



March 2021 Alert

Items 1-174

[Gluten-Free Diet in IBD: Time for a Recommendation?](#)

1.

Mol Nutr Food Res. 2021 Mar;65(5):e1901274. doi: 10.1002/mnfr.201901274. Epub 2020 Jun 28.

Authors

[Kimberly N Weaver](#) ¹, [Hans Herfarth](#) ¹

Affiliation

- ¹ Multidisciplinary Center for Inflammatory Bowel Diseases, Division of Gastroenterology and Hepatology, University of North Carolina, 130 Mason Farm Rd 4151 Bioinformatics Buildg, Chapel Hill, NC, 27599-7080, USA.
- PMID: [32558265](#)
- DOI: [10.1002/mnfr.201901274](#)

Abstract

Patients and providers alike are highly interested in identifying potentially useful dietary interventions in the management of inflammatory bowel diseases (IBD). This review examines the clinical associations of celiac disease (CeD), non-celiac gluten sensitivity (NCGS), and IBD with a focus on available data of the therapeutic efficacy of gluten-free diet (GFD) or low-gluten-containing diets in the therapy of IBD. There is a strong association between CeD and microscopic colitis, but the prevalence of CeD among IBD patients is similar to that of the general population. Interestingly, in cross-sectional studies nearly one-third of IBD patients report a diagnosis of NCGS, and many follow a GFD. Although animal studies have shown that gluten ingestion may promote intestinal inflammation and increase intestinal permeability, there have been no prospective studies evaluating the role of a GFD in the induction and maintenance of Crohn's disease and ulcerative colitis. Several cross-sectional reports suggest that a GFD may improve symptoms in IBD patients, but due to a lack of high-quality prospective clinical studies, current data do not support the universal use of a GFD in IBD.

Keywords: Crohn's disease; gluten; gluten-free diet; inflammatory bowel diseases; non-celiac gluten sensitivity; nutrition; ulcerative colitis.

© 2020 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim.

- [56 references](#)

Full text links



[Current and emerging therapies for coeliac disease](#)

2.

Nat Rev Gastroenterol Hepatol. 2021 Mar;18(3):181-195. doi: 10.1038/s41575-020-00378-1. Epub 2020 Nov 20.

Authors

[Laura Kivelä](#)^{1 2}, [Alberto Caminero](#)³, [Daniel A Leffler](#)^{4 5}, [Maria Ines Pinto-Sanchez](#)³, [Jason A Tye-Din](#)⁶, [Katri Lindfors](#)⁷

Affiliations

- ¹ Tampere Center for Child Health Research, Tampere University and Tampere University Hospital, Tampere, Finland.
- ² Children's Hospital and Pediatric Research Center, University of Helsinki and Helsinki University Hospital, Helsinki, Finland.
- ³ Department of Medicine, Farncombe Family Digestive Health Research Institute, McMaster University, Hamilton, ON, Canada.
- ⁴ Harvard Celiac Disease Research Program, Department of Medicine, Division of Gastroenterology, Beth Israel Deaconess Medical Center, Boston, MA, USA.
- ⁵ Takeda Pharmaceuticals, Cambridge, MA, USA.
- ⁶ Immunology Division, The Walter and Eliza Hall Institute, Parkville, and Gastroenterology Department, The Royal Melbourne Hospital, Parkville, Australia.
- ⁷ Celiac Disease Research Center, Faculty of Medicine and Health Technology, Tampere University, Tampere, Finland. katri.lindfors@tuni.fi.
- PMID: [33219355](#)
- DOI: [10.1038/s41575-020-00378-1](#)

Abstract

Coeliac disease is a common enteropathy that occurs in genetically susceptible individuals in response to the ingestion of gluten proteins present in wheat, rye and barley. Currently, the only available treatment for the condition is a strict, life-long gluten-free diet that, despite being safe and often effective, is associated with several challenges. Due to the high cost, particularly restrictive nature and perception of decreased quality of life associated with the diet, some

patients are continuously exposed to gluten, which prevents an adequate disease control. Moreover, a subgroup of patients does not respond to the diet adequately, and healing of the small-bowel mucosa can be incomplete. Thus, there is a need for alternative treatment forms. The increasingly understood pathogenetic process of coeliac disease has enabled the identification of various targets for future therapies. Multiple investigational therapies ranging from tolerogenic to immunological approaches are in the pipeline, and several drug candidates have entered phase II/III clinical trials. This Review gives a broad overview of the different investigative treatment modalities for coeliac disease and summarizes the latest advances in this field.

- [149 references](#)

Full text links



[Gluten and skin disease beyond dermatitis herpetiformis: a review](#)

3.

Int J Dermatol. 2021 Mar;60(3):281-288. doi: 10.1111/ijd.15098. Epub 2020 Aug 18.

Authors

[Suraj Muddasani](#)¹, [Amanda M Rusk](#)², [Katherine L Baquerizo Nole](#)²

Affiliations

- ¹ College of Medicine, University of Cincinnati, Cincinnati, OH, USA.
- ² Department of Dermatology, University of Cincinnati, Cincinnati, OH, USA.
- PMID: [32810304](#)
- DOI: [10.1111/ijd.15098](#)

Abstract

Gluten, a protein found in wheat, rye, and barley, is known to cause an immune reaction in patients with celiac disease (CD) resulting in small bowel villous atrophy and impaired nutrient absorption and cutaneous manifestations in patients with dermatitis herpetiformis (DH). It is common that patients associate skin conditions with their diet, and the advantages of a gluten-free diet (GFD) are brought up frequently. Indeed, there is evidence that certain dermatologic conditions can respond to a GFD, especially for those with concomitant CD and DH. In the last decade, new data have become available on the significance of gluten in skin disease. Herein, we review the role of gluten and a GFD on various cutaneous diseases beyond DH.

© 2020 the International Society of Dermatology.

- [50 references](#)

Full text links



[Interactions between gluten and water-unextractable arabinoxylan during the thermal treatment](#)

4.

Food Chem. 2021 May 30;345:128785. doi: 10.1016/j.foodchem.2020.128785. Epub 2020 Dec 3.

Authors

[Xiaojing Si](#)¹, [Tingting Li](#)², [Yu Zhang](#)³, [Wenhui Zhang](#)⁴, [Haifeng Qian](#)¹, [Yan Li](#)¹, [Hui Zhang](#)¹, [Xiguang Qi](#)¹, [Li Wang](#)⁵

Affiliations

- ¹ State Key Laboratory of Food Science and Technology, School of Food Science and Technology, Jiangnan University, Wuxi 214122, China.
- ² Department of Food Science and Engineering, College of Light Industry and Food Engineering, Nanjing Forestry University, Nanjing 210037, China.
- ³ Dalian Customs Comprehensive Technical Service Center, 75 Renmin Road, Zhongshan District, Dalian 116001, China.
- ⁴ Institute of Food Science, Tibet Academy of Agricultural and Animal Husbandry Sciences, Lasa 850000, China.
- ⁵ State Key Laboratory of Food Science and Technology, School of Food Science and Technology, Jiangnan University, Wuxi 214122, China. Electronic address: wl0519@163.com.
- PMID: [33310257](#)
- DOI: [10.1016/j.foodchem.2020.128785](https://doi.org/10.1016/j.foodchem.2020.128785)

Abstract

This study aimed to investigate the interactions between gluten and water-unextractable arabinoxylan (WUAX), which changed the conformation and aggregation of gluten during the thermal treatment. In this work, the interactions between water-unextractable arabinoxylan and wheat gluten during thermal treatment were extensively evaluated by different techniques. The results showed that the extra WUAX could impair the viscoelasticity as well as weaken the thermal properties of gluten. The fluorescence spectra revealed the extra WUAX changed the conformation of gluten molecules. Besides, chemical interaction measurement indicated that the extra WUAX prevented the formation of partial disulfide bonds and had a major effect on the hydrophobic interaction of gluten. In summary, these results indicated that WUAX disrupted the covalent crosslinking by affecting disulfide bonds between gluten proteins, and dominated the folding/unfolding process of gluten via the competition with gluten for water, resulting in the poor quality of whole wheat-based foods.

Keywords: Aggregation behavior; Chemical interactions; Gluten; Thermal process; Water-unextractable arabinoxylan.

Copyright © 2020 Elsevier Ltd. All rights reserved.

Full text links



[Chemical modifications and their effects on gluten protein: An extensive review](#)

5.

Food Chem. 2021 May 1;343:128398. doi: 10.1016/j.foodchem.2020.128398. Epub 2020 Oct 16.

Authors

[E Abedi](#)¹, [K Pourmohammadi](#)²

Affiliations

- ¹ Department of Food Science and Technology, College of Agriculture, Fasa University, Fasa, Iran. Electronic address: e.abedi@fasau.ac.ir.
- ² Department of Food Science and Technology, College of Agriculture, Fasa University, Fasa, Iran. Electronic address: Kpourmohammadi@fasau.ac.ir.
- PMID: [33268180](#)
- DOI: [10.1016/j.foodchem.2020.128398](https://doi.org/10.1016/j.foodchem.2020.128398)

Abstract

Gluten protein as one of the plant resources is susceptible to genetic, physical, chemical, enzymatic and engineering modifications. Chemical modifications have myriad advantages over other treatments, including short reaction times, low cost, no requirement for specialized equipment, and highly clear modification effects. Therefore, chemical modification of gluten can be mainly conducted via acylation, glycosylation, phosphorylation, and deamidation. The present review investigated the impact of different chemical compounds on conformations of gluten and its subunits. Moreover, their effects on the physico-chemical, morphological, and rheological properties of gluten and their subunits were studied. This allows for the use of gluten for a variety of purposes in the food and non-food industry.

Keywords: Chemical modifications; Conformation; Gluten; Physico-chemical properties.

Copyright © 2020 Elsevier Ltd. All rights reserved.

Full text links



6. [Family socio-economic status and childhood coeliac disease seem to be unrelated-A cross-sectional screening study](#)

Acta Paediatr. 2021 Apr;110(4):1346-1352. doi: 10.1111/apa.15562. Epub 2020 Sep 20.

Authors

[Fredrik Norström](#)¹, [Fredinah Namatovu](#)², [Annelie Carlsson](#)³, [Lotta Högberg](#)⁴, [Anneli Ivarsson](#)¹, [Anna Myléus](#)^{1 5}

Affiliations

- ¹ Department of Epidemiology and Global Health, Umeå University, Umeå, Sweden.
- ² Department of Historical, Philosophical and Religious Studies, Umeå University, Umeå, Sweden.
- ³ Department of Pediatrics, Clinical Sciences, Skåne University Hospital, Lund University, Lund, Sweden.
- ⁴ Department of Paediatrics, Norrköping Hospital, Linköping University, Norrköping, Sweden.
- ⁵ Department of Public Health and Clinical Medicine, Family Medicine, Umeå University, Umeå, Sweden.
- PMID: [32885467](#)
- PMCID: [PMC7983879](#)
- DOI: [10.1111/apa.15562](#)

Free PMC article

[Abstract](#)

Aim: The aim of our study was to examine whether there is a difference in coeliac disease prevalence in regard to parents' education level and occupation, and whether this differs between screened and clinically diagnosed children at the age of 12 years.

Methods: The study, Exploring the Iceberg of Celiacs in Sweden (ETICS), was a school-based screening study of 12-year-old children that was undertaken during the school years 2005/2006 and 2009/2010. Data on parental education and occupation were reported from parents of the children. Specifically, by parents of 10 710 children without coeliac disease, 88 children diagnosed with coeliac disease through clinical care, and 231 who were diagnosed during the study.

Results: There were no statistically significant associations between occupation and coeliac disease for either the clinically detected (prevalence ratio 1.16; confidence interval 0.76-1.76) or screening-detected coeliac disease cases (prevalence ratio 0.86; confidence interval 0.66-1.12) in comparison with children with no coeliac disease. Also, there were no statistically significant associations for parental education and coeliac disease diagnosis.

Conclusion: There was no apparent relationship between coeliac disease and socio-economic position. Using parents' socio-economic status as a tool to help identify children more likely to have coeliac disease is not recommended.

Keywords: children; coeliac disease; education; occupation; screening.

© 2020 The Authors. Acta Paediatrica published by John Wiley & Sons Ltd on behalf of Foundation Acta Paediatrica.

Conflict of interest statement

The authors report no conflicts of interest.

- [28 references](#)

Full text links



7. [Effect of Gluten Ingestion and FODMAP Restriction on Intestinal Epithelial Integrity in Patients with Irritable Bowel Syndrome and Self-Reported Non-Coeliac Gluten Sensitivity](#)

Mol Nutr Food Res. 2021 Mar;65(5):e1901275. doi: 10.1002/mnfr.201901275. Epub 2020 Oct 21.

Authors

[Mary Ajamian](#)¹, [Gennaro Rosella](#)¹, [Evan D Newnham](#)², [Jessica R Biesiekierski](#)², [Jane G Muir](#)^{1 2}, [Peter R Gibson](#)^{1 2}

Affiliations

- ¹ Department of Gastroenterology, Monash University and Alfred Health, Melbourne, Victoria, 3004, Australia.
- ² Department of Gastroenterology and Hepatology, Eastern Health, Victoria, 3128, Australia.
- PMID: [32902928](#)
- DOI: [10.1002/mnfr.201901275](#)

Abstract

Scope: Since epithelial barrier dysfunction has been associated with gluten and fermentable oligosaccharide, disaccharide, monosaccharide, and polyols (FODMAPs), the effect of alterations in FODMAP a gluten intake on epithelial barrier function in patients with irritable bowel syndrome (IBS) who self-reported gluten sensitivity.

Methods and results: Circulating concentrations of markers of epithelial injury (syndecan-1 and intestinal fatty acid-binding protein) and bacterial translocation (lipopolysaccharide-binding protein and soluble CD14) are measured while consuming habitual gluten-free diet and during blinded challenges with gluten or placebo on a background of low FODMAP intake. In 33 patients, only syndecan-1 concentrations during their habitual diet are elevated (median 43 ng mL⁻¹) compared with 23 ng mL⁻¹ in 49 healthy subjects ($p < 0.001$). On a low FODMAP diet, symptoms are reduced and levels of syndecan-1 (but not other markers) fell by a median 3335% ($p < 0.001$) irrespective of whether gluten is present or not.

Conclusion: Gluten ingestion has no specific effect on epithelial integrity or symptoms in this cohort, but reducing FODMAP intake concomitantly reduces symptoms and reverses apparent colonic epithelial injury. These findings highlight the heterogeneity of populations self-reporting gluten sensitivity and implicate FODMAPs in colonic injury in IBS.

Keywords: bacterial translocation; functional bowel disorders; gluten-free diet; intestinal epithelium.

© 2020 Wiley-VCH GmbH.

- [49 references](#)

Full text links



8. [Teaching Families of Children with Celiac Disease about Gluten-Free Diet Using Distributed Education: a Pilot Study](#)

Can J Diet Pract Res. 2021 Mar 1;82(1):38-40. doi: 10.3148/cjdpr-2020-021. Epub 2020 Sep 9.

Authors

[Mohsin Rashid MD, MEd, FRCP\(C\)](#)^{1 1}, [Jennifer Haskett BSc](#)^{1 1}, [Lisa Parkinson McGraw BSc](#)^{1 1}, [Angela Noble MD, MSc, FRCP\(C\)](#)^{1 1}, [Johan van Limbergen MD, PhD, FRCP\(C\)](#)^{1 1}, [Anthony Otley MD, MSc, FRCP\(C\)](#)^{1 1}

Affiliation

- ¹ Division of Gastroenterology and Nutrition, Department of Paediatrics, Faculty of Medicine, Dalhousie University, Halifax, NS.
- PMID: [32902326](#)
- DOI: [10.3148/cjdpr-2020-021](#)

Abstract

Introduction: Treatment of celiac disease is a strict life-long gluten-free diet (GFD). The GFD is complex, and counseling by a dietitian is essential. The number of new referrals for GFD education has increased. We studied the feasibility of GFD teaching using distributed education. **Methods:** The IWK Health Center in Halifax is the only tertiary-care pediatric hospital in the 3 Maritime provinces with GFD experienced dietitians. Families travel long distances to attend teaching sessions. Families outside the Halifax area were offered to participate in the 2.5-hour education sessions held once a month via live videoconference link at their regional hospitals. All participants were surveyed with a 10-item questionnaire assessing the content and delivery and usefulness of information. **Results:** Over a 6-month period, 39 families attended the sessions, 21 locally and 18 at distributed sites across the Maritimes. The survey was completed by 26 participants (67%). All participants at both sites strongly agreed or agreed that their setting was good for learning and the information provided was easy to understand. There were no significant differences between the 2 groups on any individual questions in the 2 domains assessed (all $P > 0.06$). **Conclusions:** Distributed education on GFD is feasible and as effective as in person education. It affords convenience and savings to families by reducing travel costs.

Full text links



[Enhanced expression of immune checkpoint receptors during SARS-CoV-2 viral infection](#)

9.

Mol Ther Methods Clin Dev. 2021 Mar 12;20:109-121. doi: 10.1016/j.omtm.2020.11.002. Epub 2020 Nov 12.

Authors

[Narjes Saheb Sharif-Askari](#)¹, [Fatemeh Saheb Sharif-Askari](#)¹, [Bushra Mdkhana](#)¹, [Saba Al Heialy](#)^{2 3}, [Habiba S Alsafar](#)^{4 5 6}, [Rifat Hamoudi](#)^{1 7}, [Qutayba Hamid](#)^{1 3 7}, [Rabih Halwani](#)^{1 7 8}

Affiliations

- ¹ Sharjah Institute of Medical Research, College of Medicine, University of Sharjah, Sharjah, United Arab Emirates.
- ² College of Medicine, Mohammed Bin Rashid University of Medicine and Health Sciences, Dubai, United Arab Emirates.
- ³ Meakins-Christie Laboratories, Research Institute of the McGill University Healthy Center, McGill University, Montreal, QC, Canada.
- ⁴ Center for Biotechnology, Khalifa University of Science and Technology, Abu Dhabi, United Arab Emirates.
- ⁵ Department of Biomedical Engineering, College of Engineering, Khalifa University of Science and Technology, Abu Dhabi, United Arab Emirates.
- ⁶ Department of Genetics and Molecular Biology, College of Medicine and Health Sciences, Khalifa University of Science and Technology, Abu Dhabi, United Arab Emirates.
- ⁷ Department of Clinical Sciences, College of Medicine, University of Sharjah, Sharjah, United Arab Emirates.

- ⁸ Prince Abdullah Ben Khaled Celiac Disease Research Chair, Department of Pediatrics, Faculty of Medicine, King Saud University, Saudi Arabia.
- PMID: [33200082](#)
- PMCID: [PMC7658590](#)
- DOI: [10.1016/j.omtm.2020.11.002](#)

Free PMC article

Abstract

The immune system is tightly regulated by the activity of stimulatory and inhibitory immune receptors. This immune homeostasis is usually disturbed during chronic viral infection. Using publicly available transcriptomic datasets, we conducted *in silico* analyses to evaluate the expression pattern of 38 selected immune inhibitory receptors (IRs) associated with different myeloid and lymphoid immune cells during coronavirus disease 2019 (COVID-19) infection. Our analyses revealed a pattern of overall upregulation of IR mRNA during severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection. A large number of IRs expressed on both lymphoid and myeloid cells were upregulated in nasopharyngeal swabs (NPSs), while lymphoid-associated IRs were specifically upregulated in autopsies, reflecting severe, terminal stage COVID-19 disease. Eight genes (BTLA, LAG3, FCGR2B, PDCD1, CEACAM1, CTLA4, CD72, and SIGLEC7), shared by NPSs and autopsies, were more expressed in autopsies and were directly correlated with viral levels. Single-cell data from blood and bronchoalveolar samples also reflected the observed association between IR upregulation and disease severity. Moreover, compared to SARS-CoV-1, influenza, and respiratory syncytial virus infections, the number and intensities of upregulated IRs were higher in SARS-CoV-2 infections. In conclusion, the immunopathology and severity of COVID-19 could be attributed to dysregulation of different immune inhibitors. Targeting one or more of these immune inhibitors could represent an effective therapeutic approach for the treatment of COVID-19 early and late immune dysregulations.

Keywords: CEACAM1; COVID-19; SARS-CoV-2; SIGLEC10; immune checkpoint inhibitors; immune inhibitory receptors; influenza A virus; lung autopsies; respiratory viral infection; sialic acid.

© 2020 The Authors.

Conflict of interest statement

The authors declare no competing interests.

- [Cited by 1 article](#)
- [123 references](#)
- [5 figures](#)

Full text links



10.

Properties of flour from pearled wheat kernels as affected by ozone treatment

Food Chem. 2021 Mar 30;341(Pt 2):128203. doi: 10.1016/j.foodchem.2020.128203. Epub 2020 Sep 30.

Authors

[Wei Zhang](#)¹, [Liuyan Li](#)², [Zaixi Shu](#)², [Pingping Wang](#)², [Xuefeng Zeng](#)³, [Wangyang Shen](#)², [Wenping Ding](#)⁴, [Yong-Cheng Shi](#)⁵

Affiliations

- ¹ College of Food Science and Engineering, Wuhan Polytechnic University, Wuhan 430023, China; Key Laboratory for Deep Processing of Major Grain and Oil(Wuhan Polytechnic University), Ministry of Education, Wuhan 430023, China; Department of Grain Science and Industry, Kansas State University, Manhattan 66506, USA.
- ² College of Food Science and Engineering, Wuhan Polytechnic University, Wuhan 430023, China.
- ³ School of Liquor and Food Engineering, Guizhou University, Guiyang 550000, China.
- ⁴ College of Food Science and Engineering, Wuhan Polytechnic University, Wuhan 430023, China; Key Laboratory for Deep Processing of Major Grain and Oil(Wuhan Polytechnic University), Ministry of Education, Wuhan 430023, China. Electronic address: wenpingding@163.com.
- ⁵ Department of Grain Science and Industry, Kansas State University, Manhattan 66506, USA. Electronic address: ycshi@ksu.edu.
- PMID: [33038803](#)
- DOI: [10.1016/j.foodchem.2020.128203](#)

Abstract

Two different pearling degrees of wheat kernels (lightly-pearled: 14.4% and heavily-pearled: 38.9%) and un-pearled kernels were treated with ozone and evaluated for flour compositions and properties. Ozonation did not change main compositions and damaged starch content of three kernels' flours. Flour brightness of all three kernels was improved after ozone treatment. Ozonation enhanced the dough strength of the flours from un-pearled and pearled kernels and the effect elevated with increasing pearling degree. Ozone treatment increased the peak viscosity of flour and the level of increase in heavily-pearled kernels was greater than un-pearled and lightly-pearled. Ozonation resulted in an increase in the insoluble protein polymer content of heavily-pearled kernels' flour, but only had a slight effect on un-pearled lightly-pearled kernels. After ozone treatment, un-pearled and lightly-pearled kernels exhibited increases in molecular weight of starch, but heavily-pearled resulted in the opposite trend.

Keywords: Dough property; Ozone; Pasting property; Wheat.

Copyright © 2020 Elsevier Ltd. All rights reserved.

Full text links



[Metabolic-associated fatty liver disease \(MAFLD\) in coeliac disease](#)

11.

Liver Int. 2021 Apr;41(4):788-798. doi: 10.1111/liv.14767. Epub 2020 Dec 28.

Authors

[Antonio Rispo](#)¹, [Nicola Imperatore](#)^{1 2}, [Maria Guarino](#)¹, [Raffaella Tortora](#)³, [Anna Alisi](#)⁴,
[Valentina Cossiga](#)¹, [Anna Testa](#)¹, [Simona Ricciolino](#)¹, [Andrea Fiorentino](#)¹, [Filomena Morisco](#)¹

Affiliations

- ¹ Gastroenterology, Department of Clinical Medicine and Surgery, School of Medicine Federico II of Naples, Naples, Italy.
 - ² Gastroenterology and Endoscopy Unit, AORN Antonio Cardarelli, Naples, Italy.
 - ³ Hepatology Unit, AORN A. Cardarelli, Naples, Italy.
 - ⁴ Research Unit of Molecular Genetics and Complex Phenotypes, Bambino Gesù Children's Hospital, IRCCS, Rome, Italy.
- PMID: [33319459](#)
 - DOI: [10.1111/liv.14767](#)

Abstract

Background and aims: Coeliac disease (CD) is considered a high-risk condition for developing non-alcoholic fatty liver disease (NAFLD) and other related metabolic disorders, particularly after commencing gluten-free diet (GFD). Recently, a new concept of metabolic-associated fatty liver disease (MAFLD) has been proposed to overcome the limitations of NAFLD definition. This study aimed at exploring the prevalence of NAFLD and MAFLD in CD patients at the time of CD diagnosis and after 2 years of GFD. Furthermore, we evaluated the role of PNPLA3 rs738409 in the development of NAFLD and MAFLD in the same population.

Methods: We retrospectively enrolled all newly diagnosed CD patients who underwent clinical, laboratory and ultrasonography investigations both at diagnosis and after 2 years of follow-up. Moreover, a PNPLA3 rs738409 genotyping assay was performed.

Results: Of 221 newly diagnosed CD patients, 65 (29.4%) presented NAFLD at CD diagnosis, while 32 (14.5%) met the criteria for MAFLD ($k = 0.57$). There were no significant differences between NAFLD and MAFLD, except for the higher rate of insulin resistance (IR) of MAFLD patients (75% vs 33.8%, $P < .001$). At 2 years of follow-up, 46.6% of patients developed NAFLD while 32.6% had MAFLD ($k = 0.71$). MAFLD subjects had higher transaminases ($P = .03$), LDL-cholesterol ($P = .04$), BMI and waist circumference and higher IR than NAFLD patients. MAFLD patients showed higher non-invasive liver fibrosis scores than NAFLD subjects (APRI = 1.43 ± 0.56 vs 0.91 ± 0.62 , $P < .001$; NFS = -1.72 ± 1.31 vs -2.18 ± 1.41 , $P = .03$; FIB-4 = 1.27 ± 0.77 vs 1.04 ± 0.74 , $P = .04$). About PNPLA3 polymorphisms, at 2 years follow-up, NAFLD subjects presented a higher rate of

heterozygosis (40.8%) and homozygosis (18.4%) polymorphisms than non-NAFLD (26.3% and 7.6%, respectively, $P = .03$ and 0.02), while no correlation between PNPLA3 polymorphisms and MAFLD was seen.

Conclusions: The new MAFLD definition better reflects the metabolic alterations following GFD in CD population. This new classification could be able to identify patients at higher risk of worse metabolic outcome, who need a close multidisciplinary approach for their multisystemic disease.

Keywords: MAFLD; coeliac disease; metabolic syndrome; steatosis.

© 2020 John Wiley & Sons A/S. Published by John Wiley & Sons Ltd.

- [47 references](#)

Full text links



[Gluten intake and metabolic health: conflicting findings from the UK Biobank](#)

12.

Eur J Nutr. 2021 Apr;60(3):1547-1559. doi: 10.1007/s00394-020-02351-9. Epub 2020 Aug 6.

Authors

[Inken Behrendt](#)¹, [Mathias Fasshauer](#)^{# 2 3 4}, [Gerrit Eichner](#)^{# 5}

Affiliations

- ¹ Institute of Nutritional Science, Justus-Liebig-University of Giessen, Goethestr. 55, 35390, Giessen, Germany. inken.behrendt@ernaehrung.uni-giessen.de.
- ² Institute of Nutritional Science, Justus-Liebig-University of Giessen, Goethestr. 55, 35390, Giessen, Germany.
- ³ Department of Internal Medicine (Endocrinology, Nephrology, and Rheumatology), University of Leipzig, Leipzig, Germany.
- ⁴ Leipzig University Medical Center, IFB AdiposityDiseases, Leipzig, Germany.
- ⁵ Mathematical Institute, Justus-Liebig-University of Giessen, Giessen, Germany.

Contributed equally.

- PMID: [32761538](#)
- DOI: [10.1007/s00394-020-02351-9](#)

Abstract

Purpose: The impact of gluten intake on metabolic health in subjects without celiac disease is unclear. The present study aimed to assess the association between gluten intake and body fat percentage (primary objective), as well as a broad set of metabolic health markers.

Methods: Gluten intake was estimated in 39,927 participants of the UK Biobank who completed a dietary questionnaire for assessment of previous 24-h dietary intakes. Multiple linear regression analyses were performed between gluten intake and markers of metabolic health with Holm adjustment for multiple comparisons.

Results: Median gluten intake was 9.7 g/day (male: 11.7 g/day; female: 8.2 g/day; $p < 0.0001$). In multiple linear regression analysis, association between gluten intake and percentage body fat was negative in males ($\beta = -0.028$, $p = 0.0020$) and positive in females ($\beta = 0.025$, $p = 0.0028$). Furthermore, gluten intake was a negative predictor of total cholesterol (male: $\beta = -0.031$, $p = 0.0154$; female: $\beta = -0.050$, $p < 0.0001$), high-density lipoprotein cholesterol (male: $\beta = -0.052$, $p < 0.0001$; female: $\beta = -0.068$, $p < 0.0001$), and glomerular filtration rate (sexes combined: $\beta = -0.031$, $p < 0.0001$) in both sexes. In females only, gluten intake was positively associated with waist circumference ($\beta = 0.041$, $p < 0.0001$), waist-to-height ratio ($\beta = 0.040$, $p < 0.0001$), as well as body mass index ($\beta = 0.043$, $p < 0.0001$), and negatively related to low-density lipoprotein cholesterol ($\beta = -0.035$, $p = 0.0011$). A positive association between gluten intake and triglycerides was observed in males only ($\beta = 0.043$, $p = 0.0001$).

Conclusion: This study indicates that gluten intake is associated with markers of metabolic health. However, all associations are weak and not clinically meaningful. Limiting gluten intake is unlikely to provide metabolic health benefits for a population in total.

Keywords: Body composition; Dyslipidemia; Gluten; Hypertension; Metabolic health; Obesity.

- [Cited by 1 article](#)
- [54 references](#)

Full text links



[Modified Appleby Procedure, Distal Splenopancreatectomy with Celiac Axis Resection](#)

13.

Ann Surg Oncol. 2021 Apr;28(4):2358. doi: 10.1245/s10434-020-09212-z. Epub 2020 Oct 21.

Authors

[Haitham Triki](#)¹, [Damien Bergeat](#)^{1 2 3}, [Marie Bougard](#)¹, [Fabien Robin](#)^{1 3 4}, [Laurent Sulpice](#)^{5 6 7 8}

Affiliations

- ¹ CHU Rennes, Service de Chirurgie Hépatobiliaire et Digestive, Hôpital Pontchaillou, Centre Hospitalier Universitaire, Université de Rennes 1, Rennes, France.
- ² UMR NuMeCan (Nutrition, Métabolismes, Cancer), INRA, ALICE, St Gilles, France.
- ³ University of Rennes, Rennes, France.
- ⁴ UMR NuMeCan, INSERM U1241, Rennes, France.
- ⁵ CHU Rennes, Service de Chirurgie Hépatobiliaire et Digestive, Hôpital Pontchaillou, Centre Hospitalier Universitaire, Université de Rennes 1, Rennes, France.
laurent.sulpice@chu-rennes.fr.
- ⁶ University of Rennes, Rennes, France. laurent.sulpice@chu-rennes.fr.
- ⁷ UMR NuMeCan, INSERM U1241, Rennes, France. laurent.sulpice@chu-rennes.fr.
- ⁸ Inserm, CIC1414 Centre d'Investigation Clinique de Rennes, Rennes, France.
laurent.sulpice@chu-rennes.fr.
- PMID: [33084990](https://pubmed.ncbi.nlm.nih.gov/33084990/)
- DOI: [10.1245/s10434-020-09212-z](https://doi.org/10.1245/s10434-020-09212-z)

Abstract

Background: Modified Appleby procedure could be indicated in stage III locally advanced body pancreatic ductal adenocarcinoma (PDAC) involving the celiac axis after neoadjuvant treatment.

Patients and methods: We report the case of a 38-year-old woman presenting a tumor arising from the body of the pancreas, involving the celiac trunk with the common hepatic artery and having contact with the anterior surface of the superior mesenteric artery. A fine-needle aspirate biopsy confirmed the diagnosis of PADC. Eight cycles of FOLFIRINOX followed by chemoradiotherapy (50.4 Gy) were conducted. After 6 months, the CA19-9 levels were normalized, and the tumor remained stable without local growth or distant metastasis. To reduce the risk of ischemia-related complications and develop the pancreaticoduodenal arcades, a preoperative embolization of the common hepatic artery was performed. Then, surgical resection was considered 4 weeks after embolization.

Results: The patient underwent a modified Appleby procedure including distal splenopancreatectomy with en bloc celiac axis resection combined with lateral portal vein resection. Venous reconstruction was carried out using peritoneal patch.¹ Pathologic evaluation revealed a 2.5-cm PDAC with negative resection margins. Postoperative course was marked by acute ischemic cholecystitis requiring reoperation at postoperative day 3. The treatment was completed with four cycles of FOLFIRINOX, and she was free of disease 6 months after surgery.

Conclusions: Nowadays, modified Appleby procedure is more frequently performed due to improvements in responses to chemotherapy and radiotherapy which have led to better local control and more aggressive approaches in highly selected patients.

- [1 reference](#)

Full text links



14. [Ipomoea hederacea Jacq.: A plant with promising antihypertensive and cardio-protective effects](#)

J Ethnopharmacol. 2021 Mar 25;268:113584. doi: 10.1016/j.jep.2020.113584. Epub 2020 Nov 12.

Authors

[Mueen Ahmad Chaudhry](#)¹, [Alamgeer](#)², [Muhammad Naveed Mushtaq](#)³, [Ishfaq Ali Bukhari](#)⁴, [Asaad Mohamed Assiri](#)⁵

Affiliations

- ¹ Laboratory of Cardiovascular Research and Integrative Pharmacology, College of Pharmacy, University of Sargodha, Sargodha, 40100, Pakistan; Faculty of Pharmacy, The University of Lahore, Lahore, Pakistan.
- ² Laboratory of Cardiovascular Research and Integrative Pharmacology, College of Pharmacy, University of Sargodha, Sargodha, 40100, Pakistan; Punjab University College of Pharmacy, Lahore, Pakistan. Electronic address: alam_yuchi@yahoo.com.
- ³ Faculty of Pharmacy, The University of Lahore, Lahore, Pakistan.
- ⁴ Department of Pharmacology, College of Medicine, King Saud University Riyadh, Saudi Arabia.
- ⁵ Prince Abdullah Ben Khaled Celiac Disease Research Chair, Department of Pediatrics, Faculty of Medicine, King Saud University, Riyadh, Saudi Arabia.
- PMID: [33189838](#)
- DOI: [10.1016/j.jep.2020.113584](#)

Abstract

Ethnopharmacological relevance: Seeds of *Ipomoea hederacea* Jacq. (family: Convolvulaceae) are traditionally used to treat high blood pressure and cardiac diseases.

Aim of the study: Present study was conducted to validate the traditional claim and explore the possible mechanism(s) of antihypertensive effects of *I. hederacea*.

Materials and methods: Aqueous-ethanolic extract and activity based fractions of *I. hederacea* were evaluated using invasive blood pressure measuring technique, isolated tissue experiments, fructose induced hypertension/metabolic syndrome and biochemical analysis. Phytochemical analysis of active fraction was performed with aim to identify chemical composition of *I. hederacea* seeds. LC-MS analysis was also performed to identify the compounds proposed to be present in active fraction of *I. hederacea* seeds.

Results: Crude extract/fractions of *I. hederacea* showed dose (0.01-100 mg/kg) dependent significant hypotensive effect in normotensive anesthetized rats, similar to verapamil (0.01-30 mg/kg). Pretreatment with hexamethonium and atropine mediated no significant changes in hypotensive effect of butanol fraction of *I. hederacea* (Ih.Bn) at 3 mg/kg dose. However, a significant decrease in the hypotensive effect of Ih.Bn 3 mg/kg ($-34.82 \pm 3.36\%$; $p < 0.05$) was

observed in the presence of L-NAME (20 mg/kg). Similarly, lh.Bn (3 mg/kg) showed no significant effect on angiotensin-II response. However, response of phenylephrine ($45.60 \pm 9.63\%$; $p < 0.05$) and dobutamine ($18.25 \pm 2.10\%$; $p < 0.01$) was significantly decreased in the presence of lh.Bn 3 mg/kg. lh.Bn also exhibited dose dependent (0.01-100 mg/kg) antihypertensive effect in fructose induced hypertensive rats, similar to verapamil (0.01-30 mg/kg). Concomitant treatment with lh.Bn (3, 10 and 30 mg/kg) for six weeks showed a dose dependent profound protection with significant ($p < 0.01$) effect at 30 mg/kg against fructose induced basal mean arterial pressure (142.2 ± 4.62 mmHg). lh.Bn did not significantly change response of PE, Ang-II and Epi was observed in invasive and ex vivo techniques. However, lh.Bn significantly ($p < 0.01$; $p < 0.001$) prevented against decrease in vascular response of acetylcholine in anesthetized rats and in isolated aorta of rat. A significant dose dependent decrease in triglyceride and glucose level ($p < 0.001$), and increase in HDL level ($p < 0.05$) was observed in lh.Bn treated groups. Results of LC-MS analysis of lh.Bn showed the presence of 24 compounds that belong to different chemical classes, including carboxylic acid, flavonoids, oligopeptides and tripeptide that are known to have antihypertensive and vasorelaxant properties.

Conclusions: Results of present study indicate the presence of hypotensive/antihypertensive effect in crude extract/fractions of *I. hederacea* with most potent effect shown by butanol fraction (lh.Bn), possibly mediated through α_1 blocking, β blocking and iNOS/cGMP stimulating activity.

Keywords: Beta blocking activity; Metabolic syndrome; Nitric oxide synthase; Vascular dysfunction.

Copyright © 2020. Published by Elsevier B.V.

Full text links



[The use of peripheral blood mononuclear cells in celiac disease diagnosis and treatment](#)

15.

Expert Rev Gastroenterol Hepatol. 2021 Mar;15(3):305-316. doi: 10.1080/17474124.2021.1850262. Epub 2020 Nov 26.

Authors

[Alma Kurki](#)¹, [Esko Kempainen](#)¹, [Pilvi Laurikka](#)¹, [Katri Kaukinen](#)^{1 2}, [Katri Lindfors](#)¹

Affiliations

- ¹ Celiac Disease Research Center, Faculty of Medicine and Health Technology, Tampere University, Tampere, Finland.
- ² Department of Internal Medicine, Tampere University Hospital, Tampere, Finland.
- PMID: [33176106](#)
- DOI: [10.1080/17474124.2021.1850262](#)

Abstract

Introduction: Celiac disease is characterized by an abnormal immune activation driven by the ingestion of gluten from wheat, barley, and rye. Gluten-specific CD4⁺ T cells play an important role in disease pathogenesis and are detectable among peripheral blood mononuclear cells (PBMCs). **Areas covered:** This review summarizes the use of celiac disease patient PBMCs in clinical applications focusing on their exploitation in the development of diagnostic approaches and novel drugs to replace or complement gluten-free diet. **Expert opinion:** The most used PBMC-based methods applied in celiac disease research include ELISpot and HLA-DQ:gluten tetramer technology. ELISpot has been utilized particularly in research aiming to develop a celiac disease vaccine and in studies addressing the toxicity of different grains in celiac disease. HLA-DQ:gluten tetramer technology on the other hand initially focused on improving current diagnostics but in combination with additional markers it is also a useful outcome measure in clinical trials to monitor the efficacy of drug candidates. In addition, the technology serves well in the more detailed characterization of celiac disease-specific T cells, thereby possibly revealing novel therapeutic targets. Future studies may also reveal clinical applications for PBMC microRNAs and/or dendritic cells or monocytes present among PBMCs.

Keywords: Celiac disease; ELISpot; HLA-DQ:gluten tetramer; diagnostics; gluten; treatment.

Full text links



16. [Real-World Gluten Exposure in Patients With Celiac Disease on Gluten-Free Diets, Determined From Gliadin Immunogenic Peptides in Urine and Fecal Samples](#)

Clin Gastroenterol Hepatol. 2021 Mar;19(3):484-491.e1. doi: 10.1016/j.cgh.2020.03.038. Epub 2020 Mar 23.

Authors

[Juan Pablo Stefanolo](#)¹, [Martín Tálamo](#)¹, [Samanta Dodds](#)¹, [María de la Paz Temprano](#)¹, [Ana Florencia Costa](#)¹, [María Laura Moreno](#)¹, [María Inés Pinto-Sánchez](#)², [Edgardo Smecuol](#)¹, [Horacio Vázquez](#)¹, [Andrea Gonzalez](#)¹, [Sonia Isabel Niveloni](#)¹, [Eduardo Mauriño](#)¹, [Elena F Verdu](#)², [Julio César Bai](#)³

Affiliations

- ¹ Dr. C. Bonorino Udaondo Gastroenterology Hospital, Buenos Aires, Argentina.
- ² Farncombe Family Digestive Health Research Institute, McMaster University Medical Centre, Health Sciences, Hamilton, Ontario, Canada.
- ³ Dr. C. Bonorino Udaondo Gastroenterology Hospital, Buenos Aires, Argentina; Research Institutes of Health, Universidad del Salvador, Buenos Aires, Argentina. Electronic address: Jbai@intramed.net.
- PMID: [32217152](#)

- DOI: [10.1016/j.cgh.2020.03.038](https://doi.org/10.1016/j.cgh.2020.03.038)

Abstract

Background & aims: It is not clear how often patients who are on gluten-free diets (GFDs) for treatment of celiac disease still are exposed to gluten. We studied levels of gluten immunogenic peptides (GIP) in fecal and urine samples, collected over 4 weeks, from patients with celiac disease on a long-term GFD.

Methods: We performed a prospective study of 53 adults with celiac disease who had been on a GFD for more than 2 years (median duration, 8 y; interquartile range, 5-12 y) in Argentina. At baseline, symptoms were assessed by the celiac symptom index questionnaire. Patients collected stool each Friday and Saturday and urine samples each Sunday for 4 weeks. We used a commercial enzyme-linked immunosorbent assay to measure GIP in stool and point-of-care tests to measure GIP in urine samples.

Results: Overall, 159 of 420 stool and urine samples (37.9%) were positive for GIP; 88.7% of patients had at least 1 fecal or urine sample that was positive for GIP (median, 3 excretions). On weekends (urine samples), 69.8% of patients excreted GIP at least once, compared with 62.3% during weekdays (stool). The number of patients with a sample that was positive for GIP increased over the 4-week study period (urine samples in week 1 vs week 4: $P < .05$). Patients with symptoms had more weeks in which GIP was detected in stool than patients without symptoms ($P < .05$). The number of samples that were positive for GIP correlated with titers of deamidated gliadin peptide IgA in patients' blood samples, but not with levels of tissue transglutaminase.

Conclusions: Patients with celiac disease on a long-term GFD still frequently are exposed to gluten. Assays to detect GIP in stool and urine might be used to assist dietitians in assessment of GFD compliance.

Keywords: Celiac Disease; Follow-up; GIP Excretion; Gluten-Free Diet Adherence.

Copyright © 2021 AGA Institute. All rights reserved.

- [Cited by 6 articles](#)

Full text links



17. [Optimization of gluten-free sponge cake fortified with whey protein concentrate using mixture design methodology](#)

Food Chem. 2021 May 1;343:128457. doi: 10.1016/j.foodchem.2020.128457. Epub 2020 Oct 24.

Authors

[Imène Ammar](#)¹, [Houda Gharsallah](#)², [Abir Ben Brahim](#)³, [Hamadi Attia](#)³, [M A Ayadi](#)³, [Bilel Hadrich](#)⁴, [Imène Felfoul](#)⁵

Affiliations

- ¹ Université de Sfax, ENIS, Laboratoire Analyse, Valorisation et Sécurité des Aliments, Sfax 3038, Tunisia. Electronic address: imene_ammam@yahoo.fr.
- ² Université de Sfax, ENIS, Laboratoire Analyse, Valorisation et Sécurité des Aliments, Sfax 3038, Tunisia; Tunisian Olive Institute, University of Sfax, Sfax, Tunisia.
- ³ Université de Sfax, ENIS, Laboratoire Analyse, Valorisation et Sécurité des Aliments, Sfax 3038, Tunisia.
- ⁴ Laboratory of Enzyme Engineering and Microbiology, Engineering National School of Sfax (ENIS), University of Sfax, Tunisia.
- ⁵ Université de Sfax, ENIS, Laboratoire Analyse, Valorisation et Sécurité des Aliments, Sfax 3038, Tunisia. Electronic address: imenef@gmail.com.
- PMID: [33153810](#)
- DOI: [10.1016/j.foodchem.2020.128457](https://doi.org/10.1016/j.foodchem.2020.128457)

Abstract

This study aimed to optimize mixtures of whey protein concentrate (WPC) and two flours of rice and maize flours for the production of gluten-free sponge cakes. This was obtained by using mixture design methodology. WPC incorporation had positive effects on specific volume and baking loss of cakes, whilst, their incorporation increased their hardness. Considering all cakes properties, two formulas F1 (78.5% Maize, 15% Rice and 6.5% WPC) and F2 (82.4% Maize, 12% Rice and 5.6% WPC) were optimized using a mixture design. The microstructure F1 was more organized and very well structured with smaller aggregates. According to the organoleptic evaluation, F1 was also most appreciated by the tasting panel. The findings of the present study indicated that maize and rice flours, and WPC could be used as a substitute for wheat flour in producing sponge cakes of high quality.

Keywords: Gluten-free sponge cake; Maize; Mixture design; Rice; WPC.

Copyright © 2020 Elsevier Ltd. All rights reserved.

Full text links



18. [Old and modern wheat \(*Triticum aestivum* L.\) cultivars and their potential to elicit celiac disease](#)

Food Chem. 2021 Mar 1;339:127952. doi: 10.1016/j.foodchem.2020.127952. Epub 2020 Sep 12.

Authors

[Darina Pronin](#)¹, [Andreas Börner](#)², [Katharina Anne Scherf](#)³

Affiliations

- ¹ Leibniz-Institute for Food Systems Biology at the Technical University of Munich, Lise-Meitner-Str. 34, 85354 Freising, Germany. Electronic address: d.pronin@leibniz-lsb@tum.de.
- ² Genebank Department, Leibniz Institute of Plant Genetics and Crop Plant Research, Corrensstr. 3, 06466 Seeland, OT Gatersleben, Germany. Electronic address: boerner@ipk-gatersleben.de.
- ³ Leibniz-Institute for Food Systems Biology at the Technical University of Munich, Lise-Meitner-Str. 34, 85354 Freising, Germany; Department of Bioactive and Functional Food Chemistry, Institute of Applied Biosciences, Karlsruhe Institute of Technology (KIT), Adenauerring 20a, 76131 Karlsruhe, Germany. Electronic address: katharina.scherf@kit.edu.
- PMID: [33152854](https://pubmed.ncbi.nlm.nih.gov/33152854/)
- DOI: [10.1016/j.foodchem.2020.127952](https://doi.org/10.1016/j.foodchem.2020.127952)

Abstract

One potential explanation for the increasing prevalence of celiac disease (CD) over the past decades is that breeding may have inadvertently changed the immunoreactive potential of wheat. To test this hypothesis, we quantitated four CD-active peptides, namely the 33-mer and peptides containing the DQ2.5-glia- α 1a/DQ2.5-glia- α 2 (P1), DQ2.5-glia- α 3 (P2) and DQ2.5-glia- γ 1 (P3) epitopes, in a set of 60 German hexaploid winter wheat cultivars from 1891 to 2010 and grown in three consecutive years. The contents of CD-active peptides were affected more by the harvest year than by the cultivar. The 33-mer and P1 peptides showed no tendency regarding their absolute contents in the flour, but they tended to increase slightly over time when calculated relative to the α -gliadins. No trends in relative or absolute values were observed for the P2 and P3 peptides derived from α - and γ -gliadins. Therefore, the immunoreactive potential of old and modern wheat cultivars appears to be similar.

Keywords: 33-mer; Breeding; Celiac disease; ELISA; Gliadin; Gluten; Mass spectrometry; Wheat.

Copyright © 2020 Elsevier Ltd. All rights reserved.

- [Cited by 2 articles](#)

Full text links



19. [Effect of celiac axis compression on target vessel-related outcomes during fenestrated-branched endovascular aortic repair](#)

J Vasc Surg. 2021 Apr;73(4):1167-1177.e1. doi: 10.1016/j.jvs.2020.07.092. Epub 2020 Aug 27.

Authors

[Francesco Squizzato](#)¹, [Gustavo S Oderich](#)¹, [Emanuel R Tenorio](#)¹, [Bernardo C Mendes](#)¹, [Randall R DeMartino](#)²

Affiliations

- ¹ Division of Vascular and Endovascular Surgery, Mayo Clinic, Rochester, Minn.
- ² Division of Vascular and Endovascular Surgery, Mayo Clinic, Rochester, Minn. Electronic address: demartino.randall@mayo.edu.
- PMID: [32861863](#)
- DOI: [10.1016/j.jvs.2020.07.092](#)

Abstract

Objective: To report the effect of median arcuate ligament (MAL) compression on outcomes and technical aspects of celiac artery (CA) stenting during fenestrated-branched endovascular aneurysm repair for thoracoabdominal aortic aneurysms (TAAA) or pararenal aortic aneurysms.

Methods: We retrospectively reviewed the clinical and anatomic data on 300 consecutive patients enrolled in a prospective nonrandomized physician-sponsored investigational device exemption study from 2013 to 2018. From this group, 230 patients with CA incorporation by fenestration or directional branch were included. MAL compression was defined by preoperative computed tomography angiogram as a J-hook narrowing of the proximal CA at the level of the ligament; the shift angle between the downward and upward segments within the CA was measured. End points were technical success, rates of intraoperative or early (30-days) CA branch revision, and freedom from target vessel instability, defined by any death or rupture owing to target vessel complication, occlusion, or reintervention for stenosis, endoleak, or disconnection.

Results: CA incorporation was performed using fenestrations in 118 patients (51%) and directional branches in 112 (49%). MAL compression was present in 97 patients (42%), resulting in a stenosis of more than 50% in 48 (49%). MAL compression was more often present in patients with extent I to III TAAAs compared with extent IV TAAA-pararenal aortic aneurysms (56% vs 31%; $P < .001$). Technical success rate was 99%. Patients with MAL compression more often received a directional branch (65% vs 37%; $P < .001$), self-expanding bridging stent grafts (32% vs 16%; $P = .007$), adjunctive bare metal stents (46% vs 24%; $P = .001$), and coverage of the gastric artery (44% vs 22%; $P < .001$). An intraoperative ($n = 6$, 2.6%) or early ($n = 1$, 0.4%) revision of the CA branch was required in seven patients (3%) owing to dissection/occlusion ($n = 2$ [0.9%]), kinking/stenosis ($n = 3$ [1.3%]), stent dislodgement ($n = 1$ [0.4%]), or type IC endoleak ($n = 1$ [0.4%]). A shift angle of less than 120° was the most significant factor associated with CA branch revision (odds ratio, 10.9; 95% confidence interval, 2.3-88.9; $P = .013$). Freedom from CA branch instability was $97 \pm 2\%$ at 4 years, and this outcome was not associated with MAL compression (hazard ratio, 0.83; 95% confidence interval, 0.14-5.02; $P = .588$) or any other predictor.

Conclusions: MAL compression was more common in extent I to III TAAAs, and related to additional challenges for CA stenting in fenestrated-branched endovascular aneurysm repair. This process may include bare metal stenting, gastric artery coverage, or early revision, especially in presence of an angulation of less than 120°. However, durable results can be achieved for CA incorporation despite these difficulties.

Keywords: Aortic aneurysm; Celiac artery; Fenestrated and branched endovascular aortic repair; Median arcuate ligament syndrome; Pararenal aortic aneurysm; Thoracoabdominal aortic aneurysm.

Copyright © 2020 Society for Vascular Surgery. Published by Elsevier Inc. All rights reserved.

Full text links



20. [Phosvitin-wheat gluten complex catalyzed by transglutaminase in the presence of Na₂SO₃: Formation, cross-link behavior and emulsifying properties](#)

Food Chem. 2021 Jun 1;346:128903. doi: 10.1016/j.foodchem.2020.128903. Epub 2020 Dec 24.

Authors

[Lu Yang](#)¹, [Jie Jia](#)², [Xuefu Zhou](#)³, [Meichen Liu](#)⁴, [Qinjun Zhang](#)⁵, [Liangjie Tian](#)⁶, [Wen Tan](#)⁷, [YanJun Yang](#)⁸, [Xuebo Liu](#)⁹, [Xiang Duan](#)¹⁰

Affiliations

- ¹ College of Food Science and Engineering, Northwest A&F University, Yangling 712100, PR China. Electronic address: yanglu1116@nwfau.edu.cn.
- ² College of Food Science and Engineering, Northwest A&F University, Yangling 712100, PR China. Electronic address: jiajili@nwfau.edu.cn.
- ³ Department of Food Science and Technology, Shanghai Jiao Tong University, Shanghai 200240, PR China. Electronic address: shiftzhou@sjtu.edu.com.
- ⁴ College of Food Science and Engineering, Northwest A&F University, Yangling 712100, PR China. Electronic address: liumeichen@nwfau.edu.cn.
- ⁵ College of Food Science and Engineering, Northwest A&F University, Yangling 712100, PR China. Electronic address: qinjunzhang1110@163.com.
- ⁶ College of Food Science and Engineering, Northwest A&F University, Yangling 712100, PR China. Electronic address: tianlj8@163.com.
- ⁷ College of Food Science and Engineering, Northwest A&F University, Yangling 712100, PR China. Electronic address: wentan@nwfau.edu.cn.
- ⁸ School of Food Science and Technology, Jiangnan University, Wuxi 214122, PR China. Electronic address: yangyj@jiangnan.edu.cn.
- ⁹ College of Food Science and Engineering, Northwest A&F University, Yangling 712100, PR China. Electronic address: xueboliu@nwfau.edu.cn.

- ¹⁰ College of Food Science and Engineering, Northwest A&F University, Yangling 712100, PR China. Electronic address: duanxiang402@163.com.
- PMID: [33429299](#)
- DOI: [10.1016/j.foodchem.2020.128903](#)

Abstract

Phosvitin (PSV) is considered as a good emulsifier, although it has a low proportion of hydrophobic regions and steric hindrance. Wheat gluten (WG) possesses excellent hydrophobicity and macromolecular network structure. In this work, WG was subjected to a series of Na₂SO₃ solution, followed by cross-linking with PSV under transglutaminase (TGase) catalyzation. The results showed that Na₂SO₃ could break disulfide bonds of WG and increase its solubility from 7.33% to 42.82% with 1200 mg/L of Na₂SO₃. Correspondingly, the cross-linking degree was significantly enhanced. Compared to PSV, the cross-linked PSV-WG exhibited a higher surface hydrophobicity and thermal stability, with a lower zeta potential and apparent viscosity. The emulsifying activity of PSV-WG reached 17.42, 20.63 and 20.28 m²/g with Na₂SO₃ concentration of 300, 600 and 900 mg/L, which were all higher than that of PSV (15.19 m²/g). This work provided a novel strategy to elevate emulsifying properties of PSV by cross-link reaction.

Keywords: Cross-link; Emulsifying property; Phosvitin; Transglutaminase; Wheat gluten.

Copyright © 2020 Elsevier Ltd. All rights reserved.

Full text links



21. [Effect of different gluten-free flours on the sensory characteristics of a vegan *alfajor*: Vegan gluten-free *Alfajor* development](#)

Food Sci Technol Int. 2021 Mar;27(2):145-150. doi: 10.1177/1082013220939792. Epub 2020 Jul 12.

Authors

[Rebecca Cardillo Diniz](#) ¹, [Fernanda Morcatti Coura](#) ¹, [Jéssica Ferreira Rodrigues](#) ¹

Affiliation

- ¹ Department of Agrarian Sciences, Federal Institute of Minas Gerais, Bambuí, Brazil.
- PMID: [32659123](#)
- DOI: [10.1177/1082013220939792](#)

Abstract

Vegan and gluten-free markets have grown considerably in the last few years. Sustainability and the use of agro-industrial waste have also gained interest on food market. Thus, this study aimed to develop a vegan gluten-free *alfajor*, assessing the effect of different gluten-free flours (peanut okara (a by-product), sorghum, and rice flours) on the product sensory profile, and its market appeal. A simplex centroid design was applied to optimize the *alfajor* formulation. Check All That Apply and acceptance tests were performed. The use of different flours and their mixtures generated products with different texture attributes. All formulations obtained good acceptances, but higher concentrations of peanut okara and sorghum flours contributed to produce softer *alfajors*, considered as preferred by consumers. Therefore, it was possible to develop a gluten-free *alfajor* with sensory quality adding value to an agroindustrial by-product.

Keywords: By-products; peanut okara; product development; sorghum; vegan.

Full text links



22. [Clinical Characteristics and Management of 50 Patients with Anti-GAD Ataxia: Gluten-Free Diet Has a Major Impact](#)

Cerebellum. 2021 Apr;20(2):179-185. doi: 10.1007/s12311-020-01203-w. Epub 2020 Oct 21.

Authors

[M Hadjivassiliou](#)¹, [P G Sarriannis](#)², [P D Shanmugarajah](#)², [D S Sanders](#)², [R A Grunewald](#)², [P Zis](#)², [N Hoggard](#)^{2 3}

Affiliations

- ¹ Academic Department of Neurosciences, Royal Hallamshire Hospital, Sheffield Teaching Hospitals NHS Trust, Glossop Road, Sheffield, S10 2JF, UK.
m.hadjivassiliou@sheffield.ac.uk.
- ² Academic Department of Neurosciences, Royal Hallamshire Hospital, Sheffield Teaching Hospitals NHS Trust, Glossop Road, Sheffield, S10 2JF, UK.
- ³ Academic Department of Neuroradiology, Royal Hallamshire Hospital, Sheffield Teaching Hospitals NHS Trust, Sheffield, UK.
- PMID: [33084997](#)
- DOI: [10.1007/s12311-020-01203-w](#)

Abstract

The objective of this study is to report the clinical characteristics and treatment of patients with progressive cerebellar ataxia associated with anti-GAD antibodies. We performed a retrospective review of all patients with anti-GAD ataxia managed at the Sheffield Ataxia Centre over the last

25 years. We identified 50 patients (62% females) with anti-GAD ataxia. The prevalence was 2.5% amongst 2000 patients with progressive ataxia of various causes. Mean age at onset was 55 and mean duration 8 years. Gaze-evoked nystagmus was present in 26%, cerebellar dysarthria in 26%, limb ataxia in 44% and gait ataxia in 100%. Nine patients (18%) had severe, 12 (24%) moderate and 29 (58%) mild ataxia. Ninety percent of patients had a history of additional autoimmune diseases. Family history of autoimmune diseases was seen in 52%. Baseline MR spectroscopy of the vermis was abnormal at presentation in 72%. Thirty-five patients (70%) had serological evidence of gluten sensitivity. All 35 went on gluten-free diet (GFD). Eighteen (51%) improved, 13 (37%) stabilised, 3 have started the GFD too recently to draw conclusions and one deteriorated. Mycophenolate was used in 16 patients, 7 (44%) improved, 2 stabilised, 6 have started the medication too recently to draw conclusions and one did not tolerate the drug. There is considerable overlap between anti-GAD ataxia and gluten ataxia. For those patients with both, strict GFD alone can be an effective treatment. Patients with anti-GAD ataxia and no gluten sensitivity respond well to immunosuppression.

Keywords: Anti-GAD Ataxia; Gluten Ataxia; Gluten Free Diet; Immune Ataxia; MR Spectroscopy.

- [Cited by 1 article](#)
- [30 references](#)

Full text links



23. [Assessment of arsenic distribution, bioaccessibility and speciation in rice utilizing continuous extraction and in vitro digestion](#)

Food Chem. 2021 Jun 1;346:128969. doi: 10.1016/j.foodchem.2020.128969. Epub 2020 Dec 31.

Authors

[Pengfei Wang](#)¹, [Naiyi Yin](#)¹, [Xiaolin Cai](#)¹, [Huili Du](#)¹, [Yaqi Fu](#)¹, [Ziqi Geng](#)¹, [Sharmin Sultana](#)¹, [Guoxin Sun](#)², [Yanshan Cui](#)³

Affiliations

- ¹ College of Resources and Environment, University of Chinese Academy of Sciences, Beijing 101408, China; Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing 100085, China.
- ² Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing 100085, China.
- ³ College of Resources and Environment, University of Chinese Academy of Sciences, Beijing 101408, China; Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing 100085, China. Electronic address: cuiyanshan@ucas.ac.cn.
- PMID: [33422920](#)
- DOI: [10.1016/j.foodchem.2020.128969](#)

Abstract

Rice, a staple food for half the world's population, easily accumulates arsenic (As). Research on As distribution in rice protein and starch and its relationship with rice As bioaccessibility remains limited. This study investigated As distribution, chemical composition, As bioaccessibility and speciation in rice by continuous extraction and in vitro digestion. Of the total As, 87.5-94.5% was in rice protein and 5.0-9.8% in rice starch. The As amount in different protein fractions decreased as follows: glutelin > globulin > albumin > prolamin. As(V), As(III) and DMA in rice were more bioaccessible in the small intestinal phase than the gastric phase, and almost all As(V) dissolved in the small intestinal phase. Bioaccessible As in gastrointestinal digestive solution and As mass in protein fractions (albumin, globulin, and glutelin) were significantly positively correlated ($p < 0.05$). These results illuminate the bioaccessibility of As to humans consuming As-contaminated rice and avoid overassessment.

Keywords: Arsenic; Bioaccessibility; Distribution; Gut microbiota; Rice; Speciation.

Copyright © 2020 Elsevier Ltd. All rights reserved.

Full text links



24. [Proteomic analysis of wheat seeds produced under different nitrogen levels before and after germination](#)

Food Chem. 2021 Mar 15;340:127937. doi: 10.1016/j.foodchem.2020.127937. Epub 2020 Aug 25.

Authors

[Daxing Wen](#)¹, [Haicheng Xu](#)², [Mingrong He](#)³, [Chunqing Zhang](#)⁴

Affiliations

- ¹ State Key Laboratory of Crop Biology, Agronomy College, Shandong Agricultural University, Tai'an, Shandong Province 271018, PR China. Electronic address: dxwen@sdau.edu.cn.
- ² State Key Laboratory of Crop Biology, Agronomy College, Shandong Agricultural University, Tai'an, Shandong Province 271018, PR China.
- ³ State Key Laboratory of Crop Biology, Agronomy College, Shandong Agricultural University, Tai'an, Shandong Province 271018, PR China. Electronic address: mrhe@sdau.edu.cn.
- ⁴ State Key Laboratory of Crop Biology, Agronomy College, Shandong Agricultural University, Tai'an, Shandong Province 271018, PR China. Electronic address: cqzhang@sdau.edu.cn.
- PMID: [32889215](#)
- DOI: [10.1016/j.foodchem.2020.127937](https://doi.org/10.1016/j.foodchem.2020.127937)

Abstract

The objective of this study was to investigate differentially abundant proteins (DAPs) of wheat seeds produced under two nitrogen levels (0 and 240 kg/ha) before and after germination. We selected samples at 8 and 72 h after imbibition (HAI) to identify DAPs by iTRAQ. The results showed 190 and 124 DAPs at 8 and 72 HAI, respectively. Alpha-gliadin and chlorophyll a-b binding protein showed the biggest difference in abundance before and after germination. In GO enrichment analysis, the most significantly enriched GO term was nutrient reservoir activity at 8 HAI and endopeptidase inhibitor activity at 72 HAI. Moreover, many DAPs involved in mobilization of stored nutrients and photosynthesis were mapped to KEGG pathways. Dough development time, dough stability time and seedling chlorophyll content under N240 were significantly higher than those under N0, which validated the results of proteomic analysis. These results are crucial for food nutrition and food processing.

Keywords: Food processing; Germination; Nitrogen level; Proteomic analysis; Wheat seeds.

Copyright © 2020 Elsevier Ltd. All rights reserved.

Full text links



25. [Effects of salt and kansui on rheological, chemical and structural properties of noodle dough during repeated sheeting process](#)

Food Chem. 2021 Apr 16;342:128365. doi: 10.1016/j.foodchem.2020.128365. Epub 2020 Oct 14.

Authors

[Chong Liu](#)¹, [Mengkun Song](#)², [Jing Hong](#)², [Limin Li](#)², [Xueling Zheng](#)³, [Ke Bian](#)², [Erqi Guan](#)²

Affiliations

- ¹ College of Grain, Oil and Food Science, Henan University of Technology, Zhengzhou 450001, PR China. Electronic address: liuachong@haut.edu.cn.
- ² College of Grain, Oil and Food Science, Henan University of Technology, Zhengzhou 450001, PR China.
- ³ College of Grain, Oil and Food Science, Henan University of Technology, Zhengzhou 450001, PR China. Electronic address: xuelingzheng@haut.edu.cn.
- PMID: [33092923](#)
- DOI: [10.1016/j.foodchem.2020.128365](https://doi.org/10.1016/j.foodchem.2020.128365)

Abstract

Effects of different levels of salt (1-2%, fwb) and kansui (0.5-1%) on the rheological, chemical and structural characteristics of noodle dough developed by repeated sheeting were studied. The rupture stress was increased by salt and kansui. The rupture elongation was increased by salt

while reduced by kansui. The rupture stress and elongation increased to a maximum at 3 or 4 sheeting passes then decreased. The larger polymeric glutenin (LPP) increased while glutenin macropolymer (GMP) and free SH contents declined with the increased sheeting passes except for the dough contained 1% kansui at which these indicators remained constant. The β -sheet was increased while the β -turn was decreased by salt and kansui. The results showed the LPP disaggregated from GMP through physical disentanglement and experienced a reaggregation process with the SS bonds participate in, but the addition of kansui especially at 1% concentration could inhibit the disaggregation of GMP through protein cross-linking.

Keywords: Glutenin; Kansui; Noodle dough; Rheology; Salt; Sheeting.

Copyright © 2020 Elsevier Ltd. All rights reserved.

Full text links



26. [Celiac disease screening in children and adolescents with type1 diabetes mellitus: What test should be performed?](#)

Endocrinol Diabetes Nutr. 2021 Mar;68(3):153-158. doi: 10.1016/j.endinu.2020.03.007. Epub 2020 Jun 30.

[Article in English, Spanish]

Authors

[M Belén Roldán Martín](#)¹, [Corina Márquez Romero](#)², [Enrique Guerra Vilches](#)², [Juan Ruiz Usabiaga](#)³, [Raquel Barrio Castellanos](#)⁴, [María Martín Frías](#)⁴, [David Plaza Oliver](#)², [Cristina Camarero Salces](#)⁵

Affiliations

- ¹ Unidad de Endocrinología y Diabetes, Servicio de Pediatría, Hospital Universitario Ramón y Cajal. Departamento de Medicina y Especialidades Médicas, Facultad de Medicina, Universidad de Alcalá, IRYCIS, Madrid, España. Electronic address: mbelen.rolan@salud.madrid.org.
- ² Servicio de Pediatría, Hospital Universitario Ramón y Cajal, IRYCIS, Madrid, España.
- ³ Servicio de Atención al Paciente, Hospital Universitario Ramón y Cajal, IRYCIS, Madrid, España.
- ⁴ Unidad de Endocrinología y Diabetes, Servicio de Pediatría, Hospital Universitario Ramón y Cajal, IRYCIS, Madrid, España.
- ⁵ Unidad de Gastroenterología, Servicio de Pediatría, Hospital Universitario Ramón y Cajal. Departamento de Medicina y Especialidades Médicas, Facultad de Medicina, Universidad de Alcalá, IRYCIS, Madrid, España.
- PMID: [32620518](#)
- DOI: [10.1016/j.endinu.2020.03.007](#)

Abstract

Introduction: Children and adolescents with type1 diabetes mellitus (T1DM) are at high risk for the development of celiac disease (CD) because of the common genetic characteristics of both conditions. The study objectives were to investigate the frequency of the human leukocyte antigen system (HLA) for CD in pediatric T1DM patients and to determine whether HLA testing is suitable for CD screening in that population and is cost-effective as compared to serological screening for CD.

Patients and methods: A retrospective, descriptive study was conducted in 296 patients (148 girls; 148 boys) with T1DM aged <18years who attended a hospital in Madrid. Data on the frequency of genotypes DQ2/DQ8 in a subgroup of 92 patients and the additional cost of performing HLA typing for screening CD were collected. Only when the risk HLA haplotype (DQ2/DQ8) is negative no further serological screening for CD is required.

Results: Twenty-three patients with T1DM (7.77%) also had CD. Alleles DQ2 or DQ8 were found in 91.3% of patients in whom the HLA haplotype was studied. Thus, only 8.7% with a negative haplotype would have benefited from HLA testing. The additional cost of HLA typing was €105.2 for each patient with positive DQ2 or DQ8 in our population.

Conclusions: HLA typing is not a cost-effective screening method for CD in T1DM because of the frequent association of T1DM with risk genotypes for CD.

Keywords: Anticuerpos anti-transglutaminasa; Celiac disease; Diabetes mellitus tipo1; Enfermedad celiaca; Human leukocyte antigens; Sistema de histocompatibilidad de antígenos leucocitarios humanos; Transglutaminase antibodies; Type 1 diabetes mellitus.

Copyright © 2020 SEEN y SED. Publicado por Elsevier España, S.L.U. All rights reserved.

Full text links



27. [Structural, gelation properties and microstructure of rice glutelin/sugar beet pectin composite gels: Effects of ionic strengths](#)

Food Chem. 2021 Jun 1;346:128956. doi: 10.1016/j.foodchem.2020.128956. Epub 2020 Dec 29.

Authors

[Ya-Ru Wang](#)¹, [Qin Yang](#)¹, [Yi-Jing Li-Sha](#)¹, [Han-Qing Chen](#)²

Affiliations

- ¹ Engineering Research Center of Bio-process, Ministry of Education, Hefei University of Technology, 420 Feicui Road, Hefei, Anhui 230601, PR China; School of Food and Biological Engineering, Hefei University of Technology, 420 Feicui Road, Hefei, Anhui 230601, PR China.

- ² Engineering Research Center of Bio-process, Ministry of Education, Hefei University of Technology, 420 Feicui Road, Hefei, Anhui 230601, PR China; School of Food and Biological Engineering, Hefei University of Technology, 420 Feicui Road, Hefei, Anhui 230601, PR China. Electronic address: hangchen@hfut.edu.cn.
- PMID: [33418414](https://pubmed.ncbi.nlm.nih.gov/33418414/)
- DOI: [10.1016/j.foodchem.2020.128956](https://doi.org/10.1016/j.foodchem.2020.128956)

Abstract

In this study, the rice glutelin (RG)/sugar beet pectin (SBP) composite gels were prepared by laccase induced cross-linking and subsequent heat treatment, and the effects of different calcium ion concentrations (0-400 mM) on the gelation, structural properties and microstructure of the RG/SBP composite gels were investigated. The results showed that the addition of 200 mM calcium ion could improve the rheological, textural properties and water holding capacity of the RG/SBP composite gels. The addition of SBP and calcium ions enhanced the hydrophobic interaction between RG molecules, thereby increased the gel properties of RG. The changes in Raman spectroscopy reflected the positive effect of the addition of SBP and calcium ions on the formation of a denser and more homogeneous protein gel, as evidenced by the results of scanning electron microscopy. Overall, SBP and calcium ions could be applied to the plant protein gel systems as gel-strengthening agents.

Keywords: Calcium ions; Gelation properties; Laccase; Raman spectra; Rice glutelin; Sugar beet pectin.

Copyright © 2020 Elsevier Ltd. All rights reserved.

Full text links



28. [Inhibitory effects of sorbitol on the collapse and deterioration of gluten network in fresh noodles during storage](#)

Food Chem. 2021 May 15;344:128638. doi: 10.1016/j.foodchem.2020.128638. Epub 2020 Nov 23.

Authors

[Mengli Zhang](#)¹, [Lingtao Zhang](#)¹, [Man Li](#)², [Qingjie Sun](#)¹

Affiliations

- ¹ School of Food Science and Engineering, Qingdao Agricultural University, Qingdao 266109, Shandong Province, PR China.
- ² School of Food Science and Engineering, Qingdao Agricultural University, Qingdao 266109, Shandong Province, PR China. Electronic address: manliqau@163.com.

- PMID: [33248846](#)
- DOI: [10.1016/j.foodchem.2020.128638](#)

Abstract

In this paper, the inhibitory effects of sorbitol on the collapse of gluten network and textural deterioration of fresh noodles during storage were investigated, based on the changes in macroscopic and microscopic characteristics of gluten protein. Appropriate addition ($\leq 2\%$) of sorbitol increased dough viscoelasticity and extension energy. Sorbitol significantly inhibited the increase of cooking loss and adhesiveness of fresh noodles, and the decrease of hardness, springiness, LA-SRC value, and GMP weight during storage. SEM images showed that sorbitol retarded the deterioration of gluten network, with maintained continuous and ordered structure after 48 h. Sorbitol enhanced the hydrogen bond interactions in gluten system and promoted dynamic depolymerization and repolymerization of gluten protein molecules during processing and cooking, this may induce the texture stability. Sorbitol as a low-molecular polyol can inhibit the deterioration in gluten network and fresh noodle texture during storage, although showing no influence on the growth of microorganisms.

Keywords: Fresh noodle; Gluten collapse; Repolymerization; Sorbitol; Texture.

Copyright © 2020 Elsevier Ltd. All rights reserved.

Full text links



29. [Insight into the advantages of premixing yeast-wheat gluten and combining ultrasound and transglutaminase pretreatments in producing umami enzymatic protein hydrolysates](#)

Food Chem. 2021 Apr 16;342:128317. doi: 10.1016/j.foodchem.2020.128317. Epub 2020 Oct 8.

Authors

[Guowan Su](#)¹, [Xin Zheng](#)¹, [Jin Zou](#)¹, [Geoffrey Ivan Neil Waterhouse](#)², [Dongxiao Sun-Waterhouse](#)³

Affiliations

- ¹ School of Food Science and Engineering, South China University of Technology, Guangzhou 510640, China; Guangdong Food Green Processing and Nutrition Regulation Technologies Research Center, Guangzhou 510650, China.
- ² School of Chemical Sciences, University of Auckland, Auckland 1142, New Zealand.
- ³ School of Food Science and Engineering, South China University of Technology, Guangzhou 510640, China; Guangdong Food Green Processing and Nutrition Regulation Technologies Research Center, Guangzhou 510650, China; School of Chemical Sciences, University of Auckland, Auckland 1142, New Zealand. Electronic address: dx.sun-waterhouse@auckland.ac.nz.

- PMID: [33067038](#)
- DOI: [10.1016/j.foodchem.2020.128317](#)

Abstract

This study aimed to utilize effectively industrial byproducts, yeast suspension (Y) and wheat gluten (W), to produce umami protein hydrolysates as seasonings. Y and W were mixed to yield YW, followed by a pretreatment (ultrasound, transglutaminase (TG), or their combination) and then proteolysis with a yeast extract enzyme and trypsin. Premixing Y and W promoted their dispersibility, and suppressed gluten aggregation and hydrolysate's bitterness. All pretreatments increased protein recovery. Ultrasound alone or ultrasound with TG increased the embedding of yeasts in W, umami and salty tastes, hydrolysis degree and proportion of molecules < 3 kDa of the YW hydrolysate. For the first time, premixing Y and W, and pretreating YW (by ultrasound then TG-catalyzed protein crosslinking), were found to increase the β -sheet and random coil contents and decreased the β -turn content and surface hydrophobicity, leading to a low-cost umami and non-bitter protein hydrolysate with 56% of species < 1 kDa.

Keywords: Byproduct utilization; Enzymatic crosslinking; Proteolysis; Seasoning; Secondary structure.

Copyright © 2020 Elsevier Ltd. All rights reserved.

Full text links



30. [Effect of degree of milling and defatting on proximate composition, functional and texture characteristics of gluten-free muffin of bran of long-grain indica rice cultivars](#)

Food Chem. 2021 May 30;345:128861. doi: 10.1016/j.foodchem.2020.128861. Epub 2020 Dec 11.

Authors

[Amandeep Kaur](#)¹, [Amardeep Singh Viridi](#)¹, [Narpinder Singh](#)¹, [Amandeep Singh](#)¹, [Raj Sukhwinder Singh Kaler](#)²

Affiliations

- ¹ Department of Food Science and Technology, Guru Nanak Dev University, Amritsar, India.
- ² Department of Food Science and Technology, Guru Nanak Dev University, Amritsar, India. Electronic address: rsskaler@yahoo.com.
- PMID: [33348134](#)
- DOI: [10.1016/j.foodchem.2020.128861](#)

Abstract

Effect of different degrees of milling (DoM: 2%, 4%, 6% and 8%) and defatting on the proximate composition, protein characteristics, functional properties of bran of long grain rice cultivars and texture characteristics of bran (RB) supplemented muffins were evaluated. Protein, ash content, redness and yellowness increased while fat content decreased for RB by extended DoM and defatting. A higher proportion of β sheets, random coils, α -helix and β -turns for all fractions of RB of both cultivars after defatting were also observed. Defatting and extended DoM both improved the essential amino acid content in RB. A higher level of prolamines (15-18 kDa) in RB and DF-RB of PUSA1121 than PR111 was observed. Muffins made from 2% DoM bran from PUSA1121 showed improved texture characteristics and achieved the highest score for sensory attributes. Therefore, DoM and defatting improved the proximate, protein profiling, and functionality of the different fraction of RB.

Keywords: Amino acid composition; FTIR analysis; Muffins; Protein profiling; Proximate composition; Rice bran.

Copyright © 2020 Elsevier Ltd. All rights reserved.

Full text links



[Small bowel capsule endoscopy: where do we stand after 20 years of clinical use?](#)

31.

Minerva Gastroenterol (Torino). 2021 Mar;67(1):101-108. doi: 10.23736/S1121-421X.20.02745-2. Epub 2020 Jul 16.

Authors

[Marco Pennazio](#)¹, [Emanuele Rondonotti](#)², [Rinaldo Pellicano](#)³, [Pablo Cortegoso Valdivia](#)⁴

Affiliations

- ¹ University Division of Gastroenterology, Città della Salute e della Scienza, University of Turin, Turin, Italy - pennazio.marco@gmail.com.
 - ² Gastroenterology Unit, Valduce Hospital, Como, Italy.
 - ³ University Division of Gastroenterology, Città della Salute e della Scienza, University of Turin, Turin, Italy.
 - ⁴ Gastroenterology and Endoscopy Unit, University Hospital of Parma, University of Parma, Parma, Italy.
-
- PMID: [32677419](#)
 - DOI: [10.23736/S1121-421X.20.02745-2](#)

Abstract

Small bowel capsule endoscopy (SBCE) was introduced into clinical practice almost 20 years ago and, nowadays, it is an essential tool for the study of the small bowel. SBCE allows a radiation-free examination of the entire mucosal surface of the small bowel with high-quality images, limited invasivity and a good safety profile. Nevertheless, the main limitation of SBCE is the lack of any possible direct therapeutic intervention. Indications for SBCE have evolved throughout the years, from "old" ones such as suspected small bowel bleeding (still the main indication for SBCE) to newer ones such as refractory celiac disease, hereditary polyposis syndromes and Crohn's disease. Thus, nowadays SBCE has a key role in the diagnostic algorithms in many conditions. Furthermore, the introduction in the SBCE field of cutting-edge technologies, as artificial intelligence systems, is likely to shorten the reading time making SBCE even more effective and easy to perform. Preliminary data are extremely promising and solid evidence is being gathered by current studies.

- [Cited by 1 article](#)

Full text links



32. [Utilization of quinoa flour \(*Chenopodium quinoa* Willd.\) in gluten-free pasta formulation: Effects on nutritional and sensory properties](#)

Food Sci Technol Int. 2021 Apr;27(3):242-250. doi: 10.1177/1082013220940092. Epub 2020 Aug 11.

Authors

[Berat Demir](#) ¹, [Nermin Bilgiçli](#) ²

Affiliations

- ¹ Bahri Dağdaş International Agricultural Research Institute, Konya, Turkey.
- ² Department of Food Engineering, Engineering and Architecture Faculty, 226846Necmettin Erbakan University, Konya, Turkey.
- PMID: [32781850](#)
- DOI: [10.1177/1082013220940092](#)

Abstract

In this study, raw and germinated quinoa seed flour was utilized in gluten-free pasta formulation. Rice:corn semolina (50:50) blend was used in gluten-free pasta as a control group. Quinoa flours were replaced with rice:corn semolina blend at different (0-30%) ratios in gluten-free pasta formulation. Guar gum (3%) was also used to tolerate structural defects caused by gluten deficiency. Trials were conducted according to (2 × 4) × 2 factorial design. Color values, cooking properties, and chemical and sensory attributes of gluten-free pasta samples were determined.

Quinoa flour type and quinoa flour addition ratio factors significantly ($p < 0.05$) affected the L^* , a^* color values and all of the cooking properties of the gluten-free pasta samples. Utilization of germinated quinoa flour in gluten-free pasta revealed lower water uptake, volume increase, firmness, and higher cooking loss values than that of raw quinoa flour. Quinoa flour especially improved the mean values of protein, total phenolic content, antioxidant activity from 8.1%, 0.7 mg GAE/g, and 13.4%, up to 12.7%, 1.5 mg GAE/g, and 28.8%, respectively. A significant ($p < 0.05$) increment was observed in Ca, Fe, K, Mg, P, and Z content of the gluten-free pasta and all addition ratios of quinoa flour. As a result, increasing amount of quinoa flour enriched the nutritional composition of gluten-free pasta but high utilization ratio resulted in slight sensory losses.

Keywords: Germination; gluten free; pasta; phenolic compounds; quinoa.

- [Cited by 1 article](#)

Full text links



33. [Evaluation of heat stress through delayed sowing on physicochemical and functional characteristics of grains, whole meals and flours of India wheat](#)

Food Chem. 2021 May 15;344:128725. doi: 10.1016/j.foodchem.2020.128725. Epub 2020 Nov 27.

Authors

[Narpinder Singh](#)¹, [Amardeep Singh Viridi](#)², [Mehak Katyal](#)², [Amritpal Kaur](#)², [Deepinder Kaur](#)², [Arvind Kumar Ahlawat](#)³, [Anju Mahendru Singh](#)³, [Ram Kumar Sharma](#)³

Affiliations

- ¹ Department of Food Science and Technology, Guru Nanak Dev University, Amritsar 143005, India. Electronic address: narpinders@yahoo.com.
- ² Department of Food Science and Technology, Guru Nanak Dev University, Amritsar 143005, India.
- ³ Division of Genetics, Indian Agricultural Research Institute, New Delhi 110012, India.
- PMID: [33279352](#)
- DOI: [10.1016/j.foodchem.2020.128725](#)

Abstract

The physicochemical and functional characteristics of grain, meal and flour of timely sown wheat (TSW) and delayed sown wheat (DSW) were compared to see the effects of heat stress (HS). TSW and DSW of different lines were sown as per the approved timings. DSW experienced higher temperature during flowering and had shorter vegetative and maturation period than TSW.

Pasting and dough rheological properties were measured using Rapid Visco-Analyser and Farinograph, respectively, while gliadins and glutenins profiling was done by SDS-PAGE. Delayed sowing decreased grain yield and diameter while increased protein and all categories of gliadins and high molecular weight glutenins. DSW showed higher peak viscosity, breakdown-viscosity and dough stability and lower setback viscosity, damaged starch, arabinoxylans and water absorption than TSW. HS in DSW appeared to lower starch synthesis causing proportionate increase in grain hardness and proteins content leading to changes in milling and rheological characteristics.

Keywords: Farinograph; Flour; Gluten; Grain hardness; Meal; Pasting; SDS-PAGE; Solvent retention capacity.

Copyright © 2020 Elsevier Ltd. All rights reserved.

Full text links



34. [Potential role of fecal gluten immunogenic peptides to assess dietary compliance in celiac patients](#)

Minerva Gastroenterol (Torino). 2021 Mar;67(1):69-71. doi: 10.23736/S1121-421X.20.02710-5. Epub 2020 May 13.

Authors

[Tiziana Larussa](#)¹, [Luigi Boccuto](#)^{2 3}, [Francesco Luzzza](#)¹, [Ludovico Abenavoli](#)⁴

Affiliations

- ¹ Department of Health Sciences, Magna Graecia University, Catanzaro, Italy.
- ² Clinic Greenwood Genetic Center, Greenwood, SC, USA.
- ³ Clemson University, Clemson, SC, USA.
- ⁴ Department of Health Sciences, Magna Graecia University, Catanzaro, Italy - l.abenavoli@unicz.it.
- PMID: [32403893](#)
- DOI: [10.23736/S1121-421X.20.02710-5](https://doi.org/10.23736/S1121-421X.20.02710-5)

No abstract available

Full text links



35. [Gluten-free green banana flour muffins: chemical, physical, antioxidant, digestibility and sensory analysis](#)

Authors

[Marjana Radünz](#)¹, [Taiane Mota Camargo](#)¹, [Camila Francine Paes Nunes](#)¹, [Elisa Dos Santos Pereira](#)¹, [Jardel Araújo Ribeiro](#)¹, [Helen Cristina Dos Santos Hackbart](#)¹, [Amanda Fabres Oliveira Radünz](#)², [André Luiz Radünz](#)³, [Márcia Arocha Gularte](#)⁴, [Fabrizio Da Fonseca Barbosa](#)⁴

Affiliations

- ¹ Posgraduate Program in Food Science and Technology, Federal University of Pelotas City, Pelotas City, Rio Grande do Sul State 96050-500 Brazil.
- ² Posgraduate Program in Health Sciences, Community University of the Chapecó Region, Chapecó City, Santa Catarina State 89809-900 Brazil.
- ³ Departamen of Agronomia, Federal University of Fronteira Sul, Chapecó City, Santa Catarina State 89815-899 Brazil.
- ⁴ Center for Chemical, Pharmaceutical and Food Sciences, Federal University of Pelotas, Pelotas City, Rio Grande do Sul State 96050-500 Brazil.
- PMID: [33746257](#)
- PMCID: **PMC7925776** (available on 2022-04-01)
- DOI: [10.1007/s13197-020-04638-5](#)

Abstract

Considering the low availability of gluten-free products that are offered an affordable price and good sensory characteristics, the main objective of the study was developed a gluten-free muffin based on green banana flour and evaluate their physical-chemical and sensorial aspects. The quality of the muffin was analyzed through such moisture content, ashes, proteins, lipids, fiber, carbohydrates, total caloric content, yield mass, weight loss in the supply, antioxidant activity, protein digestibility, and hedonic scale. The results showed that the gluten-free muffin had a moisture content of 26.7%, ash of 2.39%, lipids of 15.4%, proteins of 10.3%, fibers of 1.2%, carbohydrates of 44.0%, the total caloric value of 261.2 kcal, high protein digestibility and moderate antioxidant activity. The acceptability index was 84.5%. It has been concluded that gluten-free muffin with green banana flour is a viable alternative for the reason that they have higher protein content than other alternative flours.

Keywords: Celiac disease; Eating habits; Functional foods; Nutritional value.

© Association of Food Scientists & Technologists (India) 2020.

36. [The kiwifruit enzyme actinidin enhances the hydrolysis of gluten proteins during simulated gastrointestinal digestion](#)

Food Chem. 2021 Mar 30;341(Pt 1):128239. doi: 10.1016/j.foodchem.2020.128239. Epub 2020 Oct 1.

Authors

[Isuri A Jayawardana](#)¹, [Mike J Boland](#)², [Keriane Higgs](#)², [Maggie Zou](#)¹, [Trevor Loo](#)³, [Warren C McNabb](#)², [Carlos A Montoya](#)⁴

Affiliations

- ¹ School of Food and Advanced Technology, College of Sciences, Massey University, Private Bag 11 222, Palmerston North 4442, New Zealand; Riddet Institute, Massey University, Private Bag 11 222, Palmerston North 4442, New Zealand.
 - ² Riddet Institute, Massey University, Private Bag 11 222, Palmerston North 4442, New Zealand.
 - ³ School of Fundamental Sciences, College of Sciences, Massey University, Palmerston North 4442, New Zealand.
 - ⁴ Riddet Institute, Massey University, Private Bag 11 222, Palmerston North 4442, New Zealand; Food Nutrition & Health Team, AgResearch Limited, Grasslands Research Centre, Private Bag 11008, Palmerston North 4442, New Zealand. Electronic address: carlos.montoya@agresearch.co.nz.
- PMID: [33035854](#)
 - DOI: [10.1016/j.foodchem.2020.128239](#)

Abstract

This study investigated the effect of actinidin, a cysteine protease in kiwifruit, on the hydrolysis of gluten proteins and digestion-resistant gluten peptides (synthetic 33-mer peptide and pentapeptide epitopes) under static simulated gastrointestinal conditions. Actinidin efficacy in hydrolysing gliadin was compared with that of other gluten-degrading enzymes. Actinidin hydrolysed usually resistant peptide bonds adjacent to proline residues in the 33-mer peptide. The gastric degree of hydrolysis of gluten proteins was influenced by an interaction between pH and actinidin concentration ($P < 0.05$), whereas the pentapeptide epitopes hydrolysis was influenced only by the actinidin concentration ($P < 0.05$). The rate of gastric degree of hydrolysis of gliadin was greater ($P < 0.05$) by actinidin (0.8%/min) when compared to papain, bromelain, and one commercial enzyme (on average 0.4%/min), while all exogenous enzymes were able to hydrolyse the pentapeptide epitopes effectively. Actinidin is able to hydrolyse gluten proteins under simulated gastric conditions.

Keywords: Actinidin; Gastrointestinal tract; Gliadin; Gluten; Hydrolysis.

Copyright © 2020 Elsevier Ltd. All rights reserved.

Full text links



[Use of almond flour and stevia in rice-based gluten-free cookie production](#)

37.

J Food Sci Technol. 2021 Mar;58(3):940-951. doi: 10.1007/s13197-020-04608-x. Epub 2020 Jun 30.

Authors

[Elif Yildiz](#)¹, [Duygu Gocmen](#)¹

Affiliation

- ¹ Department of Food Engineering, Agricultural Faculty, Bursa Uludag University, Gorukle Campus, 16059 Bursa, Turkey.
- PMID: [33678877](#)
- PMCID: **PMC7884493** (available on 2022-03-01)
- DOI: [10.1007/s13197-020-04608-x](#)

Abstract

Abstract: The gluten-free cookies were produced by replacing rice flour (*RF*) and sucrose content with almond flour (*AF*) and stevia. Supplementation of *AF* caused to decrease the moisture content of the gluten-free cookies; while ash, total protein, total fat and total dietary fiber content increased. Regarding of total phenolics; extractable, hydrolyzable and bioaccessible fractions of gluten-free cookie samples that were produced with 30% of *AF* supplementation, were increased by 43.69-73% compared with the control group that was prepared with 100% *RF* ($p \leq 0.01$). Gluten was detected in the cookies with neither *RF* nor *AF*. No cross-contamination was detected during the production, too. Quality characteristics of the gluten-free cookies reached the acceptable level while *AF* and stevia contents were increased. Protein and dietary fiber contents of the cookie with *AF* and stevia were enriched to 82 and 96%, while the total carbohydrate amount decreased 19% ($p \leq 0.01$). The contents of TEAC_{ABTS} and TEAC_{FRAP} of gluten-free cookies with *AF* and stevia were 5.72 ± 0.07 and 26.08 ± 0.49 $\mu\text{mol Trolox/g}$ and higher than the control (100% *RF* + sucrose). It has found that physicochemical, nutrition and sensorial properties of gluten-free cookies that were produced with *AF* + stevia supplementation provided to produce more acceptable products.

Keywords: Almond flour; Celiac; Cookie; Gluten-free; Rice flour; Stevia.

© Association of Food Scientists & Technologists (India) 2020.

[Grain Products Are a Top Source of Energy and Nutrients among Nova Scotian Adults Following a Gluten-Free Diet](#)

38.

Can J Diet Pract Res. 2021 Mar 1;82(1):21-26. doi: 10.3148/cjdpr-2020-023. Epub 2020 Sep 9.

Authors

[Jennifer A Jamieson PhD](#)^{1 1}, [Emily Rosta BSc](#)^{1 1}, [Laura Gougeon PhD, RD](#)^{1 1}

Affiliation

- ¹ Department of Human Nutrition, St. Francis Xavier University, Antigonish, NS.
- PMID: [32902303](#)
- DOI: [10.3148/cjdpr-2020-023](#)

Abstract

To determine the food sources of energy and 13 core nutrients, 89 diet recalls were analyzed from an explanatory mixed-methods pilot study with adults following a gluten-free diet (GFD) for any reason. Nonconsecutive dietary recalls were collected through a web-based, Automated Self-Administered 24-Hour (ASA24®-Canada-2016) Tool. Mean nutrient intakes were compared with Dietary Reference Intakes. Food items (excluding supplements) were extracted and categorized according to the Bureau of Nutritional Sciences Food Group Codes. Percentages of total dietary intakes from food sources were ranked. Grain products were the highest ranked contributor of energy (21.4%), carbohydrate (30.3%), fibre (29.1%), and iron (35.3%). Breakfast cereals, hot cereals, yeast breads, and mixed grain dishes (mainly rice or pasta-based) were the most important nutrient contributors for grains, despite most (64.3%) commercial cereals and breads being unenriched. Legumes and seeds were not frequently consumed. Nutrient density in the GFD could be improved with more emphasis on gluten-free (GF) whole grains, legumes, seeds, and enriched breads and cereals. More research is needed on the nutrient composition of GF foods to identify food sources of folate, other B vitamins, zinc and magnesium-nutrients of concern for those requiring a GFD.

Full text links



39. [Significant improvement in bone mineral density in pediatric celiac disease: even at six months with gluten-free diet](#)

J Pediatr Endocrinol Metab. 2020 Dec 16;34(3):341-348. doi: 10.1515/jpem-2020-0292. Print 2021 Mar 26.

Authors

[Nelgin Gerenli](#) ¹, [Fatma Dursun](#) ², [Coşkun Çeltik](#) ¹, [Heves Kırmızıbekmez](#) ²

Affiliations

- ¹ Department of Pediatric Gastroenterology, Ümraniye Training and Research Hospital, University of Health Sciences, İstanbul, Turkey.
- ² Department of Pediatric Endocrinology, Ümraniye Training and Research Hospital, University of Health Sciences, İstanbul, Turkey.

- PMID: [33675212](#)
- DOI: [10.1515/jpem-2020-0292](#)

Abstract

Objectives: Patients with celiac disease had significantly decreased bone mineral density even in patients with no gastrointestinal symptoms. Only few bone studies are available on pediatric patients with celiac disease.

Methods: Forty-six patients underwent measurement of areal bone mineral density (aBMD) by dual-energy X-ray absorptiometry (DXA) before the initiation of gluten-free diet. Anthropometric, laboratory and DXA measurements at baseline and at sixth month of the treatment were compared.

Results: The frequency of low aBMD Z-score (≤ -1 SDS) in both or any site was found to be 78.2% in this study. Of 16 patients with an aBMD Z-score of < -2 SDS five gained more than 1 SDS, and one gained more than 2 SDS. Nine of 20 patients with an aBMD Z-score of < -1 SDS completely normalized.

Conclusions: The results of the study showed that low BMD is common in children with celiac disease at the time of diagnosis and could improve in a short period of six months with a strict gluten-free diet and adequate supplementation of calcium and vitamin D.

Keywords: bone; celiac disease; pediatric; treatment.

© 2020 Walter de Gruyter GmbH, Berlin/Boston.

- [40 references](#)

Full text links



40. [A positive diagnostic strategy is safe and saves endoscopies in patients with irritable bowel syndrome: A five-year follow-up of a randomized controlled trial](#)

Neurogastroenterol Motil. 2021 Mar;33(3):e14004. doi: 10.1111/nmo.14004. Epub 2020 Oct 7.

Authors

[Anne Line Engsbro](#)^{1 2}, [Luise M Begtrup](#)^{3 4}, [Peter Haastrup](#)⁴, [Maria Munch Storsveen](#)⁴, [Peter Bytzer](#)¹, [Jens Kjeldsen](#)⁵, [Ove Schaffalitzky De Muckadell](#)⁵, [Dorte Ejg Jarbøl](#)⁴

Affiliations

- ¹ Department of Medicine, Zealand University Hospital, Køge and Department of Clinical Medicine, Faculty of Health Sciences, University of Copenhagen, Copenhagen, Denmark.

- ² Department of Clinical Microbiology, University Hospital Copenhagen Hvidovre, Hvidovre, Denmark.
- ³ Department of Occupational and Environmental Medicine, Bispebjerg and Frederiksberg Hospital, København, Denmark.
- ⁴ Research Unit of General Practice, Department of Public Health, University of Southern Denmark, Odense, Denmark.
- ⁵ Department of Medical Gastroenterology S, Odense University Hospital, Odense, Denmark.
- PMID: [33029843](#)
- DOI: [10.1111/nmo.14004](#)

Abstract

Background: Previously, the diagnosis of irritable bowel syndrome (IBS) required exclusion of organic causes by extensive diagnostic testing. Newer guidelines recommend IBS as a positive diagnosis based on symptoms with limited testing. We investigated the long-term safety and impact on use of health resources of a positive diagnostic strategy compared to a strategy of exclusion in patients with symptoms compatible with IBS.

Methods: In 2008-2010, primary care patients aged 18-50 years fulfilling the Rome III criteria for IBS without alarm signals were randomized to a positive diagnostic strategy (limited blood tests, n = 150) or a strategy of exclusion (extensive blood tests, fecal samples for intestinal parasites, and sigmoidoscopy with biopsies, n = 152). At five years, hospital-registered diagnoses and use of health resources including lower endoscopies were retrieved from national registries. Participants provided 5-year data on Rome III criteria for IBS, severity of symptoms, and quality of life.

Key results: Baseline mean age was 31.4 (SD 9.1) years; 79% were female. No cases of celiac disease, and gastrointestinal or gynecological cancers were diagnosed within five years. Negligible and comparable numbers were diagnosed with inflammatory bowel disease, benign gynecological conditions, and upper GI conditions in the two groups. The positive diagnosis strategy carried a higher number of lower endoscopies from year 1 to 5 (23 patients versus 13 patients in the exclusion group), but overall saved endoscopies.

Conclusions & inferences: A positive diagnosis of IBS was as safe as a diagnosis of exclusion in a five-year perspective and saved lower endoscopies; the study was registered at ClinicalTrials.gov numbers: [NCT00659763](#)/NCT01153295.

© 2020 John Wiley & Sons Ltd.

- [30 references](#)

Full text links



41. [Gluten Intake and All-Cause and Cause-Specific Mortality: Prospective Findings from the UK Biobank](#)

J Nutr. 2021 Mar 11;151(3):591-597. doi: 10.1093/jn/nxaa387.

Authors

[Inken Behrendt](#)¹, [Mathias Fasshauer](#)^{1 2 3}, [Gerrit Eichner](#)⁴

Affiliations

- ¹ Institute of Nutritional Science, Justus-Liebig University of Giessen, Giessen, Germany.
- ² Department of Internal Medicine (Endocrinology, Nephrology, and Rheumatology), University of Leipzig, Leipzig, Germany.
- ³ Integrated Research and Treatment Center (IFB) AdiposityDiseases, Leipzig University Medical Center, Leipzig, Germany.
- ⁴ Mathematical Institute, Justus-Liebig University of Giessen, Giessen, Germany.
- PMID: [33382415](#)
- DOI: [10.1093/jn/nxaa387](#)

Abstract

Background: Gluten has been linked to adverse effects on metabolic and vascular health.

Objectives: The present study determines the association between dietary gluten intake and all-cause (primary objective), as well as cause-specific, mortality in people without celiac disease.

Methods: Gluten intake was estimated in 159,265 participants of the UK Biobank which is a large multicenter, prospective cohort study initiated in 2006. Cox proportional hazard regression models were used and HRs were determined for all-cause and cause-specific mortality. All models were adjusted for confounders and multiple testing.

Results: Median (IQR) age was 57 (49-62) y with 52.1% of participants being female. Gluten intake was 8.5 (5.1-12.4) g/d with significantly higher consumption in males [10.0 (6.3-14.1) g/d] than in females [7.2 (4.6-10.7) g/d] ($P < 0.0001$). During a median follow-up of 11.1 (10.6-11.9) y and 1.8 million person-years, 6259 deaths occurred. Gluten intake was not significantly associated with all-cause mortality after adjusting for confounders (HR: 1.00; 95% CI: 1.00, 1.01; $P = 0.59$). Dietary gluten was not significantly associated with cancer (HR: 1.00; 95% CI: 1.00, 1.01; raw $P = 0.24$) or noncancer (HR: 1.00; 95% CI: 0.99, 1.01; raw $P = 0.56$) mortality. However, gluten intake was positively associated with ischemic heart disease mortality (HR: 1.02; 95% CI: 1.01, 1.04; raw $P = 0.003$, Holm-adjusted $P = 0.04$).

Conclusions: Gluten intake is not significantly associated with all-cause and cancer mortality in adults without celiac disease. The findings support the hypothesis that limiting gluten intake is

unlikely to provide significant overall survival benefits on a population level. The positive association between gluten intake and ischemic heart disease mortality requires further study.

Keywords: UK Biobank; cardiovascular disease; gluten; metabolic syndrome; mortality.

© The Author(s) 2020. Published by Oxford University Press on behalf of the American Society for Nutrition.

Full text links



42. [Influence of \$\epsilon\$ -poly-L-lysine treated yeast on gluten polymerization and freeze-thaw tolerance of frozen dough](#)

Food Chem. 2021 May 1;343:128440. doi: 10.1016/j.foodchem.2020.128440. Epub 2020 Oct 21.

Authors

[Lu Lu](#)¹, [Jun-Jie Xing](#)¹, [Zhen Yang](#)¹, [Xiao-Na Guo](#)¹, [Ke-Xue Zhu](#)²

Affiliations

- ¹ State Key Laboratory of Food Science and Technology, Jiangnan University, 1800 Lihu Avenue, Wuxi 214122, Jiangsu Province, PR China; School of Food Science and Technology, Jiangnan University, 1800 Lihu Avenue, Wuxi 214122, Jiangsu Province, PR China.
- ² State Key Laboratory of Food Science and Technology, Jiangnan University, 1800 Lihu Avenue, Wuxi 214122, Jiangsu Province, PR China; School of Food Science and Technology, Jiangnan University, 1800 Lihu Avenue, Wuxi 214122, Jiangsu Province, PR China. Electronic address: kxzhzhu@jiangnan.edu.cn.
- PMID: [33127224](#)
- DOI: [10.1016/j.foodchem.2020.128440](#)

Abstract

The effects of ϵ -poly-L-lysine (ϵ -PL) treated yeast on gluten polymerization of frozen dough and quality of steamed bread after freeze-thaw cycles were investigated. Compared with steamed bread made from frozen dough containing ϵ -PL and untreated yeast (PUTY) or only untreated yeast, steamed bread made from frozen dough containing ϵ -PL treated yeast (PTY) had a larger specific volume, lower hardness and more porous. A dynamic rheological and scanning electron microscopic analysis demonstrated that using PTY instead of yeast could reduce dough elasticity and damage protein network after freeze-thaw cycles. Lower sodium dodecyl sulfate (SDS) soluble polymeric proteins and monomeric proteins, and higher SDS insoluble proteins were found in frozen dough containing PTY, which indicates a reduced depolymerization of gluten proteins after freeze-thaw cycles. After 4 freeze-thaw cycles, the lower glutathione and free

sulfhydryl in dough containing PTY indicate that the interchain disulfide bonds between proteins were preserved.

Keywords: Freeze–thaw cycles; Frozen dough; Gluten polymerization; ϵ -Poly-L-lysine treated yeast.

Copyright © 2020 Elsevier Ltd. All rights reserved.

Full text links



43. [The effects of gluten protein substitution on chemical structure, crystallinity, and Ca in vitro digestibility of wheat-cassava snacks](#)

Food Chem. 2021 Mar 1;339:127875. doi: 10.1016/j.foodchem.2020.127875. Epub 2020 Aug 20.

Authors

[Asad Nawaz](#)¹, [Ali Hussein Taher Alhilali](#)², [Engpeng Li](#)³, [Ibrahim Khalifa](#)⁴, [Sana Irshad](#)⁵, [Noman Walayat](#)⁶, [Lei Chen](#)⁶, [Peng-Kai Wang](#)⁶, [Zhi Yuan Tan](#)⁷

Affiliations

- ¹ Jiangsu Key Laboratory of Crop Genetics and Physiology, Key Laboratory of Plant Functional Genomics of the Ministry of Education, College of Agriculture, Yangzhou University, Yangzhou 225009, PR China. Electronic address: 007298@yzu.edu.cn.
- ² Provincial Key Laboratory of Plant Molecular Breeding, College of Agriculture, South China Agricultural University, Guangzhou 510642, China.
- ³ Jiangsu Key Laboratory of Crop Genetics and Physiology, Key Laboratory of Plant Functional Genomics of the Ministry of Education, College of Agriculture, Yangzhou University, Yangzhou 225009, PR China.
- ⁴ Food Technology Department, Faculty of Agriculture, 13736, Moshtohor, Benha University, Egypt.
- ⁵ School of Environmental Studies, China University of Geo Sciences, Wuhan 430074, PR China.
- ⁶ College of Food Science and Technology, Huazhong Agricultural University, Hubei, Wuhan 430070, PR China.
- ⁷ Provincial Key Laboratory of Plant Molecular Breeding, College of Agriculture, South China Agricultural University, Guangzhou 510642, China. Electronic address: 2021scau@gmail.com.
- PMID: [32866701](#)
- DOI: [10.1016/j.foodchem.2020.127875](https://doi.org/10.1016/j.foodchem.2020.127875)

Abstract

Gluten protein based snacks have been a major concern for allergen, low nutrition and physio-chemical properties. In this study, wheat flour (WF) was replaced with cassava starch (CS) at different levels [10, 20, 30, 40 and 50%(w/w)] to prepare fried snacks. The addition of CS significantly ($P < 0.05$) increased hardness and pasting properties while gluten network, oil uptake, water holding capacity, and expansion were decreased. Fourier transform infrared spectroscopy revealed that the secondary structure of amide I, α -helix ($1650\text{--}1660\text{ cm}^{-1}$), along with amide II region (1540 cm^{-1}) changed when CS was added. Starch-protein complex was identified by X-ray diffraction analysis while no starch-protein-lipid complex was observed. The micrographs from scanning electron microscopy showed that starch-protein matrix was interrupted when $\geq 40\%$ (w/w) CS was added. Furthermore, in vitro calcium bioavailability was decreased slightly with the addition of CS. The results suggest the feasibility of adding 40% CS as an alternative to WF in snacks.

Keywords: Cassava starch; Chemical structure; Fried snacks; Starch-protein matrix; Wheat flour.

Copyright © 2020 Elsevier Ltd. All rights reserved.

Full text links



44. [The use of microbial transglutaminase in a bread system: A study of gluten protein structure, deamidation state and protein digestion](#)

Food Chem. 2021 Mar 15;340:127903. doi: 10.1016/j.foodchem.2020.127903. Epub 2020 Aug 26.

Authors

[Olivia Ogilvie](#)¹, [Sarah Roberts](#)², [Kevin Sutton](#)³, [Nigel Larsen](#)², [Juliet Gerrard](#)⁴, [Laura Domigan](#)⁵

Affiliations

- ¹ School of Biological Sciences, The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand; Riddet Institute, Massey University, Private Bag 11222, Palmerston North 4442, New Zealand; The New Zealand Institute for Plant and Food Research Limited, Private Bag 4704, Christchurch Mail Centre, Christchurch 8140, New Zealand; Department of Chemical and Materials Engineering The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand. Electronic address: oogi280@aucklanduni.ac.nz.
- ² Riddet Institute, Massey University, Private Bag 11222, Palmerston North 4442, New Zealand; The New Zealand Institute for Plant and Food Research Limited, Private Bag 4704, Christchurch Mail Centre, Christchurch 8140, New Zealand.
- ³ Riddet Institute, Massey University, Private Bag 11222, Palmerston North 4442, New Zealand; The New Zealand Institute for Plant and Food Research Limited, Private Bag 4704, Christchurch Mail Centre, Christchurch 8140, New Zealand. Electronic address: kevin.sutton@plantandfood.co.nz.

- ⁴ School of Biological Sciences, The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand; Riddet Institute, Massey University, Private Bag 11222, Palmerston North 4442, New Zealand; School of Chemical Sciences, The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand. Electronic address: j.gerrard@auckland.ac.nz.
- ⁵ School of Biological Sciences, The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand; Riddet Institute, Massey University, Private Bag 11222, Palmerston North 4442, New Zealand; Department of Chemical and Materials Engineering The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand. Electronic address: l.domigan@auckland.ac.nz.
- PMID: [32889205](https://pubmed.ncbi.nlm.nih.gov/32889205/)
- DOI: [10.1016/j.foodchem.2020.127903](https://doi.org/10.1016/j.foodchem.2020.127903)

Abstract

Microbial transglutaminase (mTG) catalyses the formation of protein crosslinks, deamidating glutamine in a side-reaction. Gluten deamidation by human tissue transglutaminase is critical to activate celiac disease pathogenesis making the addition of mTG to wheat-based products controversial. The ability of mTG (0-2000 U.kg⁻¹) to alter gluten's structure, digestibility and the deamidation state of six immunogenic gluten peptides within bread was investigated. Gluten's structure was altered when mTG exceeded 100 U.kg⁻¹, determined by confocal microscopy, extractability and free sulfhydryl assays. The effect of mTG on six immunogenic peptides was investigated by in vitro digestion (INFOGEST) and mass spectrometry. The addition of mTG to bread (0-2000 U.kg⁻¹) did not alter the deamidation state or digestibility of the immunogenic peptides investigated. Overall, this investigation indicated that the addition of mTG to bread does not create activated gluten peptides. This analysis provides evidence for risk assessments of mTG as a food processing aid.

Keywords: Celiac; Food processing; Immunogenic peptide; Mass spectrometry; Peptidomics.

Copyright © 2020 Elsevier Ltd. All rights reserved.

Full text links



45. [Processed meat products with added plant antioxidants affect the microbiota and immune response in C57BL/6J mice with cyclically induced chronic inflammation](#)

Biomed Pharmacother. 2021 Mar;135:111133. doi: 10.1016/j.biopha.2020.111133. Epub 2020 Dec 28.

Authors

[Stina Burri](#)¹, [Kajsa Granheimer](#)¹, [Marine Rémy](#)¹, [Vandana Tannira](#)¹, [Yunjeong So](#)¹, [Kimmo Rumpunen](#)², [Eva Tornberg](#)¹, [Pamela Canaviri Paz](#)¹, [Elisabeth Uhlig](#)¹, [Elin Oscarsson](#)³, [Anne-Marie Rohrstock](#)⁴, [Milladur Rahman](#)⁴, [Åsa Håkansson](#)⁵

Affiliations

- ¹ Department of Food Technology, Engineering and Nutrition, Lund University, Naturvetarvägen 12, 223 62, Lund, Sweden.
- ² Department of Plant Breeding, Swedish University of Agricultural Sciences, Fjälkestadsvägen 459, 291 94, Kristianstad, Sweden.
- ³ Department of Clinical Sciences, The Diabetes and Celiac Disease Unit, Lund University, Jan Waldenströms gata 35, 21428, Malmö, Sweden.
- ⁴ Department of Clinical Sciences, Surgery Research Unit and the Clinic of Surgery, Skåne University Hospital Malmö, Lund University, Inga Marie Nilssons gata 47, 205 022, Malmö, Sweden.
- ⁵ Department of Food Technology, Engineering and Nutrition, Lund University, Naturvetarvägen 12, 223 62, Lund, Sweden. Electronic address: asa.hakansson@food.lth.se.
- PMID: [33383374](https://pubmed.ncbi.nlm.nih.gov/33383374/)
- DOI: [10.1016/j.biopha.2020.111133](https://doi.org/10.1016/j.biopha.2020.111133)

Free article

Abstract

Epidemiological studies have found that there is a correlation between red and processed meat consumption and an increased risk of colorectal cancer. There are numerous existing hypotheses on what underlying mechanisms are causative to this correlation, but the results remain unclear. A common hypothesis is that lipid oxidation, which occurs in endogenous lipids and phospholipids in consumed food, are catalyzed by the heme iron in meat. In this study, five pre-selected plant antioxidant preparations (sea buckthorn leaves and sprouts, summer savory leaves, olive polyphenols, onion skin and lyophilized black currant leaves) were added to a meatball type prone to oxidize (pork meat, 20 % fat, 2% salt, deep-fried and after 2 weeks of storage). Pro-inflammatory markers, neutrophil infiltration and microbiota composition were studied after four months in a chronic inflammation model in C57BL6/J female mice. We found that the bacterial diversity index was affected, as well as initial immunological reactions.

Keywords: Immune response; Inflammation; Microbiota; Plant phenols; Processed meat.

Copyright © 2020 The Authors. Published by Elsevier Masson SAS.. All rights reserved.

Full text links



[Optimization xanthan gum, Roselle seed and egg white powders levels based on textural and sensory properties of gluten-free rice bread](#)

46.

J Food Sci Technol. 2021 Mar;58(3):1124-1131. doi: 10.1007/s13197-020-04626-9. Epub 2020 Aug 30.

Authors

[Soheila Zarringhalami](#)¹, [Ali Ganjloo](#)¹, [Zohreh Mokhtari Nasrabadi](#)¹

Affiliation

- ¹ Department of Food Science and Engineering, Faculty of Agriculture, University of Zanjan, P.O. Box 45371-38791, Zanjan, Iran.
- PMID: [33678894](#)
- PMCID: **PMC7884577** (available on 2022-03-01)
- DOI: [10.1007/s13197-020-04626-9](#)

Abstract

A response surface methodology based on Box-Behnken design was deployed to optimize gluten-free bread formulation based on rice flour. Roselle seed powder (15, 25 and 35%), egg white powder (10, 20 and 30%) and xanthan gum (0.5, 0.75 and 1%) were selected as independent variables. The purpose of the optimization was to achieve maximum porosity and sensory properties as well as minimum hardness of bread samples. The results showed that the Roselle seed and egg white powders had a significant effect ($p \leq 0.05$) on hardness, porosity and sensory characteristics of bread. However, xanthan gum did not show a significant effect ($p > 0.05$) on sensory properties. The design revealed the optimum formulation for gluten-free rice bread with low crumb firmness and improved porosity and sensory values by using 0.73, 30 and 25% of xanthan gum, Roselle seed and egg white powders, respectively. In addition, the optimized gluten-free bread showed higher nutritional properties in terms of total protein, ash, oil and fiber contents as well as lower staling rate compared to the control.

Keywords: Egg white powder; Gluten-free bread; Response surface methodology; Roselle seed powder; Xanthan gum.

© Association of Food Scientists & Technologists (India) 2020.

Conflict of interest statement

Conflict of interest The authors declare that they have no conflict of interest.

[Posttranslational modifications as therapeutic targets for intestinal disorders](#)

47.

Pharmacol Res. 2021 Mar;165:105412. doi: 10.1016/j.phrs.2020.105412. Epub 2021 Jan 5.

Authors

[Jieun Choo](#)¹, [Gwangbeom Heo](#)¹, [Charalabos Pothoulakis](#)², [Eunok Im](#)³

Affiliations

- ¹ College of Pharmacy, Pusan National University, Busan, 46241, Republic of Korea.
- ² Section of Inflammatory Bowel Disease & Inflammatory Bowel Disease Center, Division of Digestive Diseases, David Geffen School of Medicine, UCLA, Los Angeles, CA, 90095, USA.
- ³ College of Pharmacy, Pusan National University, Busan, 46241, Republic of Korea.
Electronic address: eoim@pusan.ac.kr.
- PMID: [33412276](#)
- DOI: [10.1016/j.phrs.2020.105412](#)

Abstract

A variety of biological processes are regulated by posttranslational modifications. Posttranslational modifications including phosphorylation, ubiquitination, glycosylation, and proteolytic cleavage, control diverse physiological functions in the gastrointestinal tract. Therefore, a better understanding of their implications in intestinal diseases, including inflammatory bowel disease, irritable bowel syndrome, celiac disease, and colorectal cancer would provide a basis for the identification of novel biomarkers as well as attractive therapeutic targets. Posttranslational modifications can be common denominators, as well as distinct biomarkers, characterizing pathological differences of various intestinal diseases. This review provides experimental evidence that identifies changes in posttranslational modifications from patient samples, primary cells, or cell lines in intestinal disorders, and a summary of carefully selected information on the use of pharmacological modulators of protein modifications as therapeutic options.

Keywords: 2,4,6-trinitrobenzenesulfonic acid (PubChem CID: 11045); AS605240 (PubChem CID: 5289247); Celiac disease; Colorectal cancer; Cytokines; DAMGO (PubChem CID: 5462471); FR167653 (PubChem CID: 135484078); Inflammatory bowel disease; Irritable bowel syndrome; Mangiferin (PubChem CID: 5281647); NF-κB; PD98059 (PubChem CID: 4713); Pyrrolidine dithiocarbamate (PubChem CID: 65351); SB203580 (PubChem CID: 176155); SP600125 (PubChem CID: 8515); XG-102 (PubChem CID: 90479374).

Copyright © 2021 Elsevier Ltd. All rights reserved.

Full text links



[Nutritional considerations of a pediatric gluten free food guide for celiac disease](#)

48.

Br J Nutr. 2021 Mar 22;1-31. doi: 10.1017/S0007114521000994. Online ahead of print.

Authors

[Diana R Mager](#) ^{1 2}, [Samantha Cyrkot](#) ¹, [Christine Lirette](#) ¹, [Herbert Brill](#) ³, [Jenna Dowhaniuk](#) ³, [Heather Mileski](#) ³, [Carlota Basualdo-Hammond](#) ⁴, [Roseann Nasser](#) ⁵, [Esther Assor](#) ⁶, [Margaret Marcon](#) ⁷, [Justine M Turner](#) ^{2 8}

Affiliations

- ¹ Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada.
- ² Department of Pediatrics, University of Alberta, Edmonton, Alberta, Canada.
- ³ Division of Gastroenterology and Nutrition, McMaster Children's Hospital, Hamilton, Ontario, Canada.
- ⁴ Department of Nutrition Services, Alberta Health Services, Edmonton, Alberta, Canada.
- ⁵ Department of Nutrition and Food Services, Pasqua Hospital, Saskatchewan Health Authority, Regina, Saskatchewan, Canada.
- ⁶ Department of Pediatrics, Division of Endocrinology, Hospital for Sick Children, Toronto, Ontario, Canada.
- ⁷ Division of Gastroenterology, Hepatology and Nutrition, Hospital for Sick Children, Toronto, Ontario, Canada.
- ⁸ Division of Pediatric Gastroenterology and Nutrition, Stollery Children's Hospital, Edmonton, Alberta, Canada.
- PMID: [33745459](#)
- DOI: [10.1017/S0007114521000994](#)

Abstract

The gluten free (GF) diet is the only treatment for celiac disease (CD). While the GF diet can be nutritious, increased reliance on processed and packaged GF foods can result in higher fat/sugar and lower micronutrient intake in children with CD. Currently, there are no evidence-based nutrition guidelines that address the GF diet. The objective of this cross-sectional study was to describe the methodological considerations in forming a GF food guide for Canadian children and youth (4-18 years) with CD. Food guide development occurred in three phases: 1) evaluation of nutrient intake and dietary patterns of children on the GF diet, 2) pre-guide stakeholder consultations with 151 health care professionals and 383 community end users, and 3) development of 1260 GF diet simulations that addressed cultural preferences and food traditions, diet patterns and diet quality. Stakeholder feedback identified nutrient intake and food literacy as important topics for guide content. Except for vitamin D, the diet simulations met 100% macro- and micronutrient requirements for age-sex. The pediatric GF plate model recommends intake of >50% fruits and vegetables, <25% grains and 25% protein foods with a stronger emphasis on plant-based sources. Vitamin D fortified fluid milk/unsweetened plant-based alternatives and other rich sources are important to optimize vitamin D intake. The GF food guide can help children consume a nutritiously adequate GF diet and inform policy makers regarding the need for nutrition guidelines in pediatric CD.

Keywords: celiac disease; dietary patterns; gluten free food guide; nutrition guidelines; pediatrics.

Full text links



49. [A serial SPECT-CT study in a celiac disease patient with cerebellar ataxia and psychiatric symptoms](#)

Neurol Sci. 2021 Apr;42(4):1545-1548. doi: 10.1007/s10072-020-04908-2. Epub 2020 Nov 23.

Authors

[Juliana J Schmidt](#)¹, [Guilherme J Schmidt](#)², [Julio C Tolentino](#)², [Eunice N Simoes](#)², [Angela Obongo](#)³, [Yolanda Tolentino](#)², [Francisco A Coelho](#)⁴, [Maria C P P Landesmann](#)⁴, [Lea M B Fonseca](#)⁴, [Glenda C B Lacerda](#)², [Sergio L Schmidt](#)²

Affiliations

- ¹ Department of Neurology, Federal University of the State of Rio de Janeiro, Mariz and Barros street, 775, Tijuca, Rio de Janeiro, RJ, 202709-001, Brazil.
julianaschmidtjaneiro@gmail.com.
- ² Department of Neurology, Federal University of the State of Rio de Janeiro, Mariz and Barros street, 775, Tijuca, Rio de Janeiro, RJ, 202709-001, Brazil.
- ³ Department of Public Health, University of Brandenburg of Technology Cottbus, Senftenberg, Germany.
- ⁴ Department of Radiology, Federal University of Rio de Janeiro, Rio de Janeiro, Brazil.
- PMID: [33230758](#)
- DOI: [10.1007/s10072-020-04908-2](#)

Abstract

Celiac disease (CD) is an immune-mediated systemic disorder triggered by gluten and related prolamins in genetically predisposed individuals. Here, we described a case of a 31-year-old Caucasian woman who exhibited cerebellar and psychiatric dysfunctions. The patient underwent single-photon emission computed tomography (SPECT-CT) before and after a gluten-free diet (GFD). There was an improvement in cerebellar perfusion accompanied by a remission of cerebellar manifestations. The maintenance of the psychiatric manifestations was related to the persistence of the hypoperfusion in the frontal lobes. The patient's psychiatric symptoms did not change after 4 months under a GFD in the hospital. To our knowledge, this is the first case that shows the relationship between improvement in cerebellar perfusion and remission of cerebellar clinical manifestations in a CD patient under a GFD.

Keywords: Celiac disease; Cerebellar perfusion; Cerebellum; SPECT-CT.

- [10 references](#)

Full text links



50. [The Knowledge About Celiac Disease Among Healthcare Professionals and Patients in Central Europe](#)

J Pediatr Gastroenterol Nutr. 2021 Apr 1;72(4):552-557. doi: 10.1097/MPG.0000000000003019.

Authors

[Petra Riznik](#)¹, [Luigina De Leo](#)², [Jasmina Dolinsek](#)³, [Judit Gyimesi](#)⁴, [Martina Klemenak](#)¹, [Berthold Koletzko](#)^{5 6}, [Sibylle Koletzko](#)^{6 7}, [Tunde Koltai](#)⁸, [Ilma Rita Korponay-Szabó](#)^{4 9}, [Tomaz Krencnik](#)¹, [Marina Milinovic](#)¹⁰, [Tarcisio Not](#)², [Goran Palcevski](#)¹¹, [Daniele Sblattero](#)¹², [Katharina Julia Werkstetter](#)⁶, [Jernej Dolinsek](#)^{1 13}

Affiliations

- ¹ Department of Pediatrics, Gastroenterology, Hepatology and Nutrition Unit, University Medical Centre Maribor, Maribor, Slovenia.
- ² IRCCS Burlo Garofolo Trieste, Institute for Maternal and Child Health, Trieste, Italy.
- ³ Municipality of Maribor, Project Office, Maribor, Slovenia.
- ⁴ Heim Pál National Pediatric Institute, Coeliac Disease Centre, Budapest, Hungary.
- ⁵ Stiftung Kindergesundheit (Child Health Foundation) at Dr. von Hauner Children's Hospital.
- ⁶ Dr. von Hauner Children's Hospital, Clinical Medical Centre, LMU, Munich, Germany.
- ⁷ Department of Pediatrics, Gastroenterology and Nutrition, School of Medicine Collegium Medicum University of Warmia and Mazury, Olsztyn, Poland.
- ⁸ Hungarian Celiac Society, Celiac Society, Budapest.
- ⁹ Department of Pediatrics, Faculty of Medicine, University of Debrecen, Debrecen, Hungary.
- ¹⁰ Primorsko-Goranska County, Association of Celiac Patients.
- ¹¹ Department for Gastroenterology, Pediatrics Clinic, University Hospital Rijeka, Rijeka, Croatia.
- ¹² Department of Life Sciences, University of Trieste, Trieste, Italy.
- ¹³ Department of Pediatrics, Medical Faculty, University of Maribor, Maribor, Slovenia.
- PMID: [33346575](#)
- DOI: [10.1097/MPG.0000000000003019](#)

Abstract

Objectives: Celiac disease (CD) remains undiagnosed for a long time in many adult and pediatric patients. We assessed the knowledge about CD among healthcare professionals (HCPs) and CD patients in Central Europe (CE).

Methods: HCPs and CD patients from 5 CE countries were asked to complete the web-based questionnaire about CD. The questions were divided into subsections on epidemiology, clinical presentation, diagnostics, treatment, and follow-up. Achieved scores of different specialists

managing patients with CD were compared and regional differences in patients' knowledge were analyzed.

Results: Questionnaire was completed by 1381 HCPs and 2262 CD patients or their caregivers from Croatia, Hungary, Germany, Italy, and Slovenia. Mean score achieved by HCPs was 50.9%, and by CD patients 56.4%. Pediatric gastroenterologists scored the highest (69.4%; $P < 0.001$). There were significant differences in knowledge of patients from different CE regions with German participants scoring the highest (58.3%). Members of CD societies scored higher compared with nonmembers (mean score 58% vs 53.2%; $P < 0.001$) and patients diagnosed less than 5 years ago scored higher compared with those diagnosed more than 10 years ago (mean score 57.3% vs 54.6%; $P < 0.001$).

Conclusions: The knowledge about CD among HCPs and CD patients is not satisfactory. Further awareness-raising and learning activities are needed to improve HCPs' knowledge and to minimize the number of unrecognized patients and unnecessary diagnostic delays. Patients should be better informed about their disease to reach higher compliance with the gluten-free diet.

Copyright © 2020 by European Society for Pediatric Gastroenterology, Hepatology, and Nutrition and North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition.

Conflict of interest statement

The authors report no conflicts of interest.

- [46 references](#)

Full text links



51. [Progression of pediatric celiac disease from potential celiac disease to celiac disease: a retrospective cohort study](#)

BMC Pediatr. 2021 Mar 29;21(1):149. doi: 10.1186/s12887-021-02625-z.

Authors

[Shruti Sakhuja](#)¹, [Lori R Holtz](#)²

Affiliations

- ¹ Department of Pediatrics, Washington University School of Medicine, 660 S. Euclid, Campus, Box 8208, St. Louis, MO, 63110, USA.
- ² Department of Pediatrics, Washington University School of Medicine, 660 S. Euclid, Campus, Box 8208, St. Louis, MO, 63110, USA. loriholtz@wustl.edu.

- PMID: [33781221](#)
- DOI: [10.1186/s12887-021-02625-z](#)

Free article

[Abstract](#)

Background: A subset of patients with serology suggesting celiac disease have an initially negative biopsy but subsequently develop histopathologic celiac disease. Here we characterize patients with potential celiac disease who progress to celiac disease.

Methods: We performed a retrospective analysis of children (0-18 years of age) with biopsy-confirmed celiac disease seen at St. Louis Children's Hospital between 2013 and 2018.

Results: Three hundred sixteen of 327 (96%) children with biopsy-confirmed celiac disease were diagnosed on initial biopsy. The 11 children with potential celiac disease who progressed to celiac disease had lower anti-tissue transglutaminase (anti-TTG IgA) concentrations (2.4 (1.6-5) X upper limit of normal (ULN) vs. 6.41 (3.4-10.5) X ULN) at time of first biopsy. Their median anti-TTG IgA concentrations rose from 2.4 (1.6-5) X ULN to 3.6 (3.1-9.2) X ULN between biopsies.

Conclusions: Four percent of biopsy confirmed celiac patients initially had a negative biopsy, but later developed histopathologic celiac disease. This is likely an underestimate as no surveillance algorithm was in place. We recommend repeat assessment in children whose serology suggests celiac disease despite normal small bowel biopsy.

Keywords: Biopsy; Celiac disease; Pediatrics; Potential celiac disease.

- [23 references](#)

Full text links



[The gluten challenge is still the best option for children with a difficult diagnosis like non-coeliac gluten sensitivity](#)

52.

Acta Paediatr. 2021 Apr;110(4):1104-1106. doi: 10.1111/apa.15577. Epub 2020 Oct 8.

Author

[Chandra Sekhar Devulapalli](#) ¹

Affiliation

- ¹ Norwegian Labour and Welfare Administration, Oslo, Norway.
- PMID: [32967039](#)

- DOI: [10.1111/apa.15577](https://doi.org/10.1111/apa.15577)

No abstract available

- [10 references](#)

Full text links



53. [DIETARY GLUTEN INTAKE IS NOT ASSOCIATED WITH RISK OF INFLAMMATORY BOWEL DISEASE IN U.S. ADULTS WITHOUT CELIAC DISEASE](#)

Clin Gastroenterol Hepatol. 2021 Mar 25;S1542-3565(21)00339-6. doi: 10.1016/j.cgh.2021.03.029. Online ahead of print.

Authors

[Emily W Lopes](#)¹, [Benjamin Lebwohl](#)², [Kristin E Burke](#)¹, [Kerry L Ivey](#)³, [Ashwin N Ananthakrishnan](#)⁴, [Paul Lochhead](#)¹, [James M Richter](#)¹, [Jonas F Ludvigsson](#)⁵, [Walter C Willett](#)⁶, [Andrew T Chan](#)⁷, [Hamed Khalili](#)⁸

Affiliations

- ¹ Division of Gastroenterology, Massachusetts General Hospital and Harvard Medical School, Boston MA.
- ² Celiac Disease Center, Department of Medicine, Columbia University College of Physicians and Surgeons, New York, NY, USA; Department of Epidemiology, Mailman School of Public Health, Columbia University, New York, NY, USA.
- ³ Department of Nutrition and Dietetics, College of Nursing and Health Sciences, Flinders University, Adelaide, Australia; Department of Nutrition, Harvard T.H. Chan School of Public Health, Boston, MA, USA; South Australian Health and Medical Research Institute, Infection and Immunity Theme, School of Medicine, Flinders University, Adelaide, SA, Australia.
- ⁴ Division of Gastroenterology, Massachusetts General Hospital and Harvard Medical School, Boston MA; Clinical and Translation Epidemiology, Massachusetts General Hospital and Harvard Medical School, Boston MA.
- ⁵ Department of Medical Epidemiology and Biostatistics, Karolinska Institutet, Stockholm, Sweden; Department of Pediatrics, Örebro University Hospital, Örebro University, Örebro, Sweden.
- ⁶ Department of Nutrition, Harvard T.H. Chan School of Public Health, Boston, MA, USA; Department of Epidemiology, Harvard T. H. Chan School of Public Health, Boston, MA, USA; Channing Division of Network Medicine, Department of Medicine, Brigham and Women's Hospital and Harvard Medical School, Boston, MA, USA.
- ⁷ Division of Gastroenterology, Massachusetts General Hospital and Harvard Medical School, Boston MA; Clinical and Translation Epidemiology, Massachusetts General Hospital and Harvard Medical School, Boston MA; Channing Division of Network

Medicine, Department of Medicine, Brigham and Women's Hospital and Harvard Medical School, Boston, MA, USA.

- ⁸ Division of Gastroenterology, Massachusetts General Hospital and Harvard Medical School, Boston MA; Clinical and Translation Epidemiology, Massachusetts General Hospital and Harvard Medical School, Boston MA; Broad Institute of MIT and Harvard, Cambridge MA 02142. Electronic address: hkhalili@mgh.harvard.edu.
- PMID: [33775898](https://pubmed.ncbi.nlm.nih.gov/33775898/)
- DOI: [10.1016/j.cgh.2021.03.029](https://doi.org/10.1016/j.cgh.2021.03.029)

Abstract

Background & aims: Diet is thought to play a role in the development of inflammatory bowel disease (IBD), though the relationship between gluten intake and risk of IBD has not been explored. The aim of this study was to determine the relationship between gluten intake and risk of incident Crohn's disease (CD) and ulcerative colitis (UC).

Methods: We performed a prospective cohort study of 208,280 US participants from the Nurses' Health Study (NHS; 1986-2016), NHSII (1991-2017), and Health Professionals Follow-up Study (1986-2016) who did not have IBD at baseline or celiac disease, and who completed semi-quantitative food frequency questionnaires. We used Cox proportional hazards modeling to estimate the risk of IBD according to quintiles of cumulative average energy-adjusted dietary gluten intake over follow-up period.

Results: We documented 337 CD cases and 447 UC cases over 5,115,265 person-years of follow-up. Dietary gluten intake was not associated with risk of IBD. Compared to participants in the lowest quintile of gluten intake, the adjusted hazard-ratios and 95% confidence intervals (CI) for participants in the highest quintile of gluten intake were 1.16 (95% CI: 0.82-1.64; $P_{\text{trend}} = 0.41$) for CD and 1.04 (95% CI: 0.75-1.44; $P_{\text{trend}} = 0.64$) for UC. Adjusting for primary sources of gluten intake did not materially change our estimates.

Conclusions: In three large adult US prospective cohorts, gluten intake was not associated with risk of CD or UC. Our findings are reassuring at a time when consumption of gluten has been increasingly perceived as a trigger for chronic gastrointestinal diseases.

Keywords: Crohn's disease; gluten; inflammatory bowel disease; ulcerative colitis.

Copyright © 2021 AGA Institute. Published by Elsevier Inc. All rights reserved.

Full text links



54. [Transpositional celiac artery graft: Novel graft selection for huge right hepatic artery reconstruction in left-sided hepatectomy for perihilar cholangiocarcinoma](#)

Asian J Surg. 2021 Mar;44(3):562. doi: 10.1016/j.asjsur.2020.12.007. Epub 2020 Dec 19.

Authors

[Junichi Yoshikawa](#)¹, [Yutaro Kato](#)², [Yoshiharu Shirakata](#)³, [Atsushi Sugioka](#)², [Ichiro Uyama](#)²

Affiliations

- ¹ Department of Surgery, Fujita Health University, Japan; Department of Gastroenterological Surgery, Hyogo Prefectural Amagasaki General Medical Center, Japan. Electronic address: junichi.yoshikawa@fujita-hu.ac.jp.
- ² Department of Surgery, Fujita Health University, Japan.
- ³ Department of Gastroenterological Surgery, Hyogo Prefectural Amagasaki General Medical Center, Japan.
- PMID: [33349553](#)
- DOI: [10.1016/j.asjsur.2020.12.007](#)

Free article

No abstract available

Keywords: Hepatic artery reconstruction; Large hepatic artery; Perihilar cholangiocarcinoma.

Conflict of interest statement

Declaration of competing interest The authors have nothing to disclose and no conflict of interest.

Full text links



[Thermally induced gluten modification observed with rheology and spectroscopies](#)

55.

Int J Biol Macromol. 2021 Mar 15;173:26-33. doi: 10.1016/j.ijbiomac.2021.01.008. Epub 2021 Jan 7.

Authors

[Monika C Wehrli](#)¹, [Tim Kratky](#)², [Marina Schopf](#)³, [Katharina A Scherf](#)⁴, [Thomas Becker](#)¹, [Mario Jekle](#)⁵

Affiliations

- ¹ Technical University of Munich, Chair of Brewing and Beverage Technology, Research Group Cereal Technology and Process Engineering, Weißenstephaner Steig 20, 85354 Freising, Germany.

- ² Technical University of Munich, Department of Chemistry, Associate Professorship of Physical Chemistry with Focus on Catalysis, Lichtenbergstr, 4, 85748 Garching, Germany.
- ³ Leibniz-Institute for Food Systems Biology at the Technical University of Munich, Lise-Meitner-Str.34, 85354 Freising, Germany.
- ⁴ Leibniz-Institute for Food Systems Biology at the Technical University of Munich, Lise-Meitner-Str.34, 85354 Freising, Germany; Karlsruhe Institute of Technology, Department of Bioactive and Functional Food Chemistry, Institute of Applied Biosciences, Adenauerring 20a, 76131 Karlsruhe, Germany.
- ⁵ Technical University of Munich, Chair of Brewing and Beverage Technology, Research Group Cereal Technology and Process Engineering, Weißenstephaner Steig 20, 85354 Freising, Germany. Electronic address: mjekle@tum.de.
- PMID: [33422515](https://pubmed.ncbi.nlm.nih.gov/33422515/)
- DOI: [10.1016/j.ijbiomac.2021.01.008](https://doi.org/10.1016/j.ijbiomac.2021.01.008)

Free article

Abstract

The protein vital gluten is mainly used for food while interest for non-food applications, like biodegradable materials, increases. In general, the structure and functionality of proteins is highly dependent on thermal treatments during production or modification. This study presents conformational changes and corresponding rheological effects of vital wheat gluten depending on temperature. Dry samples analyzed by X-ray photoelectron spectroscopy (XPS), Fourier-transform infrared spectroscopy (FTIR) and thermogravimetric analysis coupled with mass spectrometry (TGA-MS) show surface compositions and conformational changes from 25 to 250 °C. Above 170 °C, XPS reveals a decreased N content at the surface while FTIR band characteristics for β -sheets prove structural changes. At 250 °C, protein denaturation accompanied by a significant mass loss due to dehydration and decarbonylation reactions is observed. Oscillatory measurements of optimally hydrated vital gluten describing network properties of the material show two structural changes along a temperature ramp from 25 to 90 °C: at 56–64 °C, the temperature necessary to trigger structural changes increases with the ratio of gliadin to total protein mass, determined by reversed-phase high performance liquid chromatography (RP-HPLC). At a temperature of 79–81 °C, complete protein denaturation occurs. FTIR confirms the denaturation process by showing band shifts with both temperature steps.

Keywords: Biopolymer; Protein; Rheology; Spectroscopy; Structure; Surface science.

Copyright © 2021 The Authors. Published by Elsevier B.V. All rights reserved.

Conflict of interest statement

Declaration of competing interest None.

Full text links



56. [Genetic, lifestyle, and health-related characteristics of adults without celiac disease who follow a gluten-free diet: a population-based study of 124,447 participants](#)

Am J Clin Nutr. 2021 Mar 11;113(3):622-629. doi: 10.1093/ajcn/nqaa291.

Authors

[Thomas J Littlejohns](#)¹, [Amanda Y Chong](#)², [Naomi E Allen](#)¹, [Matthew Arnold](#)³, [Kathryn E Bradbury](#)⁴, [Alexander J Mentzer](#)², [Elizabeth J Soilleux](#)⁵, [Jennifer L Carter](#)^{1 6}

Affiliations

- ¹ Nuffield Department of Population Health, University of Oxford, Oxford, United Kingdom.
- ² The Wellcome Centre for Human Genetics, University of Oxford, Oxford, United Kingdom.
- ³ British Heart Foundation Cardiovascular Epidemiology Unit, Department of Public Health and Primary Care, University of Cambridge, Cambridge, United Kingdom.
- ⁴ School of Population Health, University of Auckland, Auckland, New Zealand.
- ⁵ Department of Pathology, University of Cambridge, Cambridge, United Kingdom.
- ⁶ NIHR Oxford Biomedical Research Centre, Oxford, United Kingdom.
- PMID: [33184625](#)
- PMCID: [PMC7948866](#)
- DOI: [10.1093/ajcn/nqaa291](#)

Free PMC article

[Abstract](#)

Background: The number of gluten-free diet followers without celiac disease (CD) is increasing. However, little is known about the characteristics of these individuals.

Objectives: We address this issue by investigating a wide range of genetic and phenotypic characteristics in association with following a gluten-free diet.

Methods: The cross-sectional association between lifestyle and health-related characteristics and following a gluten-free diet was investigated in 124,447 women and men aged 40-69 y from the population-based UK Biobank study. A genome-wide association study (GWAS) of following a gluten-free diet was performed.

Results: A total of 1776 (1.4%) participants reported following a gluten-free diet. Gluten-free diet followers were more likely to be women, nonwhite, highly educated, living in more socioeconomically deprived areas, former smokers, have lost weight in the past year, have poorer self-reported health, and have made dietary changes as a result of illness. Conversely, these individuals were less likely to consume alcohol daily, be overweight or obese, have hypertension, or use cholesterol-lowering medication. Participants with hospital inpatient diagnosed blood and immune mechanism disorders (OR: 1.62; 95% CI: 1.18, 2.21) and non-CD

digestive system diseases (OR: 1.58; 95% CI: 1.42, 1.77) were more likely to follow a gluten-free diet. The GWAS demonstrated that no genetic variants were associated with being a gluten-free diet follower.

Conclusions: Gluten-free diet followers have a better cardiovascular risk profile than non-gluten-free diet followers but poorer self-reported health and a higher prevalence of blood and immune disorders and digestive conditions. Reasons for following a gluten-free diet warrant further investigation.

Keywords: UK Biobank; cross-sectional study; genome-wide association study; gluten free; health; lifestyle.

© The Author(s) 2020. Published by Oxford University Press on behalf of the American Society for Nutrition.

Comment in

- [The fashionable gluten-free diet-wear with caution.](#)

Jansson-Knodell CL, Rubio-Tapia A.

Am J Clin Nutr. 2021 Mar 11;113(3):491-492. doi: 10.1093/ajcn/nqaa371.

PMID: 33515028No abstract available.

- [22 references](#)
- [3 figures](#)

Full text links



57. [Proteolysis efficiency and structural traits of corn gluten meal: Impact of different frequency modes of a low-power density ultrasound](#)

Food Chem. 2021 May 15;344:128609. doi: 10.1016/j.foodchem.2020.128609. Epub 2020 Nov 13.

Authors

[Yang Wang](#)¹, [Zhaoli Zhang](#)¹, [Ronghai He](#)², [Benjamin Kumah Mintah](#)², [Mokhtar Dabbour](#)³, [Wenjuan Qu](#)², [Dandan Liu](#)², [Haile Ma](#)⁴

Affiliations

- ¹ School of Food and Biological Engineering, Jiangsu University, 301 Xuefu Road, Zhenjiang, Jiangsu 212013, China; School of Food Science and Engineering, Yangzhou University, 196 Huayang West Road, Yangzhou, Jiangsu 225127, China.
- ² School of Food and Biological Engineering, Jiangsu University, 301 Xuefu Road, Zhenjiang, Jiangsu 212013, China.
- ³ School of Food and Biological Engineering, Jiangsu University, 301 Xuefu Road, Zhenjiang, Jiangsu 212013, China; Department of Agricultural and Biosystems Engineering, Faculty of Agriculture, Benha University, P.O. Box 13736, Moshtohor, Qalubia, Egypt.
- ⁴ School of Food and Biological Engineering, Jiangsu University, 301 Xuefu Road, Zhenjiang, Jiangsu 212013, China. Electronic address: mhl@ujs.edu.cn.
- PMID: [33229163](https://pubmed.ncbi.nlm.nih.gov/33229163/)
- DOI: [10.1016/j.foodchem.2020.128609](https://doi.org/10.1016/j.foodchem.2020.128609)

Abstract

The influence of varying frequency modes of a low-power density ultrasound (LPDU) on the enzymolysis efficacy and structural property of corn gluten meal (CGM) was investigated. Sonication pretreatment (of CGM) with sequential and simultaneous duple-frequency modes enhanced notably the relative enzymolysis efficiency, compared to other LPDU frequency modes. With a sequential duple-frequency of 20/40 kHz showing the most significant effect, the maximum value of enzymolysis efficiency and protein dissolution rate were 15.99% and 61.69%, respectively. Changes in the surface hydrophobicity, secondary structure and microstructure revealed alterations of conformation of CGM by ultrasound-induced effect. Furthermore, the molecular weight distribution CGM hydrolysates primarily distributed in 200-500 Da following ultrasonication. Sonication efficaciously enhanced the susceptibility of CGM to alcalase proteolysis. Thus, the use of various LPDU frequency modes in pretreating target proteins (CGM) may be considered as a practical approach to improve protein-enzyme reactions (proteolysis).

Keywords: Corn gluten meal; Enzymolysis; Frequency modes; Low-power density ultrasound; Microstructure; Surface hydrophobicity.

Copyright © 2020. Published by Elsevier Ltd.

Full text links



[Food Processing, Dysbiosis, Gastrointestinal Inflammatory Diseases, and Antiangiogenic Functional Foods or Beverages](#)

58.

Annu Rev Food Sci Technol. 2021 Mar 25;12:235-258. doi: 10.1146/annurev-food-062520-090235. Epub 2021 Jan 19.

Author

[Jack N Losso](#) ¹

Affiliation

- ¹ School of Nutrition and Food Sciences, Louisiana State University, Baton Rouge, Louisiana 70803, USA; email: jlosso@lsu.edu.
- PMID: [33467906](https://pubmed.ncbi.nlm.nih.gov/33467906/)
- DOI: [10.1146/annurev-food-062520-090235](https://doi.org/10.1146/annurev-food-062520-090235)

Abstract

Foods and beverages provide nutrients and alter the gut microbiota, resulting in eubiosis or dysbiosis. Chronic consumption of a diet that is high in saturated or *trans* fats, meat proteins, reducing sugars, and salt and low in fiber induces dysbiosis. Dysbiosis, loss of redox homeostasis, mast cells, hypoxia, angiogenesis, the kynurenine pathway, transglutaminase 2, and/or the Janus kinase pathway are implicated in the pathogenesis and development of inflammatory bowel disease, celiac disease, and gastrointestinal malignancy. This review discusses the effects of oxidative, carbonyl, or glycative stress-inducing dietary ingredients or food processing-derived compounds on gut microbiota and gastrointestinal epithelial and mast cells as well as on the development of associated angiogenic diseases, including key signaling pathways. The preventive or therapeutic potential and the biochemical pathways of antiangiogenic or proangiogenic foods or beverages are also described. The outcomes of the interactions between disease pathways and components of food are critical for the design of foods and beverages for healthy lives.

Keywords: angiogenesis; celiac disease; dysbiosis; eubiosis; food processing; hypoxia; inflammatory bowel disease; kynurenine pathway; mast cells; transglutaminase 2.

Full text links



59. [The impact of symptoms on quality of life before and after diagnosis of coeliac disease: the results from a Polish population survey and comparison with the results from the United Kingdom](#)

BMC Gastroenterol. 2021 Mar 4;21(1):99. doi: 10.1186/s12876-021-01673-0.

Authors

[Emilia Majsiak](#)^{1 2}, [Magdalena Choina](#)³, [Dominik Golicki](#)⁴, [Alastair M Gray](#)⁵, [Bożena Cukrowska](#)⁶

Affiliations

- ¹ Faculty of Medicine, Collegium Medicum, Cardinal Stefan Wyszyński University in Warsaw, Auditorium Maximum, bldg. 21, room 201 (II floor), st. Kazimierza Wóycickiego 1/3, 01-938, Warsaw, Poland. e.majsiak@interia.pl.

- ² Polish-Ukrainian Foundation of Medicine Development, Lublin, Poland.
e.majsiak@interia.pl.
- ³ Polish-Ukrainian Foundation of Medicine Development, Lublin, Poland.
- ⁴ Department of Experimental and Clinical Pharmacology, Medical University of Warsaw, Warsaw, Poland.
- ⁵ Health Economics Research Centre, Nuffield Department of Population Health, University of Oxford, Oxford, UK.
- ⁶ Department of Pathology, Children's Memorial Health Institute, Warsaw, Poland.
- PMID: [33663388](#)
- PMCID: [PMC7934494](#)
- DOI: [10.1186/s12876-021-01673-0](#)

Free PMC article

[Abstract](#)

Background: Coeliac disease (CD) is characterised by diverse clinical symptoms, which may cause diagnostic problems and reduce the patients' quality of life. A study conducted in the United Kingdom (UK) revealed that the mean time between the onset of coeliac symptoms and being diagnosed was above 13 years. This study aimed to analyse the diagnostic process of CD in Poland and evaluate the quality of life of patients before and after CD diagnosis. In addition, results were compared to the results of the original study conducted in the UK.

Methods: The study included 2500 members of the Polish Coeliac Society. The patients were asked to complete a questionnaire containing questions on socio-demographic factors, clinical aspects and quality of life, using the EQ-5D questionnaire. Questionnaires received from 796 respondents were included in the final analysis.

Results: The most common symptoms reported by respondents were bloating (75%), abdominal pain (72%), chronic fatigue (63%) and anaemia (58%). Anaemia was the most persistent symptom, with mean duration prior to CD diagnosis of 9.2 years, whereas diarrhoea was observed for the shortest period (4.7 years). The mean duration of any symptom before CD diagnosis was 7.3 years, compared to 13.2 years in the UK. CD diagnosis and the introduction of a gluten-free diet substantially improved the quality of life in each of the five EQ-5D-5L health dimensions: pain and discomfort, anxiety and depression, usual activities, self-care and mobility ($p < 0.001$), the EQ-Index by 0.149 (SD 0.23) and the EQ-VAS by 30.4 (SD 28.3) points.

Conclusions: Duration of symptoms prior to the diagnosis of CD in Poland, although shorter than in the UK, was long with an average of 7.3 years from first CD symptoms. Faster CD diagnosis after the onset of symptoms in Polish respondents may be related to a higher percentage of children in the Polish sample. Introduction of a gluten-free diet improves coeliac patients' quality of life. These results suggest that doctors should be made more aware of CD and its symptoms across all age groups.

Keywords: Coeliac disease; Diagnostic process; Quality of life.

Conflict of interest statement

The authors declare that they have no competing interests.

- [31 references](#)

Full text links



[Gastrointestinal Food Allergies and Intolerances](#)

60.

Gastroenterol Clin North Am. 2021 Mar;50(1):41-57. doi: 10.1016/j.gtc.2020.10.006.

Authors

[Emily Hon](#)¹, [Sandeep K Gupta](#)²

Affiliations

- ¹ Division of Pediatric Gastroenterology, Hepatology, and Nutrition, Riley Hospital for Children at IU Health, ROC 4210, 705 Riley Hospital Drive, Indianapolis, IN 46202, USA.
- ² Community Health Network, 6626 E 75th Street, Suite 400, Indianapolis, IN 46250, USA; Section of Pediatric Gastroenterology, Hepatology, Nutrition, Riley Hospital for Children at IU Health, Indiana University School of Medicine, ROC 4210, 705 Riley Hospital Drive, Indianapolis, IN 46202, USA. Electronic address: sgupta@iu.edu.
- PMID: [33518168](#)
- DOI: [10.1016/j.gtc.2020.10.006](#)

Abstract

Adverse reactions to food include immune-mediated food allergies, celiac disease, and nonimmune-mediated food intolerances. Differentiating between these many disorders is important to guide us toward appropriate testing and management. Double-blind placebo-controlled food challenges are the gold standard for food allergy diagnosis but are difficult and time-consuming. In place of this, strong clinical history, other supportive tests, and oral food challenges are helpful. Some commonly available tests for food allergy and intolerances lack sufficient evidence for efficacy. Food intolerance diagnosis is largely based on history and supported by symptom improvement with appropriate dietary manipulation.

Keywords: Allergy testing; Anaphylaxis; Food allergy; Food intolerance; Food protein-induced enterocolitis syndrome; Immunoglobulin G testing; Irritable bowel syndrome; Oral allergy syndrome.

Conflict of interest statement

Disclosure E. Hon has no conflict of interest to disclose. S. Gupta is a consultant for Adare, Abbott, Allakos, Gossamer Bio, Receptos, and Medscape; royalties UpToDate; research support Shire.

Full text links



[Celiac Disease: Fallacies and Facts](#)

61.

Am J Gastroenterol. 2021 Mar 17. doi: 10.14309/ajg.0000000000001218. Online ahead of print.

Authors

[Jocelyn A Silvester](#)¹, [Amelie Therrien](#), [Ciaran P Kelly](#)

Affiliation

- ¹ Celiac Center, Division of Gastroenterology, Beth Israel Deaconess Medical Center, Boston, Massachusetts, USA; Division of Gastroenterology, Hepatology and Nutrition, Boston Children Hospital, Boston, Massachusetts, USA.
- PMID: [33767109](#)
- DOI: [10.14309/ajg.0000000000001218](#)

Abstract

Our understanding of the pathophysiology of celiac disease has progressed greatly over the past 25 years; however, some fallacies about the clinical characteristics and management persist. Worldwide epidemiologic data are now available showing that celiac disease is ubiquitous. An elevated body mass index is common at the time of the diagnosis. The gluten-free diet (GFD) is an imperfect treatment for celiac disease; not all individuals show a response. This diet is widely used by people without celiac disease, and symptomatic improvement on a GFD is not sufficient for diagnosis. Finally, the GFD is burdensome, difficult to achieve, and thus has an incomplete efficacy, opening exciting opportunities for novel, nondietary treatments.

Copyright © The American College of Gastroenterology 2021. All Rights Reserved.

Full text links



[All Things Gluten: A Review](#)

62.

Gastroenterol Clin North Am. 2021 Mar;50(1):29-40. doi: 10.1016/j.gtc.2020.10.007.

Authors

[Naureen A Chaudhry](#)¹, [Chelsea Jacobs](#)², [Peter H R Green](#)³, [S Devi Rampertab](#)⁴

Affiliations

- ¹ Division of Gastroenterology and Hepatology, Department of Medicine, University of Florida, 1329 Southwest 16th Street, Suite 5251, Gainesville, FL 32608, USA.
- ² Department of Medicine, University of Florida, 1329 Southwest 16th Street, Suite 5251, Gainesville, FL 32608, USA.
- ³ Celiac Disease Center at Columbia University, 180 Fort Washington Avenue, New York, NY 10032, USA.
- ⁴ Division of Gastroenterology and Hepatology, Department of Medicine, University of Florida, 1329 Southwest 16th Street, Suite 5251, Gainesville, FL 32608, USA. Electronic address: Devi.Rampertab@medicine.ufl.edu.
- PMID: [33518167](#)
- DOI: [10.1016/j.gtc.2020.10.007](#)

Abstract

Gluten is a common dietary component with a complex protein structure. It forms incomplete products of digestion, which have the potential to mount an immune response in genetically predisposed individuals, resulting in celiac disease. It also has been linked with nonceliac gluten sensitivity and irritable bowel syndrome due to wheat allergy. A gluten-free diet is an effective treatment of these conditions; however, it can lead to micronutrient and mineral deficiencies and a macronutrient imbalance with higher sugar and lipid intake. Recent popularity has led to greater availability, but increasing cost, of commercially available gluten-free products.

Keywords: Celiac disease; Gluten; Gluten sensitivity; Gluten-free diet; Irritable bowel syndrome; Nutrition.

Copyright © 2020 Elsevier Inc. All rights reserved.

Conflict of interest statement

Disclosure None of the authors has any financial disclosures for the purpose of this publication.

Full text links



[Clinical Presentation in Children With Coeliac Disease in Central Europe](#)

Authors

[Petra Riznik](#)¹, [Luigina De Leo](#)², [Jasmina Dolinsek](#)³, [Judit Gyimesi](#)⁴, [Martina Klemenak](#)¹, [Berthold Koletzko](#)^{5 6}, [Sibylle Koletzko](#)^{6 7}, [Ilma Rita Korponay-Szabó](#)^{4 8}, [Tomaz Krencnik](#)¹, [Tarcisio Not](#)², [Goran Palcevski](#)⁹, [Daniele Sblattero](#)¹⁰, [Katharina Julia Werkstetter](#)⁶, [Jernej Dolinsek](#)^{1 11}

Affiliations

- ¹ Department of Paediatrics, Gastroenterology, Hepatology and Nutrition Unit, University Medical Centre Maribor, Maribor, Slovenia.
 - ² IRCCS Burlo Garofolo Trieste, Institute for Maternal and Child Health, Trieste, Italy.
 - ³ Municipality of Maribor, Project Office, Maribor, Slovenia.
 - ⁴ Heim Pál National Paediatric Institute, Coeliac Disease Centre, Budapest, Hungary.
 - ⁵ Stiftung Kindergesundheit (Child Health Foundation), Dr. von Hauner Children's Hospital.
 - ⁶ Dr. von Hauner Children's Hospital, Clinical Medical Centre, LMU, Munich, Germany.
 - ⁷ Department of Paediatrics, Gastroenterology and Nutrition, School of Medicine Collegium Medicum, University of Warmia and Mazury, Olsztyn, Poland.
 - ⁸ Faculty of Medicine, Department of Paediatrics, University of Debrecen, Debrecen, Hungary.
 - ⁹ Department for Gastroenterology, Paediatric Clinic, University Hospital Rijeka, Rijeka, Croatia.
 - ¹⁰ University of Trieste, Trieste, Italy.
 - ¹¹ Medical Faculty, Department of Paediatrics, University of Maribor, Maribor, Slovenia.
-
- PMID: [33306584](#)
 - DOI: [10.1097/MPG.0000000000003015](#)

Abstract

Objectives: During the past decades, there has been a shift in the clinical presentation of coeliac disease (CD) to nonclassical, oligosymptomatic, and asymptomatic forms. We assessed clinical presentation of CD in children and adolescents in Central Europe.

Methods: Paediatric gastroenterologists in 5 countries retrospectively reported data of their patients diagnosed with CD. Clinical presentation was analyzed and the differences among very young (<3 years) and older children and adolescents were studied.

Results: Data from 653 children and adolescents (median age 7 years 2 months; 63.9% girls) from Croatia, Germany, Hungary, Italy, and Slovenia were available for the analysis. One fifth (N = 134) of all children were asymptomatic. In symptomatic children, the most common leading symptom was abdominal pain (33.3%), followed by growth retardation (13.7%) and diarrhoea (13.3%). The majority of symptomatic children (47.6%; N = 247) were polysymptomatic. Abdominal pain was the most common symptom in polysymptomatic (66.4%) as well as in monosymptomatic children (29.7%). Comparing clinical presentation of CD in very young children (younger than 3 years) with

older children (3 years or older), we found that symptoms and signs of malabsorption were significantly more common in younger ($P < 0.001$), whereas abdominal pain and asymptomatic presentation were more common in older children and adolescents (both $P < 0.001$).

Conclusion: In children with CD, abdominal pain has become the most common symptom. However, in younger children, symptoms of malabsorption are still seen frequently. This raises a question about the underlying mechanism of observed change in clinical presentation in favour of nonclassical presentation and asymptomatic disease at certain age.

Copyright © 2020 by European Society for Pediatric Gastroenterology, Hepatology, and Nutrition and North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition.

Conflict of interest statement

The authors report no conflicts of interest.

- [50 references](#)

Full text links



[New developments in non-Hodgkin lymphoid malignancies](#)

64.

Pathology. 2021 Apr;53(3):349-366. doi: 10.1016/j.pathol.2021.01.002. Epub 2021 Mar 5.

Authors

[Karthik A Ganapathi](#)¹, [Laura E Brown](#)¹, [Sonam Prakash](#)¹, [Parul Bhargava](#)²

Affiliations

- ¹ Department of Laboratory Medicine, University of California San Francisco, CA, USA.
- ² Department of Laboratory Medicine, University of California San Francisco, CA, USA.
Electronic address: Parul.Bhargava@ucsf.edu.
- PMID: [33685720](#)
- DOI: [10.1016/j.pathol.2021.01.002](#)

Abstract

The revised fourth edition of the World Health Organization (WHO) Classification of Tumours of Haematopoietic and Lymphoid Tissues (2017) reflects significant advances in understanding the biology, genetic basis and behaviour of haematopoietic neoplasms. This review focuses on some of the major changes in B-cell and T-cell non-Hodgkin lymphomas in the 2017 WHO and includes more recent updates. The 2017 WHO saw a shift towards conservatism in the classification of precursor lesions of small B-cell lymphomas such as monoclonal B-cell lymphocytosis, in situ

follicular and in situ mantle cell neoplasms. With more widespread use of next generation sequencing (NGS), special entities within follicular lymphoma and mantle cell lymphoma were recognised with recurrent genetic aberrations and unique clinicopathological features. The diagnostic workup of lymphoplasmacytic lymphoma and hairy cell leukaemia has been refined with the discovery of MYD88 L265P and BRAF V600E mutations, respectively, in these entities. Recommendations in the immunohistochemical evaluation of diffuse large B-cell lymphoma include determining cell of origin and expression of MYC and BCL2, so called 'double-expressor' phenotype. EBV-positive large B-cell lymphoma of the elderly has been renamed to recognise its occurrence amongst a wider age group. EBV-positive mucocutaneous ulcer is a newly recognised entity with indolent clinical behaviour that occurs in the setting of immunosuppression. Two lymphomas with recurrent genetic aberrations are newly included provisional entities: Burkitt-like lymphoma with 11q aberration and large B-cell lymphoma with IRF4 rearrangement. Aggressive B-cell lymphomas with MYC, BCL2 and/or BCL6 rearrangements, so called 'double-hit/triple-hit' lymphomas are now a distinct entity. Much progress has been made in understanding intestinal T-cell lymphomas. Enteropathy-associated T-cell lymphoma, type II, is now known to not be associated with coeliac disease and is hence renamed monomorphic epitheliotropic T-cell lymphoma. An indolent clonal T-cell lymphoproliferative disorder of the GI tract is a newly included provisional entity. Angioimmunoblastic T-cell lymphoma and nodal T-cell lymphomas with T-follicular helper phenotype are included in a single broad category, emphasising their shared genetic and phenotypic features. Anaplastic large cell lymphoma, ALK- is upgraded to a definitive entity with subsets carrying recurrent rearrangements in DUSP22 or TP63. Breast implant-associated anaplastic large cell lymphoma is a new provisional entity with indolent behaviour. Finally, cutaneous T-cell proliferations include a new provisional entity, primary cutaneous acral CD8-positive T-cell lymphoma, and reclassification of primary small/medium CD4-positive T-cell lymphoma as lymphoproliferative disorder.

Keywords: 2017 World Health Organization Classification; EBV-positive mucocutaneous ulcer; NOS; anaplastic large cell lymphoma ALK-; breast implant-associated anaplastic large cell lymphoma; diagnostic criteria; high grade B-cell lymphoma; in situ follicular neoplasia; indolent mantle cell lymphoma; large B-cell lymphoma with IRF4 rearrangement; monoclonal B-cell lymphocytosis; monomorphic epitheliotropic intestinal T-cell lymphoma.

Copyright © 2021 Royal College of Pathologists of Australasia. Published by Elsevier B.V. All rights reserved.

Full text links



[Gluten Degradation, Pharmacokinetics, Safety, and Tolerability of TAK-062, an Engineered Enzyme to Treat Celiac Disease](#)

65.

Gastroenterology. 2021 Mar 16;S0016-5085(21)00527-8. doi: 10.1053/j.gastro.2021.03.019. Online ahead of print.

Authors

[Ingrid Swanson Pultz](#)¹, [Malcolm Hill](#)¹, [Joanne M Vitanza](#)¹, [Clancey Wolf](#)¹, [Lasse Saaby](#)², [Tina Liu](#)³, [Peter Winkle](#)⁴, [Daniel A Leffler](#)⁵

Affiliations

- ¹ PVP Biologics, Inc., San Diego, CA, USA.
 - ² Bioneer A/S, Hørsholm, Denmark.
 - ³ Takeda Pharmaceuticals International Co., Cambridge, MA, USA.
 - ⁴ Anaheim Clinical Trials, Anaheim, CA, USA.
 - ⁵ Takeda Pharmaceuticals International Co., Cambridge, MA, USA. Electronic address: Daniel.Leffler@takeda.com.
-
- PMID: [33741317](#)
 - DOI: [10.1053/j.gastro.2021.03.019](#)

Abstract

Background & aims: Celiac disease (CeD) is an immune-mediated disorder triggered by the ingestion of gluten. Despite adhering to a gluten-free diet (the only management option available to patients with CeD), many patients continue to experience symptoms and intestinal injury. Degradation of immunogenic fractions of gluten peptides in the stomach has been proposed as an approach to reduce toxicity of ingested gluten; however, no enzymes evaluated to date have demonstrated sufficient gluten degradation in complex meals. TAK-062 is a novel, computationally designed endopeptidase under development for the treatment of patients with CeD.

Methods: Pharmacokinetics, safety, and tolerability of TAK-062 100-900 mg were evaluated in a phase 1 dose escalation study in healthy participants and patients with CeD. Gluten degradation by TAK-062 was evaluated under simulated gastric conditions in vitro and in healthy participants in the phase 1 study, with and without pretreatment with a proton pump inhibitor. Residual gluten (collected via gastric aspiration in the phase 1 study) was quantified using R5 and G12 monoclonal antibody enzyme-linked immunosorbent assays.

Results: In vitro, TAK-062 degraded more than 99% gluten (3 g and 9 g) within 10 minutes. In the phase 1 study, administration of TAK-062 was well tolerated and resulted in a median gluten degradation ranging from 97% to more than 99%, in complex meals containing 1-6 g gluten, at 20-65 minutes post dose.

Conclusions: TAK-062 is well tolerated, and rapidly and effectively degrades large amounts of gluten, supporting the development of this novel enzyme as an oral therapeutic for patients with CeD.

Keywords: gliadin; glutenase.

Full text links



66. [Extraction of total wheat \(*Triticum aestivum*\) protein fractions and cross-reactivity of wheat allergens with other cereals](#)

Food Chem. 2021 Jun 15;347:129064. doi: 10.1016/j.foodchem.2021.129064. Epub 2021 Jan 12.

Authors

[Jinlong Zhao](#)¹, [Zhenxing Li](#)², [Mati Ullah Khan](#)¹, [Xiang Gao](#)³, [Min Yu](#)¹, [Hongyan Gao](#)¹, [Yonghong Li](#)⁴, [Hewen Zhang](#)⁵, [Binaka Prabashini Dasanayaka](#)¹, [Hong Lin](#)¹

Affiliations

- ¹ College of Food Science and Engineering, Ocean University of China, No.5, Yushan Road, Qingdao City, Shandong Province 266003, PR China.
- ² College of Food Science and Engineering, Ocean University of China, No.5, Yushan Road, Qingdao City, Shandong Province 266003, PR China. Electronic address: lizhenxing@ouc.edu.cn.
- ³ Department of Allergy, The Affiliated Hospital of Qingdao University, No.16, Jiangsu Road, Qingdao City, Shandong Province 266003, PR China.
- ⁴ College of Food Science and Engineering, Ocean University of China, No.5, Yushan Road, Qingdao City, Shandong Province 266003, PR China; HOB Biotech Group Corp., Ltd., No. 218, Xinghu Road, Suzhou City, Jiangsu Province 215000, PR China.
- ⁵ HOB Biotech Group Corp., Ltd., No. 218, Xinghu Road, Suzhou City, Jiangsu Province 215000, PR China.
- PMID: [33486358](#)
- DOI: [10.1016/j.foodchem.2021.129064](#)

Abstract

A one-step mild extraction of total wheat protein fractions was developed in this study, and the allergic cross-reactivity among dietary cereals were assessed by SDS-PAGE, western blotting, indirect ELISA, and inhibition ELISA using sera from 12 wheat allergic patients. The fractions of albumin, globulin, gliadin and glutenins in wheat flour can be obtained by a one-step extraction with Na₂CO₃-NaHCO₃ (20 mM, pH 9.6, 0.5 M NaCl, 40% ethanol, 1 mM PMSF) in comparison to sequential extractions. Results showed high cross-reactivity in wheat, barley and rye due to close resemblance and high sequence identity (>50%), whereas nearly negligible cross-reactivity among rice, buckwheat, and quinoa was observed. Our research findings suggest that people with wheat allergy should rely primarily on the use of rice, quinoa and non-grain buckwheat, which is an effective substitute for wheat, while those with hypersensitivity should avoid the use of barley and rye in their diet.

Keywords: Allergen; Cereal protein; Cross-reactivity; Total protein fractions extraction; Wheat.

Full text links



[Estimating the Impact of Verification Bias on Celiac Disease Testing](#)

67.

J Clin Gastroenterol. 2021 Apr 1;55(4):327-334. doi: 10.1097/MCG.0000000000001361.

Authors

[Isabel A Hujoel](#)¹, [Claire L Jansson-Knodell](#)², [Philippe P Hujoel](#)³, [Margaux L A Hujoel](#)⁴, [Rok Seon Choung](#)¹, [Joseph A Murray](#)¹, [Alberto Rubio-Tapia](#)⁵

Affiliations

- ¹ Division of Gastroenterology and Hepatology, Mayo Clinic, Rochester, MN.
- ² Division of Gastroenterology and Hepatology, Indiana University, Indianapolis, IN.
- ³ Department of Epidemiology, School of Public Health, University of Washington, Seattle, WA.
- ⁴ Department of Biostatistics, Harvard T.H. Chan School of Public Health, Boston, MA.
- ⁵ Department of Gastroenterology and Hepatology, Cleveland Clinic, Cleveland, OH.
- PMID: [32433257](#)
- PMCID: **PMC7674196** (available on 2022-04-01)
- DOI: [10.1097/MCG.0000000000001361](#)

Abstract

Goal: The goal of this study was to estimate the impact of verification bias on the diagnostic accuracy of immunoglobulin A tissue transglutaminase (IgA tTG) in detecting celiac disease as reported by an authoritative meta-analysis, the 2016 Comparative Effectiveness Review (CER).

Background: Verification bias is introduced to diagnostic accuracy studies when screening test results impact the decision to verify disease status.

Materials and methods: We adjusted the sensitivity and specificity of IgA tTG reported by the 2016 CER with the proportion of IgA tTG positive and negative individuals who are referred for confirmatory small bowel biopsy. We performed a systematic review from January 1, 2007, to July 19, 2017, to determine these referral rates.

Results: The systematic review identified 793 articles of which 9 met inclusion criteria (n=36,477). Overall, 3.6% [95% confidence interval (CI): 1.1%-10.9%] of IgA tTG negative and 79.2.2% (95% CI: 65.0%-88.7%) of IgA tTG positive individuals were referred for biopsy. Adjusting for these referral rates the 2016 CER reported sensitivity of IgA tTG dropped from 92.6% (95% CI:

90.2%-94.5%) to 57.1% (95% CI: 35.4%-76.4%) and the specificity increased from 97.6% (95% CI: 96.3%-98.5%) to 99.6% (95% CI: 98.4%-99.9%).

Conclusions: The CER may have largely overestimated the sensitivity of IgA tTG due to a failure to account for verification bias. These findings suggest caution in the interpretation of a negative IgA tTG to rule out celiac disease in clinical practice. More broadly, they highlight the impact of verification bias on diagnostic accuracy estimates and suggest that studies at risk for this bias be excluded from systematic reviews.

Copyright © 2020 Wolters Kluwer Health, Inc. All rights reserved.

Conflict of interest statement

Conflict of Interest: None

Conflict of Interest: None; all authors have nothing to disclose

Full text links



68. [Human leukocyte antigen \(HLA\)-DQ2 and -DQ8 haplotypes in celiac, celiac with type 1 diabetic, and celiac suspected pediatric cases](#)

Medicine (Baltimore). 2021 Mar 19;100(11):e24954. doi: 10.1097/MD.00000000000024954.

Authors

[Komal Siddiqui](#)¹, [Arsalan Ahmed Uqaili](#)², [Muhammad Rafiq](#)¹, [Muhammad Aqeel Bhutto](#)¹

Affiliations

- ¹ Institute of Biotechnology and Genetic Engineering, University of Sindh.
- ² Liaquat University of Medical and Health Sciences, Jamshoro, Pakistan.
- PMID: [33725967](#)
- PMCID: [PMC7982179](#)
- DOI: [10.1097/MD.00000000000024954](#)

Free PMC article

Abstract

Celiac disease (CD) is an autoimmune enteropathy triggered by ingestion of gluten present in wheat, barley, and rye. Gluten along with environmental trigger starts an inflammatory reaction which results in damage to small intestine. Human leukocyte antigen (HLA)-DQA1*05, -DQB1*02, and -DQB1*03:02 are the known risk alleles of CD. The diagnostic method for CD involves serological or intestinal biopsy, but genetic test could be implemented. HLA typing precludes the

need for further diagnosis and it has high negative predictive value. The aim of this study was to make aware of HLA molecular typing for celiac disease among local laboratories and healthcare professionals. The prevalence and frequency distribution of HLA-DQ2 and -DQ8 haplotypes in 175 pediatric unrelated healthy controls, celiac patients, and CD with concurrent diabetes mellitus type 1 (DM1) was evaluated. The most common haplotype was DQ2 followed by DQ8. In control group only DQ2 was observed with frequency of 8.5%. In celiac patients 85.7% were DQ2, 11.4% were DQ8, and rest were DQ2/DQ8 (2.8%), and all had CD. In the group of CD with DM1, 31.4% had DQ2, 25% had DQ8, and 34% having both the haplotypes; while only 9 of these patients were suffering from CD. It was concluded that Celiac disease is frequently unrecognized by physicians, in part because of its variable clinical presentation and symptoms. Thus genetic testing for celiac disease could be an additive tool for diagnosis to exclude ambiguity.

Copyright © 2021 the Author(s). Published by Wolters Kluwer Health, Inc.

Conflict of interest statement

The authors have no conflicts of interest to disclose.

- [34 references](#)
- [3 figures](#)

Full text links



69. [Identification of saprophytic microorganisms and analysis of changes in sensory, physicochemical, and nutritional characteristics of potato and wheat steamed bread during different storage periods](#)

Food Chem. 2021 Jun 30;348:128927. doi: 10.1016/j.foodchem.2020.128927. Epub 2020 Dec 26.

Authors

[Mengmei Ma](#)¹, [Taihua Mu](#)², [Liang Zhou](#)¹

Affiliations

- ¹ Institute of Food Science and Technology, Chinese Academy of Agricultural Sciences, Key Laboratory of Agro-Products Processing, Ministry of Agriculture and Rural Affairs, No.2 Yuan Ming Yuan West Road, Haidian District, PO Box 5109, Beijing 100193, China.
- ² Institute of Food Science and Technology, Chinese Academy of Agricultural Sciences, Key Laboratory of Agro-Products Processing, Ministry of Agriculture and Rural Affairs, No.2 Yuan Ming Yuan West Road, Haidian District, PO Box 5109, Beijing 100193, China. Electronic address: mutaihua@163.com.
- PMID: [33493845](#)

- DOI: [10.1016/j.foodchem.2020.128927](https://doi.org/10.1016/j.foodchem.2020.128927)

Abstract

Due to its nutritional value and no gluten, potato flour has recently been used as a new type of material to make steamed bread. However, compared to traditional wheat steamed bread, its shelf life is considerably shorter, the dominant microorganisms and storage properties also differ. High-throughput sequencing combined with molecular biology assay revealed that *Bacillus methylotrophic* and *Bacillus subtilis* were the dominant bacteria in the crumb of potato and wheat steamed bread, respectively. Moreover, *Meyerozyma*, *Penicillium chrysogenum*, *Penicillium citrinum*, and *Aspergillus parasiticus* were the main fungi in the crusts. Ethanol was the most volatile compound in fresh potato and wheat steamed bread. Following storage for 48 h, 2,3-butanediol and 3-hydroxy-2-butanone were established as the most volatile compounds. Although decreased sourness was observed, the specific volume, brightness, and nutritional composition remained nearly unchanged. These findings provide a valuable theoretical basis for the development of potato and wheat steamed bread preservation technologies.

Keywords: Electronic nose and tongue; Flavor compounds; Potato steamed bread; Saprophytic microorganisms; Storage properties; Wheat steamed bread.

Copyright © 2020. Published by Elsevier Ltd.

Full text links



[Evaluation of mesenteric artery disease in patients with severe aortic valve stenosis](#)

70.

J Investig Med. 2021 Mar;69(3):719-723. doi: 10.1136/jim-2020-001549. Epub 2021 Jan 15.

Authors

[Aysegul Idil Soylu](#)¹, [Ufuk Avcioglu](#)², [Fatih Uzunkaya](#)³, [Korhan Soylu](#)⁴

Affiliations

- ¹ Department of Radiology, Ondokuz Mayıs University, Faculty of Medicine, Samsun, Turkey a.isoylu@gmail.com.
- ² Department of Gastroenterology, Ondokuz Mayıs University, Faculty of Medicine, Samsun, Turkey.
- ³ Department of Radiology, Ondokuz Mayıs University, Faculty of Medicine, Samsun, Turkey.
- ⁴ Department of Cardiology, Faculty of Medicine, Ondokuz Mayıs University, Samsun, Turkey.
- PMID: [33452127](https://pubmed.ncbi.nlm.nih.gov/33452127/)
- DOI: [10.1136/jim-2020-001549](https://doi.org/10.1136/jim-2020-001549)

Abstract

The aim of this study is to evaluate the mesenteric artery stenosis (MAS) in routinely performed CT angiography (CTA) of patients with severe aortic stenosis (AS) planned for transcatheter aortic valve implantation (TAVI) before the procedure. Patients with AS (AS group) who routinely underwent CTA before the TAVI procedure due to severe AS and patients who had CTA for other indications (control group) were retrospectively and sequentially scanned. The demographic characteristics of the patients in both groups were similar. Calcification and stenosis in the mesenteric arteries were recorded according to the localization of celiac truncus, superior mesenteric artery (SMA) and inferior mesenteric artery (IMA). Class 0-3 classification was used for calcification score. Stenoses with a stenosis degree $\geq 50\%$ were considered as significant. A total of 184 patients, 73 patients with severe AS and 111 control groups, were included in the study. SMA and IMA calcification scores of patients with AS were significantly higher than the control group ($p=0.035$ for SMA and $p=0.020$ for IMA). In addition, the rate of patients with significant MAS in at least 1 artery (45.2% vs 22.5%, $p=0.001$) and the rate of patients with significant stenosis in multiple arteries were also significantly higher in the AS group (8.2% vs 1.8%, $p=0.037$). According to the study results, patients with AS are at a higher risk for MAS. Chronic mesenteric ischemia should be kept in mind in patients with AS who have symptoms such as non-specific abdominal pain and weight loss.

Keywords: aorta; atherosclerosis; ischemia.

© American Federation for Medical Research 2021. No commercial re-use. See rights and permissions. Published by BMJ.

Conflict of interest statement

Competing interests: None declared.

Full text links



[Well-being and dietary adherence in patients with coeliac disease depending on follow-up](#)

71.

Scand J Gastroenterol. 2021 Apr;56(4):382-390. doi: 10.1080/00365521.2021.1889024. Epub 2021 Feb 23.

Authors

[Jesper Lexner](#)^{1 2}, [Henrik Hjortswang](#)^{3 4}, [Rickard Ekesbo](#)⁵, [Klas Sjöberg](#)^{1 2}

Affiliations

- ¹ Department of Clinical Sciences, Lund University, Lund, Sweden.
- ² Department of Gastroenterology, Skåne University Hospital, Malmö, Sweden.

- ³ Department of Gastroenterology and Hepatology, Linköping University, Linköping, Sweden.
- ⁴ Department of Health, Medicine, and Caring Sciences, Linköping University, Linköping, Sweden.
- ⁵ Department of Clinical Sciences, Lund University, Vårdhuset Malmö, Sweden.
- PMID: [33621157](#)
- DOI: [10.1080/00365521.2021.1889024](#)

Abstract

Objective: It is not clear how follow-up of coeliac disease should be optimally organised. In Malmö, Sweden, patients are followed up by general practitioners (GP), but in Linköping by gastroenterologists (GE). The aim of this study was to investigate if there were any differences in well-being and dietary adherence depending on type of follow-up.

Methods: All adult patients with newly diagnosed biopsy-verified coeliac disease in the cities between 2010 and 2014 were offered to participate. Data was retrieved comprising demography, laboratory analyses, questionnaires (Gastrointestinal Symptoms Rating Scale, Short Health Scale, Multidimensional Fatigue Inventory, Psychological General Well-being Index and Short Form 36) and follow-up.

Results: In the GP cohort 39/73 patients and in the GE cohort 58/121 agreed to participate (mean age 43 and 44 years, 69 and 60% women, respectively). A follow-up to a dietician was carried out in 31% and 93% of patients, respectively ($p < .001$). In the GP group 28% had eaten gluten-containing food during the last 4 weeks compared to 9% in the GE group ($p = .01$). Despite this, no differences could be seen in vitamin or mineral levels. The questionnaires did not indicate any major discrepancies in subjective health.

Conclusion: Irrespective of the design of the follow-up physical and mental well-being were comparable. Dietary adherence was not quite as good in the GP group but follow-up in a primary care setting can still be a suitable and equivalent alternative. However, it is crucial that the dietary counselling is structured in a way that ensures dietary adherence.

Keywords: Coeliac disease; diet; follow-up; quality of life; well-being.

Full text links



72. [Symptomatic pancreaticoduodenal artery aneurysm with coeliac artery occlusion repaired by ligation of aneurysm and creation of neocoeliac trunk](#)

ANZ J Surg. 2021 Mar;91(3):E137-E139. doi: 10.1111/ans.16175. Epub 2020 Jul 17.

Authors

[Ajay Savlania](#)¹, [Anil L Naik](#)¹, [Ashutosh Pandey](#)¹, [Ujjwal Gors](#)², [Abhinav Singh](#)¹

Affiliations

- ¹ Department of General Surgery, Postgraduate Institute of Medical Education and Research, Chandigarh, India.
- ² Department of Radiology, Postgraduate Institute of Medical Education and Research, Chandigarh, India.
- PMID: [32678495](#)
- DOI: [10.1111/ans.16175](#)

No abstract available

- [10 references](#)

Full text links



73. [Atherosclerotic Cardiovascular Disease Prevalence Among Patients With Celiac Disease in the United States: An Observational Study](#)

Mayo Clin Proc. 2021 Mar;96(3):666-676. doi: 10.1016/j.mayocp.2020.04.051.

Authors

[Ashutossh Naaraayan](#)¹, [Abhishek Nimkar](#)², [Stephen Jesmajian](#)², [Bernard Gitler](#)², [Prakash Acharya](#)²

Affiliations

- ¹ Montefiore New Rochelle Hospital, New Rochelle, NY. Electronic address: ashu.newroc@gmail.com.
- ² Montefiore New Rochelle Hospital, New Rochelle, NY.
- PMID: [33673917](#)
- DOI: [10.1016/j.mayocp.2020.04.051](#)

Abstract

Objective: To assess the prevalence of atherosclerotic cardiovascular disease (ASCVD) by age and sex in patients with celiac disease and to determine associations between ASCVD and celiac disease.

Patients and methods: This is a retrospective cohort study which included adults (>18 years old) who had hospitalizations recorded in the National Inpatient Sample database in the United States

from January 1, 2005, to December 31, 2014. Patients with celiac disease were matched (1:5) by age, sex, race, and calendar year to patients without celiac disease. Prevalence of ASCVD was calculated in patients with celiac disease and controls, and compared by sex and age groups. Associations between celiac disease and ASCVD were determined after adjustment for common cardiovascular risk factors.

Results: Among 371,776,860 patients hospitalized in the United States between 2005 and 2014, 227,172 adults with celiac disease were matched to 1,133,701 controls. Young women with celiac disease (age <40 years) had a higher prevalence of ASCVD and higher adjusted odds (aOR) of ASCVD when compared with controls (aged 18 to 29 years aOR, 2.22 [95% CI 1.41 to 3.5]; $P<.001$; and aged 30 to 39 years aOR 1.54 [95% CI 1.19 to 1.99]; $P<.001$). Adults with celiac disease of all ages and sexes had increased adjusted odds of death if they had ASCVD (aOR aged <40 years 7.31 [95% CI 2.49 to 21.46]; $P<.001$; and aOR aged ≥ 40 years 2.02 [95% CI 1.68 to 2.42]; $P<.001$).

Conclusion: We found significantly higher prevalence and adjusted odds of ASCVD in young women with celiac disease when compared with matched controls. ASCVD was associated with significant mortality among patients with celiac disease.

Copyright © 2020 Mayo Foundation for Medical Education and Research. Published by Elsevier Inc. All rights reserved.

Full text links



74. [Splanchnic occlusive disease predicts spinal cord injury after open descending thoracic and thoraco-abdominal aneurysm repair](#)

J Vasc Surg. 2021 Mar 4;S0741-5214(21)00333-5. doi: 10.1016/j.jvs.2021.02.030. Online ahead of print.

Authors

[Ivancarmine Gambardella](#)¹, [Christopher Lau](#)², [Mario FI Gaudino](#)², [Berhane Worku](#)², [Mohamad Rahouma](#)², [Robert F Tranbaugh](#)², [Leonard N Girardi](#)²

Affiliations

- ¹ Department of Cardiothoracic Surgery, Weill Cornell Medicine, New York, USA.
Electronic address: icg9002@med.cornell.edu.
- ² Department of Cardiothoracic Surgery, Weill Cornell Medicine, New York, USA.
- PMID: [33677031](#)
- DOI: [10.1016/j.jvs.2021.02.030](https://doi.org/10.1016/j.jvs.2021.02.030)

Abstract

Objective: - To discern the impact of splanchnic occlusive disease (SOD: renal, superior mesenteric and/or celiac axis arteries) on spinal cord injury (SCI: paraparesis or paraplegia) and major adverse events (MAE) after descending thoracic (DTA) and thoraco-abdominal (TAAA) aneurysm open repair.

Methods: - Patients who underwent DTA/TAAA repair at our institution were dichotomized according to presence of SOD, which was investigated as predictor of our primary (SCI) and secondary (operative mortality, myocardial infarction, stroke, need for tracheostomy, de-novo dialysis, MAE, and survival) endpoints. Risk-adjustment employed both propensity-score matching and multivariable logistic regression.

Results: - During the period 07/1997-10/2019, DTA/TAAA repair was performed in 888 patients, out of which 19 were excluded from our analysis for missing values. SOD was absent in 712 patients, and present in 157 patients. Patients with SOD presented higher incidence of pre-operative renal impairment [61 (38.9%) vs 175 (24.6%), $p < 0.01$] and peripheral arterial disease [60 (38.2%) vs 162 (22.8%), $p < 0.01$], and a decreased left ventricular ejection fraction [45% (IQR 10) vs 50% (IQR 4), $p < 0.01$]. The etiology of aortic disease was more frequently dissection in the SOD group (56.1% vs 43.7%), and more frequently non-dissecting aneurysm in the non-SOD group (56.3% vs 43.9%) ($p < 0.01$). Patients without SOD presented aneurysms more cranially located (DTA 34.0% vs 7.6%, extent I TAAA 44.0% vs 7.6%), whilst patients with SOD presented aneurysms more caudally located (extent II TAAA 36.9% vs 8.6%, extent III TAAA 30.6% vs 11.0%, extent IV TAAA 17.2% vs 2.5%) ($p < 0.01$). Propensity-score matching led to 144 pairs, in which SOD was significantly associated to SCI [10 (6.9%) vs 2 (1.4%), $p = 0.03$] and MAE [47 (32.6%) vs 26 (15%), $p < 0.01$]. 10-year survival was reduced in SOD patients (31.5% vs 45.2%, $p < 0.01$). Conditional multivariable regression confirmed SOD to be a predictor of SCI in the matched sample (OR 6.60, $p = 0.02$).

Conclusions: - SOD is a significant predictor of SCI in patients undergoing open DTA/TAAA repair. The investigation of measures to prolong neuronal ischemia tolerance (e.g. hypothermia) is warranted in such patients.

Copyright © 2021. Published by Elsevier Inc.

Full text links



[Reproductive Characteristics and Pregnancy Outcomes in Hidden Celiac Disease Autoimmunity](#)

75.

Am J Gastroenterol. 2021 Mar 1;116(3):593-599. doi: 10.14309/ajg.0000000000001148.

Authors

[Melis G Celdir](#)^{1 2}, [Rok Seon Choung](#)¹, [Shahryar K Rostamkolaei](#)¹, [Claire L Jansson-Knodell](#)³, [Katherine S King](#)⁴, [Joseph J Larson](#)⁴, [Imad Absah](#)⁵, [Joseph A Murray](#)¹

Affiliations

- ¹ Division of Gastroenterology and Hepatology, Mayo Clinic, Rochester, Minnesota, USA.
- ² Department of Medicine, SUNY Health Sciences University, Brooklyn, New York, USA.
- ³ Division of Gastroenterology and Hepatology, Indiana University, Indianapolis, Indiana, USA.
- ⁴ Biomedical Statistics and Informatics, Mayo Clinic, Rochester, Minnesota, USA.
- ⁵ Pediatric Gastroenterology, Mayo Clinic, Rochester, Minnesota, USA.
- PMID: [33560653](#)
- DOI: [10.14309/ajg.0000000000001148](#)

Abstract

Introduction: Untreated symptomatic celiac disease (CD) adversely affects female reproduction; however, the effect of hidden CD autoimmunity is uncertain.

Methods: We identified women who were not previously diagnosed with CD and tested positive for tissue transglutaminase and endomysial antibodies between 2006 and 2011 in a community-based retrospective cohort study. We evaluated (i) the rate of adverse pregnancy outcomes and medical complications of pregnancy in successful singleton deliveries and (ii) reproductive characteristics in seropositive women without a clinical diagnosis of CD and age-matched seronegative women.

Results: Among 17,888 women whose serum samples were tested for CD autoimmunity, 215 seropositive and 415 seronegative women were included. We reviewed 231 and 509 live singleton deliveries of 117 seropositive and 250 seronegative mothers, respectively. Menarche and menopausal age, gravidity, parity, and age at first child were similar in seropositive and seronegative women. CD seropositivity was not associated with an increased risk of maternal pregnancy complications. Maternal seropositivity was associated with small for gestational age in boys (OR 3.77, 95% CI: 1.47-9.71; P = 0.006), but not in girls (OR 0.57, 95% CI: 0.15-2.17; P = 0.41). CD serum positivity was not associated with prematurity, small for gestational age (birth weight <10th percentile), or 5-minute Apgar score of less than 7.

Discussion: Although underpowered, the present study did not show any difference in reproductive characteristics or rates of adverse pregnancy outcomes in women with and without CD autoimmunity, except for birth weight in male offspring. Larger studies are needed to determine the effects of CD autoimmunity on female reproduction.

Copyright © 2021 by The American College of Gastroenterology.

- [50 references](#)

Full text links

Authors

[Ezequiel Nazario](#)¹, [Juan Lasa](#)², [Amalia Schill](#)³, [Belen Duarte](#)¹, [Diego Berardi](#)¹, [Silvina Paz](#)¹, [Alexis Muryan](#)³, [Ignacio Zubiaurre](#)¹

Affiliations

- ¹ Gastroenterology Department, Hospital Británico de Buenos Aires, Perdriel 74 (1012), Buenos Aires, Argentina.
- ² Gastroenterology Department, Hospital Británico de Buenos Aires, Perdriel 74 (1012), Buenos Aires, Argentina. drjuanslasa@gmail.com.
- ³ Biochemistry Department, Hospital Británico de Buenos Aires, Buenos Aires, Argentina.
- PMID: [33770329](#)
- DOI: [10.1007/s10620-021-06939-x](#)

Abstract

Background: Guidelines for celiac disease (CD) testing recommend total serum IgA determination alongside anti-transglutaminase IgA antibodies. It is not well known if lack of serum IgA determination is a common finding in clinical practice.

Aim: To determine the prevalence of lack of serum IgA determination among patients screened for celiac disease.

Materials and methods: We identified all subjects who underwent serum anti-transglutaminase IgA and/or other CD-related antibodies determination at a single teaching hospital in Buenos Aires from October 2019 to February 2020. Medical records were reviewed to select adult patients who were tested for celiac disease. The primary outcome was the proportion of patients with inadequate testing for celiac disease due to lack of serum IgA determination. We retrieved the following variables from each patient's record: age, gender, body mass index, symptoms present at screening, first-grade family history of CD, history of type-1 diabetes mellitus, autoimmune hypothyroidism, Down's syndrome.

Results: Overall, 1122 patients were included for analysis. Lack of serum IgA determination prevalence was 20.49%. Among patients who did have serum IgA determination, the prevalence of IgA deficiency was 5.16%. The following variables were independently associated with a significantly increased odds of serum IgA determination: diarrhea [OR 1.55 (1.01-2.34)] and abdominal pain [OR 2.28 (1.44-3.63)]; higher body mass index [OR 0.91 (0.85-0.98)], osteoporosis [OR 0.49 (0.28-0.89)], hypothyroidism [OR 0.18 (0.07-0.45)], arthralgia/arthritis [OR 0.47 (0.27-

0.85)], or testing by endocrinologist [OR 0.46 (0.23-0.91)] and gynecologist [OR 0.14 (0.06-0.31)] were inversely associated.

Conclusion: IgA deficiency is not systematically ruled out in a relatively high proportion of patients undergoing serological screening of celiac disease.

Keywords: Celiac disease; Immunoglobulin A; Screening.

- [25 references](#)

Full text links



[Immune-mediated enteropathies: From bench to bedside](#)

77.

J Autoimmun. 2021 Mar;118:102609. doi: 10.1016/j.jaut.2021.102609. Epub 2021 Feb 17.

Authors

[Roy L J van Wanrooij](#)¹, [Hetty J Bontkes](#)², [E Andra Neefjes-Borst](#)³, [Chris J Mulder](#)⁴, [Gerd Bouma](#)⁴

Affiliations

- ¹ Amsterdam UMC, Vrije Universiteit Amsterdam, Department of Gastroenterology and Hepatology, AGEM Research Institute, Amsterdam, the Netherlands. Electronic address: rl.vanwanrooij@amsterdamumc.nl.
- ² Amsterdam UMC, Laboratory Medical Immunology, Department of Clinical Chemistry, AI & I Institute, AGEM Research Institute, Amsterdam, the Netherlands.
- ³ Amsterdam UMC, Department of Pathology, Amsterdam, the Netherlands.
- ⁴ Amsterdam UMC, Vrije Universiteit Amsterdam, Department of Gastroenterology and Hepatology, AGEM Research Institute, Amsterdam, the Netherlands.
- PMID: [33607573](#)
- DOI: [10.1016/j.jaut.2021.102609](#)

Free article

[Abstract](#)

Immune-mediated enteropathies are caused by excessive reactions of the intestinal immune system towards non-pathogenic molecules. Enteropathy leads to malabsorption-related symptoms and include (severe) chronic diarrhea, weight loss and vitamin deficiencies. Parenteral feeding and immunosuppressive therapy are needed in severe cases. Celiac disease has long been recognized as the most common immune-mediated enteropathy in adults, but the spectrum of immune-mediated enteropathies has been expanding. Histological and clinical features are sometimes shared among these enteropathies, and therefore it may be challenging

to differentiate between them. Here, we provide an overview of immune-mediated enteropathies focused on clinical presentation, establishing diagnosis, immunopathogenesis, and treatment options.

Keywords: Autoimmune enteropathy; Celiac disease; Common variable immunodeficiency syndrome; Eosinophilic enteritis; Graft-versus-host disease; Immune-mediated enteropathy; Indolent T-cell lymphoma; Olmesartan-associated enteropathy; Refractory celiac disease.

Copyright © 2021 The Authors. Published by Elsevier Ltd.. All rights reserved.

Full text links



78. [Primary hypoparathyroidism in a patient with common variable immunodeficiency associated enteropathy](#)

Rom J Intern Med. 2021 Mar 5;59(1):83-87. doi: 10.2478/rjim-2020-0030. Print 2021 Mar 1.

Authors

[Rashad Ismayilov](#)¹, [Ilgin Yildirim Simsir](#)², [Deniz Akyol](#)³, [Fatma Omur Ardeniz](#)⁴

Affiliations

- ¹ Ege University Faculty of Medicine, Izmir, Turkey.
- ² Ege University Faculty of Medicine, Department of Endocrinology and Metabolism Disorders, Izmir, Turkey.
- ³ Ege University Faculty of Medicine, Department of Infectious Diseases and Clinical Microbiology, Izmir, Turkey.
- ⁴ Ege University Faculty of Medicine, Department of Immunology and Allergy Diseases, Izmir, Turkey.
- PMID: [33098635](#)
- DOI: [10.2478/rjim-2020-0030](#)

Free article

[Abstract](#)

Background. Common variable immunodeficiency (CVID) is a rare disease characterized by humoral immunodeficiency, often causing sinopulmonary and gastrointestinal infections, and may cause enteropathy in some patients, which leads to severe malnutrition and electrolyte deficiencies. Although many autoimmune diseases are seen with increased frequency in CVID patients, primary hypoparathyroidism is extremely rare. **Case presentation.** A 50-year-old man with CVID presented with diarrhea. The patient had complaints for 2 years and was cachectic. He had severe electrolyte and vitamin deficiencies that did not respond to oral treatment. The diarrhea causes such as celiac, inflammatory bowel diseases, and gastrointestinal infections were

excluded and the endoscopy showed enteropathic changes in the duodenum and colon. Concomitant hypoparathyroidism was also detected in the patient with hypocalcemia despite adequate replacement. **Conclusion.** Parenteral therapy should be considered in the management of CVID enteropathy cases that do not respond to oral replacement. Although very rare, hypoparathyroidism should be considered in the differential diagnosis of CVID patients with treatment-resistant hypocalcemia.

Keywords: CVID; colitis; electrolyte deficiency; enteropathy; hypoparathyroidism.

© 2021 Rashad Ismayilov et al., published by Sciendo.

- [17 references](#)

Full text links



79. [Rosacea, Germs, and Bowels: A Review on Gastrointestinal Comorbidities and Gut-Skin Axis of Rosacea](#)

Adv Ther. 2021 Mar;38(3):1415-1424. doi: 10.1007/s12325-021-01624-x. Epub 2021 Jan 28.

Authors

[Fang-Ying Wang](#)^{1 2 3}, [Ching-Chi Chi](#)^{4 5}

Affiliations

- ¹ Department of Dermatology, Chang Gung Memorial Hospital, Linkou, Taoyuan, Taiwan.
- ² College of Medicine, Chang Gung University, Taoyuan, Taiwan.
- ³ Department of Biomedical Engineering, College of Medicine, College of Engineering, National Taiwan University, Taipei, Taiwan.
- ⁴ Department of Dermatology, Chang Gung Memorial Hospital, Linkou, Taoyuan, Taiwan. chingchi@cgmh.org.tw.
- ⁵ College of Medicine, Chang Gung University, Taoyuan, Taiwan. chingchi@cgmh.org.tw.
- PMID: [33507499](#)
- PMCID: [PMC7932979](#)
- DOI: [10.1007/s12325-021-01624-x](#)

Free PMC article

[Abstract](#)

Rosacea is a chronic inflammatory disease with complicated pathophysiology that involves genetic and environmental elements and dysregulation of innate and adaptive immunity, neurovascular responses, microbiome colonization or infection, resulting in recurrent inflammation. Rosacea has been reported associated with various gastrointestinal diseases

including inflammatory bowel disease, celiac disease, irritable bowel syndrome, gastroesophageal reflux disease, *Helicobacter pylori* (HP) infection, and small intestine bacterial overgrowth (SIBO). The link may involve common predisposing genetic, microbiota, and immunological factors, comprising the theory of the gut-skin axis. Although the evidence is still controversial, interestingly, medications for eradicating SIBO and HP provided an effective and prolonged therapeutic response in rosacea, and conventional therapy for which is usually disappointing because of frequent relapses. In this article, we review the current evidence and discuss probable mechanisms of the association between rosacea and gastrointestinal comorbidities.

Keywords: Celiac disease; Gut–skin axis; *Helicobacter pylori*; Inflammatory bowel disease; Irritable bowel syndrome; Rosacea; Small intestine bacterial overgrowth.

- [55 references](#)
- [1 figure](#)

Full text links



[Effect of long-term storage conditions on wheat flour and bread baking properties](#)

80.

Food Chem. 2021 Jun 1;346:128902. doi: 10.1016/j.foodchem.2020.128902. Epub 2021 Jan 19.

Authors

[Eloïse Lancelot](#)¹, [Joran Fontaine](#)², [Joëlle Grua-Priol](#)¹, [Alain Le-Bail](#)³

Affiliations

- ¹ Oniris, CNRS, GEPEA, UMR 6144, Nantes F-44000, France.
- ² Oniris, CNRS, GEPEA, UMR 6144, Nantes F-44000, France; VMI, 70 rue Anne de Bretagne - PA Marches de Bretagne, 85600 Saint-Hilaire-de-Loulay, France.
- ³ Oniris, CNRS, GEPEA, UMR 6144, Nantes F-44000, France. Electronic address: alain.lebail@oniris-nantes.fr.
- PMID: [33482530](#)
- DOI: [10.1016/j.foodchem.2020.128902](https://doi.org/10.1016/j.foodchem.2020.128902)

Abstract

This paper presents a study on the effect of storage conditions on wheat flour quality for 30 months. Such study may be of interest for research projects conducted over long periods. Wheat flours were stored in two types of packaging (permeable paper bags and watertight containers) and at two temperatures (ambient temperature and a cold storage room). Selected qualities parameters were evaluated regularly such as chemical stability, consistency, extensibility, resistance, water absorption, Solvent Retention Capacity and Gluten Index Performance. In

addition, Near-Infrared Spectroscopy was used to monitor the flour's evolution and models were employed to predict certain parameters. The results showed that storage at ambient temperature led to significant modifications of flour parameters and baking performances, whereas storage at low temperature preserved the initial quality of the flour. A practical recommendation is to favour storage at low temperature in a sealed container to prevent interaction with oxygen and moisture uptake.

Keywords: Bread quality; NIR spectroscopy; Wheat flour properties; Wheat flour storage.

Copyright © 2020 Elsevier Ltd. All rights reserved.

Full text links



[Celiac disease antibody levels reflect duodenal mucosal damage but not clinical symptoms](#)

81.

Scand J Gastroenterol. 2021 Mar 11;1-6. doi: 10.1080/00365521.2021.1899278. Online ahead of print.

Authors

[Aki J Käräjämäki](#)^{1 2}, [Juha Taavela](#)^{3 4}, [Christian Nielsen](#)¹, [Mårten Lönnqvist](#)¹, [Marcus Svartbäck](#)⁵, [Katri Kaukinen](#)^{4 6}, [Risto Tertti](#)^{1 7}

Affiliations

- ¹ Department of Internal Medicine, Vaasa Central Hospital, Vaasa, Finland.
 - ² Research Unit of Internal Medicine, Medical Research Center Oulu, Oulu University Hospital, and University of Oulu, Oulu, Finland.
 - ³ Central Finland Central Hospital, Jyväskylä, Finland.
 - ⁴ Celiac Disease Research Center, Faculty of Medicine and Health Technology, Tampere University, Tampere, Finland.
 - ⁵ Department of Pathology, Vaasa Central Hospital, Vaasa, Finland.
 - ⁶ Department of Internal Medicine, Tampere University Hospital, Tampere, Finland.
 - ⁷ Department of Internal Medicine, University of Turku, Turku, Finland.
-
- PMID: [33705679](#)
 - DOI: [10.1080/00365521.2021.1899278](#)

Abstract

Objectives: This study aimed to investigate, in a real-world population, whether the histological and clinical phenotype differ at baseline and during follow-up in patients with high and low CD (celiac disease) antibody titers.

Materials and methods: The study cohort consisted of 96 consecutive patients diagnosed to have CD during the years 2010-2018. The clinical parameters, symptoms and laboratory results were

registered and histomorphometry was analyzed from the available duodenal biopsies taken during the primary and follow-up esophageal-gastricduodenoscopies. Patients having immunoglobulin A transglutaminase antibody (tTG-ab) levels above 70 U/mL were classified as high titer patients.

Results: Measured by the villous-crypt ratio, the duodenal mucosa was more severely damaged in the high tTG-ab group than in the low tTG-group at baseline ($n = 70$, 0.61 ± 0.63 vs. 1.02 ± 0.87 , $p = .003$) and during the follow-up when the patients were on gluten-free diet ($n = 27$, 1.80 ± 0.72 vs. 2.35 ± 0.64 , $p = .041$). Interestingly, the high tTG-ab group members had fewer gastrointestinal symptoms at baseline than those in the low tTG-ab group (43% vs. 68%, $p = .013$) but lower vitamin D levels (68 ± 34 nmol/L vs. 88 ± 29 nmol/L, $p = .034$) and more often microcytosis (28% vs. 10%, $p = .040$). During the follow-up, these differences were no longer detected.

Conclusions: At baseline, CD patients with high tTG-ab have more severe duodenum injury and signs of malabsorption but fewer symptoms. After gluten-free diet has been initiated, the mucosal healing in the high tTG-ab group is prolonged, but symptoms and signs of malabsorption recover equally in both groups.

Keywords: Celiac disease; anemia; gastrointestinal symptoms; histomorphometry; malabsorption; tissue transglutaminase antibody.

Full text links



[Implications of SARS-COV-2 infection in the diagnosis and management of the pediatric gastrointestinal disease](#)

82.

Ital J Pediatr. 2021 Mar 24;47(1):71. doi: 10.1186/s13052-021-01020-9.

Authors

[Valeria Dipasquale](#)¹, [Stefano Passanisi](#)¹, [Ugo Cucinotta](#)¹, [Antonio Cascio](#)², [Claudio Romano](#)³

Affiliations

- ¹ Pediatric Gastroenterology and Cystic Fibrosis Unit, Department of Human Pathology in Adulthood and Childhood "G. Barresi", University of Messina, Via Consolare Valeria, 98124, Messina, Italy.
- ² Department of Health Promotion, Mother and Child Care, Internal Medicine and Medical Specialties, University of Palermo, Palermo, Italy.
- ³ Pediatric Gastroenterology and Cystic Fibrosis Unit, Department of Human Pathology in Adulthood and Childhood "G. Barresi", University of Messina, Via Consolare Valeria, 98124, Messina, Italy. romanoc@unime.it.
- PMID: [33761992](#)

- PMID: [PMC7988257](#)
- DOI: [10.1186/s13052-021-01020-9](#)

Free PMC article

Abstract

Gastrointestinal diseases such as celiac disease, functional gastrointestinal disorders (FGIDs), inflammatory bowel disease (IBDs) and acute or chronic diarrhea are quite frequent in the pediatric population. The approach, the diagnosis and management can be changed in the 2019 coronavirus disease (COVID-19) pandemic era. This review has focused on: i) the current understanding of digestive involvement in severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infected children and adolescents and the clinical implications of COVID-19 for pediatric gastroenterologists, ii) the impact of COVID-19 on the clinical approach to patients with pre-existing or onset diseases, including diagnosis and treatment, and iii) the role and limited access to the instrumental diagnosis such as digestive endoscopy. To date, it is unclear if immunosuppression in patients with IBD and chronic liver disease represents a risk factor for adverse outcomes. Scheduled outpatient follow-up visits may be postponed, especially in patients in remission. Conversely, telemedicine services are strongly recommended. The introduction of new therapeutic regimens should be made on an individual basis, discussing the benefits and risks with each patient. Furthermore, psychological care in all children with chronic disease and their parents should be ensured. All non-urgent and elective endoscopic procedures may be postponed as they must be considered at high risk of viral transmission. Finally, until SARS-CoV-2 vaccination is not available, strict adherence to standard social distancing protocols and the use of personal protective equipment should continue to be recommended.

Keywords: ACE2; COVID-19; Digestive endoscopy; Functional gastrointestinal disorders; Gastrointestinal symptoms; Inflammatory bowel disease; Liver disease; Pediatrics.

Conflict of interest statement

The authors declare that they have no competing interests.

- [58 references](#)

Full text links



83. [Increased incidence of coeliac disease autoimmunity rate in Israel: a 9-year analysis of population-based data](#)

Aliment Pharmacol Ther. 2021 Mar;53(6):696-703. doi: 10.1111/apt.16282. Epub 2021 Feb 5.

Authors

[Niva Lechtman](#)^{1 2}, [Raanan Shamir](#)^{2 3}, [Shlomi Cohen](#)^{2 4}, [Gabriel Chodick](#)^{1 2}, [Revital Kariv](#)^{1 2 5}, [Lia Supino-Rosin](#)⁶, [Yael Weintraub](#)^{2 4}, [Anat Yerushalmy-Feler](#)^{2 4}, [Amir Ben Tov](#)^{1 2 4}

Affiliations

- ¹ Maccabi Institute for Research & Innovation, Maccabi Healthcare Services, Tel Aviv, Israel.
- ² Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel.
- ³ Institute of Pediatric Gastroenterology, Nutrition, and Liver Diseases, Schneider Children's Medical Center, Petach Tikva, Israel.
- ⁴ Pediatric Gastroenterology Unit, Dana-Dwek Children's Hospital, Tel-Aviv Sourasky Medical Center, Tel Aviv, Israel.
- ⁵ Department of Gastroenterology, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel.
- ⁶ Immunology Unit, National Laboratory, Maccabi Healthcare Services, Rehovot, Israel.
- PMID: [33547687](#)
- DOI: [10.1111/apt.16282](#)

Abstract

Background: Incidence rate and temporal trends in coeliac disease and coeliac disease autoimmunity incidence vary worldwide with most data available from North American and European countries.

Aims: To explore temporal trends in incidence of coeliac disease autoimmunity and their relation to increase in screening tests in Israel.

Methods: A large retrospective population-based study was conducted in Maccabi Healthcare Services, a 2.3-million-member health maintenance organisation operating in Israel. The cohort included all patients with newly diagnosed coeliac disease autoimmunity based on first positive anti-tissue transglutaminase type 2 IgA antibodies. Data were analysed for the years 2007-2015.

Results: During the study period (17.3 million person-years), a total of 403 283 patients were tested for coeliac disease autoimmunity, of whom 6444 were positive, representing an average incidence rate of 36.64 per 100 000 person-years (95% CI: 35.74-37.55). Incidence of coeliac disease autoimmunity increased from 25.4 per 100 000 in 2007 to 52.3 per 100 000 person-years in 2015 (Incidence rate ratio of 2.06, 95% CI 1.81-2.26). Coeliac disease autoimmunity incidence was highest in the paediatric age groups, especially in children aged 0-5, and was 4 times higher than the incidence in adults aged 26-55 (Incidence rate ratio of 0.24, 95% CI (0.22-0.26). The increase in incidence surpassed the increase in testing for new patients. Positive trends in incidence were highest in small children, whereas the incidence in adults was stable over the years.

Conclusions: There was a steady increase in coeliac disease autoimmunity incidence in our cohort between the years 2007-2015. The paediatric population was the only contributor to this trend.

Comment in

- [Editorial: the rising tide of coeliac disease autoimmunity.](#)

Jossen J, Lebwohl B.

Aliment Pharmacol Ther. 2021 Mar;53(6):757-758. doi: 10.1111/apt.16291.

PMID: 33599322No abstract available.

- [31 references](#)

84. [A systematic review and meta-analysis for association of Helicobacter pylori colonization and celiac disease](#)

PLoS One. 2021 Mar 3;16(3):e0241156. doi: 10.1371/journal.pone.0241156. eCollection 2021.

Authors

[Fazel Isapanah Amlashi](#)¹, [Zahra Norouzi](#)¹, [Ahmad Sohrabi](#)^{2 3}, [Hesamaddin Shirzad-Aski](#)², [Alireza Norouzi](#)¹, [Ali Ashkbari](#)¹, [Naghme Gilani](#)¹, [Seyed Alireza Fatemi](#)¹, [Sima Besharat](#)^{1 2}

Affiliations

- ¹ Golestan Research Center of Gastroenterology and Hepatology, Golestan University of Medical Sciences, Gorgan, Iran.
- ² Infectious Diseases Research Center, Golestan University of Medical Sciences, Gorgan, Iran.
- ³ Cancer Control Research Center, Cancer Control Foundation, Iran University of Medical Sciences, Tehran, Iran.
- PMID: [33657108](#)
- PMCID: [PMC7928511](#)
- DOI: [10.1371/journal.pone.0241156](#)

Free PMC article

[Abstract](#)

Background and objectives: Based on some previous observational studies, there is a theory that suggests a potential relationship between Helicobacter pylori (H. pylori) colonization and celiac disease (CeD); however, the type of this relationship is still controversial. Therefore, we aimed to conduct a systematic review and meta-analysis to explore all related primary studies to find any possible association between CeD and human H. pylori colonization.

Data sources: Studies were systematically searched and collected from four databases and different types of gray literature to cover all available evidence. After screening, the quality and risk of bias assessment of the selected articles were evaluated.

Synthesis methods: Meta-analysis calculated pooled odds ratio (OR) on the extracted data. Furthermore, heterogeneity, sensitivity, subgroups, and publication bias analyses were assessed.

Results: Twenty-six studies were included in this systematic review, with a total of 6001 cases and 135512 control people. The results of meta-analysis on 26 studies showed a significant and negative association between *H. pylori* colonization and CeD (pooled OR = 0.56; 95% CI = 0.45-0.70; $P < 0.001$), with no publication bias ($P = 0.825$). The L'Abbé plots also showed a trend of having more *H. pylori* colonization in the control group. Among subgroups, ORs were notably different only when the data were stratified by continents or risk of bias; however, subgroup analysis could not determine the source of heterogeneity.

Conclusions: According to the meta-analysis, this negative association might imply a mild protective role of *H. pylori* against celiac disease. Although this negative association is not strong, it is statistically significant and should be further considered. Further investigations in both molecular and clinic fields with proper methodology and more detailed information are needed to discover more evidence and underlying mechanisms to clear the interactive aspects of *H. pylori* colonization in CeD patients.

Systematic review registration number (prospero): CRD42020167730
https://www.crd.york.ac.uk/prospero/display_record.php?RecordID=167730.

Conflict of interest statement

The authors have declared that no competing interests exist.

- [56 references](#)
- [3 figures](#)

Full text links



[Alternative Etiologies of Liver Disease in Children With Suspected NAFLD](#)

85.

Pediatrics. 2021 Mar 30;e2020009829. doi: 10.1542/peds.2020-009829. Online ahead of print.

Authors

[Toshifumi Yodoshi](#)¹, [Sarah Orkin](#)¹, [Ana Catalina Arce-Clachar](#)^{1 2}, [Kristin Bramlage](#)¹, [Stavra A Xanthakos](#)^{1 2}, [Pamela L Valentino](#)³, [Marialena Mouzaki](#)^{4 2}

Affiliations

- ¹ Division of Gastroenterology, Hepatology and Nutrition, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio.
- ² Department of Pediatrics, College of Medicine, University of Cincinnati, Cincinnati, Ohio; and.
- ³ Section of Gastroenterology and Hepatology, Department of Pediatrics, School of Medicine, Yale University, New Haven, Connecticut.
- ⁴ Division of Gastroenterology, Hepatology and Nutrition, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio; marialena.mouzaki@cchmc.org.
- PMID: [33785637](#)
- DOI: [10.1542/peds.2020-009829](#)

Abstract

Objectives: To determine the prevalence of alternative causes of liver disease in a cohort of youth with overweight and obesity undergoing evaluation for suspected nonalcoholic fatty liver disease (NAFLD).

Methods: Multicenter, retrospective cohort study of patients aged ≤ 18 years with overweight and obesity and evidence of elevated serum aminotransferases and/or hepatic steatosis on imaging, referred for suspected NAFLD to Cincinnati Children's Hospital Medical Center (2009-2017) or Yale New Haven Children's Hospital (2012-2017). Testing was performed to exclude the following: autoimmune hepatitis (AIH), Wilson disease, viral hepatitis (B and C), thyroid dysfunction, celiac disease, α -1 antitrypsin deficiency, and hemochromatosis.

Results: A total of 900 children with overweight and obesity (63% boys, 26% Hispanic ethnicity) were referred, with a median age of 13 years (range: 2-18). Most had severe obesity ($n = 666$; 76%) with a median BMI z score of 2.45 (interquartile range [IQR]: 2.2-2.7). Median alanine aminotransferase level at presentation was 64 U/L (IQR: 42-95). A clinically indicated liver biopsy was performed in 358 children (40%) at a median of 6 months (IQR: 1-14) post initial visit; of those, 46% had confirmed nonalcoholic steatohepatitis. Positive autoantibodies were observed in 13% of the cohort, but none met criteria for AIH. Only 19 (2%) were found to have other causes of liver disease, with no cases of viral hepatitis or Wilson disease detected.

Conclusions: In a large, multicenter cohort, the vast majority of children with overweight and obesity with presumed or confirmed NAFLD tested negative for other causes of liver disease. In contrast to a previous pediatric report, no patient was diagnosed with AIH.

Copyright © 2021 by the American Academy of Pediatrics.

Conflict of interest statement

POTENTIAL CONFLICT OF INTEREST: The authors have indicated they have no potential conflicts of interest to disclose.

[Gut-Ex-Vivo system as a model to study gluten response in celiac disease](#)

Authors

[Mara Gagliardi](#)^{1 2}, [Nausicaa Clemente](#)^{1 3}, [Romina Monzani](#)^{1 2}, [Luca Fusaro](#)¹, [Eleonora Ferrari](#)^{1 2}, [Valentina Saverio](#)^{1 2}, [Giovanna Grieco](#)^{1 2}, [Elżbieta Pańczyszyn](#)^{1 2}, [Flavia Carton](#)^{1 2}, [Claudio Santoro](#)^{1 2 3}, [Sara Del Mare-Roumani](#)⁴, [Sivan Amidror](#)⁴, [Nissan Yissachar](#)⁴, [Francesca Boccafoschi](#)^{1 2}, [Silvia Zucchelli](#)^{1 2 3}, [Marco Corazzari](#)^{5 6 7}

Affiliations

- ¹ Department of Health Science, University of Piemonte Orientale, Novara, Italy.
- ² Center for Translational Research on Autoimmune and Allergic Disease (CAAD), University of Piemonte Orientale, Novara, Italy.
- ³ Interdisciplinary Research Center of Autoimmune Diseases (IRCAD), University of Piemonte Orientale, Novara, Italy.
- ⁴ The Mina and Everard Goodman Faculty of Life Sciences, Bar-Ilan Institute of Nanotechnology and Advanced Materials, Bar-Ilan University, Ramat-Gan, Israel.
- ⁵ Department of Health Science, University of Piemonte Orientale, Novara, Italy. marco.corazzari@uniupo.it.
- ⁶ Center for Translational Research on Autoimmune and Allergic Disease (CAAD), University of Piemonte Orientale, Novara, Italy. marco.corazzari@uniupo.it.
- ⁷ Interdisciplinary Research Center of Autoimmune Diseases (IRCAD), University of Piemonte Orientale, Novara, Italy. marco.corazzari@uniupo.it.
- PMID: [33712560](#)
- PMCID: [PMC7955131](#)
- DOI: [10.1038/s41420-021-00430-2](#)

Free PMC article

Abstract

Celiac disease (CD) is a complex immune-mediated chronic disease characterized by a consistent inflammation of the gastrointestinal tract induced by gluten intake in genetically predisposed individuals. Although initiated by the interaction between digestion-derived gliadin, a gluten component, peptides, and the intestinal epithelium, the disorder is highly complex and involving other components of the intestine, such as the immune system. Therefore, conventional model systems, mainly based on two- or three-dimension cell cultures and co-cultures, cannot fully recapitulate such a complex disease. The development of mouse models has facilitated the study of different interacting cell types involved in the disorder, together with the impact of environmental factors. However, such in vivo models are often expensive and time consuming. Here we propose an organ ex vivo culture (gut-ex-vivo system) based on small intestines from gluten-sensitive mice cultivated in a dynamic condition, able to fully recapitulate the biochemical and morphological features of the mouse model exposed to gliadin (4 weeks), in 16 h. Indeed, upon gliadin exposure, we observed: i) a down-regulation of cystic fibrosis transmembrane regulator (CFTR) and an up-regulation of transglutaminase 2 (TG2) at both mRNA and protein levels; ii) increased intestinal permeability associated with deregulated tight junction protein expression; iii) induction and production of pro-inflammatory cytokines such as interleukin (IL)-

15, IL-17 and interferon gamma (IFN γ); and iv) consistent alteration of intestinal epithelium/villi morphology. Altogether, these data indicate that the proposed model can be efficiently used to study the pathogenesis of CD, test new or repurposed molecules to accelerate the search for new treatments, and to study the impact of the microbiome and derived metabolites, in a time- and cost- effective manner.

Conflict of interest statement

The authors declare no competing interests.

- [16 references](#)
- [6 figures](#)

Full text links



87. [Is Celiac Disease Testing Necessary in Functional Abdominal Disorders? A Study in Predominantly Latino Children](#)

J Pediatr Gastroenterol Nutr. 2021 Apr 1;72(4):542-545. doi: 10.1097/MPG.0000000000002993.

Authors

[Ana C Falcon](#)¹, [Amanda C Fifi](#), [Lilibet Fernandez Valdes](#), [Jessica Jaquez](#), [Carolina Mariaud](#), [Miguel Saps](#)

Affiliation

- ¹ Department of Pediatric Gastroenterology, Hepatology, and Nutrition, University of Miami Miller School of Medicine, Miami, FL.
- PMID: [33230076](#)
- DOI: [10.1097/MPG.0000000000002993](#)

Abstract

Background: Functional abdominal pain disorders (FAPDs) are among the most common causes of consultation in general pediatrics and pediatric gastroenterology. The Rome IV criteria recommend testing for celiac disease (CD) in children with irritable bowel syndrome-diarrhea (IBS-D) and leaves testing in cases of other FAPDs to the practitioner's discretion. These recommendations were based on a single study that showed a 4-fold increase of CD among patients with IBS in Italy. It is unclear if these findings can be extrapolated to other populations. Understanding whether those results are reproducible in areas with different racial/ethnic backgrounds can optimize patient care.

Aim: The aim of the study was to assess the prevalence of CD in a sample of children consulting for FAPDs to a tertiary care center in Miami.

Methods: The charts of all pediatric patients consulting for FAPDs from January 2016 to November 2019 at the University of Miami were reviewed. Demographics, diagnosis, and CD testing for each child were analyzed.

Results: One hundred eighty-one children with FAPDs and celiac testing were seen. Mean age of 12.89 years, girls 61.34%. 84 (46.40%) had a diagnosis of IBS and 97 (53.59%) had a diagnosis of other FAPD. One of 181 children with FAPDs (0/84 with IBS and 1/97 with other FAPDs) had positive CD serological testing and EGD confirmation.

Conclusions: Our study suggests that the prevalence of CD among children with FAPDs is similar to the community prevalence. This data questions the benefit of testing all children FAPDS (including IBS) for CD. Studies with larger sample size and various racial/ethnic makeup should be done to confirm our findings.

Copyright © 2020 by European Society for Pediatric Gastroenterology, Hepatology, and Nutrition and North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition.

Conflict of interest statement

The authors report no conflicts of interest.

- [15 references](#)

Full text links



[Why people follow a gluten-free diet? An application of health behaviour models](#)

88.

Appetite. 2021 Jun 1;161:105136. doi: 10.1016/j.appet.2021.105136. Epub 2021 Jan 26.

Authors

[Vilma Xhakollari](#)¹, [Maurizio Canavari](#)², [Magda Osman](#)³

Affiliations

- ¹ Department of Agricultural and Food Sciences, Alma Mater Studiorum-University of Bologna, Viale Giuseppe Fanin 50, 40127, Bologna, Italy. Electronic address: vilma.xhakollari2@unibo.it.
- ² Department of Agricultural and Food Sciences, Alma Mater Studiorum-University of Bologna, Viale Giuseppe Fanin 50, 40127, Bologna, Italy. Electronic address: maurizio.canavari@unibo.it.

- ³ Biological and Experimental Psychology, School of Biological and Chemical Sciences, Queen Mary University of London, Mile End Road, London, E1 4NS, UK. Electronic address: m.osman@qmul.ac.uk.
- PMID: [33513415](#)
- DOI: [10.1016/j.appet.2021.105136](#)

Abstract

Purpose: To understand factors affecting adherence to GFD by celiac and non-celiac people through the application of behavioural theories, Integrative Model (IM) and Multi Theory Model (MTM).

Methods: Analyses were conducted for a sample of 308 subjects, majority females, celiac and non-celiac. Adherence to GFD was measured considering two scales, self-declared adherence and scored adherence, in order to discern possible inconsistencies between what subjects believe and what they really do. Subsequently, adherence to GFD was modelled by considering constructs of MTM and IM. Moreover, the constructs were designed based on literature review. Ordered logit (OL) model was used to test the IM and MTM theoretical models.

Results: The findings show that adherence to GFD is affected mainly by attitudes towards GFD, self-efficacy, injunctive norms, knowledge about GFD and health conditions. Between the two models, IM and MTM, results show that all constructs of IM explain the behaviour. Contrary, for MTM, results indicate only some constructs of the MTM explain adherence to GFD.

Conclusions: Results of this study should be considered for improving the adherence to GFD for celiac people. Furthermore, it is important to consider the non-celiac people's perceptions for GFD and GF products. In other words an accurate information about the diet and products it is relevant for supporting people to make healthier food choices. Finally, as the results show, IM explain adherence to GFD better than MTM.

Keywords: Adherence; Celiac; Gluten free diet; Integrative model; Multi theory model; Non-celiac.

Copyright © 2021 Elsevier Ltd. All rights reserved.

Full text links



89. [Classification of intestinal T-cell receptor repertoires using machine learning methods can identify patients with coeliac disease regardless of dietary gluten status](#)

J Pathol. 2021 Mar;253(3):279-291. doi: 10.1002/path.5592. Epub 2021 Jan 6.

Authors

[Andrew D Foers](#)¹, [M Saad Shoukat](#)¹, [Oliver E Welsh](#)^{1 2}, [Killian Donovan](#)³, [Russell Petry](#)^{1 2},
[Shelley C Evans](#)¹, [Michael Eb FitzPatrick](#)⁴, [Nadine Collins](#)⁵, [Paul Klenerman](#)^{4 6}, [Anna Fowler](#)^{# 7},
[Elizabeth J Soilleux](#)^{# 1 8}

Affiliations

- ¹ Department of Pathology, University of Cambridge, Cambridge, UK.
- ² Centre for Mathematical Sciences, University of Cambridge, Cambridge, UK.
- ³ Oxford University Medical School, Oxford, UK.
- ⁴ Translational Gastroenterology Unit, Nuffield Department of Medicine, University of Oxford, Oxford, UK.
- ⁵ Department of Molecular Pathology, Royal Surrey NHS Foundation Trust, Guildford, UK.
- ⁶ Peter Medawar Building for Pathogen Research, University of Oxford, Oxford, UK.
- ⁷ Department of Health Data Science, Institute of Population Health, University of Liverpool, Liverpool, UK.
- ⁸ Nuffield Division of Clinical Laboratory Sciences, Radcliffe Department of Medicine, University of Oxford, Oxford, UK.

Contributed equally.

- PMID: [33225446](#)
- PMCID: [PMC7898595](#)
- DOI: [10.1002/path.5592](#)

Free PMC article

Abstract

In coeliac disease (CeD), immune-mediated small intestinal damage is precipitated by gluten, leading to variable symptoms and complications, occasionally including aggressive T-cell lymphoma. Diagnosis, based primarily on histopathological examination of duodenal biopsies, is confounded by poor concordance between pathologists and minimal histological abnormality if insufficient gluten is consumed. CeD pathogenesis involves both CD4⁺ T-cell-mediated gluten recognition and CD8⁺ and $\gamma\delta$ T-cell-mediated inflammation, with a previous study demonstrating a permanent change in $\gamma\delta$ T-cell populations in CeD. We leveraged this understanding and explored the diagnostic utility of bulk T-cell receptor (TCR) sequencing in assessing duodenal biopsies in CeD. Genomic DNA extracted from duodenal biopsies underwent sequencing for TCR- δ (TRD) (CeD, n = 11; non-CeD, n = 11) and TCR- γ (TRG) (CeD, n = 33; non-CeD, n = 21). We developed a novel machine learning-based analysis of the TCR repertoire, clustering samples by diagnosis. Leave-one-out cross-validation (LOOCV) was performed to validate the classification algorithm. Using TRD repertoire, 100% (22/22) of duodenal biopsies were correctly classified, with a LOOCV accuracy of 91%. Using TCR- γ (TRG) repertoire, 94.4% (51/54) of duodenal biopsies were correctly classified, with LOOCV of 87%. Duodenal biopsy TRG repertoire analysis permitted accurate classification of biopsies from patients with CeD following a strict gluten-free diet for at least 6 months, who would be misclassified by current tests. This result reflects permanent changes to the duodenal $\gamma\delta$ TCR repertoire in CeD, even in the absence of gluten consumption. Our method could complement or replace histopathological diagnosis in CeD and might have particular clinical utility in the diagnostic testing of patients unable to tolerate dietary gluten, and

for assessing duodenal biopsies with equivocal features. This approach is generalisable to any TCR/BCR locus and any sequencing platform, with potential to predict diagnosis or prognosis in conditions mediated or modulated by the adaptive immune response. © 2020 The Authors. The Journal of Pathology published by John Wiley & Sons, Ltd. on behalf of The Pathological Society of Great Britain and Ireland.

Keywords: T-cell receptor repertoire; T-lymphocyte; TRD; TRG; clustering; coeliac disease; duodenum; gluten; machine learning.

© 2020 The Authors. The Journal of Pathology published by John Wiley & Sons, Ltd. on behalf of The Pathological Society of Great Britain and Ireland.

- [51 references](#)
- [4 figures](#)

Full text links



[Nonbiopsy Approach for Celiac Disease Is Accurate When Using Exact Duodenal Histomorphometry: Prospective Study in 2 Countries](#)

90.

J Clin Gastroenterol. 2021 Mar 1;55(3):227-232. doi: 10.1097/MCG.0000000000001349.

Authors

[Alina Popp](#)^{1 2 3}, [Taina Arvola](#)^{4 5}, [Juha Taavela](#)^{1 2 6}, [Laura Kivelä](#)^{1 2}, [Adina Ene](#)³, [Kaija Laurila](#)^{1 2}, [Päivi Saavalainen](#)⁷, [Markku Mäki](#)^{1 2}, [Kalle Kurppa](#)^{1 2 8 3}

Affiliations

- ¹ Centre for Child Health Research, Tampere University.
- ² Department of Pediatrics, Tampere University Hospital.
- ³ National Institute for Mother and Child Health, University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania.
- ⁴ Allergy Centre, Tampere University Hospital, Tampere.
- ⁵ Hämeenlinna Central Hospital, Hämeenlinna.
- ⁶ Central Finland Central Hospital, Jyväskylä.
- ⁷ Research Programs Unit, Immunobiology and Department of Medical Genetics, Haartman Institute, University of Helsinki, Helsinki.
- ⁸ The University Consortium of Seinäjoki, Seinäjoki, Finland.
- PMID: [32301831](#)
- DOI: [10.1097/MCG.0000000000001349](#)

Abstract

Goals: To test the accuracy of serology-based criteria for diagnosing celiac disease utilizing quantitative histomorphometry.

Background: The revised European pediatric guidelines allow noninvasive celiac disease diagnosis for a subgroup of children. However, in some of the studies on this issue, the positive predictive value (PPV) of serology has remained suboptimal, possibly because of challenges of histopathology as the reference standard.

Study: Prospectively enrolled children with transglutaminase 2 antibodies (TGA) above the upper limit of normal (ULN) underwent blood sampling and duodenal biopsy in Finland and Romania. Those with TGA $\geq 10 \times$ ULN, positive endomysium antibodies (EmA), and disease-associated genetics were considered to fulfill triple criteria for celiac disease. Initial histopathologic analysis was conducted using grouped classification, whereupon centralized morphometry was performed.

Results: Altogether 88 (54%) children were triple positive. In local evaluation, 99% of triple-positive children and 73% of children with TGA $< 10 \times$ ULN had celiac disease. These figures increased to 100% and 85% after more precise morphometric analysis. Triple-positive children had more anemia and higher median EmA and liver enzyme values than those with TGA $< 10 \times$ ULN; the groups were comparable in other clinical features and laboratory parameters.

Conclusions: When applied as recommended, the nonbiopsy strategy had already yielded excellent PPV regardless of the site of diagnosis or clinical presentation in the local analysis. PPV further increased to 100% with standardized duodenal morphometry.

Copyright © 2020 Wolters Kluwer Health, Inc. All rights reserved.

- [38 references](#)

Full text links



[Reliability of anti-tissue transglutaminase antibodies in children with malnutrition](#)

91.

Scand J Gastroenterol. 2021 Apr;56(4):378-381. doi: 10.1080/00365521.2021.1882554. Epub 2021 Feb 16.

Authors

[Necati Balamtekin](#)¹, [Harun Erdal](#)², [Emira Gençkardeşler](#)³, [Melike Arslan](#)¹

Affiliations

- ¹ Department of Pediatrics, Division of Pediatric Gastroenterology, University of Health Sciences, Gülhane Training and Research Hospital, Ankara, Turkey.
- ² Department of Internal Medicine, Division of Gastroenterology, University of Health Sciences, Gülhane Training and Research Hospital, Ankara, Turkey.
- ³ Department of Pediatrics, University of Health Sciences, Gülhane Training and Research Hospital, Ankara, Turkey.
- PMID: [33590788](#)
- DOI: [10.1080/00365521.2021.1882554](#)

Abstract

Objectives: Serological markers are used in the diagnosis of celiac disease. Among these, the most widely used are tissue transglutaminase antibodies (anti-TG2 antibodies). It has been suggested that the mechanisms that are set in motion by malnutrition cause the tight connections between enterocytes to expand, which allows gluten-derived peptides to pass through the epithelium. This causes the production of anti-TG2 antibodies without the presence of celiac disease.

Methods: The patients who were examined for malnutrition and had their anti-TG2 antibody levels measured at the same time, were accepted into the study. The patients who were investigated for suspected celiac disease, showed no signs of malnutrition, and had their anti-TG2 antibody levels measured were accepted into a control group.

Results: The study population consisted of 126 children with mild malnutrition (54.8% female, 7.44 ± 5.38 years); 89 children with moderate malnutrition (54.8% female, 7.62 ± 5.43 years), and a control group of 200 children (53.2% female, 7.72 ± 5.05 years). According to the results, anti-TG2 IgG levels were significantly higher among patients in the mild and moderate malnutrition groups compared to patients in the control group ($p = .02$ and $p = .01$, respectively). However, there was no significant difference between the mild and moderate malnutrition groups ($p > .05$).

Conclusions: Malnutrition does not affect anti-TG2 IgA levels in children. However, anti-TG2 IgG levels increase in children suffering from malnutrition. When examining celiac disease, especially in people with a background IgA deficiency, doctors should consider whether malnutrition may be the cause of the increase in serum anti-TG2 IgG levels without celiac disease.

Keywords: Malnutrition; anti-tissue transglutaminase antibodies; children.

Full text links



[A practical approach to the patient with chronic diarrhoea](#)

Authors

[George E Hiner](#)¹, [Julian Rf Walters](#)²

Affiliations

- ¹ Imperial College Healthcare NHS Trust, London, UK.
- ² Imperial College Healthcare NHS Trust, London, UK and professor, Imperial College London, London, UK julian.walters@imperial.ac.uk.
- PMID: [33762371](#)
- PMCID: [PMC8002812](#)
- DOI: [10.7861/clinmed.2021-0028](#)

Free PMC article

Abstract

Chronic diarrhoea is common, occurring as the first presentation of several diagnoses, or as a prolonged disorder where stool frequency, urgency and incontinence have major impacts on quality of life. Good history taking is necessary, with different causes to be considered: onset and duration of symptoms, previous treatments, co-existing conditions, travel and drug use may all be relevant. Tests include blood and faecal screening. Exclusion of inflammatory bowel disease and colorectal neoplasia is important and may require colonoscopy. Coeliac disease, microscopic colitis and bile acid diarrhoea are all common conditions which should not be missed, as specific therapy is available for each of these. Functional bowel disorders with diarrhoea are prevalent, overlapping with other more treatable conditions. Dietetic assessment and advice are helpful. Awareness of high FODMAP foods, with identification of individual sensitivities, is often beneficial.

Keywords: bile acid diarrhoea; coeliac disease; functional bowel disorders; irritable bowel syndrome; microscopic colitis.

© Royal College of Physicians 2021. All rights reserved.

Full text links



[Early life antibiotics and childhood gastrointestinal disorders: a systematic review](#)

93.

BMJ Paediatr Open. 2021 Mar 3;5(1):e001028. doi: 10.1136/bmjpo-2021-001028. eCollection 2021.

Authors

[Kim Kamphorst](#)^{# 1 2}, [Emmy Van Daele](#)^{# 3}, [Arine M Vlieger](#)², [Joost G Daams](#)⁴, [Jan Knol](#)^{3 5}, [Ruurd M van Elburg](#)¹

Affiliations

- ¹ Pediatrics, Amsterdam Gastroenterology, Metabolism & Nutrition, Amsterdam Reproduction & Development Amsterdam, Amsterdam UMC Location AMC, Amsterdam, The Netherlands.
- ² Paediatrics, Sint Antonius Ziekenhuis, Nieuwegein, The Netherlands.
- ³ Laboratory of Microbiology, Wageningen Universiteit en Research, Wageningen, The Netherlands.
- ⁴ Medical Library, Amsterdam UMC Location AMC, Amsterdam, The Netherlands.
- ⁵ Gut biology and microbiology, Danone Nutricia Research, Utrecht, The Netherlands.

Contributed equally.

- PMID: [33748435](#)
- PMCID: [PMC7931764](#)
- DOI: [10.1136/bmjpo-2021-001028](#)

Free PMC article

[Abstract](#)

Background: In adults, there is increasing evidence for an association between antibiotic use and gastrointestinal (GI) disorders but in children, the evidence is scarce.

Objective: Assess the association between exposure to antibiotics in the first 2 years of life in term born children and the presence of chronic GI disorders later in childhood.

Design: For this systematic review the MEDLINE, Embase, WHO trial register and Web of Science were systematically searched from inception to 8 June 2020. Title and abstract screening (n=12 219), full-text screening (n=132) as well as the quality assessment with the Newcastle-Ottawa Scale were independently performed by two researchers.

Main outcome measures: The association between antibiotics and inflammatory bowel disease (IBD) (n=6), eosinophilic oesophagitis (EoE) (n=5), coeliac disease (CeD) (n=6), infantile colics (n=3), functional constipation (n=2), recurrent abdominal pain, regurgitation, functional diarrhoea and infant dyschezia were examined.

Results: Twenty-two studies were included, 11 cohort and 11 case-control studies. A best evidence synthesis showed strong evidence for an association between antibiotic exposure in the first 2 years of life and the presence of IBD, and CeD during childhood. Moderate evidence was found for an association with EoE and no association with functional constipation in the first year of life. There was insufficient evidence for the other studied disorders.

Conclusions: The use of antibiotics in early life may increase the risk of GI disorders later in life. Further studies are necessary to unravel the underlying mechanisms and determine potential

preventive measures. Meanwhile judicious use of antibiotics in early childhood is highly warranted.

Prospero registration number: PROSPERO CRD42019132631.

Keywords: epidemiology; gastroenterology; neonatology.

© Author(s) (or their employer(s)) 2021. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

Conflict of interest statement

Competing interests: JK is a fulltime employee of Danone Nutricia Research (DNR), the PhD trajectory of EVD and KK are partly sponsored by DNR.

- [52 references](#)
- [2 figures](#)

Full text links



94. [Effect of substituting wet corn gluten feed and corn stover for alfalfa hay in total mixed ration silage on lactation performance in dairy cows](#)

Animal. 2021 Mar;15(3):100013. doi: 10.1016/j.animal.2020.100013. Epub 2021 Feb 6.

Authors

[G N Zhang](#)¹, [Y Li](#)¹, [C Zhao](#)¹, [X P Fang](#)¹, [Y G Zhang](#)²

Affiliations

- ¹ College of Animal Science and Technology, Northeast Agricultural University, Harbin 150030, China.
- ² College of Animal Science and Technology, Northeast Agricultural University, Harbin 150030, China. Electronic address: zhangyonggen@sina.com.
- PMID: [33558089](#)
- DOI: [10.1016/j.animal.2020.100013](https://doi.org/10.1016/j.animal.2020.100013)

Free article

[Abstract](#)

Wet corn gluten feed (WCGF) is a high moisture feed containing rapidly digestible, non-forage fiber and protein. The objective of this study was to investigate the effect of substituting WCGF and corn stover for alfalfa hay in total mixed ration (TMR) silage on lactation performance and

nitrogen balance in dairy cows. Nine multiparous Holstein dairy cows (BW = 532 ± 28.9 kg and day in milk = 136 ± 5.6 d; mean ± SD) were used in a replicated 3 × 3 Latin square design with 21-d periods (14 d of diet adaption and 7 d of sample collection). Groups were balanced for parity, day in milk, and milk production and consumed one of three treatment diets during each period. The treatment diets were fed as TMR and contained similar concentrate mixtures and corn silage but different proportions of roughage and WCGF. The three treatments were: (1) 0% WCGF, 0% corn stover, and 22.1% alfalfa hay (0% WCGF); (2) 6.9% WCGF, 3.4% corn stover, and 11.8% alfalfa hay (7% WCGF); and (3) 13.3% WCGF, 4.9% corn stover, and 3.9% alfalfa hay (13.3% WCGF). Compared to the 0% WCGF diet, the cows fed the 7% and 13.3% WCGF diets had a higher milk yield and concentration of milk fat, protein, lactose, and total solids. Effective degradability of DM was higher in the cows fed the 7% and 13.3% WCGF diets than it was with the 0% WCGF diet. Cows fed the 13.3% WCGF had a higher CP effective degradability and a lower rumen undegraded protein than cows fed the 0% WCGF diet. The concentration of ruminal volatile fatty acids and ammonia-N was higher in cows fed the 7% and 13.3% WCGF diets than cows fed the 0% WCGF diet. The fecal N was lower in cows fed the 7% and 13.3% WCGF diets than it was in cows fed the 0% WCGF diet. Milk N secretion and milk N as a percent of N intake were higher in cows fed the 13.3% WCGF diet than cows fed the 0% and 7% WCGF diets. In conclusion, it appears that feeding a TMR silage containing WCGF and corn stover in combination, replacing a portion of alfalfa hay, may improve lactation performance and nitrogen utilization for lactating dairy cows.

Keywords: By-products; Milk composition; Nitrogen balance; Nutrient digestibility; Ruminal parameter.

Copyright © 2021. Published by Elsevier B.V.

Full text links



[Colonic paracellular permeability and circulating zonulin-related proteins](#)

95.

Scand J Gastroenterol. 2021 Apr;56(4):424-431. doi: 10.1080/00365521.2021.1879247. Epub 2021 Feb 3.

Authors

[Felipe Meira de-Faria](#)¹, [Olga Bednarska](#)^{1 2}, [Magnus Ström](#)^{1 2}, [Johan D Söderholm](#)^{1 3}, [Susanna A Walter](#)^{1 2}, [Åsa V Keita](#)¹

Affiliations

- ¹ Department of Biomedical and Clinical Sciences, Linköping University, Linköping, Sweden.
- ² Department of Gastroenterology, Linköping University, Linköping, Sweden.
- ³ Department of Surgery, Linköping University, Linköping, Sweden.

- PMID: [33535002](#)

- DOI: [10.1080/00365521.2021.1879247](https://doi.org/10.1080/00365521.2021.1879247)

Abstract

Objective: Irritable bowel syndrome (IBS) is a gut-brain disorder associated with increased gut permeability. Zonulin has been suggested to regulate the gut barrier and claimed to be pre-haptoglobin 2 (pre-HP2) and circulating zonulin is often used as a proxy for gastrointestinal permeability. This study investigated the correlation between colonic paracellular permeability and levels of circulating zonulin and pre-HP2.

Materials and methods: Colonic biopsies from 32 patients with IBS and 15 healthy controls (HC) were used to measure permeability in Ussing chambers and levels of zonulin (Cusabio ELISA). Zonulin was also measured in blood samples from 40 HC, 78 patients with IBS and 20 patients with celiac disease (CeD), before and after a gluten-free diet. In addition, we verified HP genotype and circulating pre-HP2 using a monoclonal pre-HP2 antibody (Bio-Rad) by ELISA.

Results: Increased colonic paracellular permeability correlated positively with zonulin levels in IBS biopsies, but negatively with plasma zonulin. We found no agreement between circulating zonulin and pre-HP2. Genotyping revealed non-specificity of the zonulin kit, as all pre-HP2 non-producers presented detectable levels. Patients with CeD displayed higher pre-HP2 and zonulin levels compared to HC. A gluten-free diet in patients with CeD led to lower serum zonulin and pre-HP2 concentrations.

Conclusions: Our study suggests that neither circulating zonulin nor pre-HP2 mirror colonic permeability. Our data corroborate previous reports showing the inability of the Cusabio zonulin kit to target zonulin and highlights that the results of studies using this kit must be re-examined with caution.

Keywords: Colonic paracellular permeability; ELISA; irritable bowel syndrome; pre-haptoglobin 2; zonulin.

Full text links



[The association between ectopic pregnancy and inflammatory bowel disease, irritable bowel syndrome, and celiac disease: A systematic review](#)

96.

J Obstet Gynaecol Res. 2021 Mar 17. doi: 10.1111/jog.14705. Online ahead of print.

Authors

[Jonah I R Talavera](#)¹, [Allison M Parrill](#)¹, [Chris Elsayad](#)², [Joshua Fogel](#)^{3 4}, [John C Riggs](#)⁴, [Bo Peng](#)¹

Affiliations

- ¹ American University of the Caribbean, School of Medicine, Cupecoy, Sint Maarten (Dutch part), Netherlands Antilles.
- ² Department of Medicine, Nassau University Medical Center, East Meadow, New York, USA.
- ³ Department of Business Management, Brooklyn College, Brooklyn, New York, USA.
- ⁴ Department of Obstetrics and Gynecology, Nassau University Medical Center, East Meadow, New York, USA.
- PMID: [33733538](#)
- DOI: [10.1111/jog.14705](#)

Abstract

Aim: Inflammatory bowel disease (IBD), irritable bowel syndrome (IBS), and celiac disease (CeD) more commonly affect women of reproductive age. The aim of our study is to evaluate the association between ectopic pregnancy (EP) in women with IBD, IBS, and CeD.

Methods: We searched MEDLINE, Web of Science, and CINAHL from the database inception date through December 31, 2020. Peer-reviewed publications and abstracts written in English, regarding the association between EP and IBD, IBS, and CeD with controls were included. Quality assessment was conducted based on GRADE criteria. Analyses included odds ratios (ORs) with 95% confidence intervals (CIs). Heterogeneity between studies was presented with I^2 .

Results: We included five population-based cohort studies. The odds of EP significantly increased in Crohn's disease (CD), but not ulcerative colitis (UC) as compared to IBD-free controls. The odds of EP significantly increased in IBS as compared to women without IBS. No significant difference was observed for odds of EP in women with and without CeD.

Conclusions: Possible evidence of associations between EP and CD as well as IBS were observed; however, not with UC and CeD. Pregnant women with chronic inflammatory bowel pathologies may warrant cautious monitoring.

Keywords: gastrointestinal and hepatic; gastrointestinal disorders; pregnancy loss (abortion, ectopic pregnancy).

© 2021 Japan Society of Obstetrics and Gynecology.

- [36 references](#)

Full text links



[Indications, Contraindications, and Considerations for Video Capsule Endoscopy](#)

97.

Gastrointest Endosc Clin N Am. 2021 Apr;31(2):267-276. doi: 10.1016/j.giec.2020.12.002. Epub 2021 Feb 15.

Authors

[Jacquelyn G Bolwell](#)¹, [Daniel Wild](#)²

Affiliations

- ¹ Duke University Medical Center, 1151 Duke South, Yellow Zone, Box 3534, Durham, NC 27710, USA.
- ² Division of Gastroenterology, Duke University Medical Center, Durham, NC, USA. Electronic address: daniel.wild@duke.edu.
- PMID: [33743925](#)
- DOI: [10.1016/j.giec.2020.12.002](#)

Abstract

Video capsule endoscopy is indicated in a broad range of clinical settings, most commonly in evaluating suspected small bowel bleeding. It is also useful in diagnosing Crohn's disease and monitoring patients with known Crohn's. Video capsule endoscopy has a role in evaluating patients with refractory celiac disease symptoms and in surveying patients with polyposis syndromes. The only absolute contraindication to video capsule endoscopy is luminal gastrointestinal tract obstruction. Despite manufacturer statement, video capsule endoscopy can be used safely in patients with implantable cardiac devices including pacemakers, defibrillators, and ventricular assist devices.

Keywords: Contraindications; Indications; Video capsule endoscopy.

Copyright © 2020 Elsevier Inc. All rights reserved.

Conflict of interest statement

Disclosure Neither author has any pertinent disclosures.

Full text links



[Double-headed small-bowel capsule endoscopy: Real-world experience from a multi-centre British study](#)

98.

Dig Liver Dis. 2021 Apr;53(4):461-466. doi: 10.1016/j.dld.2021.01.017. Epub 2021 Feb 8.

Authors

[D E Yung](#)¹, [A R Robertson](#)¹, [M Davie](#)², [R Sidhu](#)³, [M McAlindon](#)³, [I Rahman](#)⁴, [P Patel](#)⁴, [L Sinha](#)⁵, [S Mason](#)⁵, [J Brzeszczynska](#)², [S Douglas](#)¹, [J N Plevris](#)⁶, [A Koulaouzidis](#)⁷

Affiliations

- ¹ The Royal Infirmary of Edinburgh, Edinburgh, UK.
- ² The University of Edinburgh, College of Medicine and Veterinary Medicine, Edinburgh, UK.
- ³ Royal Hallamshire Hospital, Sheffield, UK.
- ⁴ Southampton General Hospital, Southampton, UK.
- ⁵ Queen's Hospital, Romford, UK.
- ⁶ The Royal Infirmary of Edinburgh, Edinburgh, UK; The University of Edinburgh, College of Medicine and Veterinary Medicine, Edinburgh, UK.
- ⁷ The Royal Infirmary of Edinburgh, Edinburgh, UK; Department of Social Medicine & Public Health, Faculty of Health Sciences, Pomeranian Medical University, Szczecin, Poland. Electronic address: akoulaouzidis@hotmail.com.
- PMID: [33574013](https://pubmed.ncbi.nlm.nih.gov/33574013/)
- DOI: [10.1016/j.dld.2021.01.017](https://doi.org/10.1016/j.dld.2021.01.017)

Abstract

Introduction: Capsule endoscopy (CE) is well established the investigation of small-bowel (SB) pathology. We compared the use of double-headed (DH) capsules, to conventional single-headed (SH), in a real-world patient cohort in the first multicentre British study.

Methods: Over 9 months, patients referred for routine SBCE at 4 tertiary referral centres in the UK underwent DH CE instead of conventional SH using MiroCam[®] MC2000 as per local protocols. One head (L/R) was chosen at random and reported by an expert reviewer. The DH recordings, anonymised and randomised, reported by another expert or re-read after a 4-week interval. For each CE, numbers and types of findings and overall conclusion/diagnosis were compared between SH and DH examinations.

Results: 211 CEs were performed. 7 failed to reach the SB; 204 analysed. Indications were: SB bleeding (n = 94); ?SB inflammation or reassessment of known inflammatory bowel disease (IBD) (n = 84); ?SB neoplasia including suspicious radiological imaging (n = 15); and, others e.g. ?celiac disease (n = 11). For SB bleeding: 27/94 (28.7%) examinations reported differences between SH and DH readings. In 17 (18.1%) the findings were clinically significant. SH CE missed angiectasias (5 pts), SB inflammation (7 pts), oesophagitis (2 pts) and SB masses (2 pts). In 1 patient, the extent of angiectasias seen was greater on the DH reading. For IBD: findings differed in 30/84 (35.7%) of CEs; 11 (13.1%) were clinically significant. In 5, signs of active inflammation were missed by the SH reading. In 6, assessment of extent/severity differed. For ?SB neoplasia findings differed in 2/15 (13.3%) of examinations. Both were clinically significant. For others: 1/11 (9.1%) examinations differed; however, not deemed clinically significant. Overall, use of DH CE impacted the diagnosis in 30/204 (14.7%).

Conclusions: The use of DH CE provides more information with the potential to change clinical diagnosis and therefore management. Therefore, the routine adoption of DH CE in SB assessment should be considered.

Keywords: Bleeding; Capsule endoscopy; Double headed; Inflammatory bowel disease; Neoplasia; Small bowel.

Copyright © 2021 Editrice Gastroenterologica Italiana S.r.l. Published by Elsevier Ltd. All rights reserved.

Conflict of interest statement

Declaration of Competing Interest The above authors have no COI but would like to disclose material support for this study by IntroMedic and SynMed.

Full text links



99. [TAK-101 Nanoparticles Induce Gluten-Specific Tolerance in Celiac Disease: A Randomized, Double-Blind, Placebo-Controlled Study](#)

Gastroenterology. 2021 Mar 12;S0016-5085(21)00521-7. doi: 10.1053/j.gastro.2021.03.014. Online ahead of print.

Authors

[Ciarán P Kelly](#)¹, [Joseph A Murray](#)², [Daniel A Leffler](#)³, [Daniel R Getts](#)⁴, [Adam C Bledsoe](#)⁵, [Glennnda Smithson](#)⁶, [M Roy First](#)⁷, [Amy Morris](#)⁷, [Michael Boyne](#)⁷, [Adam Elhofy](#)⁷, [Tsung-Teh Wu](#)⁸, [Joseph R Podojil](#)⁹, [Stephen D Miller](#)¹⁰, [TAK-101 Study Group](#)

Affiliations

- ¹ Medical Director, Celiac Center, Beth Israel Deaconess Medical Center; Professor of Medicine, Harvard Medical School, Boston, Massachusetts.
- ² Professor of Medicine, Mayo Clinic, Rochester, Minnesota.
- ³ Associate Professor of Medicine, Beth Israel Deaconess Medical Center, Harvard Medical School Celiac Research Program, Boston, Massachusetts; Medical Director, Clinical Science, Takeda Pharmaceuticals International Co., Cambridge, Massachusetts.
- ⁴ Chief Scientific Officer, COUR Pharmaceuticals Development Co., Inc., Northbrook, Illinois; Department of Microbiology-Immunology, Feinberg School of Medicine, Northwestern University, Chicago, Illinois.
- ⁵ Fellow, Division of Gastroenterology and Hepatology, Mayo Clinic, Rochester, Minnesota.
- ⁶ Director, GI Drug Discovery Unit, Takeda Pharmaceuticals International Co., Cambridge, Massachusetts.
- ⁷ Chief Medical Officer (RF), Vice President of Clinical Development and Regulatory Affairs (AM), Director of Immunology (JRP), Vice President of Product Development (MB),

Director of Immunology (AE); COUR Pharmaceuticals Development Co., Inc., Northbrook, Illinois.

- ⁸ Professor of Pathology, Mayo Clinic, Rochester, Minnesota.
- ⁹ Chief Medical Officer (RF), Vice President of Clinical Development and Regulatory Affairs (AM), Director of Immunology (JRP), Vice President of Product Development (MB), Director of Immunology (AE); COUR Pharmaceuticals Development Co., Inc., Northbrook, Illinois; Research Associate Professor of Microbiology-Immunology, Department of Microbiology-Immunology, Feinberg School of Medicine, Northwestern University, Chicago, Illinois.
- ¹⁰ Professor of Microbiology-Immunology and Dermatology, Feinberg School of Medicine, Northwestern University, Chicago, Illinois. Electronic address: s-d-miller@northwestern.edu.
- PMID: [33722583](https://pubmed.ncbi.nlm.nih.gov/33722583/)
- DOI: [10.1053/j.gastro.2021.03.014](https://doi.org/10.1053/j.gastro.2021.03.014)

Abstract

Background & aims: In celiac disease (CeD), gluten induces immune activation, leading to enteropathy. TAK-101, gluten protein (gliadin) encapsulated in negatively charged poly(dl-lactide-co-glycolic acid) nanoparticles, is designed to induce gluten-specific tolerance.

Methods: TAK-101 was evaluated in phase 1 dose escalation safety and phase 2a double-blind, randomized, placebo-controlled studies. Primary endpoints included pharmacokinetics, safety, and tolerability of TAK-101 (phase 1) and change from baseline in circulating gliadin-specific IFN- γ -producing cells at day 6 of gluten challenge, in patients with CeD (phase 2a). Secondary endpoints in the phase 2a study included changes from baseline in enteropathy (villus height to crypt depth ratio [Vh:Cd]), and frequency of intestinal intraepithelial lymphocytes (IELs) and peripheral gut-homing T cells.

Results: In phase 2a, thirty-three randomized patients completed the 14-day gluten challenge. TAK-101 induced an 88% reduction in change from baseline in IFN- γ spot-forming units versus placebo (2.01 vs 17.58, $P=.006$). Vh:Cd deteriorated in the placebo group (-0.63, $P=.002$), but not in the TAK-101 group (-0.18, $P=.110$), although the intergroup change from baseline was not significant ($P=0.08$). IEL numbers remained equal. TAK-101 reduced changes in circulating $\alpha 4\beta 7^+CD4^+$ (0.26 vs 1.05, $P=.032$), $\alpha E\beta 7^+CD8^+$ (0.69 vs 3.64, $P=.003$), and $\gamma\delta$ (0.15 vs 1.59, $P=.010$) effector memory T cells. TAK-101 (up to 8 mg/kg) induced no clinically meaningful changes in vital signs or routine clinical laboratory evaluations. No serious adverse events occurred.

Conclusions: TAK-101 was well tolerated and prevented gluten-induced immune activation in CeD. The findings from the present clinical trial suggest that antigen-specific tolerance was induced and represent a novel approach translatable to other immune-mediated diseases.

Keywords: antigen-specific immune tolerance; gliadin.

Full text links



100. [The multiple faces of autoimmune/immune-mediated myocarditis in children: a biopsy-proven case series treated with immunosuppressive therapy](#)

ESC Heart Fail. 2021 Apr;8(2):1604-1609. doi: 10.1002/ehf2.13163. Epub 2021 Jan 16.

Authors

[Renzo Marcolongo](#)¹, [Stefania Rizzo](#)², [Alessia Cerutti](#)³, [Elena Reffo](#)³, [Biagio Castaldi](#)³, [Anna Baritussio](#)⁴, [Cristina Basso](#)², [Giovanni Di Salvo](#)³, [Alida L P Caforio](#)⁴

Affiliations

- ¹ Hematology and Clinical Immunology, Department of Medicine, University of Padova, Padova, Italy.
 - ² Cardiovascular Pathology Unit, Department of Cardiac, Thoracic, Vascular Sciences and Public Health, University of Padova, Padova, Italy.
 - ³ Pediatric Cardiology, Department of Woman and Child Health, University of Padova, Padova, Italy.
 - ⁴ Division of Cardiology, Department of Cardiac Thoracic Vascular Sciences and Public Health, University of Padova, Padova, Italy.
- PMID: [33452872](#)
 - DOI: [10.1002/ehf2.13163](#)

Free article

Abstract

The role of immunosuppressive therapy (IT) in paediatric autoimmune/immune-mediated myocarditis remains poorly defined. To explore its role, we present a series of three consecutive paediatric patients with biopsy-proven, virus negative, autoimmune/immune-mediated myocarditis, with distinct clinical and pathological features, who have been successfully treated with IT, a 14-year-old boy with Loeffler's fibroblastic parietal endomyocarditis, a 6-year-old child with celiac disease with chronic active lymphocytic myocarditis, and a 13-year-old boy with long-standing heart failure and active lymphocytic myocarditis. Patients started IT and entered follow-up between July 2017 and September 2019; the first patient completed IT. IT was associated with a substantial and sustained recovery of cardiac function in our patients, regardless of their heterogeneous clinical and pathological features. Combination IT was well tolerated and enabled tapering and weaning off steroids.

Keywords: Children; Endomyocardial biopsy; Immunosuppressive therapy; Myocarditis.

- [15 references](#)

Full text links



101. [Outcomes After Open and Endovascular Repair of Non-Ruptured True Pancreaticoduodenal and Gastroduodenal Artery Aneurysms Associated with Coeliac Artery Compression: A Multicentre Retrospective Study](#)

Eur J Vasc Endovasc Surg. 2021 Mar 21;S1078-5884(21)00173-8. doi: 10.1016/j.ejvs.2021.02.023. Online ahead of print.

Authors

[Giulio Illuminati](#)¹, [Aurélien Hostalrich](#)², [Rocco Pasqua](#)¹, [Priscilla Nardi](#)¹, [Xavier Chaufour](#)², [Jean-Baptiste Ricco](#)³

Affiliations

- ¹ Department of Surgical Sciences, University of Rome - La Sapienza, Rome, Italy.
- ² Department of Vascular Surgery, University Hospital Rangueil, Toulouse, France.
- ³ Department of Clinical Research, University Hospital of Poitiers, Poitiers, France.
Electronic address: jean.baptiste.ricco@univ-poitiers.fr.

- PMID: [33762153](#)
- DOI: [10.1016/j.ejvs.2021.02.023](#)

Abstract

Objective: True aneurysms of the peri-pancreatic arcade (PDAA) have been attributed to increased collateral flow related to coeliac axis (CA) occlusion by a median arcuate ligament (MAL). Although PDAA exclusion is currently recommended, simultaneous CA release and the technique to be used are debated. The aim of this retrospective multicentre study was to compare the results of open surgical repair of true non-ruptured PDAA with release or CA bypass (group A) vs. coil embolisation of PDAA and CA stenting or laparoscopic release (group B).

Methods: From January 1994 to February 2019, 57 consecutive patients (group A: 31 patients; group B: 26 patients), including 35 (61%) men (mean age 56 ± 11 years), were treated at three centres. Twenty-six patients (46%) presented with non-specific abdominal pain: 15 (48%) in group A and 11 (42%) in group B (p = .80).

Results: No patient died during the post-operative period. At 30 days, all PDAAs following open repair and embolisation had been treated successfully. In group A, all CAs treated by MAL release

or bypass were patent. In group B, 2/12 CA stentings failed at < 48 hours, and all MAL released by laparoscopy were successful. Median length of hospital stay was significantly greater in group A than in group B (5 vs. 3 days; $p = .001$). In group A, all PDAAs remained excluded. In group B, three PDAA recanalizations following embolisation were treated successfully (two redo embolisations and one open surgical resection). At six years, Kaplan-Meier estimates of freedom for PDAA recanalisation were 100% in group A, and $88\% \pm 6\%$ in group B ($p = .082$). No PDAA ruptured during follow up. In group A, all 37 CAs treated by MAL release were patent, and one aortohepatic bypass occluded. In group B, five CAs occluded: four after stenting and the other after laparoscopic MAL release with two redo stenting and three aortohepatic bypasses. Estimates of freedom from CA restenosis/occlusion were $95\% \pm 3\%$ for MAL release or visceral bypass, and $60\% \pm 9\%$ for CA stenting ($p = .001$). Two late restenoses following CA stenting were associated with PDAA recanalisation.

Conclusion: Current data suggest that open and endovascular treatment of PDAA can be performed with excellent post-operative results in both groups. However, PDAA embolisation was associated with few midterm recanalizations and CA stenting with a significant number of early and midterm failures.

Keywords: Embolisation; Median arcuate ligament; Pancreaticoduodenal artery; Visceral aneurysm.

Copyright © 2021 European Society for Vascular Surgery. Published by Elsevier B.V. All rights reserved.

Full text links



102. [Relationships between disaccharidase deficiencies, duodenal inflammation and symptom profile in children with abdominal pain](#)

Sci Rep. 2021 Mar 1;11(1):4902. doi: 10.1038/s41598-021-84535-9.

Authors

[Jennifer M Colombo](#)¹, [Chance S Friesen](#)¹, [Uttam Garg](#)², [Craig A Friesen](#)³, [William San Pablo](#)¹

Affiliations

- ¹ Division of Gastroenterology, Hepatology, and Nutrition, Children's Mercy Hospital, 2401 Gillham Road, Kansas City, MO, 64109, USA.
- ² Pathology and Laboratory Medicine, Children's Mercy Hospital, 2401 Gillham Road, Kansas City, MO, 64108, USA.
- ³ Division of Gastroenterology, Hepatology, and Nutrition, Children's Mercy Hospital, 2401 Gillham Road, Kansas City, MO, 64109, USA. cfriesen@cmh.edu.
- PMID: [33649365](#)
- PMCID: [PMC7921103](#)

- DOI: [10.1038/s41598-021-84535-9](https://doi.org/10.1038/s41598-021-84535-9)

Free PMC article

Abstract

Abdominal pain has been associated with disaccharidase deficiencies. While relationships with individual symptoms have been assessed, relationships between disaccharidase deficiencies and symptom complexes or inflammation have not been evaluated in this group. The primary aims of the current study were to assess relationships between disaccharidase deficiency and symptoms or symptom complexes and duodenal inflammation, respectively. Patients with abdominal pain who underwent endoscopy with evaluation of disaccharidase activity levels were identified. After excluding all patients with inflammatory bowel disease, celiac disease, H. pylori, or gross endoscopic lesions, patients were evaluated for disaccharidase deficiency frequency. Disaccharidase were compared between patients with and without histologic duodenitis. Lastly, relationships between individual gastrointestinal symptoms or symptom complexes were evaluated. Lactase deficiency was found in 34.3% of patients and disaccharidase pan-deficiency in 7.6%. No individual symptoms or symptom complexes predicted disaccharidase deficiency. While duodenitis was not associated with disaccharidase deficiency, it was only present in 5.9% of patients. Disaccharidase deficiency, particularly lactase deficiency, is common in youth with abdominal pain and multiple deficiencies are not uncommon. Disaccharidase deficiency cannot be predicted by symptoms in this population. Further studies are needed to assess the clinical significance of disaccharidase deficiency.

Conflict of interest statement

The authors declare no competing interests.

- [21 references](#)

Full text links



[\[Weaknesses in healthcare for persons with gluten-related disorders\]](#)

103.

Cad Saude Publica. 2021 Mar 12;37(2):e00244219. doi: 10.1590/0102-311X00244219. eCollection 2021.

[Article in Portuguese]

Authors

[Juliana Crucinsky](#)^{1 2}, [Jorginete de Jesus Damião](#)¹, [Inês Rugani Ribeiro de Castro](#)¹

Affiliations

- ¹ Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Brasil.

- ² Universidade Castelo Branco, Rio de Janeiro, Brasil.
- PMID: [33729309](#)
- DOI: [10.1590/0102-311X00244219](#)

Free article

[Abstract](#)

in [English](#), [Portuguese](#), [Spanish](#)

Gluten-related disorders affect 1% to 6% of the population, with complications and high risk of short and long-term morbidity and mortality. Since 2009, Brazil has a Clinical Protocol of Therapeutic Guidelines for Celiac Disease, but there are frequent complaints by persons with gluten-related disorders concerning the lack of healthcare professionals' knowledge of this topic and the difficulties related to healthcare, for both diagnosis and treatment. This study aimed to understand the weaknesses in healthcare perceived by persons with gluten-related disorders. An online qualitative survey was conducted in the Living Without Gluten group on Facebook, consulting the records saved by the group for 65 months, which totaled 510 posts and the respective comments. The data were grouped in categories, and thematic content analysis was performed, adopting the theoretical references on healthcare. The analysis revealed that the searches for diagnosis and adequate treatment were often described as a forced pilgrimage, resulting from shortcomings in healthcare, including lack of up-to-date knowledge on gluten-related disorders among the healthcare professionals and problems in the physician-patient relationship. Weaknesses in patient care and late diagnoses contribute to increasing the risk of complications and deaths. In this context, the Living Without Gluten group plays a leading role as a support group and network of solidarity, favoring increased awareness and empowerment of numerous Brazilians with gluten-related disorders.

As desordens relacionadas ao glúten (DRG) afetam de 1% a 6% da população, com complicações e alto risco de morbimortalidade em curto e longo prazos. Desde 2009, o Brasil possui um Protocolo Clínico de Diretrizes Terapêuticas para a Doença Celíaca, entretanto, são comuns as queixas das pessoas com DRG a respeito da falta de conhecimento dos profissionais de saúde nessa temática e das dificuldades relacionadas ao cuidado em saúde em relação tanto ao diagnóstico quanto ao tratamento. Este estudo objetivou compreender as fragilidades no cuidado em saúde percebidas por pessoas com DRG. Foi realizada uma pesquisa qualitativa virtual no grupo Viva Sem Glúten (VSG), da rede social Facebook, na qual foram consultados os registros armazenados no grupo por 65 meses, que totalizaram 510 postagens e seus respectivos comentários. Os dados foram agrupados em categorias, e foi realizada análise temática de conteúdo, adotando-se os referenciais teóricos sobre o cuidado em saúde. A análise revelou que as buscas por um diagnóstico e por tratamento adequado frequentemente são descritas como uma peregrinação, sendo decorrentes das fragilidades no cuidado em saúde, traduzidas pela falta de conhecimento atualizado dos profissionais sobre as DRG e por problemas na relação profissional-paciente. As fragilidades no cuidado em saúde e os diagnósticos tardios contribuem para aumentar o risco de complicações e óbitos. Nesse contexto, o grupo VSG se destaca em seu papel de grupo de apoio e rede de solidariedade, favorecendo o esclarecimento e o empoderamento de inúmeras pessoas com DRG.

Los desórdenes relacionados al gluten afectan de 1% a 6% de la población, con complicaciones y alto riesgo de morbilidad en corto y largo plazos. Desde 2009, Brasil posee un Protocolo Clínico de Directrices Terapéuticas para la Enfermedad Celíaca, sin embargo, son comunes las quejas de las personas con desórdenes relacionados al gluten, respecto a la falta de conocimiento de los profesionales de salud en esa temática y las dificultades relacionadas con el cuidado en salud, en relación tanto con el diagnóstico como con el tratamiento. Este estudio se marcó como objetivo comprender las fragilidades en el cuidado en salud percibidas por personas con desórdenes relacionados al gluten. Se realizó una investigación cualitativa virtual en el grupo Vivir Sin Gluten (VSG) de la red social Facebook, en la que se consultaron los registros almacenados en el grupo durante 65 meses, que totalizaron 510 posts y sus respectivos comentarios. Los datos se agruparon en categorías y se realizó un análisis temático de contenido, adoptándose los referenciales teóricos sobre el cuidado en salud. El análisis reveló que las búsquedas de un diagnóstico y tratamiento adecuado frecuentemente se describen como una peregrinación, siendo derivados de las fragilidades en el cuidado en salud, traducidas por la falta de conocimiento actualizado de los profesionales sobre las desórdenes relacionados al gluten y por problemas en la relación profesional-paciente. Las fragilidades en el cuidado en salud y los diagnósticos tardíos contribuyen a aumentar el riesgo de complicaciones y óbitos. En este contexto el grupo VSG se destaca en su papel de grupo de apoyo y red de solidaridad, favoreciendo la información y el empoderamiento de innumerables personas con desórdenes relacionados al gluten.

Full text links

free full text
available at  Scielo.org

104. [Maternal food consumption during late pregnancy and offspring risk of islet autoimmunity and type 1 diabetes](#)

Diabetologia. 2021 Mar 30. doi: 10.1007/s00125-021-05446-y. Online ahead of print.

Authors

[Randi K Johnson](#)¹, [Roy Tamura](#)², [Nicole Frank](#)³, [Ulla Uusitalo](#)², [Jimin Yang](#)², [Sari Niinistö](#)⁴, [Carin Andrén Aronsson](#)⁵, [Anette-G Ziegler](#)⁶, [William Hagopian](#)⁷, [Marian Rewers](#)⁸, [Jorma Toppari](#)⁹, [Beena Akolkar](#)¹⁰, [Jeffrey Krischer](#)², [Suvi M Virtanen](#)^{4 11 12 13}, [Jill M Norris](#)¹⁴, [TEDDY Study Group](#)

Affiliations

- ¹ Division of Biomedical Informatics and Personalized Medicine, Department of Medicine, University of Colorado School of Medicine, Aurora, CO, USA.
- ² Health Informatics Institute, Morsani College of Medicine, University of South Florida, Tampa, FL, USA.
- ³ Department of Epidemiology, Colorado School of Public Health, Aurora, CO, USA.
- ⁴ Department of Public Health Solutions, Finnish Institute for Health and Welfare, Helsinki, Finland.
- ⁵ The Diabetes and Celiac Disease Unit, Department of Clinical Sciences, Lund University, Malmo, Sweden.

- ⁶ Institute of Diabetes Research, Helmholtz Zentrum München, Munich, Germany.
- ⁷ Pacific Northwest Diabetes Institute, Seattle, WA, USA.
- ⁸ Barbara Davis Center for Childhood Diabetes, University of Colorado Anschutz Medical Campus, Aurora, CO, USA.
- ⁹ Institute of Biomedicine, Research Centre for Integrated Physiology and Pharmacology, University of Turku, Turku, Finland.
- ¹⁰ National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health, Bethesda, MD, USA.
- ¹¹ Unit of Health Sciences, Faculty of Social Sciences, Tampere University, Tampere, Finland.
- ¹² Research, Development and Innovation Center, Tampere University Hospital, Tampere, Finland.
- ¹³ Center for Child Health Research, Tampere University and Tampere University Hospital, Tampere, Finland.
- ¹⁴ Department of Epidemiology, Colorado School of Public Health, Aurora, CO, USA.
Jill.norris@cuanschutz.edu.
- PMID: [33783586](https://pubmed.ncbi.nlm.nih.gov/33783586/)
- DOI: [10.1007/s00125-021-05446-y](https://doi.org/10.1007/s00125-021-05446-y)

Abstract

Aims/hypothesis: We aimed to investigate the association between maternal consumption of gluten-containing foods and other selected foods during late pregnancy and offspring risk of islet autoimmunity (IA) and type 1 diabetes in The Environmental Determinants of Diabetes in the Young (TEDDY) study.

Methods: The TEDDY study recruited children at high genetic risk for type 1 diabetes at birth, and prospectively follows them for the development of IA and type 1 diabetes (n = 8556). A questionnaire on the mother's diet in late pregnancy was completed by 3-4 months postpartum. The maternal daily intake was estimated from a food frequency questionnaire for eight food groups: gluten-containing foods, non-gluten cereals, fresh milk, sour milk, cheese products, soy products, lean/medium-fat fish and fatty fish. For each food, we described the distribution of maternal intake among the four participating countries in the TEDDY study and tested the association of tertile of maternal food consumption with risk of IA and type 1 diabetes using forward selection time-to-event Cox regression.

Results: By 28 February 2019, 791 cases of IA and 328 cases of type 1 diabetes developed in TEDDY. There was no association between maternal late-pregnancy consumption of gluten-containing foods or any of the other selected foods and risk of IA, type 1 diabetes, insulin autoantibody-first IA or GAD autoantibody-first IA (all $p \geq 0.01$). Maternal gluten-containing food consumption in late pregnancy was higher in Sweden (242 g/day), Germany (247 g/day) and Finland (221 g/day) than in the USA (199 g/day) (pairwise $p < 0.05$).

Conclusions/interpretation: Maternal food consumption during late pregnancy was not associated with offspring risk for IA or type 1 diabetes.

Trial registration: ClinicalTrials.gov [NCT00279318](https://clinicaltrials.gov/ct2/show/study/NCT00279318).

Keywords: Autoimmunity; Gluten; Maternal diet; Pregnancy; Type 1 diabetes.

- [43 references](#)

Full text links



105. [Relationship between duodenal microbiota composition, clinical features at diagnosis, and persistent symptoms in adult Coeliac disease](#)

Dig Liver Dis. 2021 Mar 16;S1590-8658(21)00088-8. doi: 10.1016/j.dld.2021.02.019. Online ahead of print.

Authors

[Annalisa Schieppatti](#)¹, [Sara Bacchi](#)², [Federico Biagi](#)³, [Simona Panelli](#)⁴, [Elena Betti](#)⁵, [Gino Roberto Corazza](#)⁵, [Enrica Capelli](#)², [Rachele Ciccocioppo](#)⁶

Affiliations

- ¹ Istituti Clinici Scientifici Maugeri, I.R.C.C.S., Gastroenterology Unit of Pavia Institute, University of Pavia, Pavia, Italy. Electronic address: annalisa.schiepatti01@universitadipavia.it.
- ² Laboratory of Immunology and Genetic Analysis, Department of Earth and Environmental Science, University of Pavia, Pavia, Italy; Centre for Health Technologies, University of Pavia, Pavia, Italy.
- ³ Istituti Clinici Scientifici Maugeri, I.R.C.C.S., Gastroenterology Unit of Pavia Institute, University of Pavia, Pavia, Italy.
- ⁴ Department of Biomedical and Clinical Sciences "L. Sacco", Pediatric Clinical Research Center "Invernizzi", University of Milan, Milan, Italy.
- ⁵ First Department of Internal Medicine, I.R.C.C.S. San Matteo Hospital Foundation, University of Pavia, Pavia, Italy.
- ⁶ Gastroenterology Unit, Department of Medicine, A.O.U.I. Policlinico G.B. Rossi and University of Verona, Verona, Italy.
- PMID: [33741248](https://pubmed.ncbi.nlm.nih.gov/33741248/)
- DOI: [10.1016/j.dld.2021.02.019](https://doi.org/10.1016/j.dld.2021.02.019)

Abstract

Background: Duodenal dysbiosis has been suggested to possibly influence the clinical manifestations of coeliac disease (CD), both at onset and when symptoms persist despite a gluten-free diet (GFD).

Aims: To evaluate the relationship between duodenal microbiota composition and: i) clinical phenotype of untreated CD (UCD); ii) presence and type of persistent symptoms despite a satisfactory serological and histological response to a strict GFD.

Methods: Duodenal microbiota was analyzed by 16S rRNA sequencing and compared with i) clinical features in 12 adult UCD patients; ii) presence/absence and type of persistent symptoms (diarrhea-predominant vs. non-diarrhea predominant) in 25 adult treated coeliac patients (TCD) on a strict GFD.

Results: UCD with iron deficiency anemia (IDA) had a pro-inflammatory shift in their duodenal microbiota (reduction of Firmicutes, $p = 0.03$; increase of beta-Proteobacteria, $p = 0.02$) than those without IDA. TCD with persistent diarrhea showed a reduction of Actinobacteria ($p = 0.03$) and *Rothia* spp ($p = 0.046$) compared to TCD suffering from other type of persistent symptoms.

Conclusion: A distinctive duodenal microbiota profile is associated with IDA in UCD, and diarrhea-predominant persistent symptoms in TCD. Clinical interventions may include reconsidering patients presenting with IDA as a specific disease subtype, and dietary rebalancing if diarrhea persists despite histological response to a GFD.

Keywords: Coeliac disease; Gluten-free diet; Iron deficiency anemia; Microbiota; Persistent symptoms.

Copyright © 2021 Editrice Gastroenterologica Italiana S.r.l. Published by Elsevier Ltd. All rights reserved.

Conflict of interest statement

Declaration of Competing Interests None to declare

Full text links



[The self-management work of food hypersensitivity](#)

106.

PLoS One. 2021 Mar 5;16(3):e0248181. doi: 10.1371/journal.pone.0248181. eCollection 2021.

Authors

[Monika Dybdahl Jakobsen](#)^{1 2}, [Aud Obstfelder](#)³, [Tonje Braaten](#)², [Birgit Abelsen](#)⁴

Affiliations

- ¹ Center for Care Research, UiT The Arctic University of Norway, Tromsø, Norway.
- ² Department of Community Medicine, UiT The Arctic University of Norway, Tromsø, Norway.

- ³ Center for Care Research, The Norwegian University of Science and Technology (NTNU), Gjøvik, Norway.
- ⁴ Department of Community Medicine, Norwegian Centre of Rural Medicine, UiT The Arctic University of Norway, Tromsø, Norway.
- PMID: [33667275](#)
- PMCID: [PMC7935271](#)
- DOI: [10.1371/journal.pone.0248181](#)

Free PMC article

Abstract

Background: Food hypersensitivity (FH) has received considerable attention in the scientific community in recent years. However, little attention has been given to the efforts people make to manage their FH. We aimed to explore these efforts by using Normalization Process Theory, which is a conceptual framework formerly used to describe the self-management 'work' of long-term conditions.

Methods: We carried out qualitative individual interviews with 16 women with FH. Transcripts from recorded interviews were analyzed using template analysis.

Results: 16 women participated; some had diagnoses from conventional medicine (celiac disease, lactose intolerance, food allergies, irritable bowel syndrome) and some did not. Participants described carrying out several tasks, some of which were time-consuming, to manage their FH. Women who had clarified once and for all what food(s) caused symptoms, described that they could concentrate on carrying out a restricted diet, which could become routine. Conversely, participants who had not achieved such clarification described carrying out tasks to identify what food(s) caused symptoms, and to implement and evaluate a tentative diet. Participants' descriptions also revealed a heightened vigilance when they ate food that others had prepared, and some made efforts to conceal their FH.

Conclusions: Self-management of FH may, like the self-management of other long-term conditions, imply a large workload and burden of treatment. Efforts made to conceal FH may be considered part of this workload, while help in clarifying which food(s) cause symptoms has the potential to reduce the workload.

Conflict of interest statement

The authors have declared that no competing interests exist.

- [58 references](#)
- [1 figure](#)

Full text links



107. [Digestibility, lactation performance, plasma metabolites, ruminal fermentation, and bacterial communities in Holstein cows fed a fermented corn gluten-wheat bran mixture as a substitute for soybean meal](#)

J Dairy Sci. 2021 Mar;104(3):2866-2880. doi: 10.3168/jds.2020-19072. Epub 2021 Jan 15.

Authors

[X Jiang](#)¹, [H J Xu](#)¹, [G M Ma](#)¹, [Y K Sun](#)¹, [Y Li](#)², [Y G Zhang](#)³

Affiliations

- ¹ College of Animal Science and Technology, Northeast Agricultural University, Harbin, 150030, China.
- ² College of Animal Science and Technology, Northeast Agricultural University, Harbin, 150030, China. Electronic address: liyang1405053@sina.com.
- ³ College of Animal Science and Technology, Northeast Agricultural University, Harbin, 150030, China. Electronic address: zhangyonggen@sina.com.
- PMID: [33455755](#)
- DOI: [10.3168/jds.2020-19072](#)

Abstract

The purpose of this research was to investigate the effects of replacing soybean meal (SBM) with a fermented corn gluten-wheat bran mixture (FCWM) on nutrient digestibility, lactation performance, plasma metabolites, ruminal fermentation, and bacterial communities in Holstein cows. Nine healthy multiparous (parity = 3) Holstein cows with similar body weights (624 ± 14.4 kg), days in milk (112 ± 4.2), and milk yields (31.8 ± 1.73 kg; all mean \pm standard deviation) were used in a replicated 3×3 Latin square design with 3 periods of 28 d. Cows were fed 1 of 3 dietary treatments in which FCWM replaced SBM as follows: basal diet with no replacement (0FCWM); 50% replacement of SBM with FCWM (50%FCWM); and 100% replacement of SBM with FCWM (100%FCWM). The diets were formulated to be isocaloric and isonitrogenous. The results showed that the total-tract digestibility of dry matter and crude protein increased linearly with increased dietary FCWM, and we found a trend for increased total-tract neutral detergent fiber and potentially digestible NDF digestibility. Milk yield tended to increase in a linear manner as more FCWM was consumed, and energy-corrected milk production was significantly increased with FCWM supplementation as a result of increased milk protein and lactose yields. Plasma glucose and IgG concentrations increased linearly with increasing FCWM supplementation, but plasma malondialdehyde concentration decreased linearly. Concentrations of total volatile fatty acids and propionate showed a linear increase with increasing FCWM supplementation, leading to a linear decrease in pH. The relative abundance of ruminal Prevotellaceae, Veillonellaceae, and Prevotella 1 increased linearly with increasing FCWM supplementation, and the relative abundance of ruminal Succinivibrionaceae and Muribaculaceae decreased linearly. The relative abundance of fecal Ruminococcaceae, Prevotellaceae, and Ruminococcaceae UCG-005 increased linearly with increasing FCWM supplementation, but the relative abundance of fecal Peptostreptococcaceae decreased linearly. Overall, the replacement of SBM with FCWM altered

the composition of the ruminal bacterial community and improved nutrient digestibility, lactation performance, and ruminal fermentation in cows, providing a data reference for the use of FCWM in dairy production.

Keywords: dairy cow; fermented corn gluten-wheat bran mixture; performance.

Copyright © 2021 American Dairy Science Association. Published by Elsevier Inc. All rights reserved.

Full text links



108. [Persisting Villous Atrophy and Adherence in Celiac Disease: What Does the Patient Want? What Should a Clinician Advise?](#)

Am J Gastroenterol. 2021 Mar 25. doi: 10.14309/ajg.0000000000001244. Online ahead of print.

Authors

[Anupam Rej](#)¹, [Luca Elli](#), [David Surendran Sanders](#)

Affiliation

- ¹ Academic Unit of Gastroenterology, Royal Hallamshire Hospital, Sheffield Teaching Hospital NHS Foundation Trust, Sheffield, England; Gastroenterology and Endoscopy Unit, Department of Pathophysiology and Transplantation, Center for Prevention and Diagnosis of Celiac Disease, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, University of Milan, Milan, Italy; Academic Unit of Gastroenterology, Department of Infection, Immunity, and Cardiovascular Disease, University of Sheffield, Sheffield, United Kingdom.
- PMID: [33767095](#)
- DOI: [10.14309/ajg.0000000000001244](#)

Abstract

Adherence to a gluten-free diet in celiac disease remains challenging. Clinicians may view mucosal healing as crucial. From the patient's perspective, avoidance of an invasive upper endoscopy may be desirable. A fundamental misconception is that noninvasive tools including symptoms, serology, dietary adherence questionnaires, and novel gluten immunogenic peptides may detect ongoing villous atrophy rather than assess adherence. Duodenal biopsies are the only reliable method for assessment of mucosal healing-however, we as clinicians should provide patients with the uncertainties of this approach allowing them to make an informed decision on an individual basis.

Full text links



[The nature of genetic and environmental susceptibility to multiple sclerosis](#)

109.

PLoS One. 2021 Mar 22;16(3):e0246157. doi: 10.1371/journal.pone.0246157. eCollection 2021.

Authors

[Douglas S Goodin](#)¹, [Pouya Khankhanian](#)², [Pierre-Antoine Gourraud](#)^{1 3 4}, [Nicolas Vince](#)^{3 4}

Affiliations

- ¹ Department of Neurology, University of California, San Francisco, San Francisco, CA, United States of America.
- ² Center for Neuro-Engineering and Therapeutics, University of Pennsylvania, Philadelphia, PA, United States of America.
- ³ Centre de Recherche en Transplantation et Immunologie UMR 1064, INSERM, Université de Nantes, Nantes, France.
- ⁴ Institut de Transplantation Urologie Néphrologie (ITUN), CHU Nantes, Nantes, France.
- PMID: [33750973](#)
- DOI: [10.1371/journal.pone.0246157](#)

Free article

[Abstract](#)

Objective: To understand the nature of genetic and environmental susceptibility to multiple sclerosis (MS) and, by extension, susceptibility to other complex genetic diseases.

Background: Certain basic epidemiological parameters of MS (e.g., population-prevalence of MS, recurrence-risks for MS in siblings and twins, proportion of women among MS patients, and the time-dependent changes in the sex-ratio) are well-established. In addition, more than 233 genetic-loci have now been identified as being unequivocally MS-associated, including 32 loci within the major histocompatibility complex (MHC), and one locus on the X chromosome. Despite this recent explosion in genetic associations, however, the association of MS with the HLA-DRB1*15:01~HLA-DQB1*06:02~a1 (H+) haplotype has been known for decades.

Design/methods: We define the "genetically-susceptible" subset (G) to include everyone with any non-zero life-time chance of developing MS. Individuals who have no chance of developing MS, regardless of their environmental experiences, belong to the mutually exclusive "non-susceptible" subset (G-). Using these well-established epidemiological parameters, we analyze, mathematically, the implications that these observations have regarding the genetic-susceptibility to MS. In addition, we use the sex-ratio change (observed over a 35-year interval in

Canada), to derive the relationship between MS-probability and an increasing likelihood of a sufficient environmental exposure.

Results: We demonstrate that genetic-susceptibility is confined to less than 7.3% of populations throughout Europe and North America. Consequently, more than 92.7% of individuals in these populations have no chance whatsoever of developing MS, regardless of their environmental experiences. Even among carriers of the HLA-DRB1*15:01~HLA-DQB1*06:02~a1 haplotype, far fewer than 32% can possibly be members the (G) subset. Also, despite the current preponderance of women among MS patients, women are less likely to be in the susceptible (G) subset and have a higher environmental threshold for developing MS compared to men. Nevertheless, the penetrance of MS in susceptible women is considerably greater than it is in men. Moreover, the response-curves for MS-probability in susceptible individuals increases with an increasing likelihood of a sufficient environmental exposure, especially among women. However, these environmental response-curves plateau at under 50% for women and at a significantly lower level for men.

Conclusions: The pathogenesis of MS requires both a genetic predisposition and a suitable environmental exposure. Nevertheless, genetic-susceptibility is rare in the population (< 7.3%) and requires specific combinations of non-additive genetic risk-factors. For example, only a minority of carriers of the HLA-DRB1*15:01~HLA-DQB1*06:02~a1 haplotype are even in the (G) subset and, thus, genetic-susceptibility to MS in these carriers must result from the combined effect this haplotype together with the effects of certain other (as yet, unidentified) genetic factors. By itself, this haplotype poses no MS-risk. By contrast, a sufficient environmental exposure (however many events are involved, whenever these events need to act, and whatever these events might be) is common, currently occurring in, at least, 76% of susceptible individuals. In addition, the fact that environmental response-curves plateau well below 50% (especially in men), indicates that disease pathogenesis is partly stochastic. By extension, other diseases, for which monozygotic-twin recurrence-risks greatly exceed the disease-prevalence (e.g., rheumatoid arthritis, diabetes, and celiac disease), must have a similar genetic basis.

Conflict of interest statement

The authors have declared that no competing interests exist.

Full text links



110. [Lifelines COVID-19 cohort: investigating COVID-19 infection and its health and societal impacts in a Dutch population-based cohort](#)

BMJ Open. 2021 Mar 17;11(3):e044474. doi: 10.1136/bmjopen-2020-044474.

Authors

[Katherine Mc Intyre](#)¹, [Pauline Lanting](#)^{# 1}, [Patrick Deelen](#)^{# 1 2}, [Henry H Wiersma](#)^{# 1}, [Judith M Vonk](#)^{# 3}, [Anil P S Ori](#)^{# 1 4}, [Soesma A Jankipersadsing](#)^{# 1}, [Robert Warmerdam](#)¹, [Irene van](#)

[Blokland](#)^{1 5}, [Floranne Boulogne](#)¹, [Marjolein X L Dijkema](#)¹, [Johanna C Herkert](#)¹, [Annieke Claringbould](#)¹, [Olivier Bakker](#)¹, [Esteban A Lopera Maya](#)¹, [Ute Bültmann](#)⁶, [Alexandra Zhernakova](#)¹, [Sijmen A Reijneveld](#)⁶, [Elianne Zijlstra](#)⁶, [Morris A Swertz](#)¹, [Sandra Brouwer](#)⁶, [Raun van Ooijen](#)⁶, [Viola Angelini](#)⁷, [Louise H Dekker](#)^{7 8}, [Anna Sijsma](#)⁹, [Sicco A Scherjon](#)¹⁰, [Cisca Wijmenga](#)^{1 11}, [Jackie A M Dekens](#)^{1 12}, [Jochen Mierau](#)^{7 13}, [H Marike Boezen](#)³, [Lude Franke](#)¹⁴

Affiliations

- ¹ Department of Genetics, University of Groningen, University Medical Center Groningen, Groningen, The Netherlands.
- ² Department of Genetics, University Medical Centre Utrecht, Utrecht, The Netherlands.
- ³ Department of Epidemiology, University of Groningen, University Medical Center Groningen, Groningen, The Netherlands.
- ⁴ Department of Psychiatry, University of Groningen, University Medical Center Groningen, Groningen, The Netherlands.
- ⁵ Department of Cardiology, University of Groningen, University Medical Center Groningen, Groningen, The Netherlands.
- ⁶ Department of Health Sciences, Community and Occupational Medicine, University of Groningen, University Medical Center Groningen, Groningen, The Netherlands.
- ⁷ Faculty of Economics and Business, University of Groningen, Groningen, The Netherlands.
- ⁸ Department of Nephrology, University Medical Center Groningen, Groningen, The Netherlands.
- ⁹ Lifelines Cohort Study, Groningen, The Netherlands.
- ¹⁰ Department of Obstetrics and Gynaecology, University of Groningen, University Medical Center Groningen, Groningen, The Netherlands.
- ¹¹ K.G. Jebsen Coeliac Disease Research Centre, Institute of Clinical Medicine, University of Oslo, Oslo, Norway.
- ¹² Center of Development and Innovation, University of Groningen, University Medical Center Groningen, Groningen, The Netherlands.
- ¹³ Aletta Jacobs School of Public Health, University of Groningen, Groningen, The Netherlands.
- ¹⁴ Department of Genetics, University of Groningen, University Medical Center Groningen, Groningen, The Netherlands l.h.franke@umcg.nl.

Contributed equally.

- PMID: [33737436](#)
- PMCID: [PMC7977080](#)
- DOI: [10.1136/bmjopen-2020-044474](#)

Free PMC article

Abstract

Purpose: The Lifelines COVID-19 cohort was set up to assess the psychological and societal impacts of the COVID-19 pandemic and investigate potential risk factors for COVID-19 within the Lifelines prospective population cohort.

Participants: Participants were recruited from the 140 000 eligible participants of Lifelines and the Lifelines NEXT birth cohort, who are all residents of the three northern provinces of the Netherlands. Participants filled out detailed questionnaires about their physical and mental health and experiences on a weekly basis starting in late March 2020, and the cohort consists of everyone who filled in at least one questionnaire in the first 8 weeks of the project. **FINDINGS TO DATE:** >71 000 unique participants responded to the questionnaires at least once during the first 8 weeks, with >22 000 participants responding to seven questionnaires. Compiled questionnaire results are continuously updated and shared with the public through the Corona Barometer website. Early results included a clear signal that younger people living alone were experiencing greater levels of loneliness due to lockdown, and subsequent results showed the easing of anxiety as lockdown was eased in June 2020.

Future plans: Questionnaires were sent on a (bi)weekly basis starting in March 2020 and on a monthly basis starting July 2020, with plans for new questionnaire rounds to continue through 2020 and early 2021. Questionnaire frequency can be increased again for subsequent waves of infections. Cohort data will be used to address how the COVID-19 pandemic developed in the northern provinces of the Netherlands, which environmental and genetic risk factors predict disease susceptibility and severity and the psychological and societal impacts of the crisis. Cohort data are linked to the extensive health, lifestyle and sociodemographic data held for these participants by Lifelines, a 30-year project that started in 2006, and to data about participants held in national databases.

Keywords: COVID-19; epidemiology; genetics; mental health; public health.

© Author(s) (or their employer(s)) 2021. Re-use permitted under CC BY. Published by BMJ.

Conflict of interest statement

Competing interests: None declared.

- [Cited by 1 article](#)
- [21 references](#)
- [4 figures](#)

Full text links



[Does cystic fibrosis make susceptible to celiac disease?](#)

Authors

[Nagehan Emiralioglu](#)¹, [Dilber Ademhan Tural](#)², [Hayriye Hizarcioglu Gulsen](#)³, [Yasin Maruf Ergen](#)³, [Beste Ozsezen](#)², [Birce Sunman](#)², [İncinur Saltık Temizel](#)³, [Ebru Yalcin](#)², [Deniz Dogru](#)², [Uğur Ozcelik](#)², [Nural Kiper](#)²

Affiliations

- ¹ Department of Pediatric Pulmonology, Hacettepe University Faculty of Medicine, Ankara, Turkey. drnagehan@yahoo.com.
- ² Department of Pediatric Pulmonology, Hacettepe University Faculty of Medicine, Ankara, Turkey.
- ³ Department of Pediatric Gastroenterology, Hacettepe University Faculty of Medicine, Ankara, Turkey.
- PMID: [33765186](#)
- DOI: [10.1007/s00431-021-04011-4](#)

Abstract

Patients with cystic fibrosis (CF) have a higher incidence of celiac disease (CD) than the healthy population; however, the actual incidence of coexisting CF and CD is unclear. In this report, we aimed to evaluate the frequency of CD and CF coexistence and to assess the clinical findings of affected patients during follow-up. We conducted a retrospective review of patients with CF to reveal the frequency of CD and also investigated the clinical characteristics and clinical response to gluten-free diet in patients with CD. The incidence of CD in 515 patients with CF was 1.4%. The median age at the time of CF diagnosis was 2 months (1-6 months). CD was diagnosed in six patients with poor weight gain, fatty stools, and low z score for BMI and one patient with poor weight gain despite a high protein and calorie diet and pancreatic enzyme replacement. The median age of CD diagnosis was 8 years (2-12 years). Except for one patient who was recently diagnosed, the other six patients gained weight and their accompanying symptoms resolved after starting a gluten-free diet. Conclusion: CD should be investigated in patients with CF in the presence of inadequate weight and/or height gain or poor control of malabsorption symptoms despite appropriate and adequate nutritional and enzyme replacement treatment. What is Known: • CFTR dysfunction may be a risk factor for CD, due to increased intestinal permeability and intestinal inflammation, pancreatic exocrine insufficiency that results in higher antigen load and increased antibodies against to nutritional antigens such as anti-gliadin IgA antibodies. • Although coexistence of CF and CD are rare in the same patient; there is still no consensus on when children with CF should be screened for CD. What is New: • Physicians should consider the investigation of CD in patients with CF, in the presence of inadequate weight and/or height gain or poor control of malabsorption symptoms despite appropriate and adequate nutritional and enzyme replacement treatment. • CFTR dysfunction has been emphasized to develop susceptibility to CD, and patients with CF who have persistent gastrointestinal symptoms despite appropriate and adequate nutritional and enzyme replacement treatment should be screened for CD.

Keywords: CFTR dysfunction; Celiac disease; Cystic fibrosis; Malnutrition.

- [28 references](#)

Full text links



112. [Chromogranin A regulates gut permeability via the antagonistic actions of its proteolytic peptides](#)

Acta Physiol (Oxf). 2021 Mar 30;e13655. doi: 10.1111/apha.13655. Online ahead of print.

Authors

[Elke M Muntjewerff](#)¹, [Kechun Tang](#)², [Lisanne Lutter](#)^{3 4}, [Gustaf Christoffersson](#)^{5 6}, [Mara J T Nicolassen](#)¹, [Hong Gao](#)⁷, [Gajanan D Katkar](#)⁸, [Soumita Das](#)⁹, [Martin Ter Beest](#)¹, [Wei Ying](#)⁷, [Pradipta Ghosh](#)^{8 10 7}, [Sahar El Aidy](#)¹¹, [Bas Oldenburg](#)⁴, [Geert van den Bogaart](#)^{1 11}, [Sushil K Mahata](#)^{2 7}

Affiliations

- ¹ Department of Tumor Immunology, Radboud Institute for Molecular Life Sciences, Radboud University Medical Center, Nijmegen, the Netherlands.
- ² VA San Diego Healthcare System, 3350 La Jolla Village Drive, San Diego, CA, USA.
- ³ Center for Translational Immunology, Utrecht University Medical Center, Utrecht, the Netherlands.
- ⁴ Department of Gastroenterology and Hepatology, Utrecht University Medical Center, Utrecht, the Netherlands.
- ⁵ Science for Life Laboratory, Uppsala University, Uppsala, Sweden.
- ⁶ Department of Medical Cell biology, Uppsala University, Uppsala, Sweden.
- ⁷ Medicine, University of California San Diego, La Jolla, CA, USA.
- ⁸ Departments of Cellular and Molecular Medicine, University of California San Diego, La Jolla, CA, USA.
- ⁹ University of California San Diego Health Sciences, Department of Pathology, La Jolla, USA.
- ¹⁰ Pathology, University of California San Diego, La Jolla, CA, USA.
- ¹¹ Department of Molecular Immunology and Microbiology, Groningen Biomolecular Sciences and Biotechnology Institute, University of Groningen, Groningen, the Netherlands.
- PMID: [33783968](#)
- DOI: [10.1111/apha.13655](#)

Abstract

Aim: A 'leaky' gut barrier has been implicated in the initiation and progression of a multitude of diseases, e.g., inflammatory bowel disease (IBD), irritable bowel syndrome, and celiac disease.

Here we show how pro-hormone Chromogranin A (CgA), produced by the enteroendocrine cells, and Catestatin (CST: hCgA₃₅₂₋₃₇₂), the most abundant CgA-derived proteolytic peptide, affect the gut barrier.

Methods: Colon tissues from region-specific CST-knockout (CST-KO) mice, CgA-knockout (CgA-KO) and WT mice were analyzed by immunohistochemistry, Western blot, ultrastructural and flowcytometry studies. FITC-dextran assays were used to measure intestinal barrier function. Mice were supplemented with CST or CgA fragment pancreastatin (PST: CgA₂₅₀₋₃₀₁). The microbial composition of cecum was determined. CgA and CST levels were measured in blood of IBD patients.

Results: Plasma levels of CST were elevated in IBD patients. CST-KO mice displayed (i) elongated tight, adherens junctions and desmosomes similar to IBD patients, (ii) elevated expression of Claudin 2, and (iii) gut inflammation. Plasma FITC-dextran measurements showed increased intestinal paracellular permeability in the CST-knockout mice. This correlated with a higher ratio of Firmicutes to Bacteroidetes, a dysbiotic pattern commonly encountered in various diseases. Supplementation of CST-knockout mice with recombinant CST restored paracellular permeability and reversed inflammation, whereas CgA-knockout mice supplementation with CST and/or PST in CgA-KO mice showed that intestinal paracellular permeability is regulated by the antagonistic roles of these two peptides: CST reduces and PST increases permeability.

Conclusion: The pro-hormone CgA regulates the intestinal paracellular permeability. CST is both necessary and sufficient to reduce permeability and primarily acts by antagonizing PST.

Keywords: Catestatin; Inflammatory bowel disease; chromogranin A; enteroendocrine cells; epithelial tight junctions; gut barrier.

This article is protected by copyright. All rights reserved.

Full text links



113. [Lung CD4⁺ T-cells in patients with lung fibrosis produce pro-fibrotic interleukin-13 together with interferon- \$\gamma\$](#)

Eur Respir J. 2021 Mar 11;57(3):2000983. doi: 10.1183/13993003.00983-2020. Print 2021 Mar.

Authors

[Liv I B Sikkeland](#)^{1 2}, [Shuo-Wang Qiao](#)^{3 4}, [Thor Ueland](#)^{5 6 7}, [Ole Myrdal](#)², [Łukasz Wyrożemski](#)⁴, [Pål Aukrust](#)^{5 6 7 8}, [Frode L Jahnsen](#)^{5 9}, [Tone Sjøheim](#)², [Johny Kongerud](#)^{5 2}, [Øyvind Molberg](#)^{5 10}, [May Brit Lund](#)^{5 2}, [Espen S Bækkevold](#)^{9 11}

Affiliations

- ¹ Institute of Clinical Medicine, Faculty of Medicine, University of Oslo, Oslo, Norway
l.i.b.sikkeland@medisin.uio.no.
- ² Dept of Respiratory Medicine, Oslo University Hospital Rikshospitalet, Oslo, Norway.
- ³ Dept of Immunology, Centre for Immune Regulation, Oslo University Hospital Rikshospitalet, Oslo, Norway.
- ⁴ K.G. Jebsen, Coeliac Disease Research Centre, University of Oslo, Oslo, Norway.
- ⁵ Institute of Clinical Medicine, Faculty of Medicine, University of Oslo, Oslo, Norway.
- ⁶ Institute of Internal Medicine, Oslo University Hospital, Rikshospitalet, Oslo, Norway.
- ⁷ K.G. Jebsen, TREC, University of Tromsø, Tromsø, Norway.
- ⁸ Section of Clinical Immunology and Infectious Diseases, Oslo University Hospital Rikshospitalet, Oslo, Norway.
- ⁹ Dept of Pathology, Oslo University Hospital, Rikshospitalet, Oslo, Norway.
- ¹⁰ Dept of Rheumatology, Oslo University Hospital Rikshospitalet, Oslo, Norway.
- ¹¹ Institute of Oral Biology, Faculty of Dentistry, University of Oslo, Oslo, Norway.
- PMID: [33154027](https://pubmed.ncbi.nlm.nih.gov/33154027/)
- DOI: [10.1183/13993003.00983-2020](https://doi.org/10.1183/13993003.00983-2020)

No abstract available

Conflict of interest statement

Conflict of interest: L.I.B. Sikkeland reports grants from Norwegian Respiratory Society sponsored by Boehringer Ingelheim, during the conduct of the study. Conflict of interest: S-W. Qiao has nothing to disclose. Conflict of interest: T. Ueland has nothing to disclose. Conflict of interest: O. Myrdal has nothing to disclose. Conflict of interest: Ł. Wyrozemski has nothing to disclose. Conflict of interest: P. Aukrust has nothing to disclose. Conflict of interest: F.L. Jahnsen has nothing to disclose. Conflict of interest: T. Sjøheim reports personal fees from Boehringer Ingelheim and Roche (speaker's honoraria), outside the submitted work. Conflict of interest: J. Kongerud has nothing to disclose. Conflict of interest: Ø. Molberg has nothing to disclose. Conflict of interest: M.B. Lund has nothing to disclose. Conflict of interest: E.S. Bækkevold has nothing to disclose.

Full text links



[Celiac disease: A global survey](#)

114.

J Diabetes. 2021 Mar 14. doi: 10.1111/1753-0407.13178. Online ahead of print.

Authors

[Robert Rapaport](#), [Zachary Bloomgarden](#)

- PMID: [33715311](https://pubmed.ncbi.nlm.nih.gov/33715311/)

- DOI: [10.1111/1753-0407.13178](https://doi.org/10.1111/1753-0407.13178)

No abstract available

- [10 references](#)

Full text links



[Editorial: the rising tide of coeliac disease autoimmunity](#)

115.

Aliment Pharmacol Ther. 2021 Mar;53(6):757-758. doi: 10.1111/apt.16291.

Authors

[Jacqueline Jossen](#)¹, [Benjamin Lebwohl](#)¹

Affiliation

- ¹ The Celiac Disease Center, Columbia University Irving Medical Center, New York City, NY, USA.
- PMID: [33599322](#)
- DOI: [10.1111/apt.16291](https://doi.org/10.1111/apt.16291)

No abstract available

Comment on

- [Increased incidence of coeliac disease autoimmunity rate in Israel: a 9-year analysis of population-based data.](#)

Lechtman N, Shamir R, Cohen S, Chodick G, Kariv R, Supino-Rosin L, Weintraub Y, Yerushalmy-Feler A, Ben Tov A.

Aliment Pharmacol Ther. 2021 Mar;53(6):696-703. doi: 10.1111/apt.16282. Epub 2021 Feb 5.

PMID: 33547687

- [6 references](#)

[Processing a 100% legume pasta in a classical extruder without agglomeration during mixing](#)

116.

J Food Sci. 2021 Mar;86(3):724-729. doi: 10.1111/1750-3841.15604. Epub 2021 Feb 2.

Authors

[Karima Laleg](#)¹, [Denis Cassan](#)¹, [Joël Abecassis](#)¹, [Valérie Micard](#)¹

Affiliation

- ¹ IATE, Univ Montpellier, INRAE, Institut Agro, Montpellier, France.
- PMID: [33533024](#)
- DOI: [10.1111/1750-3841.15604](#)

Abstract

Pasta made exclusively from legume has high nutritional potential (rich in protein and gluten free). However, it is difficult to produce 100% legume dough suitable for the extrusion step in pasta production that comprises hydration, mixing, and extrusion. This paper addresses the biochemical phenomena at the origin of the agglomeration of dough particles frequently reported in the literature, which results in very sticky dough that cannot be extruded. We tested changes in mixing conditions including mixing temperature, addition of antioxidants, and flour pretreatment. Our results suggest that enzymatic reactions, notably lipoxygenase related redox activity, are responsible for this impairment of dough mixing and extrusion. Some of the process conditions studied can be applied at industrial scale and will help produce a legume food with nutritional and culinary qualities, beneficial for people with celiac disease, or gluten intolerance, as well as the general population. PRACTICAL APPLICATION: In the context of a sustainable and healthy food transition, the food industry is developing legume-based food of high nutritional quality that is widely consumed, like pasta. However, using legumes often leads to technological problems during the mixing and extrusion of pasta. This article demonstrates they are linked to enzymatic oxidative phenomena and provides an easy solution to reduce the problems without drastically changing pasta processing. Applied at industrial scale, it will allow the production of naturally gluten-free pasta rich in protein (two to three times the protein content of wheat pasta), of good nutritional quality.

Keywords: antioxidant; extrusion; faba; lentil; red-ox enzymes; wheat.

© 2021 The Authors. Journal of Food Science published by Wiley Periodicals LLC on behalf of Institute of Food Technologists.

- [21 references](#)

Full text links



[An update on coeliac disease from the NHS England National Centre for Refractory Coeliac Disease](#)

Clin Med (Lond). 2021 Mar;21(2):127-130. doi: 10.7861/clinmed.2021-0025.

Authors

[Anupam Rej](#)¹, [David S Sanders](#)²

Affiliations

- ¹ Royal Hallamshire Hospital, Sheffield, UK; anupam.rej@nhs.net.
- ² Royal Hallamshire Hospital, Sheffield, UK.
- PMID: [33762372](#)
- PMCID: [PMC8002803](#)
- DOI: [10.7861/clinmed.2021-0025](#)

Free PMC article

Abstract

Coeliac disease (CD) is a common autoimmune-mediated gluten sensitive enteropathy, with a prevalence of around 1%. While the incidence of CD has increased over the last 2 decades, many cases still remain undiagnosed. The presentation of CD is variable and can be subtle, with it being important to explore both gastrointestinal and extra-intestinal features. The cornerstone of management is adherence to a strict gluten free diet, which requires support and education from an expert gastrointestinal dietitian. Persisting symptoms in individuals requires re-evaluation, with repeat duodenal biopsies sometimes required. Refractory CD affects a small subset of individuals with CD, requiring specialist input.

Keywords: coeliac disease; gluten; refractory coeliac disease; wheat.

© Royal College of Physicians 2021. All rights reserved.

- [2 figures](#)

Full text links



118. [Circulating CD103⁺ \$\gamma\delta\$ and CD8⁺ T cells are clonally shared with tissue-resident intraepithelial lymphocytes in celiac disease](#)

Mucosal Immunol. 2021 Mar 2. doi: 10.1038/s41385-021-00385-8. Online ahead of print.

Authors

[Louise F Risnes](#)^{# 1 2}, [Linn M Eggesbø](#)^{# 1}, [Stephanie Zühlke](#)^{1 2}, [Shiva Dahal-Koirala](#)¹, [Ralf S Neumann](#)¹, [Knut E A Lundin](#)^{1 3}, [Asbjørn Christophersen](#)¹, [Ludvig M Sollid](#)^{4 5}

Affiliations

- ¹ K. G. Jebsen Centre for Coeliac Disease Research, University of Oslo, Oslo, Norway.
- ² Department of Immunology, University of Oslo and Oslo University Hospital-Rikshospitalet, Oslo, Norway.
- ³ Department of Gastroenterology, Oslo University Hospital-Rikshospitalet, Oslo, Norway.
- ⁴ K. G. Jebsen Centre for Coeliac Disease Research, University of Oslo, Oslo, Norway.
l.m.sollid@medisin.uio.no.
- ⁵ Department of Immunology, University of Oslo and Oslo University Hospital-Rikshospitalet, Oslo, Norway. l.m.sollid@medisin.uio.no.

Contributed equally.

- PMID: [33654213](https://pubmed.ncbi.nlm.nih.gov/33654213/)
- DOI: [10.1038/s41385-021-00385-8](https://doi.org/10.1038/s41385-021-00385-8)

Abstract

Gut intraepithelial $\gamma\delta$ and CD8⁺ $\alpha\beta$ T lymphocytes have been connected to celiac disease (CeD) pathogenesis. Based on the previous observation that activated (CD38⁺), gut-homing (CD103⁺) $\gamma\delta$ and CD8⁺ $\alpha\beta$ T cells increase in blood upon oral gluten challenge, we wanted to shed light on the pathogenic involvement of these T cells by examining the clonal relationship between cells of blood and gut during gluten exposure. Of 20 gluten-challenged CeD patients, 8 and 10 had increase in (CD38⁺CD103⁺) $\gamma\delta$ and CD8⁺ $\alpha\beta$ T cells, respectively, while 16 had increase in gluten-specific CD4⁺ T cells. We obtained $\gamma\delta$ and $\alpha\beta$ TCR sequences of >2500 single cells from blood and gut of 5 patients, before and during challenge. We observed extensive sharing between blood and gut $\gamma\delta$ and CD8⁺ $\alpha\beta$ T-cell clonotypes even prior to gluten challenge. In subjects with challenge-induced surge of $\gamma\delta$ and/or CD8⁺ $\alpha\beta$ T cells, as larger populations of cells analyzed, we observed more expanded clonotypes and clonal sharing, yet no discernible TCR similarities between expanded and/or shared clonotypes. Thus, CD4⁺ T cells appear to drive expansion of clonally diverse $\gamma\delta$ or CD8⁺ $\alpha\beta$ T-cell clonotypes that may not be specific for the gluten antigen.

- [27 references](#)

Full text links



[Partitioned glioma heritability shows subtype-specific enrichment in immune cells](#)

119.

Neuro Oncol. 2021 Mar 20;noab072. doi: 10.1093/neuonc/noab072. Online ahead of print.

Authors

[Quinn T Ostrom](#)¹, [Jacob Edelson](#)^{2 3}, [Jinyoung Byun](#)^{1 2}, [Younghun Han](#)^{1 2}, [Ben Kinnersley](#)⁴, [Beatrice Melin](#)⁵, [Richard S Houlston](#)⁴, [Michelle Monje](#)⁶, [Kyle M Walsh](#)^{7 8}, [Christopher I Amos](#)^{1 2}, [Melissa L Bondy](#)^{1 9}

Affiliations

- ¹ Department of Medicine, Section of Epidemiology and Population Sciences, Dan L. Duncan Comprehensive Cancer Center, Baylor College of Medicine, Houston, Texas, United States.
- ² Institute for Clinical and Translational Research, Dan L. Duncan Comprehensive Cancer Center, Baylor College of Medicine, Houston, Texas, United States.
- ³ Center for Biomedical Informatics Research, Stanford University School of Medicine, Stanford, California, United States.
- ⁴ Division of Genetics and Epidemiology, The Institute of Cancer Research, Sutton, London, United Kingdom.
- ⁵ Department of Radiation Sciences, Oncology, Umea University, Umea, Sweden.
- ⁶ Departments of Neurology, Neurosurgery, Pediatrics and Pathology, Stanford University School of Medicine, Stanford, California, United States.
- ⁷ Duke Cancer Institute, Duke University Medical Center, Durham, North Carolina, United States.
- ⁸ Department of Neurosurgery, Duke University School of Medicine, Durham, North Carolina, United States.
- ⁹ Department of Epidemiology and Population Health, Stanford University School of Medicine, Stanford, California, United States.
- PMID: [33743008](#)
- DOI: [10.1093/neuonc/noab072](#)

Abstract

Background: Epidemiological studies of adult glioma have identified genetic syndromes and 25 heritable risk loci that modify individual risk for glioma, as well increased risk in association with exposure to ionizing radiation and decreased risk in association with allergies. In this analysis we assess whether there is shared genome-wide genetic architecture between glioma and atopic/autoimmune diseases.

Methods: Using summary statistics from a glioma genome-wide association studies (GWAS) meta-analysis, we identified significant enrichment for risk variants associated with gene expression changes in immune cell populations. We also estimated genetic correlations between glioma and autoimmune, atopic, and hematologic traits using LDscore regression, which leverages genome-wide single nucleotide polymorphism (SNP) associations and patterns of linkage disequilibrium.

Results: Nominally significant negative correlations were observed for glioblastoma and primary biliary cirrhosis ($rg=-0.26$, $p=0.0228$), and for non-glioblastoma gliomas and celiac disease ($rg=-0.32$, $p=0.0109$). Our analyses implicate dendritic cells (GB $pHM=0.0306$ and non-GB $pHM=0.0186$) in mediating both glioblastoma and non-glioblastoma genetic predisposition, with

glioblastoma-specific associations identified in natural killer (NK) (pHM=0.0201) and stem cells (pHM=0.0265).

Conclusions: This analysis identifies putative new associations between glioma and autoimmune conditions with genomic architecture that is inversely correlated with that of glioma and that T cells, NK cells, and myeloid cells are involved in mediating glioma predisposition. This provides further evidence that increased activation of the acquired immune system may modify individual susceptibility to glioma.

Keywords: Glioma; allergies; autoimmune disease; genetic architecture; heritability.

© The Author(s) 2021. Published by Oxford University Press on behalf of the Society for Neuro-Oncology. All rights reserved. For permissions, please e-mail: journals.permissions@oup.com.

Full text links



120. [Unintentional exposure and incidental findings during conventional chest radiography in the pediatric intensive care unit](#)

Medicine (Baltimore). 2021 Mar 5;100(9):e24760. doi: 10.1097/MD.00000000000024760.

Authors

[Mohamad-Hani Temsah](#)^{1 2 3}, [Ayman Al-Eyadhy](#)^{1 2}, [Fahad Alsohime](#)^{1 2}, [Saeed Majed Nassar](#)¹, [Talal Nabil AlHoshan](#)¹, [Hatim Abdullah Alebdi](#)¹, [Faisal Almojel](#)¹, [Muath Abdullah AlBattah](#)¹, [Omendra Narayan](#)⁴, [Ali Alhaboob](#)^{1 2}, [Gamal Mohamad Hasan](#)^{2 5}, [Abdullah Abujamea](#)^{1 6}

Affiliations

- ¹ College of Medicine, King Saud University.
 - ² Pediatric Intensive Care Unit, Pediatric Department, King Saud University Medical City.
 - ³ Prince Abdullah Ben Khalid Celiac Disease Research Chair, King Saud University, Riyadh, Saudi Arabia.
 - ⁴ University of Manchester, Manchester, UK.
 - ⁵ Faculty of Medicine, Assiut University, Assiut, Egypt.
 - ⁶ Radiology Department, King Saud University Medical City, Riyadh, Saudi Arabia.
-
- PMID: [33655939](#)
 - PMCID: [PMC7939184](#)
 - DOI: [10.1097/MD.00000000000024760](#)

Free PMC article

Abstract

Radiation overexposure is common in chest X-ray (CXR) of pediatric patients. However, overexposure may reveal incidental findings that can help to guide patient management or warrant quality improvement. To assess the prevalence of overexposure in CXRs in pediatric intensive care unit (PICU); and identify the incidental findings within overexposed areas, we conducted a retrospective cohort study of children who were admitted to PICU. Two independent evaluators reviewed patient's charts and digital CXRs according to the American College of Radiology standards; to evaluate overexposure of the anatomical parameters and incidental findings. A total of 400 CXRs of 85 patients were reviewed. The mean number of CXRs per patient was 4.7. Almost all (99.75%) CXRs met the criteria for overexposure, with the most common being upper abdomen (99.2%), upper limbs (97%) and neck (95.7%). In addition, 43% of these X-rays were cropped by the radiology technician to appear within the requested perimeter. There was a significant association between field cropping and overexposure (t-test: $t = 9.8$, $P < .001$). Incidental findings were seen in 41.5% of the radiographs; with the most common being gaseous abdominal distension (73.1%), low-positioned nasogastric tube (24.6%), and constipation (10.3%). Anatomical overexposure in routine CXRs remains high and raises a concern in PICU practice. Appropriate collimation of the X-ray beam, rather than electronically cropping the image, is highly recommended to minimize hiding incidental findings in the cropped-out areas. Redefining the anatomic boundaries of CXR in critically ill infants and children may need further studies and consideration. Quality improvement initiatives to minimize radiation overexposure in PICU are recommended, especially in younger children and those with more severe illness upon PICU admission.

Copyright © 2021 the Author(s). Published by Wolters Kluwer Health, Inc.

Conflict of interest statement

The authors have no conflicts of interest to disclose.

- [25 references](#)
- [4 figures](#)

Full text links



121. [Assessment of Tumor Response in Mice with Ovarian Peritoneal Carcinomatosis using Doppler Ultrasound of the Superior Mesenteric Artery and Celiac Trunk](#)

Ultrasound Med Biol. 2021 Mar;47(3):759-768. doi: 10.1016/j.ultrasmedbio.2020.11.030. Epub 2021 Jan 6.

Authors

[Matthias Barral](#)¹, [Cynthia Pimpie](#)¹, [Rachid Kaci](#)², [Iman Al-Dybiat](#)¹, [Massoud Mirshahi](#)¹, [Marc Pocard](#)³, [Philippe Bonnin](#)⁴

Affiliations

- ¹ INSERM Unité 1275 CAP Paris-Tech, Université de Paris, Paris, France.
- ² INSERM Unité 1275 CAP Paris-Tech, Université de Paris, Paris, France; Anatomopathologie, hôpital Lariboisière, Université de Paris, Paris, France.
- ³ INSERM Unité 1275 CAP Paris-Tech, Université de Paris, Paris, France; Chirurgie Digestive et cancérologique, hôpital Lariboisière, Université de Paris, Paris, France.
- ⁴ Physiologie Clinique-Explorations-Fonctionnelles, hôpital Lariboisière, Université de Paris, Paris, France; INSERM U1148, LVTS, hôpital Bichat, Université de Paris, Paris, France. Electronic address: philippe.bonnin@aphp.fr.
- PMID: [33358050](https://pubmed.ncbi.nlm.nih.gov/33358050/)
- DOI: [10.1016/j.ultrasmedbio.2020.11.030](https://doi.org/10.1016/j.ultrasmedbio.2020.11.030)

Abstract

The goal of the work described here was to assess the performance of Doppler ultrasound (US) of the superior mesenteric artery (SMA) and celiac trunk (CT) in the evaluation of tumor response in female mice with ovarian peritoneal carcinomatosis treated either with bevacizumab or with carboplatin. Compared with untreated mice, carboplatin-treated mice had a lower weight (23.3 ± 2.0 vs. 27.9 ± 2.9 g, $p < 0.001$), peritoneal carcinomatosis index (PCI, 11 ± 3 vs. 28 ± 6 , $p < 0.001$), Ki67-positive staining surfaces ($p < 0.001$), vascular density ($p < 0.001$), mean blood flow velocity (mBFVel) in the SMA (7.0 ± 1.4 vs. 10.9 ± 1.8 cm/s, $p < 0.001$) and CT (8.0 ± 1.8 vs. 14.3 ± 4.6 cm/s, $p < 0.001$) and no ascites. Weight and mBFVel were similar in bevacizumab-treated and untreated mice. The mBFVels in the SMA and CT correlated with the PCI used as an estimation of the tumor burden, $R = 0.70$ ($p < 0.0001$) and $R = 0.65$ ($p < 0.0001$), respectively. Doppler US allows non-invasive assessment of the effects of anticancer therapy in ovarian peritoneal carcinomatosis-induced mice.

Keywords: Celiac trunk; Doppler ultrasound; Ovarian peritoneal carcinomatosis; Peritoneal carcinomatosis; Superior mesenteric artery; Tumor response.

Copyright © 2020 World Federation for Ultrasound in Medicine & Biology. Published by Elsevier Inc. All rights reserved.

Full text links



122. [Effect of grape seed power on the structural and physicochemical properties of wheat gluten in noodle preparation system](#)

Food Chem. 2021 Mar 8;355:129500. doi: 10.1016/j.foodchem.2021.129500. Online ahead of print.

Authors

[Sheng-Xiong Chen](#)¹, [Zhi-Jing Ni](#)², [Kiran Thakur](#)³, [Shaoyun Wang](#)⁴, [Jian-Guo Zhang](#)³, [Ya-Fang Shang](#)⁵, [Zhao-Jun Wei](#)⁶

Affiliations

- ¹ School of Food Science and Biological Engineering, Hefei University of Technology, Hefei 230009, PR China.
 - ² Collaborative Innovation Center for Food Production and Safety, School of Biological Science and Engineering, North Minzu University, Yinchuan 750021, PR China.
 - ³ School of Food Science and Biological Engineering, Hefei University of Technology, Hefei 230009, PR China; Collaborative Innovation Center for Food Production and Safety, School of Biological Science and Engineering, North Minzu University, Yinchuan 750021, PR China.
 - ⁴ College of Biological Science and Technology, Fuzhou University, Fuzhou 350108, PR China.
 - ⁵ School of Food Science and Biological Engineering, Hefei University of Technology, Hefei 230009, PR China. Electronic address: yafangshang19@hfut.edu.cn.
 - ⁶ School of Food Science and Biological Engineering, Hefei University of Technology, Hefei 230009, PR China; Collaborative Innovation Center for Food Production and Safety, School of Biological Science and Engineering, North Minzu University, Yinchuan 750021, PR China. Electronic address: zjwei@hfut.edu.cn.
- PMID: [33780794](#)
 - DOI: [10.1016/j.foodchem.2021.129500](#)

Abstract

Noodles were prepared using wheat flour supplemented with 1%, 3%, and 5% grape seed power (GSP). The farinograph properties of wheat flour, the textural properties of the dough, and thermal properties of the gluten were determined. The microstructure was analyzed by scanning electron and atomic force microscopy, and the effects of the addition of GSP on the physicochemical and structural properties (free sulfhydryl content, surface hydrophobic region, and secondary structure) of wheat gluten protein were analyzed. 1% GSP promoted the aggregation of gluten proteins by promoting hydrophobic interactions and hydrogen bonding, thus enhanced the noodle quality. Whereas, 3% and 5% GSP addition disrupted the disulfide bonds between gluten protein molecules and formed macromolecular aggregates linked to gluten proteins through non-covalent bonds and hydrophobic interactions, which prevented the formation of the gluten protein reticulation structure. Our study emphasized the interaction between wheat proteins and GSP in noodle making dough.

Keywords: Gluten; Grape seed power; Molecular interaction; Physicochemical properties; Structure; Wheat; Wheat gluten, PubChem SID: 135,322,122.

Copyright © 2021 Elsevier Ltd. All rights reserved.

Full text links

123. [Evaluation of malnutrition status and clinical indications in children with celiac disease: a cross-sectional study](#)

BMC Pediatr. 2021 Mar 29;21(1):147. doi: 10.1186/s12887-021-02621-3.

Authors

[Zahra Setavand](#)¹, [Maryam Ekramzadeh](#)², [Naser Honar](#)³

Affiliations

- ¹ Student Research Committee, Shiraz University of Medical Sciences, Shiraz, Iran.
- ² Nutrition Research Center, Department of Clinical Nutrition, School of Nutrition and Food Sciences, Shiraz University of Medical Sciences, Shiraz, Iran.
mekramzade@gmail.com.
- ³ Neonatal Research Center, Shiraz University of Medical Sciences, Shiraz, Iran.
- PMID: [33781226](#)
- DOI: [10.1186/s12887-021-02621-3](#)

Free article

[Abstract](#)

Background: Celiac Disease (CD) is an autoimmune systemic disorder triggered by gluten in genetically susceptible individuals, which can lead to chronic malabsorption. Considering the changes in the manifestations of CD, this study aimed to determine anthropometric indices and clinical indications in children with CD.

Methods: This cross-sectional study aimed to evaluate the children with CD who had referred to Imam Reza Celiac Clinic between 2016 and 2019. Totally, 361 children were eligible and their anti-tissue transglutaminase (TGA-IgA) level, weight, height, and Body Mass Index (BMI) were extracted from their records. The anthropometric indices were presented based on the criteria of the Center for Disease Control and Prevention (CDC) and World Health Organization (WHO). The prevalent symptoms were assessed, as well.

Results: Based on the CDC's criteria, 18.3, 28.8, and 25.8% of the children had short stature, low body weight, and low BMI, respectively. These measures were obtained as 10, 22.4, and 13.9% according to the WHO's categorization respectively. Furthermore, the most common symptoms among the children were abdominal pain (56.5%), skeletal pain (28%), constipation (27.4%), and anemia (23.8%).

Conclusion: To sum up, the results clearly indicated that growth failure and low height, weight, and BMI were prevalent among the children with CD. Moreover, in addition to gastrointestinal symptoms, a considerable number of patients had skeletal pain and anemia.

Keywords: BMI; Body weight; Celiac disease; Children; Gluten; Growth; Stature.

- [59 references](#)

Full text links



124. [Precision medicine and machine learning towards the prediction of the outcome of potential celiac disease](#)

Sci Rep. 2021 Mar 11;11(1):5683. doi: 10.1038/s41598-021-84951-x.

Authors

[Francesco Piccialli](#)¹, [Francesco Calabrò](#)², [Danilo Crisci](#)¹, [Salvatore Cuomo](#)¹, [Edoardo Prezioso](#)¹, [Roberta Mandile](#)³, [Riccardo Troncone](#)^{3 4}, [Luigi Greco](#)^{3 4}, [Renata Auricchio](#)^{3 4}

Affiliations

- ¹ Department of Mathematics and Applications "Renato Caccioppoli", University of Naples "Federico II", Via Cintia, Monte S. Angelo, 80126, Naples, Italy.
- ² Department of Mathematics and Applications "Renato Caccioppoli", University of Naples "Federico II", Via Cintia, Monte S. Angelo, 80126, Naples, Italy.
francesco.calabro@unina.it.
- ³ Department of Translational Medical Sciences, University of Naples "Federico II", Naples, Italy.
- ⁴ European Laboratory for the Investigation of Food Induced Diseases (ELFID), University of Naples "Federico II", Naples, Italy.
- PMID: [33707543](#)
- PMCID: [PMC7952550](#)
- DOI: [10.1038/s41598-021-84951-x](#)

Free PMC article

[Abstract](#)

Potential Celiac Patients (PCD) bear the Celiac Disease (CD) genetic predisposition, a significant production of antihuman transglutaminase antibodies, but no morphological changes in the small bowel mucosa. A minority of patients (17%) showed clinical symptoms and need a gluten free diet at time of diagnosis, while the majority progress over several years (up to a decade) without any clinical problem neither a progression of the small intestine mucosal damage even when they continued to assume gluten in their diet. Recently we developed a traditional multivariate approach to predict the natural history, on the base of the information at enrolment (time 0) by a discriminant analysis model. Still, the traditional multivariate model requires stringent assumptions that may not be answered in the clinical setting. Starting from a follow-up dataset available for PCD, we propose the application of Machine Learning (ML) methodologies to extend

the analysis on available clinical data and to detect most influent features predicting the outcome. These features, collected at time of diagnosis, should be capable to classify patients who will develop duodenal atrophy from those who will remain potential. Four ML methods were adopted to select features predictive of the outcome; the feature selection procedure was indeed capable to reduce the number of overall features from 85 to 19. ML methodologies (Random Forests, Extremely Randomized Trees, and Boosted Trees, Logistic Regression) were adopted, obtaining high values of accuracy: all report an accuracy above 75%. The specificity score was always more than 75% also, with two of the considered methods over 98%, while the best performance of sensitivity was 60%. The best model, optimized Boosted Trees, was able to classify PCD starting from the selected 19 features with an accuracy of 0.80, sensitivity of 0.58 and specificity of 0.84. Finally, with this work, we are able to categorize PCD patients that can more likely develop overt CD using ML. ML techniques appear to be an innovative approach to predict the outcome of PCD, since they provide a step forward in the direction of precision medicine aimed to customize healthcare, medical therapies, decisions, and practices tailoring the clinical management of PCD children.

Conflict of interest statement

The authors declare no competing interests.

- [36 references](#)
- [5 figures](#)

Full text links



[Coeliac disease: making the diagnosis](#)

125.

Arch Dis Child. 2021 Mar 9;archdischild-2020-321361. doi: 10.1136/archdischild-2020-321361. Online ahead of print.

Authors

[R Mark Beattie](#)¹, [Akshay Batra](#)²

Affiliations

- ¹ Paediatric Gastroenterology, Southampton Children's Hospital, Southampton, UK
mark.beattie@uhs.nhs.uk.
- ² Paediatric Gastroenterology, Southampton Children's Hospital, Southampton, UK.
- PMID: [33687918](#)
- DOI: [10.1136/archdischild-2020-321361](#)

No abstract available

Keywords: gastroenterology; pathology.

Conflict of interest statement

Competing interests: None declared.

Full text links



126. [Low isolated ferritin levels without anemia: is gastrointestinal tract endoscopy sufficient to explain the cause?](#)

Ir J Med Sci. 2021 Mar 16. doi: 10.1007/s11845-021-02589-0. Online ahead of print.

Authors

[Ayşenur Bahadır](#)¹, [Elif Sag](#)², [Murat Çakır](#)², [Erol Erduran](#)³

Affiliations

- ¹ Division of Pediatric Hematology-Oncology, Faculty of Medicine, Karadeniz Technical University, Trabzon, Turkey. aysenurkbr@yahoo.com.
- ² Division of Pediatric Gastroenterology, Hepatology and Nutrition, Faculty of Medicine, Karadeniz Technical University, Trabzon, Turkey.
- ³ Division of Pediatric Hematology-Oncology, Faculty of Medicine, Karadeniz Technical University, Trabzon, Turkey.
- PMID: [33728527](#)
- DOI: [10.1007/s11845-021-02589-0](#)

Abstract

Aim: The present study assesses the diagnostic significance of low ferritin levels in gastrointestinal diseases by evaluating the endoscopic findings of patients with low ferritin levels without anemia.

Method: The study included patients aged 0-18 years who underwent an upper and lower gastrointestinal system endoscopy in the Pediatric Gastroenterology Department of our hospital. The patients were divided into three groups based on hemoglobin, and ferritin levels at the time of initial presentation and endoscopic and histopathological findings were recorded retrospectively.

Results: In the present study, 2391 pediatric patients were reviewed, among which 29% (n = 699) had anemia, 23% (n = 549) had low ferritin levels without anemia, and 48% (n = 1143) did not have anemia. The most common symptoms were abdominal pain, dyspepsia, and growth

retardation. When the endoscopy findings were compared with those of patients with non-anemic group, *Helicobacter pylori* gastritis (24%/17.6%) and celiac disease (6%/2.2%) were more common in low ferritin levels without anemia, which indicated a statistically significant difference ($p = 0.000/p = 0.04$).

Conclusions: *Helicobacter pylori* gastritis and celiac disease were more commonly observed in association with low ferritin levels. Low ferritin levels without anemia can be an early and silent sign of celiac disease.

Keywords: Anemia; Children; Gastrointestinal endoscopic findings; Low ferritin.

- [19 references](#)

Full text links



127. [Distal pancreatectomy with en bloc celiac axis resection \(DP-CAR\) and arterial reconstruction: Techniques and outcomes](#)

J Surg Oncol. 2021 Mar 8. doi: 10.1002/jso.26424. Online ahead of print.

Authors

[Pietro Addeo](#)¹, [Martina Guerra](#)¹, [Philippe Bachellier](#)¹

Affiliation

- ¹ Hepato-Pancreato-Biliary Surgery and Liver transplantation, Pôle des Pathologies Digestives, Hépatiques et de la Transplantation, Hôpital de Hautepierre-Hôpitaux Universitaires de Strasbourg, Université de Strasbourg, Strasbourg, France.
- PMID: [33684225](#)
- DOI: [10.1002/jso.26424](#)

Abstract

Background: Ischemic complications are still prevalent after distal pancreatectomy with en bloc celiac axis resection (DP-CAR) despite the use of preoperative arterial embolization. We described our institutional experience with arterial reconstruction during DP-CAR.

Methods: We retrospectively reviewed short- and long-term outcomes of all DP-CAR performed for pancreatic adenocarcinoma between January 1, 1995 and March 30, 2020. Outcomes were compared according to the presence of arterial reconstruction.

Results: Sixty consecutive DP-CARs were reviewed. Most patients underwent induction chemotherapy (85%) based on FOLFIRINOX protocol (80.3%). The hepatic artery was

reconstructed in 50 patients (83.3%). The left gastric artery was reconstructed in 4 and preserved in 14 patients. A venous resection was associated during 44 DP-CARs (36 segmental venous resections/8 lateral venous resections). Ninety days mortality was 5.0% with 48.3% (n = 29) overall rate of morbidity. Postoperative outcomes in term of mortality, morbidity, and ischemic events between patients with and without arterial reconstruction were similar despite a higher rate of venous resection (81% vs. 40%; p = 0.005) and more complex cases (Mayo clinic DP-CARs class 1B, 2A, and 3A) in the reconstructed group.

Conclusion: Arterial reconstruction represents a safe surgical option during DP-CAR to lessen postoperative ischemic events. This technique, reserved to high volume centers expert in vascular resection during pancreatectomy, deserves further comparison with standard technique in a larger setting.

Keywords: Appleby procedure; arterial resection; celiac trunk; distal pancreatectomy; pancreatic surgery.

© 2021 Wiley Periodicals LLC.

- [27 references](#)

Full text links



128. [Occupational IgE-mediated psyllium allergy in contemporary gluten-free and vegan baking: A case of allergic rhinitis](#)

Am J Ind Med. 2021 Mar 2. doi: 10.1002/ajim.23238. Online ahead of print.

Authors

[Soile Jungewelter](#)¹, [Sari Suomela](#)¹, [Liisa Airaksinen](#)¹

Affiliation

- ¹ Finnish Institute of Occupational Health (FIOH), Helsinki, Finland.
- PMID: [33651455](#)
- DOI: [10.1002/ajim.23238](#)

Abstract

Psyllium (from *Plantago ovata*; ispaghula) is used as a dietary supplement and is supplied in the form of husk, granules, capsules, or powder. Consumers using psyllium-containing laxatives, healthcare workers handling these, and pharmaceutical workers in laxative-manufacturing plants are known to be at risk of sensitization and subsequent rhinitis, asthma, contact urticaria, and even anaphylaxis. To our knowledge, the case we present here is the first of baker's

immunoglobulin E (IgE)-mediated occupational allergy due to psyllium exposure. Our patient, a 24-year-old female baker with no previous allergies, was referred to our clinic with suspected occupational rhinitis. After 1 year of baking with cereal flour or gluten-free flour-mix, she began to suffer from rhino-conjunctival symptoms during workdays. Skin prick tests with agents from the patient's workplace revealed allergies not only to wheat and rye flours but also to psyllium, with a remarkable 10 mm wheal. Subsequently, nasal provocation tests confirmed occupational allergic rhinitis to psyllium. We also found work-related sensitization to buckwheat, which she used in gluten-free baking. Due to the increased prevalence of celiac disease and the popularity of gluten-free and vegan food, psyllium has recently become a common ingredient in baking, used as a substitute for gluten or eggs. Bakers handle allergens such as these in high concentrations and this may lie behind the emergence of respiratory and dermal symptoms. It is essential to consider new or recently introduced materials as possible allergens if it is suspected that a baker has work-related respiratory or allergic symptoms.

Keywords: allergy; baker; ispaghula; nasal provocation test; occupational rhinitis.

© 2021 Wiley Periodicals LLC.

- [17 references](#)

Full text links



129. [Evaluation of anti-COVID-19 measures taken by the parents of children with celiac disease: a cross-sectional study](#)

Sao Paulo Med J. 2021 Mar 3;S1516-31802021005006202. doi: 10.1590/1516-3180.2020.0644.10122020. Online ahead of print.

Authors

[Ayşegül Bükülmez](#)¹, [Melike Taşdelen Baş](#)², [Esra Çiftci](#)³

Affiliations

- ¹ MD. Physician and Professor, Department of Pediatrics, Afyonkarahisar Health Sciences University, Afyonkarahisar, Turkey.
- ² PhD. Nurse and Lecturer, Selcuk University Aksehir Kadir Yallagoz Health School, Konya, Turkey.
- ³ MD. Pediatrician, Department of Pediatrics, Afyonkarahisar Health Sciences University, Afyonkarahisar, Turkey.
- PMID: [33681884](#)
- DOI: [10.1590/1516-3180.2020.0644.10122020](#)

Free article

Abstract

Background: Coronavirus disease 2019 (COVID-19) causes negative life changes brought about through lockdowns, in addition to severe complications and death. Among these changes, asplenism or hyposplenism has been reported in patients with celiac disease. It has been reported that the risk of pneumococcal sepsis is higher in celiac patients with hyposplenism. Moreover, celiac patients present high risk of admission to hospital due to influenza.

Objective: To determine the degree of awareness of COVID-19 among parents of children with celiac disease and examine the measures that they take.

Design and setting: Cross-sectional study at a university hospital in the Middle Anatolian region of Turkey.

Methods: The diagnosis of celiac disease was confirmed through a survey conducted online among 73 parents between May and July 2020.

Results: The mean age was 37.57 ± 6.56 years for the mothers, 41.15 ± 5.56 years for the fathers and 11.36 ± 4.36 years for the children. 90.4% of the parents reported that COVID-19 was transmitted through "speaking, coughing, sneezing and infection of the face after contact with virus-infected surfaces". Moreover, 78.1% indicated that they did not have any difficulty in finding gluten-free foods.

Conclusion: These parents of children with celiac disease believed that their children's risk of developing COVID-19 did not differ from that of healthy children. It was also observed that appetite and states of nervousness were higher among these children with celiac disease during lockdowns and that their sleep patterns were affected.

Full text links

free full text
available at [Scielo.org](https://scielo.org)

[\[Diagnosis of celiac disease in a nonagenarian patient\]](#)

130.

Rev Esp Geriatr Gerontol. Mar-Apr 2021;56(2):109-110. doi: 10.1016/j.regg.2020.12.005. Epub 2021 Jan 22.

[Article in Spanish]

Authors

[Elena María García Carreño](#)¹, [Nieves Parras García de León](#)², [Javier Gil Moreno](#)², [Noel Ortea Llera](#)³

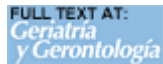
Affiliations

- ¹ FEA de Geriatria, Hospital General de Ciudad Real, Ciudad Real, España. Electronic address: elena.gcarreno@gmail.com.

- ² FEA de Geriátría, Hospital General de Ciudad Real, Ciudad Real, España.
- ³ FEA de Medicina Familiar y Comunitaria, Centro de Salud de Mota del Cuervo, Mota del Cuervo, Cuenca, España.
- PMID: [33487460](#)
- DOI: [10.1016/j.regg.2020.12.005](#)

No abstract available

Full text links



[Overexpression of endogenous retroviruses in children with celiac disease](#)

131.

Eur J Pediatr. 2021 Mar 26. doi: 10.1007/s00431-021-04050-x. Online ahead of print.

Authors

[Pier-Angelo Tovo](#) ¹, [Anna Opramolla](#) ², [Antonio Pizzol](#) ², [Giulia Calosso](#) ², [Valentina Daprà](#) ³, [Ilaria Galliano](#) ³, [Cristina Calvi](#) ³, [Michele Pinon](#) ², [Fabio Cisarò](#) ², [Caterina Rigazio](#) ², [Pier Luigi Calvo](#) ², [Massimiliano Bergallo](#) ^{4 5}

Affiliations

- ¹ Department of Public Health and Pediatric Sciences, University of Turin, Piazza Polonia, 96 10126, Turin, Italy.
- ² Pediatric Gastroenterology Unit, Regina Margherita Children's Hospital, Azienda Ospedaliera-Universitaria Città della Salute e della Scienza, Turin, Italy.
- ³ Pediatric Laboratory, Department of Public Health and Pediatric Sciences, University of Turin, Turin, Italy.
- ⁴ Department of Public Health and Pediatric Sciences, University of Turin, Piazza Polonia, 96 10126, Turin, Italy. massimiliano.bergallo@unito.it.
- ⁵ Pediatric Laboratory, Department of Public Health and Pediatric Sciences, University of Turin, Turin, Italy. massimiliano.bergallo@unito.it.
- PMID: [33772337](#)
- DOI: [10.1007/s00431-021-04050-x](#)

Abstract

Human endogenous retroviruses (HERVs) represent 8% of our genome. Although no longer infectious, they can regulate transcription of adjacent cellular genes, produce retroviral RNAs, and encode viral proteins that can modulate both innate and adaptive immune responses. Based on this, HERVs have been studied and proposed as contributing factors in various autoimmune disorders. Celiac disease (CD) is considered an autoimmune disease, but HERV expression has not been studied in celiac patients. The aim of this study is to assess the transcription levels of pol

genes of HERV-H, -K, and -W and of their TRIM28 repressor in WBCs from celiac children and age-matched control subjects. A PCR real-time TaqMan amplification assay was used to evaluate HERV and TRIM28 transcripts with normalization of the results to glyceraldehyde-3-phosphate dehydrogenase. The RNA levels of pol genes of the three HERV families were significantly higher in WBCs from 38 celiac patients than from 51 control subjects. TRIM28 transcription was comparable between the two study populations. Conclusion: Present results show, for the first time, that pol genes of HERV-H, -K, and -W are overexpressed in patients with CD. Given their proinflammatory and autoimmune properties, this suggests that HERVs may contribute to the development of CD in susceptible individuals. What is Known: • Based on this, HERVs have been studied and proposed as contributing factors in various autoimmune disorders. What is New: • Present results show, for the first time, that pol genes of HERV-H, -K, and -W are overexpressed in patients with CD.

Keywords: Autoimmune diseases; Celiac disease; Children; Human endogenous retroviruses.

- [38 references](#)

Full text links



[The fashionable gluten-free diet-wear with caution](#)

132.

Am J Clin Nutr. 2021 Mar 11;113(3):491-492. doi: 10.1093/ajcn/nqaa371.

Authors

[Claire L Jansson-Knodell](#)¹, [Alberto Rubio-Tapia](#)²

Affiliations

- ¹ Division of Gastroenterology and Hepatology, Department of Medicine, Indiana University School of Medicine, Indianapolis, IN, USA.
- ² Division of Gastroenterology, Hepatology, and Nutrition; Digestive Disease and Surgery Institute, Cleveland Clinic, Cleveland, OH, USA.
- PMID: [33515028](#)
- DOI: [10.1093/ajcn/nqaa371](#)

No abstract available

Comment on

- [Genetic, lifestyle, and health-related characteristics of adults without celiac disease who follow a gluten-free diet: a population-based study of 124,447 participants.](#)

Littlejohns TJ, Chong AY, Allen NE, Arnold M, Bradbury KE, Mentzer AJ, Soilleux EJ, Carter JL.

Am J Clin Nutr. 2021 Mar 11;113(3):622-629. doi: 10.1093/ajcn/nqaa291.

PMID: 33184625 Free PMC article.

Full text links



[A rapid and sensitive lateral flow immunoassay \(LFIA\) for the detection of gluten in foods](#)

133.

Food Chem. 2021 Mar 13;355:129514. doi: 10.1016/j.foodchem.2021.129514. Online ahead of print.

Authors

[Robert M Hnasko](#)¹, [Eric S Jackson](#)², [Alice V Lin](#)², [Ronald P Haff](#)², [Jeffery A McGarvey](#)²

Affiliations

- ¹ United States Department of Agriculture, Agricultural Research Service, Pacific West Area, Western Regional Research Center (USDA-ARS-PWA-WRRC), 800 Buchanan St., Albany, CA 94710, United States. Electronic address: Robert.hnasko@ars.usda.gov.
- ² United States Department of Agriculture, Agricultural Research Service, Pacific West Area, Western Regional Research Center (USDA-ARS-PWA-WRRC), 800 Buchanan St., Albany, CA 94710, United States.
- PMID: [33774225](#)
- DOI: [10.1016/j.foodchem.2021.129514](#)

Free article

[Abstract](#)

The gluten protein found in a variety of cereal grains is a food allergen that can elicit a spectrum of immuno-inflammatory responses in people. Consumer awareness has prompted changes in food labeling requirements, expanded gluten-free food product availability and increased demand for effective gluten testing methodologies. To meet the challenges associated with gluten testing from diverse and complex foods we developed a lateral flow immunoassay (LFIA) using a pair of novel gliadin monoclonal antibodies (MAbs). Using a visual gold reporter, we show sensitive gluten detection (150 ng/mL) from complex food substrates using a fast (<5 min) and easy testing methodology. In this report we characterize the binding properties of a cohort of newly generated gliadin monoclonal antibodies suitable for gluten detection using multiple assay formats and introduce a novel plug-n-play test strip platform with integrated test components in a single-use format.

Keywords: Biosensor; Food allergen; Gliadin; Gluten; Lateral Flow Immunoassay (LFIA); Monoclonal antibodies.

Published by Elsevier Ltd.

Full text links



134. [Long-term Outcome of Children Born to Women with Autoimmune Rheumatic Diseases: A Multicentre, Nationwide Study on 299 Randomly Selected Individuals](#)

Clin Rev Allergy Immunol. 2021 Mar 16. doi: 10.1007/s12016-021-08857-2. Online ahead of print.

Authors

[Laura Andreoli](#)^{# 1 2}, [Cecilia Nalli](#)^{# 3}, [Maria Grazia Lazzaroni](#)^{4 3}, [Chiara Carini](#)⁴, [Francesca Dall'Ara](#)⁴, [Rossella Reggia](#)⁴, [Marília Rodrigues](#)⁵, [Carolina Benigno](#)⁶, [Elena Baldissera](#)⁷, [Elena Bartoloni](#)⁸, [Fabio Basta](#)⁹, [Francesca Bellisai](#)¹⁰, [Alessandra Bortoluzzi](#)¹¹, [Corrado Campochiaro](#)⁷, [Francesco Paolo Cantatore](#)¹², [Roberto Caporali](#)^{13 14}, [Angela Ceribelli](#)¹⁵, [Cecilia B Chighizola](#)¹⁶, [Paola Conigliaro](#)¹⁷, [Addolorata Corrado](#)¹², [Maurizio Cutolo](#)¹⁸, [Salvatore D'Angelo](#)¹⁹, [Elena De Stefani](#)¹¹, [Andrea Doria](#)²⁰, [Maria Favaro](#)²⁰, [Colomba Fischetti](#)²¹, [Rosario Foti](#)²², [Armando Gabrielli](#)²¹, [Elena Generali](#)¹⁵, [Roberto Gerli](#)⁸, [Maria Gerosa](#)^{13 14}, [Maddalena Larosa](#)²⁰, [Armin Maier](#)²³, [Nazzarena Malavolta](#)²⁴, [Marianna Meroni](#)²⁵, [Pier Luigi Meroni](#)¹⁶, [Carlomaurizio Montecucco](#)²⁶, [Marta Mosca](#)²⁷, [Melissa Padovan](#)¹¹, [Giuseppe Paolazzi](#)²⁸, [Giulia Pazzola](#)²⁹, [Susanna Peccatori](#)²⁸, [Roberto Perricone](#)¹⁷, [Giorgio Pettiti](#)³⁰, [Valentina Picerno](#)¹⁹, [Immacolata Prevete](#)³¹, [Véronique Ramoni](#)²⁶, [Nicoletta Romeo](#)³⁰, [Amelia Ruffatti](#)²⁰, [Carlo Salvarani](#)²⁹, [Gian Domenico Sebastiani](#)³¹, [Carlo Selmi](#)¹⁵, [Francesca Serale](#)³⁰, [Luigi Sinigaglia](#)¹³, [Chiara Tani](#)²⁷, [Marica Trevisani](#)²⁴, [Marta Vadacca](#)⁹, [Eleonora Valentini](#)⁸, [Guido Valesini](#)³², [Elisa Visalli](#)²², [Ester Vivaldelli](#)²³, [Lucia Zuliani](#)²¹, [Angela Tincani](#)^{4 3}

Affiliations

- ¹ Department of Clinical and Experimental Sciences, University of Brescia, Viale Europa 11, 25123, Brescia, Italy. laura.andreoli@unibs.it.
- ² Rheumatology and Clinical Immunology Unit, ASST Spedali Civili, Piazzale Spedali Civili 1, 25123, Brescia, Italy. laura.andreoli@unibs.it.
- ³ Rheumatology and Clinical Immunology Unit, ASST Spedali Civili, Piazzale Spedali Civili 1, 25123, Brescia, Italy.
- ⁴ Department of Clinical and Experimental Sciences, University of Brescia, Viale Europa 11, 25123, Brescia, Italy.
- ⁵ Centro Hospitalar de Leiria (CHL), Hospital de Santo André (HSA), R. de Santo André, 2410-197, Leiria, Portugal.
- ⁶ Rheumatology Research Unit, Department of Clinical Medicine and Surgery, University Federico II of Naples, Via Sergio Pansini 5, 80131, Naples, Italy.
- ⁷ Unit of Medicine and Clinical Immunology, IRCCS San Raffaele Scientific Institute, Via Olgettina 60, 20132, Milan, Italy.

- ⁸ Department of Medicine, Rheumatology Unit, University of Perugia, Piazzale Gambuli 1, 06132, Perugia, Italy.
- ⁹ Unit of Allergology, Clinical Immunology and Rheumatology, University Campus Biomedico Rome, Via Álvaro del Portillo, 21, 00128, Rome, Italy.
- ¹⁰ Rheumatology Unit, Policlinico Le Scotte and University of Siena, Via Mario Bracci-Loc.Le Scotte, 53100, Siena, Italy.
- ¹¹ Rheumatology Unit, Department of Medical Sciences, University of Ferrara and Azienda Ospedaliero-Universitaria S. Anna, Via Aldo Moro 8, 44124, Cona, Ferrara, Italy.
- ¹² Rheumatology Clinic, Department of Medical and Surgical Sciences, University of Foggia, Rione Biccari, 71122, Foggia, Italy.
- ¹³ Department of Rheumatology, ASST Istituto Gaetano Pini & CTO, Piazza Cardinale Andrea Ferrari, 1, 20122, Milan, Italy.
- ¹⁴ Department of Clinical Sciences and Community Health, University of Milan, Via Festa del Perdono 7, 20122, Milano, Italy.
- ¹⁵ Division of Rheumatology and Clinical Immunology, Humanitas Research Hospital, Via Manzoni 56Rozzano Milano, 20089, Milan, Italy.
- ¹⁶ Unit of Rheumatology, Istituto Auxologico Italiano, Via Mosè Bianchi, 90, 20149, Milan, Italy.
- ¹⁷ Rheumatology, Allergy and Clinical Immunology, University of Rome Tor Vergata, Via Oxford 81, 00133, Rome, Italy.
- ¹⁸ Research Laboratory and Division of Rheumatology, Postgraduate School of Rheumatology, Department of Internal Medicine, University of Genova, Viale Benedetto XV 16, 16132, Genova, Italy.
- ¹⁹ Rheumatology Institute of Lucania (IREL) - Rheumatology Department of Lucania, San Carlo Hospital of Potenza and Madonna Delle Grazie Hospital of Matera, Via Potito Petrone 1, 85100, Potenza, Italy.
- ²⁰ Rheumatology Unit, Department of Medicine-DIMED, University of Padua, Via Nicolò Giustiniani, 2, 35128, Padua, Italy.
- ²¹ Clinica Medica, Università Politecnica Delle Marche, Via Tronto, 10/a, 60126, Ancona, Italy.
- ²² Rheumatology Unit, A.O.U. Policlinico Vittorio Emanuele, Via S. Sofia 78, 95123, Catania, Italy.
- ²³ Rheumatology Outpatient Clinic, Internal Medicine Department, Hospital of Bolzano, Via Lorenz Böhler 5, 39100, Bolzano, Italy.
- ²⁴ Rheumatology Unit, Internal Medicine, Policlinico S.Orsola-Malpighi, Azienda Ospedaliero-Universitaria Di Bologna, Via Pietro Albertoni 15, 40138, Bologna, Italy.
- ²⁵ Humanitas Gavazzeni, ASL 5 Spezzino, BergamoLa Spezia, Italy.
- ²⁶ Division of Rheumatology, University of Pavia and Fondazione IRCCS Policlinico San Matteo, Viale Camillo Golgi 19, 27100, Pavia, Italy.
- ²⁷ Rheumatology Unit, Department of Clinical and Experimental Medicine, University of Pisa, Via Roma, 67, 56126, Pisa, Italy.
- ²⁸ Department of Rheumatology, S. Chiara Hospital, Largo Medaglie D'oro 9, 38122, Trento, Italy.
- ²⁹ Rheumatology Unit, Azienda USL-IRCCS of Reggio Emilia, University of Modena and Reggio Emilia, Viale Risorgimento, 80, 42123, Reggio-Emilia, Italy.
- ³⁰ Unit of Rheumatology, S.Croce E Carle Hospital, Via Michele Coppino, 26, 12100, Cuneo, Italy.

- ³¹ Rheumatology Unit, San Camillo Hospital, Circonvallazione Gianicolense, 87, 00152, Rome, Italy.
- ³² Rheumatology Unit, Department of Internal Medicine and Medical Specialties, La Sapienza University, Piazzale Aldo Moro 5, 00185, Roma, Italy.

Contributed equally.

- PMID: [33725262](#)
- DOI: [10.1007/s12016-021-08857-2](#)

Abstract

The concern about the offspring's health is one of the reasons for a reduced family size of women with rheumatic diseases (RD). Increased risk of autoimmune diseases (AD) and neurodevelopmental disorders (ND) has been reported in children born to patients with RD. Within a nationwide survey about reproductive issues of women with RD, we aimed at exploring the long-term outcome of their children. By surveying 398 patients who received their diagnosis of RD during childbearing age (before the age of 45), information about the offspring were obtained from 230 women who declared to have had children. A total of 148 (64.3%) patients were affected by connective tissue diseases (CTD) and 82 (35.7%) by chronic arthritis. Data on 299 children (156 males, 52.1%; mean age at the time of interview 17.1 ± 9.7 years) were collected. Twelve children (4.0%), who were born to patients with CTD in 75% of the cases, were affected by AD (8 cases of celiac disease). Eleven children had a certified diagnosis of ND (3.6%; 6 cases of learning disabilities); 9 of them were born to mothers with CTD (5 after maternal diagnosis). No association was found between ND and prenatal exposure to either maternal autoantibodies or anti-rheumatic drugs. Absolute numbers of offspring affected by AD and ND were low in a multicentre cohort of Italian women with RD. This information can be helpful for the counselling about reproductive issues, as the health outcomes of the offspring might not be an issue which discourage women with RD from having children.

Keywords: Counselling; Neurodevelopmental disorders; Offspring; Reproductive issues; Rheumatic diseases.

- [20 references](#)

Full text links



[Editorial: towards an understanding of increased mortality in coeliac disease](#)

135.

Aliment Pharmacol Ther. 2021 Mar;53(5):654-655. doi: 10.1111/apt.16237.

Author

[Robert P Anderson](#) ¹

Affiliation

- ¹ Wesley Medical Research - The Wesley Hospital, Auchenflower, QLD, Australia.
- PMID: [33566401](#)
- DOI: [10.1111/apt.16237](#)

No abstract available

Comment in

- [Editorial: towards an understanding of increased mortality in coeliac disease-authors' reply.](#)

Schneider CV, Strnad P.

Aliment Pharmacol Ther. 2021 Mar;53(5):656. doi: 10.1111/apt.16246.

PMID: 33566418No abstract available.

Comment on

- [Phenome-wide association study in adult coeliac disease: role of HLA subtype.](#)

Schneider CV, Kleinjans M, Fromme M, Schneider KM, Strnad P.

Aliment Pharmacol Ther. 2021 Feb;53(4):510-518. doi: 10.1111/apt.16206. Epub 2020 Dec 5.

PMID: 33280147

- [11 references](#)

136. [Correction to: Distance measurements and origin levels of the coeliac trunk, superior mesenteric artery, and inferior mesenteric artery by multiple-detector computed tomography angiography](#)

Anat Sci Int. 2021 Mar;96(2):332. doi: 10.1007/s12565-020-00591-7.

Authors

[Arzu Ekingen](#) ¹, [Eyüp Savaş Hatipoğlu](#) ², [Cihad Hamidi](#) ³

Affiliations

- ¹ Vocational High School of Health Services, Batman University, Batman, Turkey. arzumumcu55@gmail.com.
- ² Department of Anatomy, Faculty of Medicine, University of Dicle, Diyarbakır, Turkey.
- ³ Department of Radiology, Private Bağlar Hospital, Diyarbakır, Turkey.
- PMID: [33373030](#)
- DOI: [10.1007/s12565-020-00591-7](https://doi.org/10.1007/s12565-020-00591-7)

No abstract available

Erratum for

- [Distance measurements and origin levels of the coeliac trunk, superior mesenteric artery, and inferior mesenteric artery by multiple-detector computed tomography angiography.](#)

Ekingen A, Hatipoğlu ES, Hamidi C.

Anat Sci Int. 2021 Jan;96(1):132-141. doi: 10.1007/s12565-020-00571-x. Epub 2020 Sep 11.

PMID: 32915395

Full text links



[Spontaneous dissection of coeliac and superior mesenteric artery: double whammy](#)

137.

BMJ Case Rep. 2021 Mar 15;14(3):e240047. doi: 10.1136/bcr-2020-240047.

Authors

[Kanhai Lalani](#) ¹, [Tom Devasia](#) ¹, [Ganesh Paramasivam](#) ²

Affiliations

- ¹ Cardiology, Kasturba Medical College, Manipal, Manipal Academy of Higher Education, Manipal, Karnataka, India.
- ² Cardiology, Kasturba Medical College, Manipal, Manipal Academy of Higher Education, Manipal, Karnataka, India ganeshbmc@gmail.com.
- PMID: [33722914](#)
- PMCID: **PMC7959236** (available on 2023-03-15)
- DOI: [10.1136/bcr-2020-240047](https://doi.org/10.1136/bcr-2020-240047)

Abstract

Isolated dissection of one of the mesenteric arteries without concurrent involvement of the aorta is a rare clinical entity and an unusual cause of abdominal pain. It usually involves one artery, most commonly the superior mesenteric artery (SMA) followed by the coeliac artery. We are reporting a rare case where both coeliac and SMA were showing dissection. We are reporting a case of 60-year-old hypertensive male who came with worsening abdominal pain for 5 days; CT scan showed coeliac and SMA dissection without any imaging evidence of intestinal ischaemia. He was successfully managed medically with bowel rest and anticoagulation. Two weeks of follow-up CT scan showed no progression or thrombus formation. For complicated cases, percutaneous transluminal angioplasty of a visceral artery or open surgical exploration or hybrid approach is required. However, for stable uncomplicated cases, medical therapy alone is sufficient.

Keywords: cardiovascular system; coeliac disease; medical management; radiology (diagnostics).

© BMJ Publishing Group Limited 2021. No commercial re-use. See rights and permissions.
Published by BMJ.

Conflict of interest statement

Competing interests: None declared.

Full text links



138. [Abatacept enhances blood regulatory B cells of rheumatoid arthritis patients to a level that associates with disease remittance](#)

Sci Rep. 2021 Mar 11;11(1):5629. doi: 10.1038/s41598-021-83615-0.

Authors

[Maha Fahad Alenazy](#)^{1 2}, [Fatemeh Saheb Sharif-Askari](#)³, [Mohammed A Omair](#)⁴, [Mohammad S El-Wetidy](#)¹, [Maha A Omair](#)⁵, [Hussam Mitwalli](#)¹, [Saleh Al-Muhsen](#)^{1 6}, [Abeer Al-Masri](#)², [Qutayba Hamid](#)^{3 7 8}, [Rabih Halwani](#)^{9 10 11}

Affiliations

- ¹ Immunology Research Lab, College of Medicine, King Saud University, Riyadh, Saudi Arabia.
- ² Department of Physiology, College of Medicine, King Saud University, Riyadh, Saudi Arabia.
- ³ Sharjah Institute of Medical Research, University of Sharjah, Sharjah, United Arab Emirates.

- ⁴ Rheumatology Unit, Department of Medicine, College of Medicine, King Saud University, Riyadh, Saudi Arabia.
- ⁵ Department of Statistics and Operations Research, College of Science, King Saud University, Riyadh, Saudi Arabia.
- ⁶ Department of Pediatrics, College of Medicine, King Saud University, Riyadh, Saudi Arabia.
- ⁷ Department of Clinical Sciences, College of Medicine, University of Sharjah, Sharjah, United Arab Emirates.
- ⁸ Meakins-Christie Laboratories, Research Institute of the McGill University Health Center, Montreal, QC, Canada.
- ⁹ Sharjah Institute of Medical Research, University of Sharjah, Sharjah, United Arab Emirates. rhalwani@sharjah.ac.ae.
- ¹⁰ Department of Clinical Sciences, College of Medicine, University of Sharjah, Sharjah, United Arab Emirates. rhalwani@sharjah.ac.ae.
- ¹¹ Prince Abdullah Ben Khaled Celiac Disease Chair, College of Medicine, King Saud University, Riyadh, Saudi Arabia. rhalwani@sharjah.ac.ae.
- PMID: [33707483](https://pubmed.ncbi.nlm.nih.gov/33707483/)
- PMCID: [PMC7952390](https://pubmed.ncbi.nlm.nih.gov/PMC7952390/)
- DOI: [10.1038/s41598-021-83615-0](https://doi.org/10.1038/s41598-021-83615-0)

Free PMC article

[Abstract](#)

Abatacept, an inhibitor of CD28 mediated T-cell activation, has been shown to be effective in controlling inflammation during rheumatoid arthritis (RA). However, its effects on immune regulatory B and T cells (Bregs and Tregs) has not been fully explored. Thirty-one RA patients treated with abatacept for ≥ 6 months along with 31 RA patients treated with other modalities as well as 30 healthy controls were recruited. Of these 62 RA patients, 49 (79%) were females with a mean age of 54 ± 12 years and disease duration of 10 ± 6 years. The blood levels of Tregs and Bregs and their production of immunosuppressive cytokines, were determined using FACS analysis and Luminex Multiplex assay. Treatment with abatacept significantly enhanced the blood level of IL-35⁺ IL-10⁺ Bregs ($P = 0.0007$). Their levels were higher in the blood of remitted patients (DAS28-CRP < 2.6) compared to the unremitted ones ($P = 0.0173$), 6 months following abatacept treatment initiation. Moreover, abatacept treatment significantly enhanced the blood levels of LAG3⁺ conventional and unconventional Tregs of RA patients. This increase in the blood levels of Bregs and Tregs was accompanied with an elevated serum level of IL-35 and IFN- β in abatacept-treated patients. Therefore, Abatacept efficiency to achieve remittance in RA could be attributed, in part, to its ability to enhance immune regulatory cells, especially IL-135⁺ IL-10⁺ Bregs.

Conflict of interest statement

Dr. Mohammed A. Omair has received speakers' fees and educational/research grants from Bristol-Myers Squibb. He was blinded to the analysis of the data. All other authors declare no competing interests related to this work.

- [47 references](#)

- [3 figures](#)

Full text links



[Towards virtual biopsies of gastrointestinal tissues using photoacoustic remote sensing microscopy](#)

139.

Quant Imaging Med Surg. 2021 Mar;11(3):1070-1077. doi: 10.21037/qims-20-722.

Authors

[Benjamin R Ecclestone](#)¹, [Saad Abbasi](#)¹, [Kevan Bell](#)^{1 2}, [Deepak Dinakaran](#)^{2 3}, [Gilbert Bigras](#)⁴, [John R Mackey](#)³, [Parsin Haji Reza](#)¹

Affiliations

- ¹ PhotoMedicine Labs, Department of Systems Design Engineering, University of Waterloo, Waterloo, Canada.
- ² illumiSonics Inc., Department of Systems Design Engineering, University of Waterloo, Waterloo, Canada.
- ³ Department of Oncology, University of Alberta, Edmonton, Canada.
- ⁴ Department of Laboratory Medicine and Pathology, University of Alberta, Edmonton, Canada.
- PMID: [33654678](#)
- PMCID: [PMC7829170](#)
- DOI: [10.21037/qims-20-722](#)

Free PMC article

[Abstract](#)

Gastrointestinal (GI) tissue biopsies provide critical diagnostic information for a wide variety of conditions such as neoplastic diseases (colorectal, small bowel and stomach cancers) and non-neoplastic diseases (inflammatory disorders, infection, celiac disease). Endoscopic biopsies collect small tissue samples that require resource intensive processing to permit histopathological analysis. Unfortunately, the sparsely collected biopsy samples may fail to capture the pathologic condition because selection of biopsy sites relies on macroscopic superficial tissue features and clinician judgement. Here, we present the first all-optical non-contact label-free non-interferometric photoacoustic microscopy system capable of performing "virtual biopsies". A modular photoacoustic remote sensing (PARS™) architecture is used facilitating imaging of unprocessed tissues providing information similar to conventional histopathological staining techniques. Prospectively this would allow gastroenterologists to assess subcellular tissue morphology in situ when selecting biopsy location. Tested on preserved unstained human and freshly resected murine tissues, the presented PARS microscope rapidly retrieves images of similar area to current biopsies, while maintaining comparable quality to the

current standard for histopathological analysis. Additionally, results show the first label free assessment of subsurface cellular morphology in FFPE GI tissue blocks. Clinically relevant features are recovered including cellular details such as lamina propria within colon tissue and cell nuclear structure in resected smooth muscle. Constructed with a modular architecture, this system facilitates the future development of compact imaging heads. The modular PARS system overcomes many of the challenges with imaging unstained thick tissue *in situ*, representing a significant milestone in the development of a clinical microscope providing virtual biopsy capabilities.

Keywords: Photoacoustic remote sensing microscopy (PARS); gastrointestinal (GI); histology; pathology; photoacoustics.

2021 Quantitative Imaging in Medicine and Surgery. All rights reserved.

Conflict of interest statement

Conflicts of Interest: All authors have completed the ICMJE uniform disclosure form (available at <http://dx.doi.org/10.21037/qims-20-722>). The special issue “Advanced Optical Imaging in Biomedicine” was commissioned by the editorial office without any funding or sponsorship. KB, DD, JRM and PHR have financial interests in IllumiSonics Inc. IllumiSonics partially supported this work. The authors have no other conflicts of interest to declare.

- [4 figures](#)

Full text links



[Successful coping with SARS-CoV-2 infection of adult celiac patients assessed by telemedicine](#)

140.

Dig Liver Dis. 2021 Apr;53(4):391-393. doi: 10.1016/j.dld.2021.01.007. Epub 2021 Jan 14.

Authors

[Gloria Galli](#)¹, [Gianluca Esposito](#)², [Emanuele Dilaghi](#)², [Bruno Annibale](#)², [Edith Lahner](#)², [Laura Conti](#)²

Affiliations

- ¹ Department of Surgical-Medical Sciences and Translational Medicine, Sant'Andrea University Hospital, Sapienza University of Rome, Via di Grottarossa 1035, 00189 Rome, Italy. Electronic address: gloria.galli@uniroma1.it.
- ² Department of Surgical-Medical Sciences and Translational Medicine, Sant'Andrea University Hospital, Sapienza University of Rome, Via di Grottarossa 1035, 00189 Rome, Italy.
- PMID: [33468430](#)

- PMCID: [PMC7808248](#)
- DOI: [10.1016/j.dld.2021.01.007](#)

Free PMC article

No abstract available

Keywords: COVID-19; Celiac disease; Gluten free diet; SARS-CoV2; Telemedicine.

Conflict of interest statement

Declaration of Competing Interest All authors declare no conflict of interests.

- [10 references](#)

Full text links



141. [Antioxidant properties and inhibition of angiotensin-converting enzyme by highly active peptides from wheat gluten](#)

Sci Rep. 2021 Mar 4;11(1):5206. doi: 10.1038/s41598-021-84820-7.

Authors

[Wen-Ying Liu](#)^{# 1 2}, [Jiang-Tao Zhang](#)^{# 3}, [Takuya Miyakawa](#)⁴, [Guo-Ming Li](#)⁵, [Rui-Zeng Gu](#)⁵, [Masaru Tanokura](#)⁶

Affiliations

- ¹ College of Engineering, China Agricultural University, Beijing, 100083, People's Republic of China. wenyingliu888@126.com.
- ² Beijing Engineering Research Center of Protein and Functional Peptides, China National Research Institute of Food and Fermentation Industries Co., Ltd, Beijing, 100015, People's Republic of China. wenyingliu888@126.com.
- ³ College of Life Science and Technology, HuaZhong University of Science and Technology, Wuhan, People's Republic of China.
- ⁴ Department of Applied Biological Chemistry, Graduate School of Agricultural and Life Sciences, The University of Tokyo, 1-1-1 Yayoi, Bunkyo-ku, Tokyo, 113-8657, Japan.
- ⁵ Beijing Engineering Research Center of Protein and Functional Peptides, China National Research Institute of Food and Fermentation Industries Co., Ltd, Beijing, 100015, People's Republic of China.
- ⁶ Department of Applied Biological Chemistry, Graduate School of Agricultural and Life Sciences, The University of Tokyo, 1-1-1 Yayoi, Bunkyo-ku, Tokyo, 113-8657, Japan. amtanok@mail.ecc.u-tokyo.ac.jp.

Contributed equally.

- PMID: [33664447](#)
- PMCID: [PMC7933229](#)
- DOI: [10.1038/s41598-021-84820-7](#)

Free PMC article

Abstract

This study aimed to focus on the high-value utilization of raw wheat gluten by determining the potent antioxidant peptides and angiotensin I-converting enzyme (ACE) inhibitory peptides from wheat gluten oligopeptides (WOP). WOP were analyzed for in vitro antioxidant activity and inhibition of ACE, and the identification of active peptides was performed by reversed-phase high-performance liquid chromatography and mass spectrometry. Quantitative analysis was performed for highly active peptides. Five potent antioxidant peptides, Leu-Tyr, Pro-Tyr, Tyr-Gln, Ala-Pro-Ser-Tyr and Arg-Gly-Gly-Tyr (6.07 ± 0.38 , 7.28 ± 0.29 , 11.18 ± 1.02 , 5.93 ± 0.20 and 9.04 ± 0.47 mmol 6-hydroxy-2,5,7,8-tetramethylchroman-2-carboxylic acid (Trolox) equivalent/g sample, respectively), and five potent ACE inhibitory peptides, Leu-Tyr, Leu-Val-Ser, Tyr-Gln, Ala-Pro-Ser-Tyr and Arg-Gly-Gly-Tyr (half maximal inhibitory concentration (IC_{50}) values = 0.31 ± 0.02 , 0.60 ± 0.03 , 2.00 ± 0.13 , 1.47 ± 0.08 and 1.48 ± 0.11 mmol/L, respectively), were observed. The contents of Leu-Tyr, Pro-Tyr, Tyr-Gln, Ala-Pro-Ser-Tyr, Arg-Gly-Gly-Tyr, and Leu-Val-Ser were 155.04 ± 8.36 , 2.08 ± 0.12 , 1.95 ± 0.06 , 22.70 ± 1.35 , 0.25 ± 0.01 , and 53.01 ± 2.73 μ g/g, respectively, in the WOP. Pro-Tyr, Tyr-Gln, Ala-Pro-Ser-Tyr, Arg-Gly-Gly-Tyr, and Leu-Val-Ser are novel antioxidative/ACE inhibitory peptides that have not been previously reported. The results suggest that WOP could potentially be applied in the food industry as a functional additive.

Conflict of interest statement

The authors declare no competing interests.

- [68 references](#)
- [4 figures](#)

Full text links



[Viscoelastic properties of wheat gluten in a molecular dynamics study](#)

142.

PLoS Comput Biol. 2021 Mar 24;17(3):e1008840. doi: 10.1371/journal.pcbi.1008840. Online ahead of print.

Authors

[Łukasz Mioduszeński](#)¹, [Marek Cieplak](#)¹

Affiliation

- ¹ Institute of Physics, Polish Academy of Sciences, Warsaw, Poland.
- PMID: [33760823](#)
- DOI: [10.1371/journal.pcbi.1008840](#)

Free article

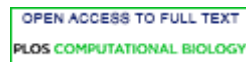
Abstract

Wheat (*Triticum* spp.) gluten consists mainly of intrinsically disordered storage proteins (glutenins and gliadins) that can form megadalton-sized networks. These networks are responsible for the unique viscoelastic properties of wheat dough and affect the quality of bread. These properties have not yet been studied by molecular level simulations. Here, we use a newly developed α -C-based coarse-grained model to study ~ 4000 -residue systems. The corresponding time-dependent properties are studied through shear and axial deformations. We measure the response force to the deformation, the number of entanglements and cavities, the mobility of residues, the number of the inter-chain bonds, etc. Glutenins are shown to influence the mechanics of gluten much more than gliadins. Our simulations are consistent with the existing ideas about gluten elasticity and emphasize the role of entanglements and hydrogen bonding. We also demonstrate that the storage proteins in maize and rice lead to weaker elasticity which points to the unique properties of wheat gluten.

Conflict of interest statement

The authors have declared that no competing interests exist.

Full text links



[Fungal Dysbiosis in Children with Celiac Disease](#)

143.

Dig Dis Sci. 2021 Mar 16. doi: 10.1007/s10620-021-06823-8. Online ahead of print.

Authors

[Mohammad El Mouzan](#) ¹, [Abdulrahman Al-Hussaini](#) ², [Brian Fanelli](#) ³, [Asaad Assiri](#) ⁴, [Badr AlSaleem](#) ⁵, [Mohammad Al Mofarreh](#) ⁶, [Ahmed Al Sarkhy](#) ⁷, [Mona Alasmi](#) ⁷

Affiliations

- ¹ Department of Pediatrics (Gastroenterology), King Saud University, P O Box 2925, Riyadh, 11461, Saudi Arabia. melmouzan@ksu.edu.sa.
- ² Gastroenterology Division, King Fahad Medical City, Children's Hospital, University of King Saud Bin Abdulaziz for Health Sciences, P. O. Box 59046, Riyadh, 11525, Saudi Arabia.
- ³ CosmosID, 1600 E Gude Drive, Suite 210, Rockville, MD, 20850, USA.

- ⁴ Department of Pediatrics (Gastroenterology) and Supervisor, Prince Abdullah Bin Khalid Celiac Disease Research Chair, King Saud University, P O Box 2925, Riyadh, 11461, Saudi Arabia.
- ⁵ Division of Gastroenterology, The Children Hospital, King Fahad Medical City, Pediatric Intestinal Failure and Parenteral Nutrition Program, P. O. Box 59046, Riyadh, 11525, Saudi Arabia.
- ⁶ Al Mofarreh PolyClinic, Takhassosi Street, P O Box 9789, Riyadh, 11423, Saudi Arabia.
- ⁷ Department of Pediatrics (Gastroenterology), King Saud University, P O Box 2925, Riyadh, 11461, Saudi Arabia.
- PMID: [33723701](#)
- DOI: [10.1007/s10620-021-06823-8](#)

Abstract

Background: Although intestinal fungi are known to interact with the immune system, the relationship between intestinal fungi and childhood celiac disease (CeD), an immune-mediated condition, has rarely been reported.

Aims: The aim of this study was to describe gut fungal profiles in a cohort of children with new-onset CeD.

Methods: Mucosal and fecal samples were collected from children with CeD and controls and subjected to metagenomics analysis of fungal microbiota communities. DNA libraries were sequenced using Illumina HiSeq platform 2 × 150 bp. Bioinformatic analysis was performed to quantify the relative abundance of fungi. Shannon alpha diversity metrics and beta diversity principal coordinate (PCo) analyses were calculated, and DESeq tests were performed between celiac and non-celiac groups.

Results: Overall more abundant taxa in samples of children with CeD included Tricholomataceae, Saccharomycetaceae, Saccharomycetes *Saccharomyces cerevisiae*, and *Candida*, whereas less abundant taxa included Pichiaceae, *Pichia kudriavzevii*, *Pneumocystis*, and *Pneumocystis jirovecii*. Alpha diversity between CeD and control individuals did not differ significantly, and beta diversity PCo analysis showed overlap of samples from CeD and controls for both fecal or mucosal samples; however, there was a clear separation between mucosal and fecal overall samples. **CONCLUSIONS:** We report fungal dysbiosis in children with CeD, suggesting a possible role in the pathogenesis of CeD. Further larger, controlled, prospective and longitudinal studies are needed to verify the results of this study and clarify the functional role of fungi in CeD.

Keywords: Celiac disease; Dysbiosis; Fungi; Microbiota; Saudi children.

- [43 references](#)

Full text links



144. [Perceptions of porta-celiac vascular models for hepatic surgery and their use in residency training](#)

Surg Radiol Anat. 2021 Mar 7. doi: 10.1007/s00276-021-02724-7. Online ahead of print.

Authors

[Mehmet Asim Ozer](#)¹, [Alper Uguz](#)², [Omer Vedat Unalp](#)², [Ahmet Coker](#)², [Figen Govsa](#)³, [Ezgi Guler](#)⁴, [Ayse Hilal Bati](#)⁵, [Yelda Pinar](#)¹

Affiliations

- ¹ Department of Anatomy, Digital Imaging and 3D Modelling Laboratory, Faculty of Medicine, Ege University, TR-35100, Izmir, Turkey.
- ² Department of General Surgery, Faculty of Medicine, Ege University, Izmir, Turkey.
- ³ Department of Anatomy, Digital Imaging and 3D Modelling Laboratory, Faculty of Medicine, Ege University, TR-35100, Izmir, Turkey. figen.govsa@ege.edu.tr.
- ⁴ Department of Radiology, Faculty of Medicine, Ege University, Izmir, Turkey.
- ⁵ Department of Medical Education, Faculty of Medicine, Ege University, Izmir, Turkey.
- PMID: [33677685](#)
- DOI: [10.1007/s00276-021-02724-7](#)

Abstract

Background: Primary aspect of hepatic navigation surgery is the identification of source vascular details to preserve healthy liver which has a vascular anatomy quite challenging for the young surgeons. The purpose was to determine whether three-dimensional (3D) vascular pattern models of preoperative computed tomography (CT) images will assist resident-level trainees for hepatic surgery.

Methods: This study was based on the perception of residents who were presented with 5 different hepatic source vascular patterns and required to compare their perception level of CT, and 1:1 models in terms of importance of variability, differential of patterns and preoperative planning.

Results: All residents agree that models provided better understanding of vascular source and improved preplanning. Five stations provided qualitative assessment with results showing the usefulness of porta-celiac models when used as anatomical tools in preplanning ($p = 0.04$), simulation of interventional procedures ($p = 0.02$), surgical education ($p = 0.01$). None of the cases had scored less than 8.5. Responses related to understanding variations were significantly higher in the perception of the 3D model in all cases, furthermore 3D models were more useful for seniors in more complex cases 3 and 5. Some open-ended answers: "The 3D model can completely change the operation plan" One of the major factors for anatomical resection of liver transplantation is the positional relationship between the hepatic arteries and the portal veins.

Conclusion: The plastic-like material presenting the hepatic vascularity enables the visualization of the origin, pattern, shape, and angle of the branches with appropriate spatial perception thus making it well-structured.

Keywords: 3D models; Graduate surgical education; Hepatic vascularity; Living donor liver transplantation; Model-guided surgery; Patient-specific modeling.

- [37 references](#)

Full text links



145. [Neuromodulatory effect of GnRH from coeliac ganglion on luteal regression in the late pregnant rat](#)

Cell Tissue Res. 2021 Mar 29. doi: 10.1007/s00441-021-03436-5. Online ahead of print.

Authors

[Laura Morales](#)¹, [Sandra Vallcaneras](#)¹, [María Belén Delsouc](#)¹, [Verónica Filippa](#)^{2 3}, [Claudia Aguilera-Merlo](#)², [Marina Fernández](#)⁴, [Marilina Casais](#)⁵

Affiliations

- ¹ Laboratorio de Biología de la Reproducción (LABIR), Facultad de Química, Bioquímica y Farmacia, Universidad Nacional de San Luis, Instituto Multidisciplinario de Investigaciones Biológicas de San Luis (IMIBIO-SL-CONICET), Av. Ejército de los Andes 950, D5700HHW, San Luis, Argentina.
- ² Histología, Facultad de Química, Bioquímica y Farmacia, Universidad Nacional de San Luis, Av. Ejército de los Andes 950, Bloque I, Piso No. 1, 5700, San Luis, Argentina.
- ³ Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET), 5700, San Luis, Argentina.
- ⁴ Instituto de Biología y Medicina Experimental (IBYME-CONICET), V. de Obligado 2490, C1428ADN, Buenos Aires, Argentina.
- ⁵ Laboratorio de Biología de la Reproducción (LABIR), Facultad de Química, Bioquímica y Farmacia, Universidad Nacional de San Luis, Instituto Multidisciplinario de Investigaciones Biológicas de San Luis (IMIBIO-SL-CONICET), Av. Ejército de los Andes 950, D5700HHW, San Luis, Argentina. mcasais@unsl.edu.ar.
- PMID: [33779845](#)
- DOI: [10.1007/s00441-021-03436-5](#)

Abstract

The GnRH/GnRH receptor system has been found in several extrapituitary tissues, although its physiological significance has not yet been well established. Taking into account that the

peripheral neural system can act as a modulator of pregnancy corpus luteum, the objective was to physiologically investigate the presence of the GnRH system in coeliac ganglion (CG) and to analyse its possible involvement in luteal regression through the superior ovarian nerve (SON) at the end of pregnancy in the rat. The integrated ex vivo CG-SON-Ovary system of rats on day 21 of pregnancy was used. Cetrorelix (CTX), a GnRH receptor antagonist, was added into the ganglionic compartment while the control systems were untreated. Ganglionic GnRH release was detected under basal conditions. Then, the CTX addition in CG increased it, which would indicate the blockade of the receptor. In turn, CTX in CG caused an increase in ovarian progesterone release. Furthermore, the luteal cells showed an increase in the expression of Hsd3b1 and a decrease in the expression of Akr1c3 (progesterone synthesis and degradation enzymes, respectively), reduced TUNEL staining according to an increase in the antioxidant defence system activity and low lipid peroxide levels. The ovarian and ganglionic nitric oxide (NO) release increased, while the luteal nitrotyrosine content, measured as nitrosative stress marker, decreased. CTX in CG decreased the ovarian noradrenaline release. The present study provides evidence that GnRH from CG may trigger neuronal signals that promote the luteal regression in late pregnancy by affecting the release of NO and noradrenaline in the ovary.

Keywords: GnRH; Late pregnancy; Luteal regression; Nitric oxide; Peripheral nervous system.

- [57 references](#)

Full text links



[Role of percutaneous liver biopsy in infantile cholestasis: cohort from Arabs](#)

146.

BMC Gastroenterol. 2021 Mar 12;21(1):118. doi: 10.1186/s12876-021-01699-4.

Authors

[Amna Basheer M Ahmed](#)¹, [Musa Ahmad Fagih](#)², [Muhammed Salman Bashir](#)³, [Abdulrahman Abdullah Al-Hussaini](#)^{4 5 6}

Affiliations

- ¹ The Division of Pediatric Gastroenterology, Children's Specialized Hospital, King Fahad Medical City, P. O. Box 59046, Riyadh, Postal Code 11525, Kingdom of Saudi Arabia.
- ² Department of Pathology and Laboratory Medicine, King Saud Medical City, Riyadh, Kingdom of Saudi Arabia.
- ³ Department of Biostatistics, Research Services Administration, King Fahad Medical City, Riyadh, 11525, Kingdom of Saudi Arabia.
- ⁴ The Division of Pediatric Gastroenterology, Children's Specialized Hospital, King Fahad Medical City, P. O. Box 59046, Riyadh, Postal Code 11525, Kingdom of Saudi Arabia.
aa_alhussaini@yahoo.com.
- ⁵ College of Medicine, Alfaisal University, Riyadh, Kingdom of Saudi Arabia.
aa_alhussaini@yahoo.com.

- ⁶ Prince Abdullah Bin Khalid Celiac Disease Research Chair, Department of Pediatrics, Faculty of Medicine, King Saud University Riyadh, Riyadh, Kingdom of Saudi Arabia. aa_alhussaini@yahoo.com.
- PMID: [33711954](#)
- PMCID: [PMC7953702](#)
- DOI: [10.1186/s12876-021-01699-4](#)

Free PMC article

[Abstract](#)

Background: Investigators from different parts of the world are calling for a re-evaluation of the role of liver biopsy (LB) in the evaluation of infantile cholestasis (IC), especially in the light of emerging non-invasive diagnostic technologies. Therefore, this retrospective single-center study was conducted to determine the impact of LB on the diagnosis and management of IC in a cohort from Arabs.

Methods: From 2007 until 2019, 533 cases of IC were referred for evaluation. All infants who underwent LB were included in the study. We categorized the yield of LB into: (1) defined specific diagnosis; (2) excluded an important diagnosis. A single pathologist reviewed and made the histology report.

Results: 122 LB specimens met the inclusion criteria. The main indication for LB was a high suspicion of biliary atresia (BA) [high gamma-glutamyl transferase (GGT) cholestasis and pale stool] in 46 cases (37.8%). Liver biopsy had sensitivity of 86.4%, specificity (66.7%), PPV (70.4%), NPV (84.2%) in diagnosing BA. LB had a direct impact on clinical management in 52 cases (42.6%): (1) The true diagnosis was suggested by LB in 36 cases; (2) LB excluded BA and avoided intraoperative cholangiogram in 16 cases with high suspicion of BA. Among the 76 cases with low suspicion of BA, LB suggested the true diagnosis or helped to initiate specific management in 8 cases only (10.5%). In contrast, molecular testing confirmed the diagnosis in 48 (63%).

Conclusion: LB continues to be an important tool in the workup of cases with a high suspicion of BA. The low yield of LB in cases with low suspicion of BA calls for a re-evaluation of its role in these cases in whom early incorporation of cholestasis sequencing gene panels can have a better diagnostic yield.

Keywords: Cholestasis; Indications; Infant; Liver biopsy; Pathology; Saudi Arabia.

Conflict of interest statement

The authors declare that they have non to declare.

- [25 references](#)
- [5 figures](#)

Full text links



147. [Where have all the other coeliacs gone in 2020? Road for a 2021 catch-up with missed diagnoses](#)

Dig Liver Dis. 2021 Apr;53(4):504-505. doi: 10.1016/j.dld.2021.01.008. Epub 2021 Feb 1.

Authors

[Francesco Valitutti](#)¹, [Riccardo Troncone](#)², [Pasquale Pisano](#)³, [Carolina Ciacchi](#)⁴, [Campania Coeliac Disease Network](#)

Affiliations

- ¹ Pediatric Unit, Salerno University Hospital, Salerno, Italy; EBRIS (European Biomedical Research Institute of Salerno), Salerno, Italy. Electronic address: francesco.valitutti@gmail.com.
- ² Department of Medical Translational Sciences and European Laboratory for the Investigation of Food-Induced Diseases, University Federico II, Naples, Italy. Electronic address: troncone@unina.it.
- ³ Pediatric Unit, Salerno University Hospital, Salerno, Italy. Electronic address: pasquale.pisano@sangiovannieruggi.it.
- ⁴ Department of Medicine, Surgery and Dentistry "Scuola Medica Salernitana", University of Salerno, Largo Città d'Ippocrate, 84131 Salerno, Italy. Electronic address: cciacchi@unisa.it.
- PMID: [33541798](#)
- DOI: [10.1016/j.dld.2021.01.008](https://doi.org/10.1016/j.dld.2021.01.008)

No abstract available

Keywords: Coeliac disease; Covid-19; Diagnosis.

Conflict of interest statement

Declaration of Competing Interest All the authors declare no conflicts of interest regarding this paper

Full text links



148. [The Use of Fecal Calprotectin Testing in Paediatric Disorders: A Position Paper of the European Society for Paediatric Gastroenterology and Nutrition Gastroenterology Committee](#)

J Pediatr Gastroenterol Nutr. 2021 Apr 1;72(4):617-640. doi: 10.1097/MPG.0000000000003046.

Authors

[Carmen Ribes Koninckx](#)¹, [Ester Donat](#)¹, [Marc A Benninga](#)², [Ilse J Broekaert](#)³, [Frederic Gottrand](#)⁴, [Kaija-Leena Kolho](#)⁵, [Paolo Lionetti](#)⁶, [Erasmio Miele](#)⁷, [Rok Orel](#)⁸, [Alexandra Papadopoulou](#)⁹, [Corina Pienar](#)¹⁰, [Michela G Schäppi](#)¹¹, [Michael Wilschanski](#)¹², [Nikhil Thapar](#)^{13 14}

Affiliations

- ¹ Department of Paediatric Gastroenterology, Hepatology and Nutrition, La Fe University Hospital Valencia, Spain.
- ² Department of Paediatric Gastroenterology and Nutrition, Emma Children's Hospital, Amsterdam UMC, University of Amsterdam, Amsterdam, the Netherlands.
- ³ Department of Paediatrics, Faculty of Medicine and University Hospital Cologne, University of Cologne, Cologne, Germany.
- ⁴ Department of Paediatric Gastroenterology, Hepatology and Nutrition, CHU Lille, University Lille, France.
- ⁵ Children's Hospital, University of Helsinki, Helsinki, Finland and Tampere University, Tampere, Finland.
- ⁶ Department NEUROFARBA, University of Florence - Meyer Children's Hospital, Florence.
- ⁷ Department of Translational Medical Science, Section of Pediatrics, University of Naples "Federico II", Naples, Italy.
- ⁸ Department of Gastroenterology, Hepatology and Nutrition, University Children's Hospital, Faculty of Medicine, University of Ljubljana, Ljubljana, Slovenia.
- ⁹ Division of Gastroenterology and Hepatology, First Department of Paediatrics, University of Athens, Children's hospital «Agia Sofia», Athens, Greece.
- ¹⁰ Department of Paediatrics, "Victor Babes" University of Medicine and Pharmacy, Timisoara, Romania.
- ¹¹ Paediatric Centre, Clinique des Grangettes and Centre Médical Universitaire, Geneva, Switzerland.
- ¹² Paediatric Gastroenterology Hadassah Hebrew University Medical Centre, Jerusalem, Israel.
- ¹³ Neurogastroenterology and Motility, UCL Great Ormond Street Institute of Child Health and Department of Gastroenterology, Great Ormond Street Hospital, London, UK.
- ¹⁴ Gastroenterology, Hepatology and Liver Transplant, Queensland Children's Hospital, Brisbane, Australia.
- PMID: [33716293](#)
- DOI: [10.1097/MPG.0000000000003046](#)

Abstract

Objectives: The aim of the study was to review the evidence regarding the clinical use and value of fecal calprotectin (FC) measurements in different gastrointestinal disorders in children.

Methods: A literature search was conducted in the PubMed, MEDLINE, EMBASE, and Cochrane databases until October 31, 2019. Subtopics were identified and each assigned to individual authors.

Results: A total of 28 recommendations were voted on using the nominal voting technique. Recommendations are given related to sampling, measurement methods, and results interpretation. The 14 authors anonymously voted on each recommendation using a 9-point scale (1 strongly disagree to 9 fully agree). Consensus was considered achieved if at least 75% of the authors voted 6, 7, 8, or 9.

Conclusions: Consensus was reached for all recommendations. Limitations for the use of FC in clinical practice include variability in extraction methodology, performance of test kits as well as the need to establish local reference ranges because of the influence of individual factors, such as age, diet, microbiota, and drugs. The main utility of FC measurement at present is in the diagnosis and monitoring of inflammatory bowel disease (IBD) as well as to differentiate it from functional gastrointestinal disorders (FAPDs). FC, however, has neither utility in the diagnosis of infantile colic nor to differentiate between functional and organic constipation. A rise in FC concentration, may alert to the risk of developing necrotizing enterocolitis and help identifying gastrointestinal involvement in children with Henoch-Schönlein purpura. FC measurement is of little value in Cow's Milk Protein Allergy, coeliac disease (CD), and cystic fibrosis. FC does neither help to distinguish bacterial from viral acute gastroenteritis (AGE), nor to diagnose Helicobacter Pylori infection, small intestinal bacterial overgrowth (SIBO), acute appendicitis (AA), or intestinal polyps.

Copyright © 2021 by European Society for Pediatric Gastroenterology, Hepatology, and Nutrition and North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition.

Conflict of interest statement

The authors report no conflicts of interest.

- [214 references](#)

Full text links



149. [Clustering based approach for population level identification of condition-associated T-cell receptor \$\beta\$ -chain CDR3 sequences](#)

BMC Bioinformatics. 2021 Mar 25;22(1):159. doi: 10.1186/s12859-021-04087-7.

Authors

[Dawit A Yohannes](#)^{1 2}, [Katri Kaukinen](#)³, [Kalle Kurppa](#)⁴, [Päivi Saavalainen](#)^{# 1 2}, [Dario Greco](#)^{# 5 6 7}

Affiliations

- ¹ Research Programs Unit, Translational Immunology, University of Helsinki, Helsinki, Finland.
- ² Department of Medical and Clinical Genetics, University of Helsinki, Helsinki, Finland.
- ³ Department of Internal Medicine, Faculty of Medicine and Health Technology, Tampere University Hospital, Tampere University, Tampere, Finland.
- ⁴ Department of Pediatrics, Tampere University Hospital and Center for Child Health Research, Tampere University, Tampere, Finland.
- ⁵ Faculty of Medicine and Health Technology, Tampere University, Tampere, Finland. dario.greco@tuni.fi.
- ⁶ BioMediTech Institute, Tampere University, Tampere, Finland. dario.greco@tuni.fi.
- ⁷ Institute of Biotechnology, University of Helsinki, Helsinki, Finland. dario.greco@tuni.fi.

Contributed equally.

- PMID: [33765908](https://pubmed.ncbi.nlm.nih.gov/33765908/)
- PMCID: [PMC7993519](https://pubmed.ncbi.nlm.nih.gov/PMC7993519/)
- DOI: [10.1186/s12859-021-04087-7](https://doi.org/10.1186/s12859-021-04087-7)

Free PMC article

[Abstract](#)

Background: Deep immune receptor sequencing, RepSeq, provides unprecedented opportunities for identifying and studying condition-associated T-cell clonotypes, represented by T-cell receptor (TCR) CDR3 sequences. However, due to the immense diversity of the immune repertoire, identification of condition relevant TCR CDR3s from total repertoires has mostly been limited to either "public" CDR3 sequences or to comparisons of CDR3 frequencies observed in a single individual. A methodology for the identification of condition-associated TCR CDR3s by direct population level comparison of RepSeq samples is currently lacking.

Results: We present a method for direct population level comparison of RepSeq samples using immune repertoire sub-units (or sub-repertoires) that are shared across individuals. The method first performs unsupervised clustering of CDR3s within each sample. It then finds matching clusters across samples, called immune sub-repertoires, and performs statistical differential abundance testing at the level of the identified sub-repertoires. It finally ranks CDR3s in differentially abundant sub-repertoires for relevance to the condition. We applied the method on total TCR CDR3 β RepSeq datasets of celiac disease patients, as well as on public datasets of yellow fever vaccination. The method successfully identified celiac disease associated CDR3 β sequences, as evidenced by considerable agreement of TRBV-gene and positional amino acid usage patterns in the detected CDR3 β sequences with previously known CDR3 β s specific to gluten in celiac disease. It also successfully recovered significantly high numbers of previously known CDR3 β sequences relevant to each condition than would be expected by chance.

Conclusion: We conclude that immune sub-repertoires of similar immuno-genomic features shared across unrelated individuals can serve as viable units of immune repertoire comparison, serving as proxy for identification of condition-associated CDR3s.

Keywords: Antigen-specific TCR identification; Celiac disease associated TCR clonotypes; Computational antigen-specificity identification; Immune repertoire analysis; Immuno-informatics; TCR clustering; TCR differential abundance analysis; TCR repertoire analysis.

Conflict of interest statement

The authors declare that they have no competing interests.

- [46 references](#)
- [5 figures](#)

Full text links



150. [NanoUPLC-MS^E reveals differential abundance of gluten proteins in wheat flours of different technological qualities](#)

J Proteomics. 2021 Mar 4;239:104181. doi: 10.1016/j.jprot.2021.104181. Online ahead of print.

Authors

[V C M Victorio](#)¹, [T O Alves](#)², [G H M F Souza](#)³, [L C Gutkoski](#)⁴, [L C Cameron](#)⁵, [M S L Ferreira](#)⁶

Affiliations

- ¹ Laboratory of Bioactives, Food and Nutrition Graduate Program, PPGAN, Federal University of the State of Rio de Janeiro, UNIRIO, Av. Pasteur, 296, 22290-240, RJ, Brazil. Electronic address: veronica.victorio@edu.unirio.br.
- ² Laboratory of Bioactives, Food and Nutrition Graduate Program, PPGAN, Federal University of the State of Rio de Janeiro, UNIRIO, Av. Pasteur, 296, 22290-240, RJ, Brazil. Electronic address: thais.alves@edu.unirio.br.
- ³ Waters Corporation, Waters, São Paulo, Brazil. Electronic address: gustavo_souza@spectramass.com.
- ⁴ Laboratory of Bioactives, Food and Nutrition Graduate Program, PPGAN, Federal University of the State of Rio de Janeiro, UNIRIO, Av. Pasteur, 296, 22290-240, RJ, Brazil.
- ⁵ Center of Innovation in Mass Spectrometry-Laboratory of Protein Biochemistry (IMaS-LBP), UNIRIO, Brazil. Electronic address: cameron@unirio.br.
- ⁶ Laboratory of Bioactives, Food and Nutrition Graduate Program, PPGAN, Federal University of the State of Rio de Janeiro, UNIRIO, Av. Pasteur, 296, 22290-240, RJ, Brazil; Center of Innovation in Mass Spectrometry-Laboratory of Protein Biochemistry (IMaS-LBP), UNIRIO, Brazil. Electronic address: mariana.ferreira@unirio.br.

- PMID: [33677101](#)
- DOI: [10.1016/j.jprot.2021.104181](#)

Abstract

Gluten proteins contribute to the rheological properties of dough. Mass spectrometric techniques help to understand the contribution of these proteins to the quality of the end product. This work aimed to apply modern proteomic techniques to characterize and provide a better understanding of gluten proteins in wheat flours of different technological qualities. Nine Brazilian wheat flours (*Triticum aestivum*) classified by rheological gluten force were used to extract the proteins. Extracts were pooled together by technological qualities in low (LW), medium (MD), and superior (SP). Peptides were analyzed by nanoUPLC and mass spectrometry multiplex method (MS^E). Collectively, 3545 peptides and 1297 proteins were identified, and 116 proteins were found differentially abundant. Low molecular weight glutenin subunits (LMW-GS) were found up-regulated only in SP samples. Proteins related to wheat grain hardness, such as puroindoline-A, were found in significant concentration in LW samples. After domain prediction, LW presented a different pattern with a lower abundance of functional domains, and SP presented chaperones, known to be involved in adequate folding of the storage proteins. NanoUPLC-MS^E was efficient in analyzing and distinguishing the proteomic pattern of wheat flours from different qualities, pointing out the differentially abundant gluten proteins and providing a better understanding of wheat flour quality. SIGNIFICANCE: Common wheat is one of the most important staple food sources in the world. The improvement and comprehension of wheat quality has been a major objective of plant breeders and cereal chemists. Our findings highlighted the application of a modern proteomic approach to obtain a better understanding of the impact of gluten proteins on the technological quality of different wheat flours. The obtained data revealed different abundances of wheat quality-related proteins in superior quality flours when compared with samples of low rheological properties. In addition, multivariate statistical analysis clearly distinguished the flours of different qualities. This work contributes to the consolidation of research in the field of wheat technological quality.

Keywords: Foodomics; Protein abundance profile; SDS-PAGE; Storage proteins; Wheat quality.

Copyright © 2021 Elsevier B.V. All rights reserved.

Full text links



[Giant Celiac Artery Pseudoaneurysm in a Case of Chronic Pancreatitis: A Rare Case Report With Literature Review](#)

151.

Vasc Endovascular Surg. 2021 Mar 19;15385744211002497. doi: 10.1177/15385744211002497. Online ahead of print.

Authors

[Uday Kumar Chapa](#)¹, [Souradeep Dutta](#)¹, [Reddy Abhinaya](#)¹, [Ankit Jain](#)¹, [Aravind Kalyanasundaram](#)², [Hemachandren Munuswamy](#)², [Vishnu Prasad Nelamangala Ramakrishnaiah](#)¹

Affiliations

- ¹ Division of GI & HPB Surgery, Department of Surgery, Jawaharlal Institute of Postgraduate Medical Education & Research, Puducherry, India.
- ² Department of Cardiothoracic and Vascular Surgery, Jawaharlal Institute of Postgraduate Medical Education & Research, Puducherry, India.
- PMID: [33739212](#)
- DOI: [10.1177/15385744211002497](#)

Abstract

Pancreatic pseudoaneurysms though uncommon can result in life-threatening spontaneous acute gastrointestinal or intraperitoneal hemorrhage. Celiac artery pseudoaneurysm in a background of chronic pancreatitis is a very rare event. Digital Subtraction Angiography is an important adjunct in the diagnosis and follow-up with the advantage of providing therapeutic options along with giving other details regarding the site, size, and flow characteristics. It has replaced emergency surgical procedures with the added advantage of fewer postoperative complications and lower morbidity and mortality. An urgent surgical intervention remains the only option when such endovascular management fails, not feasible, or is unavailable. Surgical options include proximal arterial ligation or a pancreatic resection, depending on the location of the pseudoaneurysm. We report a case of a 35-year-old gentleman, a known patient of chronic pancreatitis, who presented to our emergency with clinical features of hypovolemic shock and was diagnosed to have celiac artery pseudoaneurysm. Following a failed endovascular coiling, he was successfully managed with operative celiac artery ligation.

Keywords: celiac artery pseudoaneurysm; chronic pancreatitis; pancreatic pseudoaneurysms; pancreatitis.

Full text links



[Median arcuate ligament syndrome: A clinical dilemma](#)

152.

Cleve Clin J Med. 2021 Mar 1;88(3):143-144. doi: 10.3949/ccjm.88a.21001.

Author

[John H Rodriguez](#)¹

Affiliation

- ¹ Assistant Professor of Surgery, Director of Surgical Endoscopy, Digestive Disease and Surgery Institute, Cleveland Clinic, Cleveland, OH rodrigj3@ccf.org.
- PMID: [33648963](#)
- DOI: [10.3949/ccjm.88a.21001](https://doi.org/10.3949/ccjm.88a.21001)

Free article

No abstract available

Comment on

- [Median arcuate ligament syndrome: Incidental finding or real problem?](#)

Mandzhieva B, Zafar H, Jain A, Manoucheri M.

Cleve Clin J Med. 2021 Mar 1;88(3):140-142. doi: 10.3949/ccjm.88a.20052.

PMID: 33648962 No abstract available.

Full text links



153. [High-amylose corn in gluten-free pasta: Strategies to deliver nutritional benefits ensuring the overall quality](#)

Food Chem. 2021 Mar 5;353:129489. doi: 10.1016/j.foodchem.2021.129489. Online ahead of print.

Authors

[Andrea Bresciani](#) ¹, [Debora Giordano](#) ², [Francesca Vanara](#) ³, [Massimo Blandino](#) ⁴, [Alessandra Marti](#) ⁵

Affiliations

- ¹ Department of Food, Environmental and Nutritional Sciences (DeFENS), Università degli Studi di Milano, via G. Celoria 2, 20133 Milan, Italy. Electronic address: andrea.bresciani@unimi.it.
- ² Department of Agricultural, Forest and Food Sciences (DISAFA), Università degli Studi di Torino, Largo Braccini 2, 10095 Grugliasco, TO, Italy. Electronic address: debora.giordano@unito.it.
- ³ Department of Agricultural, Forest and Food Sciences (DISAFA), Università degli Studi di Torino, Largo Braccini 2, 10095 Grugliasco, TO, Italy. Electronic address: francesca.vanara@unito.it.

- ⁴ Department of Agricultural, Forest and Food Sciences (DISAFA), Università degli Studi di Torino, Largo Braccini 2, 10095 Grugliasco, TO, Italy. Electronic address: massimo.blandino@unito.it.
- ⁵ Department of Food, Environmental and Nutritional Sciences (DeFENS), Università degli Studi di Milano, via G. Celoria 2, 20133 Milan, Italy. Electronic address: alessandra.marti@unimi.it.
- PMID: [33714114](https://pubmed.ncbi.nlm.nih.gov/33714114/)
- DOI: [10.1016/j.foodchem.2021.129489](https://doi.org/10.1016/j.foodchem.2021.129489)

Abstract

High-amylose corn alone or in combination (25% and 50%) with conventional corn was used to produce gluten-free pasta. Flour pre-gelatinization in a tank (process A) or on a conveyor belt (process B) were tested. Resistant starch (RS), soluble (SPAs) and cell-wall bound phenolic acids (CWBPAs) and antioxidant capacity were significantly higher in high-amylose corn pasta. Cooked pasta from process B showed a higher SPA concentration, likely due to the lower cooking loss. The structure of pasta prepared with process B was more homogeneous, whereas it was more compact in the case of process A, as shown by a lower starch susceptibility to α -amylase hydrolysis, higher beginning of gelatinization temperature and lower water absorption. 25% HA represents a good compromise between high RS (4.2%) and good cooking behavior. At higher HA levels, process B is more suitable to obtain pasta with a better cooking quality.

Keywords: Antioxidant capacity; Extrusion-cooking; Maize; Phenolic acids; Pre-gelatinization; Resistant starch.

Copyright © 2021 Elsevier Ltd. All rights reserved.

Full text links



154. [Hybrid QconCAT-Based Targeted Absolute and Data-Independent Acquisition-Based Label-Free Quantification Enables In-Depth Proteomic Characterization of Wheat Amylase/Trypsin Inhibitor Extracts](#)

J Proteome Res. 2021 Mar 5;20(3):1544-1557. doi: 10.1021/acs.jproteome.0c00752. Epub 2021 Jan 28.

Authors

[Malte Sielaff](#)¹, [Valentina Curella](#)², [Manjusha Neerukonda](#)², [Muhammad Afzal](#)³, [Khaoula El Hassouni](#)³, [Ute Distler](#)¹, [Detlef Schuppan](#)^{2,4}, [C Friedrich H Longin](#)³, [Stefan Tenzer](#)¹

Affiliations

- ¹ Institute for Immunology, University Medical Center of the Johannes Gutenberg-University Mainz, Langenbeckstr. 1, 55131 Mainz, Germany.

- ² Institute of Translational Immunology, University Medical Center of the Johannes Gutenberg-University Mainz, Langenbeckstr. 1, 55131 Mainz, Germany.
- ³ State Plant Breeding Institute, University of Hohenheim, Fruwirthstr. 21, 70599 Stuttgart, Germany.
- ⁴ Division of Gastroenterology, Beth Israel Deaconess Medical Center, Harvard Medical School, 330 Brookline Avenue, Boston, Massachusetts 02215, United States.
- PMID: [33507751](#)
- DOI: [10.1021/acs.jproteome.0c00752](#)

Abstract

Wheat amylase/trypsin inhibitors (ATIs) have gained significant relevance as inducers of intestinal and extra-intestinal inflammation. In this study, we present a novel hybrid data-independent acquisition (DIA) liquid chromatography-mass spectrometry (LC-MS) approach, combining QconCAT technology with short microflow LC gradients and DIA and apply the method toward the quantitative proteome analysis of ATI extracts. The presented method is fast, robust, and reproducible and provides precise QconCAT-based absolute quantification of major ATI proteins while simultaneously quantifying the proteome by label-free quantification (LFQ). We analyzed extracts of 60 varieties of common wheat grown in replication and evaluated the reproducibility and precision of the workflow for the quantification of ATIs. Applying the method to analyze different wheat species (i.e., common wheat, spelt, durum wheat, emmer, and einkorn) and comparing the results to published data, we validated inter-laboratory and cross-methodology reproducibility of ATI quantification, which is essential in the context of large-scale breeding projects. Additionally, we applied our workflow to assess environmental effects on ATI expression, analyzing ATI content and proteome of same varieties grown at different locations. Finally, we explored the potential of combining QconCAT-based absolute quantification with DIA-based LFQ proteome analysis for the generation of new hypotheses or assay development.

Keywords: QconCAT; *Triticum aestivum*; alpha-amylase/trypsin inhibitor; bottom-up proteomics; celiac disease; data-independent acquisition; flour; label-free quantification; non-celiac wheat sensitivity; wheat.

- [Cited by 1 article](#)

Full text links



155. [Carboxymethylcellulose-induced changes in rheological properties and microstructure of wheat gluten proteins under different pH conditions](#)

J Food Sci. 2021 Mar;86(3):677-686. doi: 10.1111/1750-3841.15646. Epub 2021 Feb 16.

Authors

[Yuanyuan Chen](#)¹, [Yu Tang](#)¹, [Qiming Wang](#)¹, [Lin Lei](#)¹, [Jichun Zhao](#)¹, [Yuhao Zhang](#)¹, [Lin Li](#)², [Qiang Wang](#)³, [Jian Ming](#)¹

Affiliations

- ¹ College of Food Science, Southwest University, Chongqing, 400715, People's Republic of China.
- ² Engineering Research Center of Health Food Design & Nutrition Regulation, School of Chemical Engineering and Energy Technology, Dongguan University of Technology, Dongguan, 523808, People's Republic of China.
- ³ Institute of Food Science and Technology, Chinese Academy of Agricultural Sciences, Beijing, 100193, People's Republic of China.
- PMID: [33590508](#)
- DOI: [10.1111/1750-3841.15646](#)

Abstract

Abstract: The interaction between gluten and hydrocolloid additive, as well as the pH condition during dough formation is very important in making flour products. In this study, the influence of different pH conditions on the interactions between gluten proteins (including glutenin and gliadin) and carboxymethylcellulose (CMC), and on the rheological and microstructure changes of gluten proteins was investigated. The dynamic frequency sweep indicated CMC-gluten displayed more solid-like behavior under alkaline conditions than that under acidic conditions. The creep-recovery experiment suggested acidic conditions were not conducive to maintain the elasticity of CMC-gluten. Microstructural changes of various glutes with CMC showed that a higher ratio of β -sheets was observed in the CMC-gluten and CMC-glutenin under alkaline conditions. Total free sulfhydryl contents and changes in tryptophan microenvironment showed glutenin played a key role in the G polymerization with the addition of CMC. Lower surface hydrophobicity of CMC-gluten was displayed under acidic conditions. Scanning electron microscopy images showed that neutral and alkaline conditions were conducive to the network structure formation of CMC-gluten and CMC-glutenin.

Practical application: This study investigated the interaction of CMC with gluten, gluten, and gliadin under different pH conditions, providing a basis for expanding dough quality improvement, and extending the in-depth application of CMC in the food industry.

Keywords: carboxymethylcellulose; gluten proteins; microstructure; rheological properties.

© 2021 Institute of Food Technologists®.

- [41 references](#)

Full text links



156. [Hexafurcated celiac trunks, trifurcated common hepatic artery, and a new variant of the arc of Bühler](#)

Folia Morphol (Warsz). 2021 Mar 22. doi: 10.5603/FM.a2021.0025. Online ahead of print.

Authors

[B A Manta](#)¹, [M C Rusu](#)¹, [A M Jianu](#)², [A C Ilie](#)³

Affiliations

- ¹ Division of Anatomy, Department 1, Faculty of Dental Medicine, "Carol Davila" University of Medicine and Pharmacy, Bucharest, Romania.
- ² Department of Anatomy and Embryology, Faculty of Medicine, "Victor Babes" University of Medicine and Pharmacy, Timisoara, Romania. adelina.jianu@gmail.com.
- ³ Department of Functional Sciences, Discipline of Public Health, Faculty of Medicine, "Victor Babeş" University of Medicine and Pharmacy, Timisoara, Romania.
- PMID: [33749804](#)
- DOI: [10.5603/FM.a2021.0025](#)

Abstract

The celiac trunk (CT) is well-known as trifurcated into the left gastric (LGA), common hepatic (CHA) and splenic (SA) arteries. Scarce reports indicate that the CT could appear cvadri-, penta-, hexa-, or even heptafurcated. Reports of CTs with six branches (hexafurcated CT) are few, less than ten. The hexafurcated CT variant was documented by a retrospective study of 93 computed tomography angiograms. Two hexafurcated CTs were found. In one case an arc of Bühler was added to the inferior phrenic arteries, LGA, CHA and SA. In the second case the dorsal pancreatic artery was added to the other five branches. That arc of Bühler descended in front of the aorta to connect with the origin of the third jejunal artery. The CHA in that second case was trifurcated into the left and right hepatic arteries, and the gastroduodenal artery; the proper hepatic artery was absent. Although the hexafurcated CT, as well as the trifurcated CHA, are rarely occurring and reported anatomic variants, this doesn't mean they could not be encountered during surgical or interventional procedures, which they would complicate if not recognized. Moreover, the arc of Bühler, the embryonic remnant, was not reported previously to insert into the CT as an additional branch of it.

Keywords: aorta; arc of Bühler; computed tomography; hepatic artery; portal vein; splenic artery; superior mesenteric artery.

Full text links



[Epitope mapping of anti-amelogenin IgG in untreated celiac children](#)

Authors

[Sanja Petronijevic](#)¹, [Solveig Stig](#)¹, [Trond S Halstensen](#)^{1 2}

Affiliations

- ¹ Institute of Oral Biology, Faculty of Dentistry, University of Oslo, Oslo, Norway.
- ² Medical Department, Lovisenberg Diaconal Hospital, Oslo, Norway.
- PMID: [33656197](#)
- DOI: [10.1111/eos.12770](#)

Abstract

Children with untreated celiac disease (CeD) may develop enamel defects, and children with severe CeD have significantly increased levels of IgG to amelogenin, which may interfere with normal amelogenesis depending on which epitope(s) they bind. Children with untreated CeD (n = 42), for whom CeD had been confirmed either by biopsy (n = 17, cohort 1) or by the presence of particularly high serum levels of anti-transglutaminase 2 (TG2) IgA (n = 25, cohort 2), were selected from 146 children with CeD, and 10 controls were selected from 34 children who did not have CeD. Samples from these 52 children were used for detailed IgG anti-amelogenin, X isoform (AMELX) epitope mapping using 31 overlapping, 10-22mer peptides in ELISA. Although sera from both groups showed reactivity to peptides containing sequences from the N and C terminus of AMELX, sera from children with CeD reacted more strongly to peptides from the central region (amino acids 75-150) containing both a binding site for transforming growth factor- β (TGF- β), as well as the enzymatic cleavage sites for matrix metalloproteinase-20 and for kallikrein-4. Antigen-specific extraction revealed that only IgG to the central region cross-reacted to gliadin. Thus, cross-reactive anti-gliadin/amelogenin IgG may affect normal amelogenesis by interfering with enzymatic degradation, proper folding, and/or TGF- β signaling in children with untreated CeD.

Keywords: autoimmunity; dental enamel; gluten; immunology.

© 2021 The Authors. European Journal of Oral Sciences published by John Wiley & Sons Ltd on behalf of Scandinavian Division of the International Association for Dental Research.

- [36 references](#)

Full text links



[The quality of gluten-free bread made of brown rice flour prepared by low temperature impact mill](#)

158.

Food Chem. 2021 Jun 30;348:129032. doi: 10.1016/j.foodchem.2021.129032. Epub 2021 Jan 12.

Authors

[Shunjing Luo](#)¹, [Xudong Yan](#)¹, [Yuteng Fu](#)¹, [Min Pang](#)², [Ruiyun Chen](#)¹, [Yunfei Liu](#)³, [Jun Chen](#)⁴, [Chengmei Liu](#)⁵

Affiliations

- ¹ State Key Laboratory of Food Science and Technology, Nanchang University, No. 235 Nanjing East Road, Nanchang 330047, China.
 - ² Guilin Guiliu Modern Food Co, Ltd, Changjiang East Road, Guilin 541805, China.
 - ³ Institute of Applied Chemistry, Jiangxi Academy of Sciences, 7777 Changdong Avenue, Nanchang 330096, China.
 - ⁴ State Key Laboratory of Food Science and Technology, Nanchang University, No. 235 Nanjing East Road, Nanchang 330047, China. Electronic address: chenjun1986@hotmail.com.
 - ⁵ State Key Laboratory of Food Science and Technology, Nanchang University, No. 235 Nanjing East Road, Nanchang 330047, China. Electronic address: liuchengmei@aliyun.com.
- PMID: [33508598](#)
 - DOI: [10.1016/j.foodchem.2021.129032](#)

Abstract

Our previous work reported that the brown rice flour prepared by low temperature impact mill possessed excellent physicochemical properties. The performance of brown rice flour in making gluten-free bread was further investigated. It was found that the starch crystal structure was destroyed and the damaged starch content increased as the particle size of brown rice flour decreased. The interaction between the starch and water in the model dough and the matrix structures among the endosperm masses were enhanced as the particle size decreased, making the gluten-free dough more viscoelastic. However, dough made with finer flour was too sticky, which limited the expansion of dough. Gluten-free bread prepared with medium-sized brown rice flour had favorable quality characterized by large specific volume, low hardness, numerous and homogeneous gas cells.

Keywords: Brown rice; Dough; Gluten-free bread; Low temperature impact mill; Particle size.

Copyright © 2021 Elsevier Ltd. All rights reserved.

Full text links



[Editorial: towards an understanding of increased mortality in coeliac disease-authors' reply](#)

Authors

[Carolyn V Schneider](#)^{1 2}, [Pavel Strnad](#)²

Affiliations

- ¹ The Institute for Translational Medicine and Therapeutics, The Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, USA.
- ² Medical Clinic III, Gastroenterology, Metabolic diseases and Intensive Care, University Hospital RWTH Aachen, Aachen, Germany.
- PMID: [33566418](#)
- DOI: [10.1111/apt.16246](#)

No abstract available

Comment on

- [Phenome-wide association study in adult coeliac disease: role of HLA subtype.](#)

Schneider CV, Kleinjans M, Fromme M, Schneider KM, Strnad P.

Aliment Pharmacol Ther. 2021 Feb;53(4):510-518. doi: 10.1111/apt.16206. Epub 2020 Dec 5.

PMID: 33280147

- [Editorial: towards an understanding of increased mortality in coeliac disease.](#)

Anderson RP.

Aliment Pharmacol Ther. 2021 Mar;53(5):654-655. doi: 10.1111/apt.16237.

PMID: 33566401No abstract available.

- [6 references](#)

[50 Years Ago in The Journal of Pediatrics: Association of Type 1 Diabetes Mellitus and Celiac Disease: Then and Now](#)
160.

J Pediatr. 2021 Mar;230:70. doi: 10.1016/j.jpeds.2020.10.050.

Authors

[Jennifer Ni](#)¹, [Chaitan Khosla](#)², [David M Maahs](#)³

Affiliations

- ¹ Division of Pediatric Endocrinology, School of Medicine.
- ² Stanford ChEM-H.
- ³ Division of Pediatric Endocrinology, School of Medicine, Stanford University, Palo Alto, California.
- PMID: [33632400](#)
- DOI: [10.1016/j.jpeds.2020.10.050](#)

No abstract available

Full text links



161. [Novel parameters characterizing size distribution of A and B starch granules in the gluten network: Effects on dough stability in bread wheat](#)

Carbohydr Polym. 2021 Apr 1;257:117623. doi: 10.1016/j.carbpol.2021.117623. Epub 2021 Jan 10.

Authors

[Liwei Yu](#) ¹, [Lei Guo](#) ¹, [Yingchun Liu](#) ¹, [Yanrong Ma](#) ¹, [Jianchu Zhu](#) ¹, [Yang Yang](#) ¹, [Donghong Min](#) ¹, [Yanzhou Xie](#) ¹, [Mingxun Chen](#) ¹, [Jingyang Tong](#) ², [Ata-Ur Rehman](#) ³, [Zhonghua Wang](#) ⁴, [Xinyou Cao](#) ⁵, [Xin Gao](#) ⁶

Affiliations

- ¹ State Key Laboratory of Crop Stress Biology in Arid Areas and College of Agronomy, Northwest A&F University, Yangling, Shaanxi 712100, China.
- ² Institute of Crop Sciences/National Wheat Improvement Center, Chinese Academy of Agricultural Sciences, Beijing 100081, China.
- ³ Graham Centre for Agricultural Innovation, Charles Sturt University, Wagga Wagga, NSW 2650, Australia.
- ⁴ State Key Laboratory of Crop Stress Biology in Arid Areas and College of Agronomy, Northwest A&F University, Yangling, Shaanxi 712100, China. Electronic address: zhwangnew@126.com.
- ⁵ Crop Research Institute, Shandong Academy of Agricultural Sciences/National Engineering Laboratory for Wheat and Maize/Key Laboratory of Wheat Biology and Genetic Improvement in North Yellow and Huai River Valley, Ministry of Agriculture, Jinan 250100, China. Electronic address: caoxinyou@126.com.
- ⁶ State Key Laboratory of Crop Stress Biology in Arid Areas and College of Agronomy, Northwest A&F University, Yangling, Shaanxi 712100, China. Electronic address: bestgaoxin@nwsuaf.edu.cn.

- PMID: [33541650](#)
- DOI: [10.1016/j.carbpol.2021.117623](#)

Abstract

Our study on six wheat genotypes has revealed strong interaction between gluten and starch to affect dough stability. To establish gluten-starch interaction and its roles in dough stability, we randomly selected 16 wheat genotypes and investigated the physicochemical properties of gluten and starch. The manner in which the starch granules occupied available space in gluten network was quantitatively analyzed using gluten lacunarity and proportion of different sized A-type and B-type starch granules. Positive correlations were found between the morphological attributes (B/A/Lacunarity, B/Lacunarity) and dough stability. The correlation coefficient between B/A/Lacunarity and dough stability was highest, followed by the percentage of unextractable polymeric protein (UPP%), B/Lacunarity and dough stability. Dough mixing properties were strongly affected by gluten-starch interactions, as indicated by novel parameters. Whereas the effect of gluten on its own did not provide any evidence to suggest its concrete role in dough mixing properties because of the various genetic backgrounds.

Keywords: Interaction between gluten and starch; Physicochemical properties of gluten and starch; Regression analysis; Wheat dough.

Copyright © 2021 Elsevier Ltd. All rights reserved.

Full text links



[Revealing 3D structure of gluten in wheat dough by optical clearing imaging](#)

162.

Nat Commun. 2021 Mar 17;12(1):1708. doi: 10.1038/s41467-021-22019-0.

Authors

[Takenobu Ogawa](#)¹, [Yasuki Matsumura](#)²

Affiliations

- ¹ Division of Food Science and Biotechnology, Graduate School of Agriculture, Kyoto University, Kyoto, Japan. ogawa.takenobu.6v@kyoto-u.ac.jp.
- ² Division of Agronomy and Horticultural Science, Graduate School of Agriculture, Kyoto University, Uji, Kyoto, Japan. matsumur@kais.kyoto-u.ac.jp.
- PMID: [33731714](#)
- DOI: [10.1038/s41467-021-22019-0](#)

Free article

Abstract

Gluten, which makes up 85% of endosperm wheat protein, is considered a crucial quality determinant of wheat-based food products. During wheat dough manufacture, the molecular packing of gluten causes formation of large structures that exceed the millimetre scale. However, due to lack of imaging techniques for complex systems composed of giant macromolecules, the entire gluten structure remains unknown. Here, we develop an optical clearing reagent (termed SoROCS) that makes wheat-based products transparent. Combined with two-photon microscopy, we image the three-dimensional (3D) structure of gluten at the size in the millimetre scale and at submicron resolution. Further, we demonstrate how the 3D structure of gluten dramatically changes from a honeycomb-shaped network to sparse large clumps in wheat noodles, depending on the salt added during dough making, thereby reducing stress when compressing the noodle. Moreover, we show that SoROCS can be used for noodle imaging using confocal laser scanning microscopy.

- [30 references](#)

Full text links



163. [Addressing the social needs of individuals with food allergy and celiac disease during COVID-19: A new practice model for sustained social care](#)

Soc Work Health Care. 2021 Mar 28;1-10. doi: 10.1080/00981389.2021.1904323. Online ahead of print.

Authors

[Lucy A Bilaver](#)^{1 2}, [Rajeshree Das](#)¹, [Erin Martinez](#)³, [Emily Brown](#)³, [Ruchi S Gupta](#)^{1 2 4}, [Marissa Love](#)⁵

Affiliations

- ¹ Center for Food Allergy and Asthma Research, Northwestern University Feinberg School of Medicine, Chicago, Illinois, USA.
- ² Department of Pediatrics, Northwestern University Feinberg School of Medicine, Chicago, Illinois, USA.
- ³ The Food Equality Initiative, Kansas City, Missouri, USA.
- ⁴ Advanced General Pediatrics and Primary Care, Ann & Robert H. Lurie Children's Hospital of Chicago, Chicago, Illinois, USA.
- ⁵ Division of Allergy, Clinical Immunology and Rheumatology, University of Kansas Medical Center, Kansas City, Kansas, USA.
- PMID: [33775233](#)
- DOI: [10.1080/00981389.2021.1904323](#)

Abstract

COVID-19 has led to high rates of food insecurity. Food insecure patients with food allergy and celiac disease are especially vulnerable during the pandemic when foods become limited. This paper describes a practice innovation implemented by a community-based organization, Food Equality Initiative (FEI), whose mission is improving health and ending hunger among individuals with food allergy and celiac disease. FEI responded to the pandemic by converting their in-person pantries to a contactless delivery of safe foods. The practice innovation is discussed in relation to three system-level elements necessary to sustain the integration of social care into the delivery of healthcare.

Keywords: COVID-19; Food insecurity; celiac disease; food allergy; social work.

164. [Highly Efficient Deamidation of Wheat Gluten by Glucose-Citric Acid-Based Natural Deep Eutectic Solvent: A Potential Effective Reaction Media](#)

J Agric Food Chem. 2021 Mar 24;69(11):3452-3465. doi: 10.1021/acs.jafc.0c07275. Epub 2021 Mar 16.

Authors

[Shi-Lin Cao](#)¹, [Wen-Yu Zheng](#)¹, [Zhan-Peng Chen](#)¹, [Feng-Li Zhang](#)², [Wen-Hao Jiang](#)¹, [Yu-Qiong Qiu](#)¹, [Ming Gu](#)¹, [Zi-Shi Chen](#)¹, [Tian-Yi Zheng](#)¹, [Hong-Kun Zhang](#)¹, [Shao-Yun Wang](#)², [Lan Liao](#)^{1 2}

Affiliations

- ¹ Department of Food Science, Foshan University, Foshan, Guangdong 528000, The People's Republic of China.
- ² College of Biological Science and Technology, Fuzhou University, Fuzhou, Fujian 350108, The People's Republic of China.
- PMID: [33724017](#)
- DOI: [10.1021/acs.jafc.0c07275](#)

Abstract

An efficient technique using citric acid and glucose based natural deep eutectic solvent (G-C-NADES) was developed to obtain ultrahigh deamidated wheat gluten (UDWG) (deamidation degree (DD) > 90%). FTIR and ¹H NMR indicated intensive hydrogen bonds (HBs) in G-C-NADES supermolecules. Quantum chemical calculations and molecular dynamic simulations demonstrated that 10 wt % diluted G-C-NADES still had a myriad of HBs. Physicochemical results showed UDWG had DD up to 92.45% after G-C-NADES deamidation, that is, 22% higher than citric-acid-DWG with a weak degree of hydrolysis (1.75%). Conformational characterization demonstrated the obvious conversion from α -helix to β -sheet via FTIR, the least amount of disulfide bonds by Raman spectra, and more exposure of tryptophan residues by fluorescence measurement for UDWG. It is proven that enhanced accessible conformation of WG reached with HBs of G-C-NADESs could contribute to the improvement on nucleophilic attack of

deamidation, declaring that G-C-NADES might be a potential solvent for obtaining an ultrahigh deamidation for WG to successfully guarantee the safety of wheat gluten based cereal food regarding to lowering its allergy.

Keywords: conformation changes; glucose-citric acid natural deep eutectic solvent; hydrogen bond; ultrahigh deamidation; wheat gluten.

Full text links



165. [Conversion pancreaticoduodenectomy with dual arterial reconstructions for locally advanced pancreatic cancer: Case report and literature review](#)

Int J Surg Case Rep. 2021 Mar;80:105692. doi: 10.1016/j.ijscr.2021.105692. Epub 2021 Feb 22.

Authors

[Yasutoshi Kimura](#)¹, [Masafumi Imamura](#)², [Tatsuya Itoh](#)³, [Takatoshi Yotsuyanagi](#)⁴, [Nobuyoshi Kawaharada](#)⁵, [Ichiro Takemasa](#)⁶

Affiliations

- ¹ Department of Surgery, Surgical Oncology and Science, Sapporo Medical University School of Medicine, S1 W16, Chuo-ku, Sapporo, Hokkaido, 060-8543, Japan. Electronic address: kimuray@sapmed.ac.jp.
- ² Department of Surgery, Surgical Oncology and Science, Sapporo Medical University School of Medicine, S1 W16, Chuo-ku, Sapporo, Hokkaido, 060-8543, Japan. Electronic address: imamura@sapmed.ac.jp.
- ³ Department of Surgery, Surgical Oncology and Science, Sapporo Medical University School of Medicine, S1 W16, Chuo-ku, Sapporo, Hokkaido, 060-8543, Japan. Electronic address: ito.tatsuya@sapmed.ac.jp.
- ⁴ Plastic and Reconstructive Surgery, Sapporo Medical University School of Medicine, S1 W16, Chuo-ku, Sapporo, Hokkaido, 060-8543, Japan. Electronic address: yotsuyanagi@sapmed.ac.jp.
- ⁵ Cardiovascular Surgery, Sapporo Medical University School of Medicine, S1 W16, Chuo-ku, Sapporo, Hokkaido, 060-8543, Japan. Electronic address: nobuyosh@sapmed.ac.jp.
- ⁶ Department of Surgery, Surgical Oncology and Science, Sapporo Medical University School of Medicine, S1 W16, Chuo-ku, Sapporo, Hokkaido, 060-8543, Japan. Electronic address: itakemasa@sapmed.ac.jp.
- PMID: [33639500](#)
- PMCID: [PMC7921499](#)
- DOI: [10.1016/j.ijscr.2021.105692](https://doi.org/10.1016/j.ijscr.2021.105692)

Free PMC article

Abstract

Introduction: Extended pancreatectomy for initially unresectable locally advanced (URLA) pancreatic carcinoma (PC) often requires combined arterial resection/reconstruction. By limiting candidate arterial inflow after combined resection of the celiac arterial system over a long distance, great saphenous vein graft (GSVG) is an alternative conduit for obtaining non-anatomical arbitrary arterial inflow.

Presentation of case: A 66-year-old woman was diagnosed with URLA pancreatic head carcinoma involving the region from the celiac axis (CA) to the common hepatic and proximal splenic artery (SA). She received 10 courses of modified FOLFIRINOX followed by concurrent chemoradiotherapy including S1 with favorable response. The duration of disease control and normalization of serum carbohydrate antigen 19-9 (CA19-9) exceeded 10 months, and conversion surgery was planned. Extended pancreaticoduodenectomy (PD) required concomitant resection of the CA to the proper hepatic and SA. The dual arterial reconstructions involved a GSVG interposition from the abdominal aorta to the distal SA to preserve the entire stomach, and from the mesenteric second jejunal artery to the right hepatic artery. The patient achieved pathological R0 resection with a histological response of Evans grade IIB.

Discussion: Reconstruction of the distal SA with GSVG in extended PD enabled preservation of the subtotal stomach and distal pancreas, even when the root of the CA was transected.

Conclusion: Multiple arterial reconstructions using GSVG might be useful in extended pancreatectomy to preserve visceral organs, offer better quality of life in terms of oral intake and nutritional status, and control blood glucose than after total pancreatectomy concomitant with subtotal gastrectomy.

Keywords: Arterial reconstruction; Great saphenous vein; Non-anatomical; Pancreatectomy.

Copyright © 2021 The Authors. Published by Elsevier Ltd.. All rights reserved.

- [20 references](#)
- [5 figures](#)

Full text links



[Several faces of refractory coeliac disease type 2](#)

166.

Gut. 2021 Mar 30;gutjnl-2021-324251. doi: 10.1136/gutjnl-2021-324251. Online ahead of print.

Author

[Joseph A Murray](#)¹

Affiliation

- ¹ Division of Gastroenterology and Hepatology, Mayo Clinic, Rochester, Minnesota, USA murray.joseph@mayo.edu.
- PMID: [33785554](#)
- DOI: [10.1136/gutjnl-2021-324251](#)

No abstract available

Keywords: T-cell receptor; celiac disease; lymphoma.

Conflict of interest statement

Competing interests: JAM received study grants from Nexpep/ImmusanT, National Institutes of Health, Immunogenix, Takeda Pharmaceutical, Allakos, Oberkotter, and Cour; consultancy fees from Bionix, Lilly Research Laboratory, Johnson & Johnson, Dr. Schar USA, UCB Biopharma, Celimmune, Intrexon Corporation, Chugai Pharma, Kanyos and Boehringer Ingelheim; holds patents licensed to Evelo Biosciences; and receives royalties from Torax Medical.

167. [The significance of retroperitoneal-first laparoscopic approach \(Retlap\) using the innermost layer approach to preserve the celiac axis in laparoscopic distal pancreatectomy for pancreatic body cancer close to the arterial wall](#)

Surg Oncol. 2021 Mar 20;37:101547. doi: 10.1016/j.suronc.2021.101547. Online ahead of print.

Authors

[Gozo Kiguchi](#) ¹, [Atsushi Sugioka](#) ², [Yutaro Kato](#) ², [Ichiro Uyama](#) ²

Affiliations

- ¹ Department of Surgery, Fujita Health University, 1-98 Dengakugakubo, Kutsukake, Toyoake, Aichi, 470-1192, Japan. Electronic address: gozo_kiguchi@kuhp.kyoto-u.ac.jp.
- ² Department of Surgery, Fujita Health University, 1-98 Dengakugakubo, Kutsukake, Toyoake, Aichi, 470-1192, Japan.
- PMID: [33780699](#)
- DOI: [10.1016/j.suronc.2021.101547](#)

No abstract available

Keywords: Laparoscopic distal pancreatectomy; Pancreatic body cancer; Retlap.

Full text links



[B lymphocytes contribute to celiac disease pathogenesis](#)

168.

Gastroenterology. 2021 Mar 2;S0016-5085(21)00468-6. doi: 10.1053/j.gastro.2021.02.063.
Online ahead of print.

Authors

[Thomas Lejeune](#)¹, [Celine Meyer](#)², [Valérie Abadie](#)³

Affiliations

- ¹ Department of Microbiology, Infectiology, and Immunology, Faculty of Medicine, University of Montreal, Montreal, Quebec, Canada; Sainte-Justine Hospital Research Centre, Montreal, Quebec, Canada.
- ² Department of Medicine, Chicago, Illinois, USA.
- ³ Department of Medicine, Chicago, Illinois, USA; Section of Gastroenterology, Hepatology and Nutrition, University of Chicago, Chicago, Illinois, USA.
- PMID: [33667487](#)
- DOI: [10.1053/j.gastro.2021.02.063](#)

No abstract available

Full text links



[Unraveling the role of gut microbiome in Celiac Disease in the advent of next-generation sequencing](#)

169.

Gastroenterology. 2021 Mar 6;S0016-5085(21)00481-9. doi: 10.1053/j.gastro.2021.03.007.
Online ahead of print.

Authors

[Konstantina Zafeiropoulou](#)¹, [Richard Hansen](#)², [Konstantinos Gerasimidis](#)³

Affiliations

- ¹ Human Nutrition, School of Medicine, Dentistry and Nursing, College of Medical, Veterinary and Life Sciences, University of Glasgow, New Lister Building, Glasgow Royal Infirmary, G31 2ER, Glasgow.
- ² Department of Paediatric Gastroenterology, Royal Hospital for Children, Glasgow.

- ³ Human Nutrition, School of Medicine, Dentistry and Nursing, College of Medical, Veterinary and Life Sciences, University of Glasgow, New Lister Building, Glasgow Royal Infirmary, G31 2ER, Glasgow. Electronic address: onstantinos.gerasimidis@glasgow.ac.uk.
- PMID: [33689745](#)
- DOI: [10.1053/j.gastro.2021.03.007](#)

No abstract available

Full text links



170. [Screening for celiac disease in youth with type 1 diabetes: Are current recommendations adequate?](#)

J Diabetes. 2021 Mar 12. doi: 10.1111/1753-0407.13177. Online ahead of print.

Authors

[Meredith Wilkes](#) ¹, [Evan Graber](#) ², [Robert Rapaport](#) ¹

Affiliations

- ¹ Department of Pediatrics, Division of Pediatric Endocrinology, Icahn School of Medicine at Mount Sinai, New York, New York, USA.
- ² Department of Pediatrics, Division of Pediatric Endocrinology, Nemours/Alfred I. duPont Hospital for Children, Wilmington, Delaware, USA.
- PMID: [33710760](#)
- DOI: [10.1111/1753-0407.13177](#)

No abstract available

Keywords: celiac disease; pediatrics; type 1 diabetes.

Full text links



171. [A compact vocabulary of paratope-epitope interactions enables predictability of antibody-antigen binding](#)

Cell Rep. 2021 Mar 16;34(11):108856. doi: 10.1016/j.celrep.2021.108856.

Authors

[Rahmad Akbar](#)¹, [Philippe A Robert](#)², [Milena Pavlović](#)³, [Jeliazko R Jeliazkov](#)⁴, [Igor Snapkov](#)², [Andrei Slabodkin](#)², [Cédric R Weber](#)⁵, [Lonneke Scheffer](#)⁶, [Enkelejda Miho](#)⁷, [Ingrid Hobæk Haff](#)⁸, [Dag Trygve Tryslew Haug](#)⁹, [Fridtjof Lund-Johansen](#)², [Yana Safonova](#)¹⁰, [Geir K Sandve](#)³, [Victor Greiff](#)¹¹

Affiliations

- ¹ Department of Immunology, University of Oslo, Oslo, Norway. Electronic address: rahmad.akbar@medisin.uio.no.
- ² Department of Immunology, University of Oslo, Oslo, Norway.
- ³ Department of Informatics, University of Oslo, Oslo, Norway; Centre for Bioinformatics, University of Oslo, Norway; K.G. Jebsen Centre for Coeliac Disease Research, Institute of Clinical Medicine, University of Oslo, Oslo, Norway.
- ⁴ Department of Biochemistry, University of Zürich, Zürich, Switzerland.
- ⁵ Department of Biosystems Science and Engineering, ETH Zürich, Basel, Switzerland.
- ⁶ Department of Informatics, University of Oslo, Oslo, Norway; Centre for Bioinformatics, University of Oslo, Norway.
- ⁷ Institute of Medical Engineering and Medical Informatics, School of Life Sciences, FHNW University of Applied Sciences and Arts Northwestern Switzerland, Muttens, Switzerland.
- ⁸ Department of Mathematics, University of Oslo, Oslo, Norway.
- ⁹ Department of Philosophy, Classics, History of Arts and Ideas, Oslo, Norway.
- ¹⁰ Computer Science and Engineering Department, University of California, San Diego, La Jolla, CA, USA.
- ¹¹ Department of Immunology, University of Oslo, Oslo, Norway. Electronic address: victor.greiff@medisin.uio.no.
- PMID: [33730590](#)
- DOI: [10.1016/j.celrep.2021.108856](#)

Free article

Abstract

Antibody-antigen binding relies on the specific interaction of amino acids at the paratope-epitope interface. The predictability of antibody-antigen binding is a prerequisite for de novo antibody and (neo-)epitope design. A fundamental premise for the predictability of antibody-antigen binding is the existence of paratope-epitope interaction motifs that are universally shared among antibody-antigen structures. In a dataset of non-redundant antibody-antigen structures, we identify structural interaction motifs, which together compose a commonly shared structure-based vocabulary of paratope-epitope interactions. We show that this vocabulary enables the machine learnability of antibody-antigen binding on the paratope-epitope level using generative machine learning. The vocabulary (1) is compact, less than 10^4 motifs; (2) distinct from non-immune protein-protein interactions; and (3) mediates specific oligo- and polyreactive interactions between paratope-epitope pairs. Our work leverages combined structure- and sequence-based learning to demonstrate that machine-learning-driven predictive paratope and epitope engineering is feasible.

Keywords: antibody; antigen; deep learning; epitope; machine learning; paratope; prediction; structure.

Copyright © 2021 The Author(s). Published by Elsevier Inc. All rights reserved.

Conflict of interest statement

Declaration of interests E.M. declares holding shares in aiNET GmbH. V.G. declares advisory board positions in aiNET GmbH and Enpicom B.V.

Full text links



172. [Letter: improved parsimony of genetic risk scores for coeliac disease through refined HLA modelling](#)

Aliment Pharmacol Ther. 2021 Mar;53(6):759-760. doi: 10.1111/apt.16263.

Authors

[Michael Erlichster](#)¹, [Justin Bedo](#)¹, [Efstratios Skafidas](#)¹, [Patrick Kwan](#)¹, [Adam Kowalczyk](#)^{1 2}, [Benjamin Goudey](#)¹

Affiliations

- ¹ Melbourne, VIC, Australia.
- ² Canberra, ACT, Australia.
- PMID: [33599319](#)
- DOI: [10.1111/apt.16263](#)

No abstract available

Comment on

- [A single nucleotide polymorphism genetic risk score to aid diagnosis of coeliac disease: a pilot study in clinical care.](#)

Sharp SA, Jones SE, Kimmitt RA, Weedon MN, Halpin AM, Wood AR, Beaumont RN, King S, van Heel DA, Campbell PM, Hagopian WA, Turner JM, Oram RA.

Aliment Pharmacol Ther. 2020 Oct;52(7):1165-1173. doi: 10.1111/apt.15826. Epub 2020 Aug 13.

PMID: 32790217

- [3 references](#)

[An Unusual Etiology of Obstructive Jaundice in a Newly Diagnosed Celiac Disease Patient](#)

173.

J Gastrointestin Liver Dis. 2021 Mar 12;30(1):15. doi: 10.15403/jgld-3343.

Authors

[Adrian Ionut Saizu](#)¹, [Ion Bancila](#)², [Gabriel Becheanu](#)³, [Mona Dumbrava](#)⁴, [Cristian Gheorghe](#)⁵

Affiliations

- ¹ Carol Davila University of Medicine and Pharmacy, Gastroenterology Department, Fundeni Clinical Institute, Bucharest, Romania. saizuadrian@gmail.com.
- ² Carol Davila University of Medicine and Pharmacy, Gastroenterology Department, Fundeni Clinical Institute, Bucharest, Romania. ibancila@yahoo.com.
- ³ Carol Davila University of Medicine and Pharmacy, Gastroenterology Department, Fundeni Clinical Institute, Bucharest, Romania. gbecheanu@yahoo.com.
- ⁴ Carol Davila University of Medicine and Pharmacy, Gastroenterology Department, Fundeni Clinical Institute, Bucharest, Romania. dmona98@yahoo.com.
- ⁵ Carol Davila University of Medicine and Pharmacy, Gastroenterology Department, Fundeni Clinical Institute, Bucharest, Romania. drcgheorghe@gmail.com.
- PMID: [33723549](#)
- DOI: [10.15403/jgld-3343](#)

Free article

No abstract available

Full text links



[The role of female endoscopists: are women gastroenterologists better at obtaining biopsies for celiac disease than men?](#)

174.

Scand J Gastroenterol. 2021 Apr;56(4):505-507. doi: 10.1080/00365521.2021.1887926. Epub 2021 Feb 18.

Authors

[Claire L Jansson-Knodell](#)¹, [William R Kessler](#)¹

Affiliation

- ¹ Division of Gastroenterology and Hepatology, Department of Medicine, Indiana University, Indianapolis, IN, USA.
- PMID: [33599184](#)
- DOI: [10.1080/00365521.2021.1887926](#)

Abstract

Objectives: Celiac disease (CD) is commonly found in women. Given the sex differences in diagnosed patients, we hypothesized sex differences in physicians obtaining biopsies for CD may exist.

Materials and methods: We retrospectively reviewed duodenal biopsies for suspected CD excluding pre-existing CD patients. Appropriate biopsy practice was defined as ≥ 5 specimens per ACG guidelines.

Results: We included 125 patients (females, 92). There were 85 properly (68%) biopsied. Presence of a female endoscopist was associated with better adherence to biopsy guidelines (OR, 2.99, 95% CI, 1.19-7.54; $p = .02$) which remained significant after multivariable adjustment (adjusted OR, 2.7; $p = .047$).

Conclusions: Physician sex-based differences in biopsy patterns may exist.

Keywords: Sprue; diagnosis; duodenal biopsy; gender; practice patterns; sex.

Full text links

