

Webinar training contents:

ex-ante questionnaire

TUESDAY 09 Feb 2021
3.30 PM – 5.00 PM CET

post-ante questionnaire

- Introduction
- From Guidelines To Practice
- Principles Of Healthy Diet
- Dietary Advice And Practice
- Q & A

CELIAC DISEASE

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DEFINITION of Coeliac Disease

- ❖ **Coeliac disease is generally defined as a chronic immune-mediated enteropathy driven by dietary gluten, which is present in grains including wheat, rye and barley.**
- ❖ **The development of CD requires genetic susceptibility and the disorder almost exclusively occurs in individuals with the human leukocyte antigen (HLA)-DQ2 and/or HLA-DQ8 haplotypes.**

Coeliac Disease

❖ *CD primarily affects the small intestinal mucosa, and the ingestion of gluten by predisposed individuals results in the development of a mucosal immune response, including an increased intraepithelial lymphocytes count, and such immune response eventually lead to structural changes in the gut, characterized by villous atrophy (blunting or flattening of the villi) and crypt hyperplasia (elongation of the crypts).*

Coeliac Disease

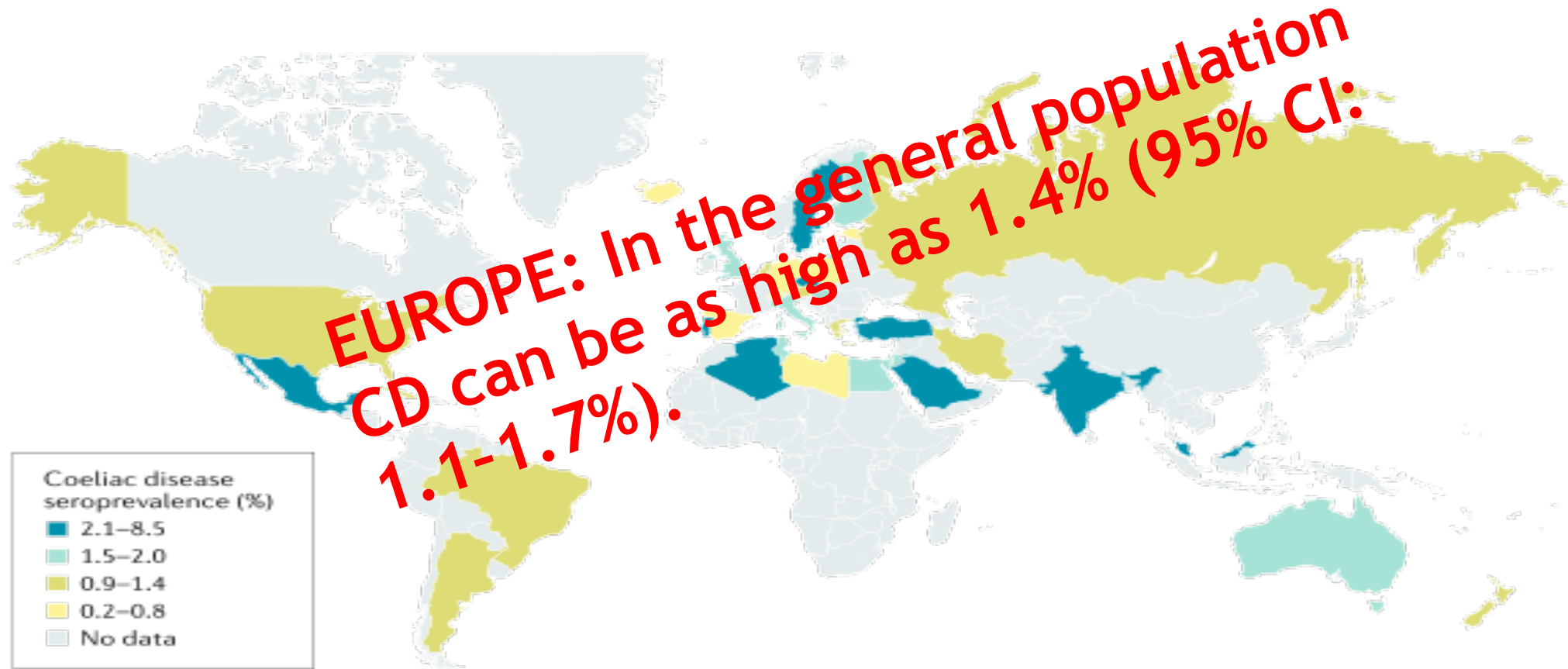
- ❖ ***CD-associated enteropathy is often accompanied by gastrointestinal symptoms and signs of malabsorption.***
- ❖ ***The manifestations of the disease are broad, and in addition to gastrointestinal problems, patients may experience various extraintestinal symptoms or even remain asymptomatic***

Coeliac Disease

Coeliac disease is heavily underdiagnosed worldwide

Lindfors K. et al. , Nature Reviews 2019

The global seroprevalence of coeliac disease



Coeliac Disease

➤ Of the world's top ten most populated countries, population-based prevalence data on coeliac disease are available from India, the United States, Brazil and Russia but are largely lacking from China, Indonesia, Pakistan, Nigeria, Bangladesh and Japan. Taken together, coeliac disease is now known to affect people worldwide. In some geographical areas such as Far East Asia and sub-Saharan Africa, the disease is still rare, although large epidemiological studies from these sites are still lacking

Coeliac Disease

➤ The global pooled prevalence of biopsy-proven coeliac disease, which is 0.7% (95% CI: 0.5–0.9%), is lower than the seroprevalence. On the basis of serological data, the prevalence of coeliac disease is increasing over time. Two studies reported a 2-fold increase in sero- prevalence of coeliac disease over two decades, and a further study with ~50 years of follow-up indicated a 4–4.5-fold increase over time. A recent meta-analysis also confirmed a parallel increase in the prevalence of biopsy-proven coeliac disease.

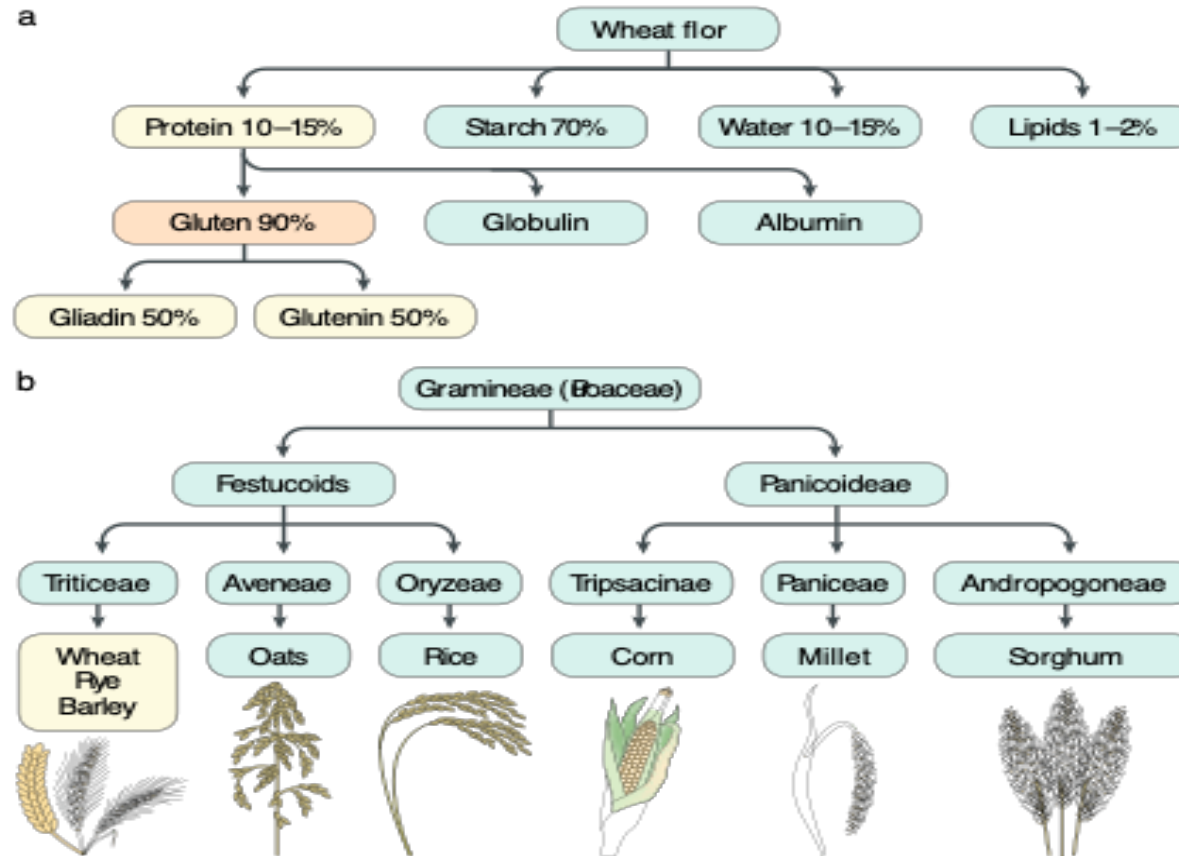
Box 1 | Risk groups and associated disorders

- First-degree relative with coeliac disease (2–20%)
- Type 1 diabetes mellitus (3–12%)
- Selective IgA deficiency (2–8%)
- Autoimmune thyroiditis (4–7%)
- Sjögren syndrome (4–12%)
- Down syndrome (5–12%)
- Addison disease (5%)
- Turner syndrome (3–4%)
- Williams syndrome (2–4%)

Percentages in parentheses indicate the prevalence of coeliac disease in each group. Data are from REFS^{33,34}.

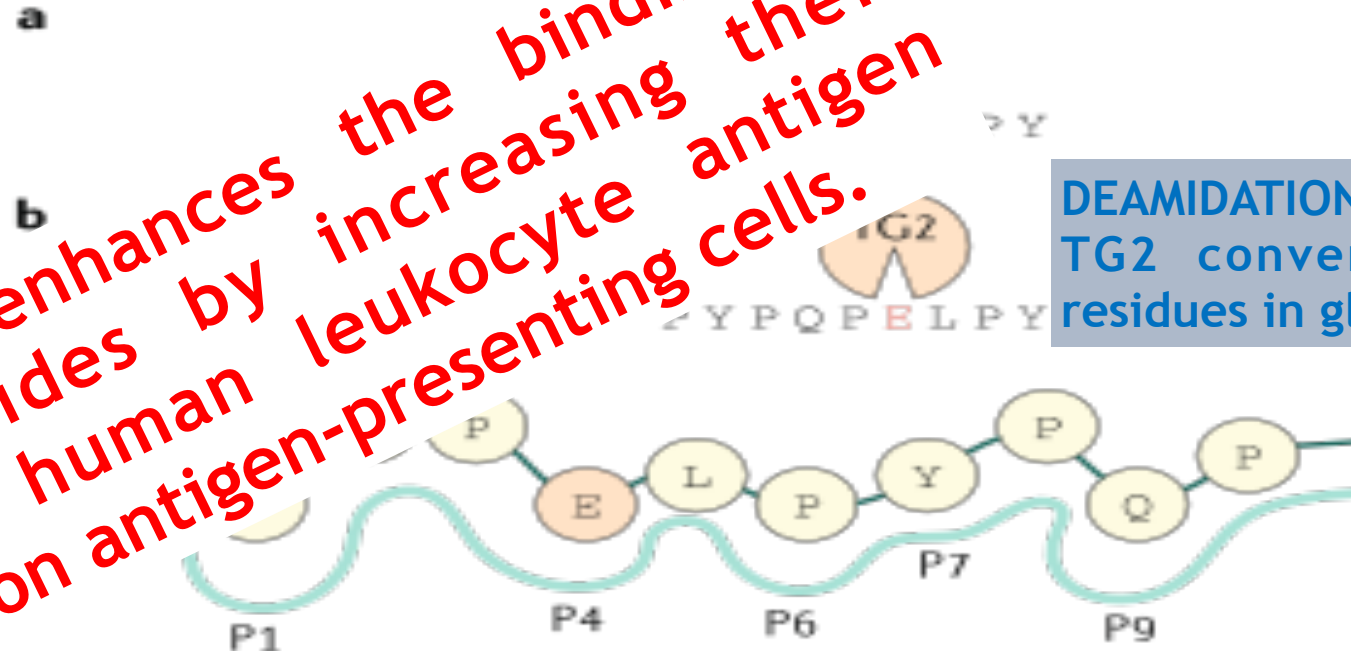
Katri Lindfors et al., NATURE REVIEWS | DISEASE PRIMERs, 2019 |

Cereals harmful for patients with coeliac disease



Gluten peptide presentation by HLA-DQ2

Deamidation enhances the binding of gluten peptides by increasing their affinity to human leukocyte antigen (HLA)-DQ2 on antigen-presenting cells.



DEAMIDATION reaction:
TG2 converts distinct glutamine residues in gluten peptides

Coeliac Disease

GENETICS

- *The genetic susceptibility is evidenced by the high prevalence of CD among first-degree relatives of patients , being about 8%*
- *The HLA-DQ haplotypes HLA-DQ2 and HLA-DQ8 impart the strongest risk and these variants contribute about 25-40% of the genetic risk*
- *HLA-DQ2 or HLA-DQ8 is necessary but not sufficient for CD to develop*

HLA-DQ haplotypes and COELIAC DISEASE

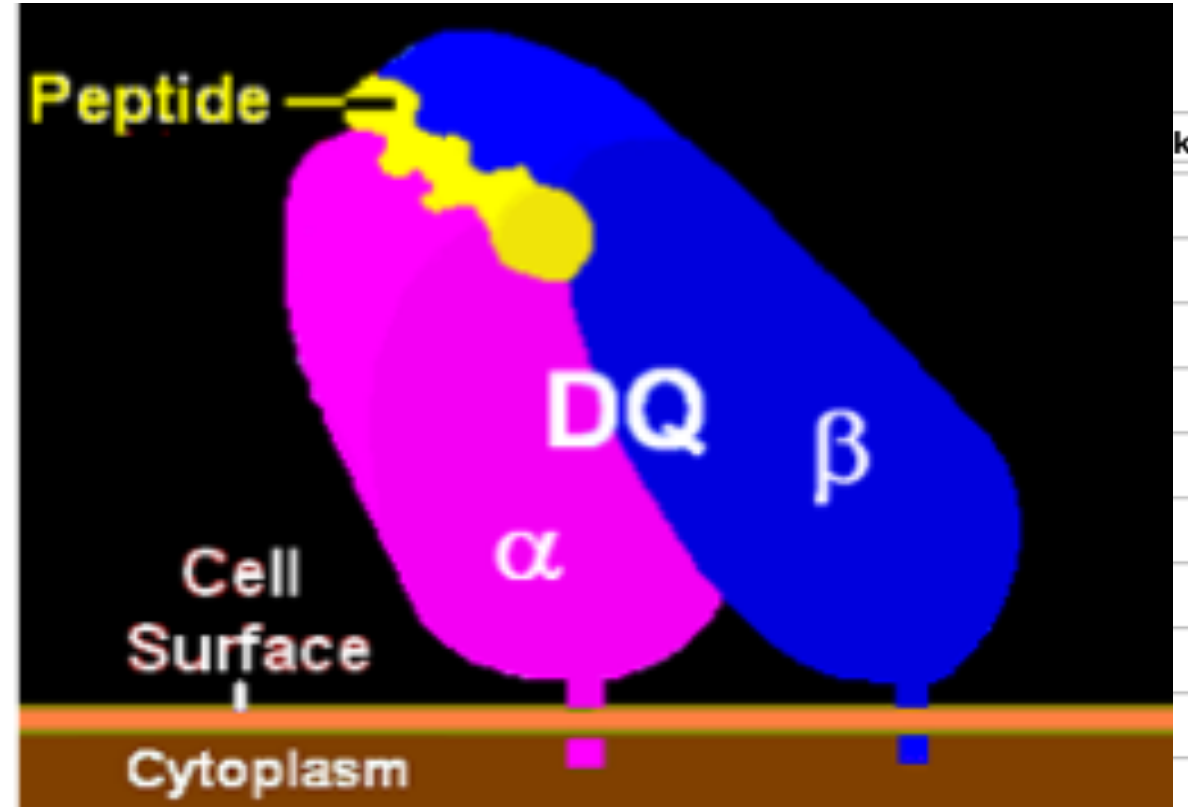
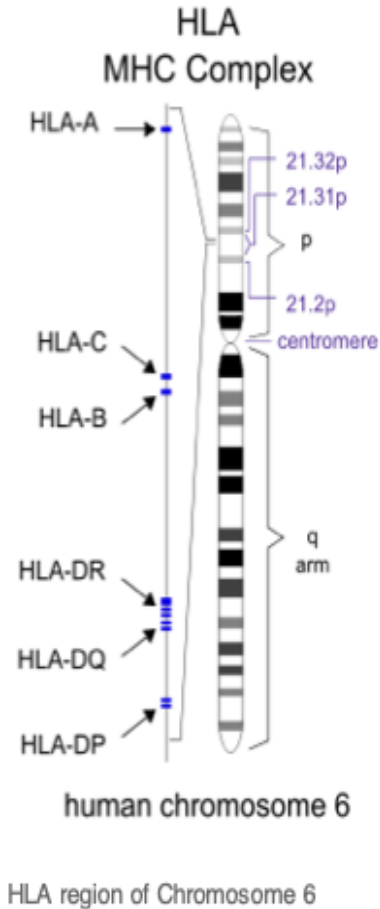


Illustration of an HLA-DQ molecule (magenta and blue) with a bound ligand (yellow) floating on the plasma membrane of the cell.

Non-HLA regions associated with CD

Chromosomal region	Candidate genes*	Pathway enriched for target genes
2q12.1	<i>IL18R1</i> and <i>IL18RAP</i>	<ul style="list-style-type: none"> • Inflammatory bowel disease • Cytokine–cytokine receptor activation
2q32.2–32.3	<i>STAT4</i>	<ul style="list-style-type: none"> • Inflammatory bowel disease • JAK–STAT signalling pathway
2q33.2	<i>CD28</i>	<ul style="list-style-type: none"> • Cell adhesion molecules • T cell receptor signalling • Autoimmune thyroid disease • Intestinal immune network for IgA production • Allograft rejection • Type 1 diabetes mellitus
	<i>CTLA4</i>	<ul style="list-style-type: none"> • Cell adhesion molecules • T cell receptor signalling • Autoimmune thyroid disease
	<i>ICOS</i>	<ul style="list-style-type: none"> • Cell adhesion molecules • T cell receptor signalling • Intestinal immune network for IgA production
3p22.3	<i>CCR4</i>	<ul style="list-style-type: none"> • Chemokine signalling pathway • Cytokine–cytokine receptor activation

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6q23.3	<i>TNFAIP3</i>	NF-κB signalling
7p14.1	<i>ELMO1</i>	Chemokine signalling pathway
10p15.1	<i>PRKCQ</i>	<ul style="list-style-type: none"> • NF-κB signalling • T cell receptor signalling
16p13.13	<i>SOCS1</i>	JAK–STAT signalling pathway
21q22.3	<i>ICOSLG</i>	<ul style="list-style-type: none"> • Cell adhesion molecules • Intestinal immune network for IgA production
Xq28	<i>IRAK1</i>	NF-κB signalling

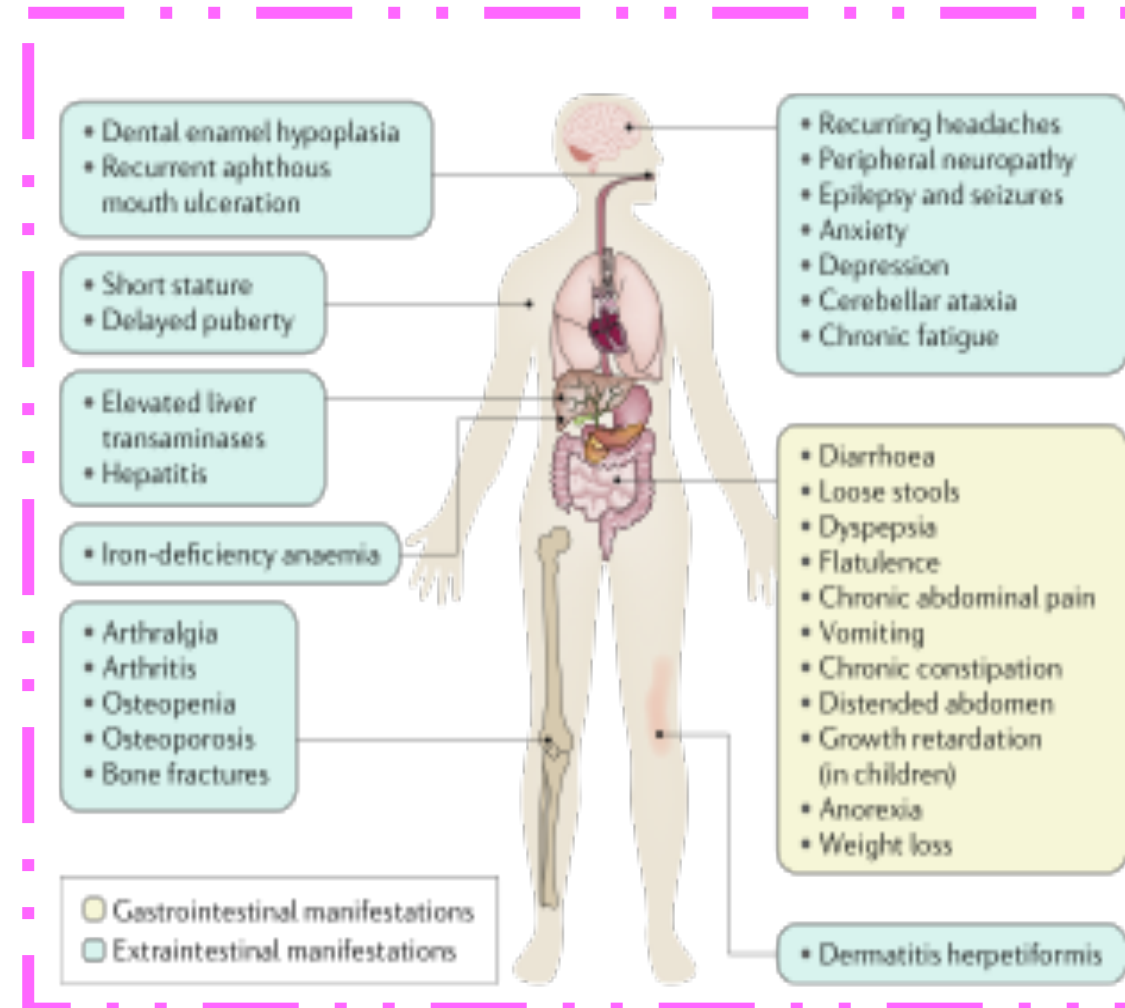
N= 43

Table 1. Manifestations and associations of coeliac disease.

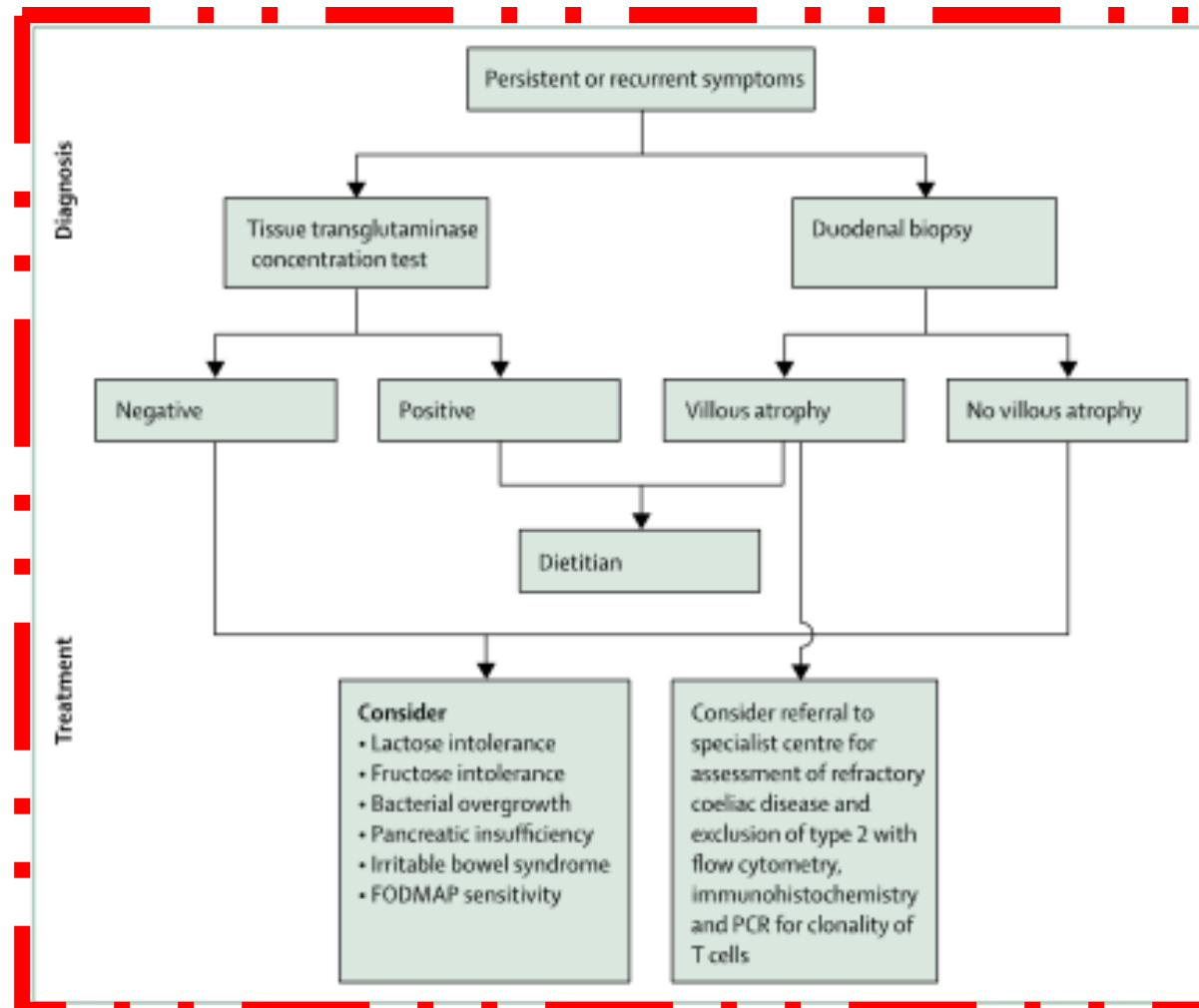
Gastro-intestinal manifestations	Extra-intestinal manifestations	Disease associations
Chronic diarrhoea	<i>Haematological</i>	<i>Auto-immune</i>
Abdominal pain	Iron deficiency anaemia	Type 1 diabetes mellitus
Abdominal distension	Other deficiencies (zinc, vitamin B ₁₂ , vitamin D, folate, vitamin B ₆)	Juvenile chronic arthritis
Constipation	Hyposplenism	Auto-immune thyroid disease
Bloating	<i>Liver disease</i>	Auto-immune liver disease (auto-immune hepatitis, primary biliary cirrhosis, primary sclerosing cholangitis)
Steatorrhea	Transaminase elevation	Systemic lupus erythematosus
Malabsorption	Cirrhosis	Selective IgA deficiency
IBS symptoms	<i>Endocrine</i>	IgA nephropathy
Poor weight gain	Fatigue	Sjögren's Syndrome
Weight loss	Short stature	<i>Genetic</i>
Failure to thrive	Failure to thrive	First-degree relatives of coeliac patients (FDR)
Constipation	Delayed puberty	Second-degree relatives of coeliac patients (SDR)
Gastro-oesophageal reflux	Delayed menarche	Down syndrome
Coeliac crisis	<i>Gynaecological manifestations</i>	Turner syndrome
	Recurrent abortions	William syndrome
	Early menopause	
	Infertility	
	Intra-uterine growth retardation	
	Low birthweight	
	Pre-term delivery	
	<i>Neurological</i>	
	Myelopathy	
	Epilepsy	
	Ataxia	
	Peripheral neuropathy	
	Sporadic ataxia	
	<i>Mucocutaneous</i>	
	Recurrent aphthous ulceration/stomatitis	
	Dermatitis herpetiformis	
	Psoriasis	
	Urticaria	
	Alopecia areata	
	Glossitis	
	Angular cheilitis	
	<i>Bone and metabolic disease</i>	
	Dental enamel hypoplasia	
	Arthritis	
	Osteopenia/osteoporosis	

IBS, irritable bowel syndrome.

The clinical manifestations of coeliac disease



Proposed flowchart for diagnosis and treatment following persistent or recurrent symptoms in patients with coeliac disease



KEY POINTS

- There is increasing recognition of coeliac disease world-wide, with emerging data on prevalence in countries like India and China.
- Coeliac disease is a polygenic disorder with involvement of a large number of non-HLA loci with minor effects as well as HLA as a dominating locus with large effect.
- CD4⁺ T cells recognizing gluten epitopes in the context of disease-associated HLA-DQ molecules are key players in the pathogenesis, and T cells of different patients recognizing the same epitopes often use similar T-cell receptors.
- New guidelines state that coeliac disease can be diagnosed in children without endoscopy and biopsy if there are clinical signs of coeliac disease, strongly positive serology in repeated testing and presence of HLA-DQ2 or HLA-DQ8.
- The risk for mortality and morbidity in coeliac disease is less than previously thought.

Panel 2: National Institute for Health and Care Excellence guidelines⁷¹ on the indications that should prompt testing for coeliac disease

Coeliac testing recommended

- Persistent unexplained abdominal or gastrointestinal symptoms
- Faltering growth
- Prolonged fatigue
- Unexpected weight loss
- Severe or persistent mouth ulcers
- Unexplained iron, vitamin B12, or folate deficiency
- Type 1 diabetes
- Autoimmune thyroid disease
- Irritable bowel syndrome
- First degree relatives of people with coeliac disease

Coeliac testing should be considered

- Metabolic bone disorders (reduced bone mineral density or osteomalacia)
- Unexplained neurological symptoms (particularly peripheral neuropathy or ataxia)
- Unexplained subfertility or recurrent miscarriage
- Persistently increased concentrations of liver enzymes with unknown cause
- Dental enamel defects
- Down's syndrome
- Turner syndrome

Panel 3: Causes of non-responsive coeliac disease

Incorrect initial diagnosis

- Non-coeliac gluten sensitivity
- Seronegative villous atrophy

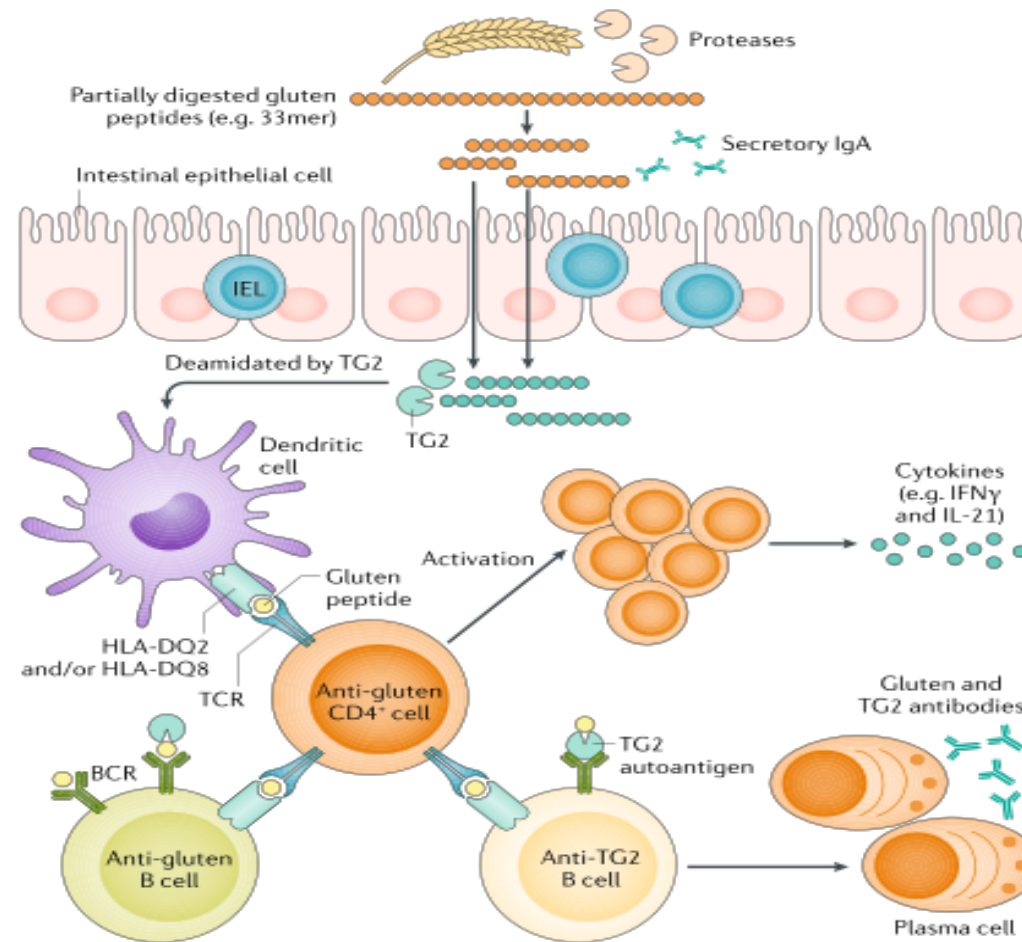
Inadvertent gluten exposure

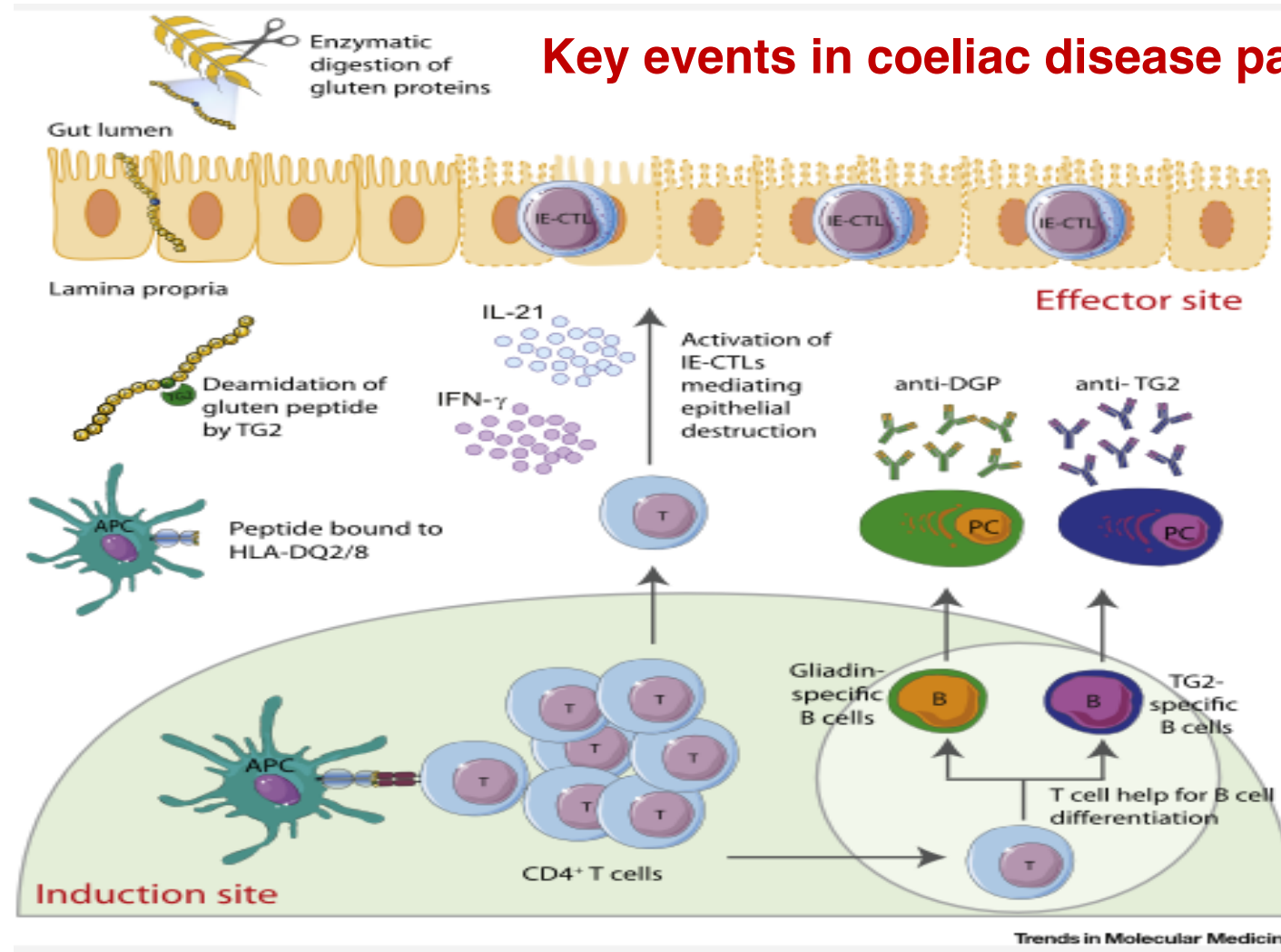
Additional conditions

- Irritable bowel syndrome
- Small intestinal bacterial overgrowth
- Food intolerance (eg, to lactose or fructose)
- Pancreatic exocrine insufficiency
- Microscopic colitis

Refractory coeliac disease

Adaptive immune responses involved in coeliac disease.

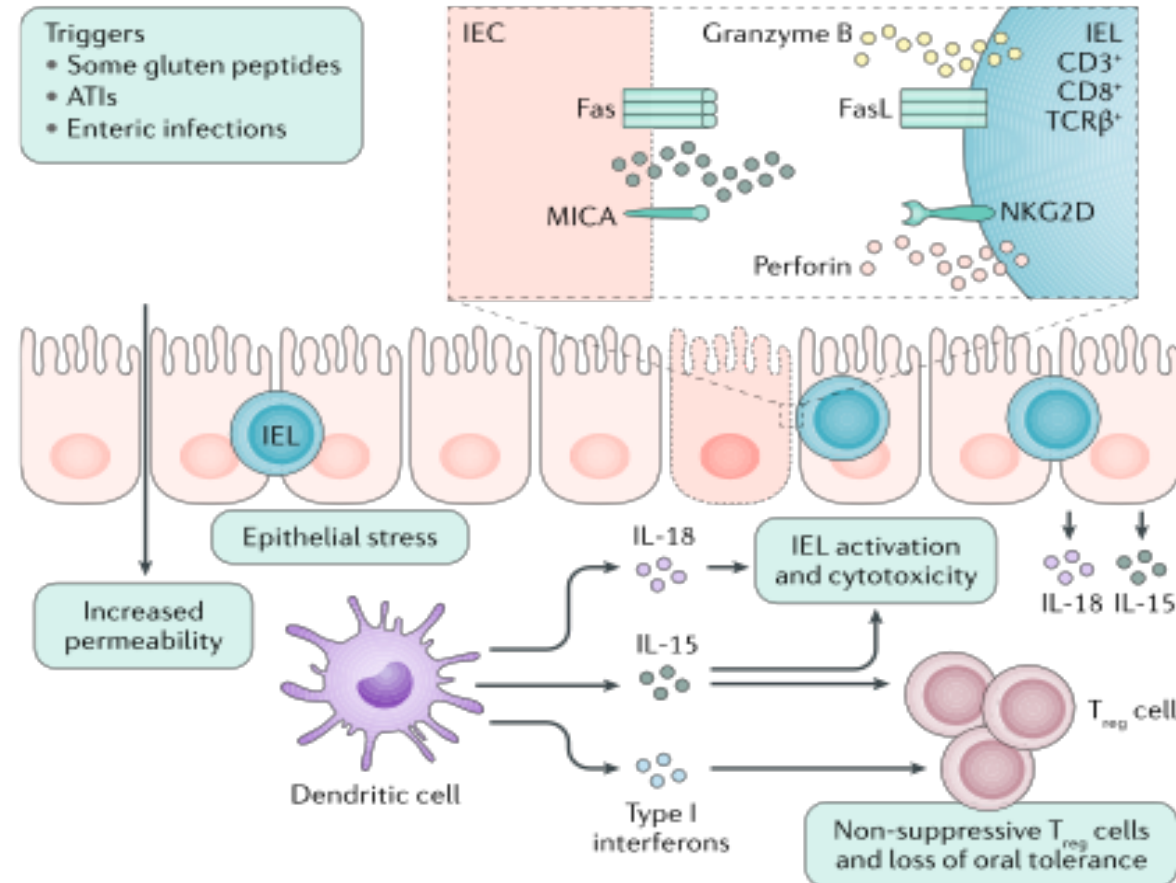




Coeliac Disease

Gluten proteins in food are poorly digested in the small intestine as a consequence of high content of proline residues. Surviving gluten peptide fragments somehow manage to cross the epithelium and enter to the lamina propria. In the lamina propria, specific glutamine residues of the gluten fragments are targeted by TG2 for enzymatic deamidation or transamidation (crosslinking). Deamidated gluten peptides will then be taken up by antigen-presenting cells and presented to CD4⁺ T cells. Only the disease-associated HLA molecules (HLA-DQ2.5, HLA-DQ2.2 or HLA-DQ8) can bind and present deamidated gluten peptides thus explaining the HLA association of CeD [100]. Organized gut associated lymphoid tissue (mesenteric lymph nodes or Peyer's patches) serve as the induction site for the anti-gluten immune response. Interaction between HLA-DQ bound gluten peptides and T cell receptors lead to activation of gluten-specific CD4⁺ T cells which again result in cytokine release (IFN- γ , IL-2 and IL-21) and T cell clonal expansion. Activated gluten-specific CD4⁺ T cells likely provide help to both TG2-specific and gluten-specific B cells to differentiate into antibody-producing plasma cells [101]. Activated gluten-specific T cells and plasma cells then migrate to the lamina propria and function as effector cells. The activated gluten-specific CD4⁺ T cells further provide signals that remain to be fully defined for intraepithelial cytotoxic T lymphocytes (IE-CTLs). Activated IE-CTLs can kill epithelial cells resulting in villous blunting, but whether this activation is dependent on TCR ligation is not known. Importantly, disease-driving gluten-specific CD4⁺ T cell clonotypes persist for decades in CeD patients [81]. Both the appearance of autoantibodies in serum and the villous blunting recede when gluten proteins are removed from the diet. A gluten-free diet is thus an effective but cumbersome treatment for CeD.

Innate immune responses involved in coeliac disease.



The continuum of small intestinal mucosal damage in coeliac disease

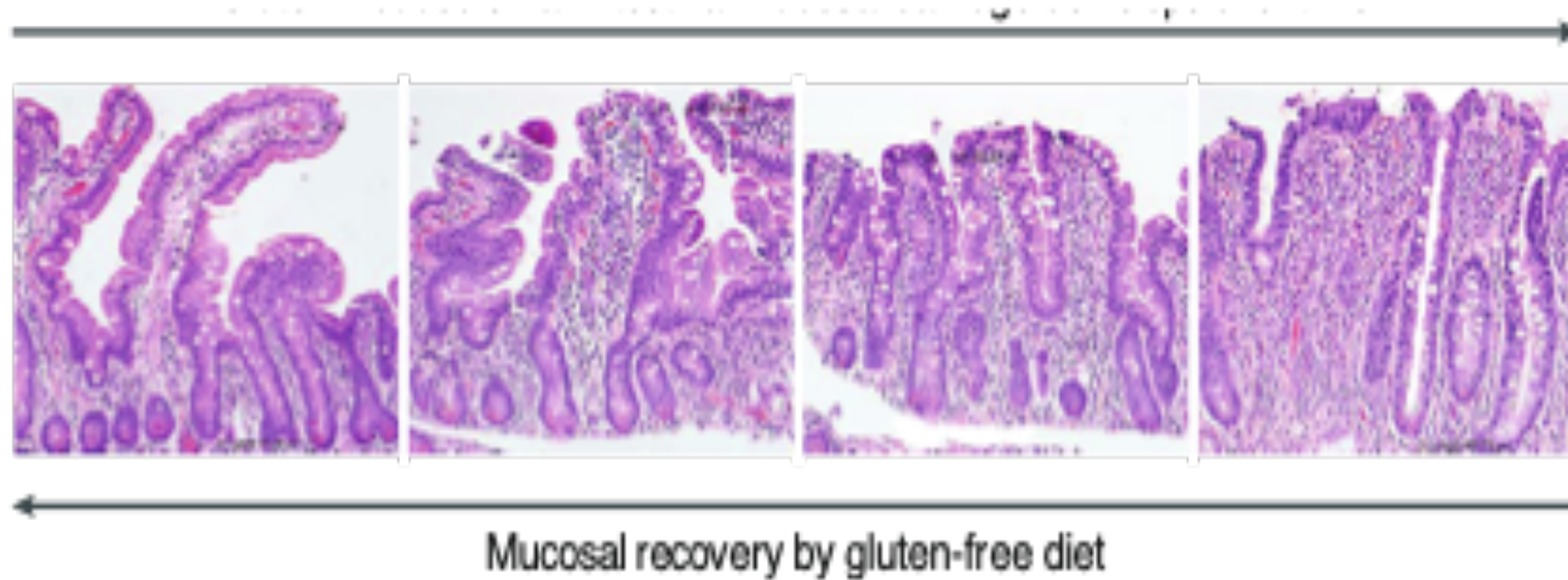


Table 2 | Differential diagnostics of disorders related to gluten and cereal consumption

Disease	Causative agent	Symptoms	Prevalence	Small intestinal mucosal morphology	Antibodies	Genetics	Mechanisms	Age of diagnosis	Treatment
Coeliac disease	Gluten	<ul style="list-style-type: none"> • GI • Malabsorption • Extraintestinal • Some asymptomatic 	1–2%	<ul style="list-style-type: none"> • Villous atrophy • Crypt hyperplasia 	IgA, EmAs and TG2-Abs	HLA-DQ2 and HLA-DQ8	Immune mediated	Children and adults	Lifelong GFD
Cereal allergy	Cereal proteins	<ul style="list-style-type: none"> • GI • Respiratory symptoms • Mouth and skin symptoms • Rarely anaphylaxis 	<ul style="list-style-type: none"> • 1% in children • Often resolves by adulthood 	Normal	IgE cereal RAST in some cases	Genetic susceptibility	IgE or non-IgE mediated	Often children	Avoidance of symptom-causing cereals
NCGS	<ul style="list-style-type: none"> • Gluten • Fructose • Other 	<ul style="list-style-type: none"> • GI • Extraintestinal 	0.5–8%	Normal	Some with IgA and/or IgG anti-gliadin	Unknown	<ul style="list-style-type: none"> • Innate • Unknown 	Mostly adults	<ul style="list-style-type: none"> • Avoidance of gluten-containing cereals and FODMAPs • Length of the diet: no data
IBS	Unknown	GI	10–20%	Normal	Unknown	Unknown	<ul style="list-style-type: none"> • Multifactorial • Unknown 	Children and adults	<ul style="list-style-type: none"> • Avoidance of gluten-containing cereals and FODMAPs • Length of the diet: according to symptoms

EmAs, endomysial antibodies; FODMAPs, fermentable oligosaccharides, disaccharides, monosaccharides and polyols; GFD, gluten-free diet; GI, gastrointestinal; HLA, human leukocyte antigen; IBS, irritable bowel syndrome; NCGS, non-coeliac gluten sensitivity; RAST, radioallergosorbent test; TG2-Abs, transglutaminase 2 antibodies.

Table 2. Pooled sensitivity and specificity of various coeliac serology tests. Data from Husby [17], Giersiepen [45] and Hill [46].

Test	Sensitivity (%)	Specificity (%)
IgA anti-tTG antibodies	> 95 (73.9–100)	> 95 (77.8–100)
IgA anti-endomysial antibodies	> 90 (82.6–100)	98.2 (94.7–100)
IgG DGP	> 90 (80.1–98.6)	> 90 (86.0–96.9)
IgG anti-tTG antibodies	Widely variable (12.6–99.3)	Widely variable (86.3–100)
IgA AGA	Widely variable (52–100)	Widely variable (71–100)
IgG AGA	Widely variable (57–100)	Widely variable (47–94)
HLA DQ2/DQ8	91 (82.6–97)	54.0 (12–68)

tTG, Tissue transglutaminase; DGP, deaminated gliadin peptides; AGA, anti-gliadin antibodies.

J. R. GLISSEN BROWN AND P. SINGH, PAEDIATRICS AND INTERNATIONAL CHILD HEALTH, 2018

■ *Coeliac Disease*

Panel 1: Terminology describing patients with coeliac disease (adapted from Ludvigsson and colleagues, 2013)²⁰

Potential

Positive serological tests and normal intestinal biopsy

Asymptomatic

Absence of symptoms despite specific questioning regarding symptoms

Symptomatic

Presence of either intestinal or extra-intestinal symptoms

Classic

Diarrhoea, signs and symptoms of malabsorption, or both

Non-classic

Lack of malabsorption symptoms, but other symptoms present (eg, anaemia, osteoporosis)

Refractory

Persistent symptoms and villous atrophy despite adherence to a gluten-free diet

Panel 2: National Institute for Health and Care Excellence guidelines²¹ on the indications that should prompt testing for coeliac disease

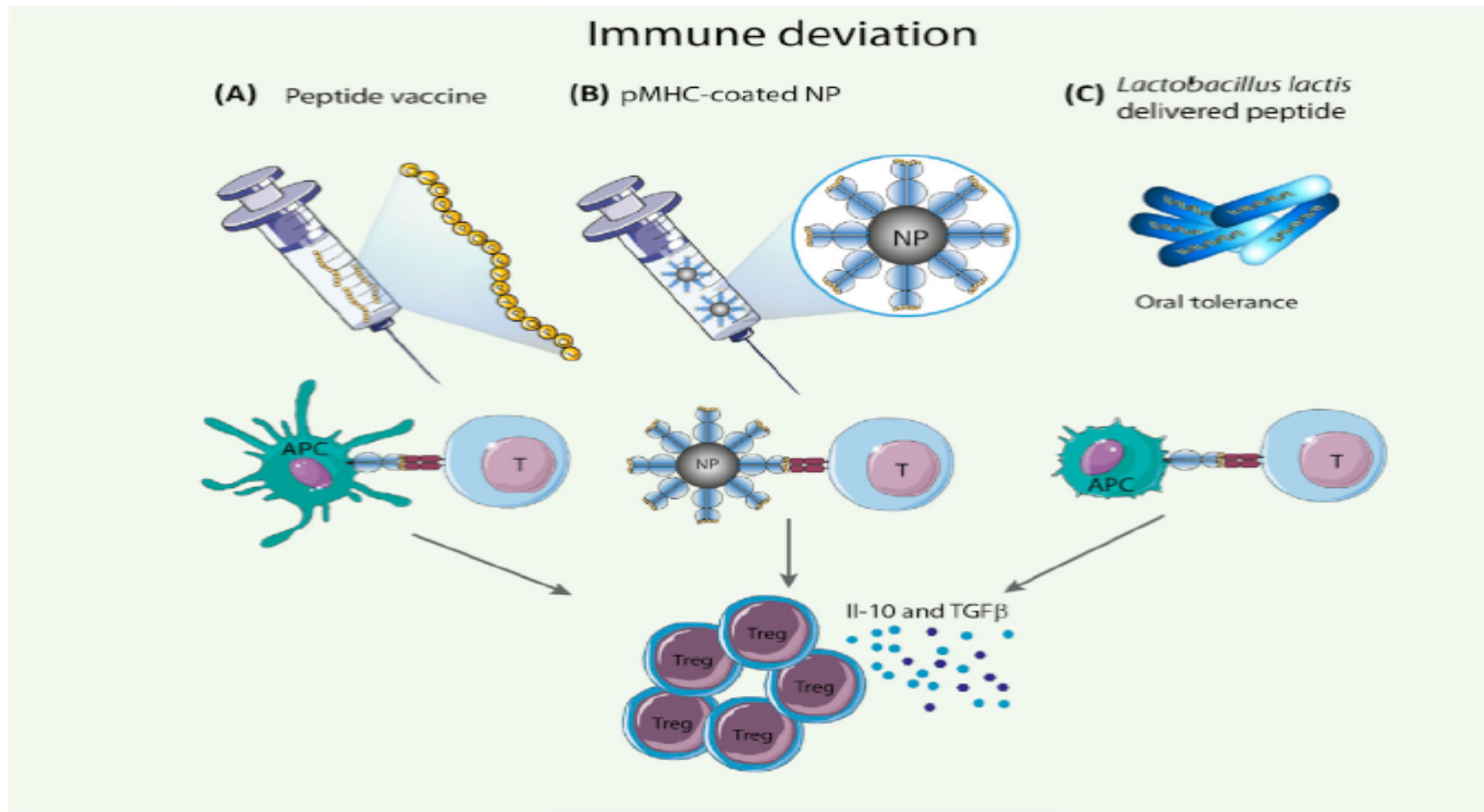
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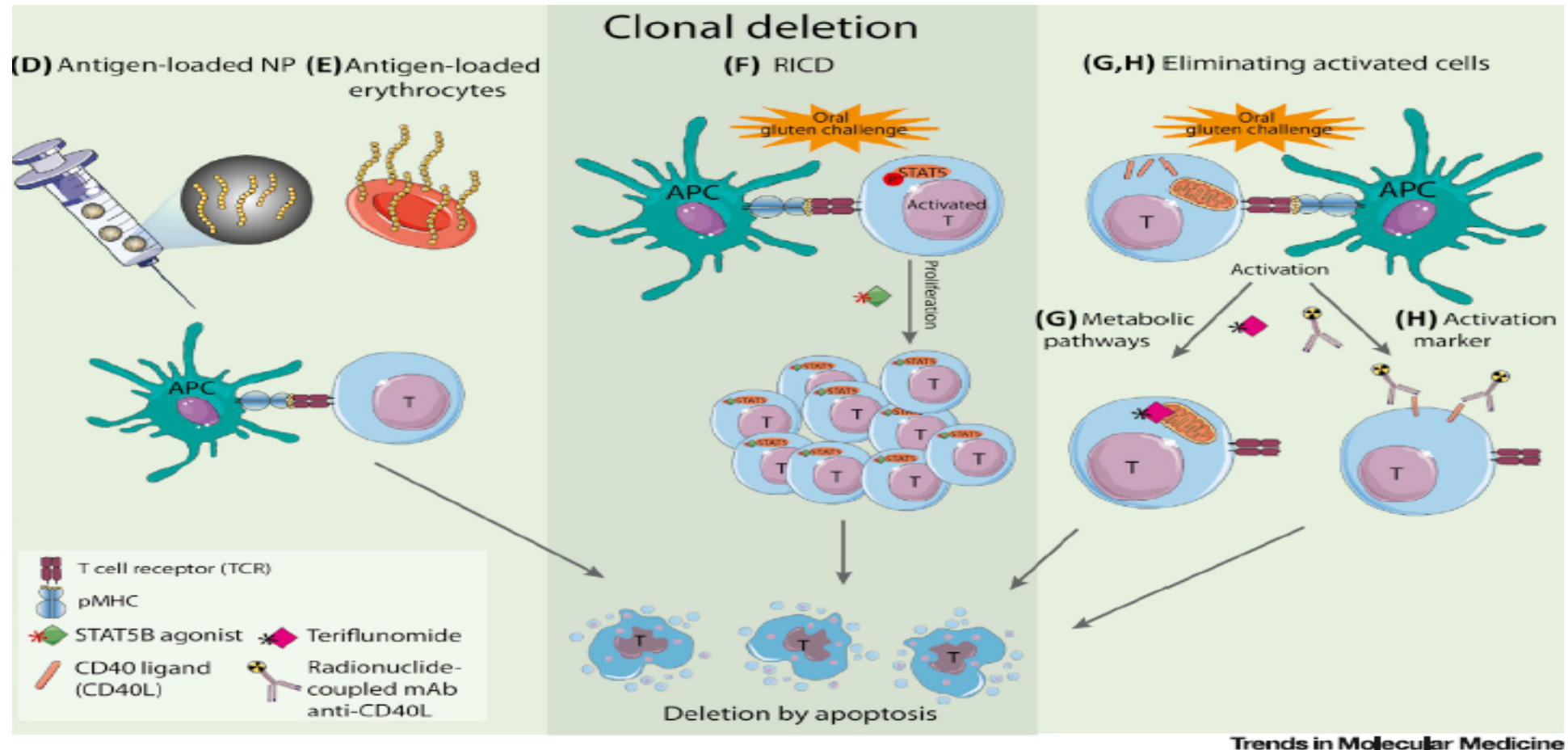
Coeliac testing should be considered

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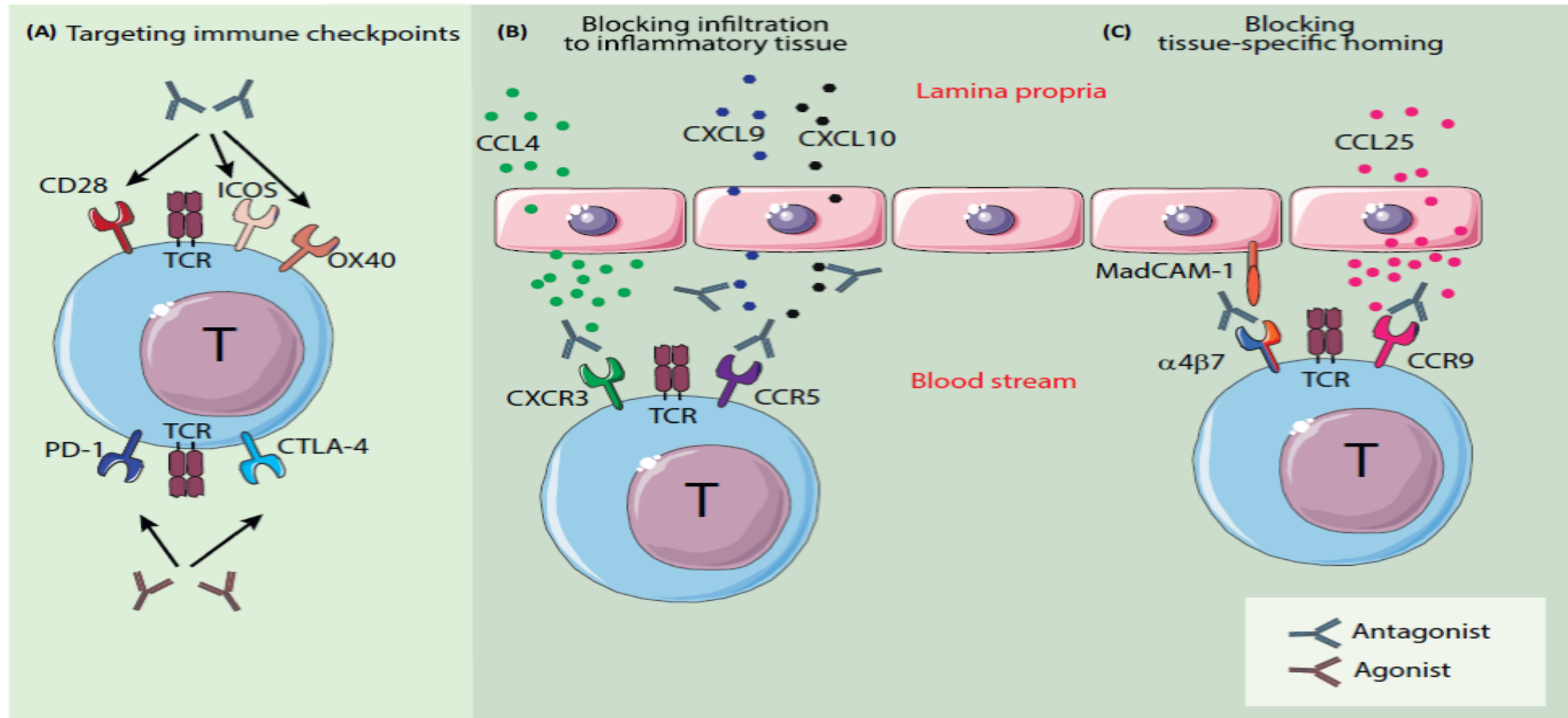
Antigen-specific approaches aiming at tolerance induction



Antigen-specific approaches aiming at tolerance induction

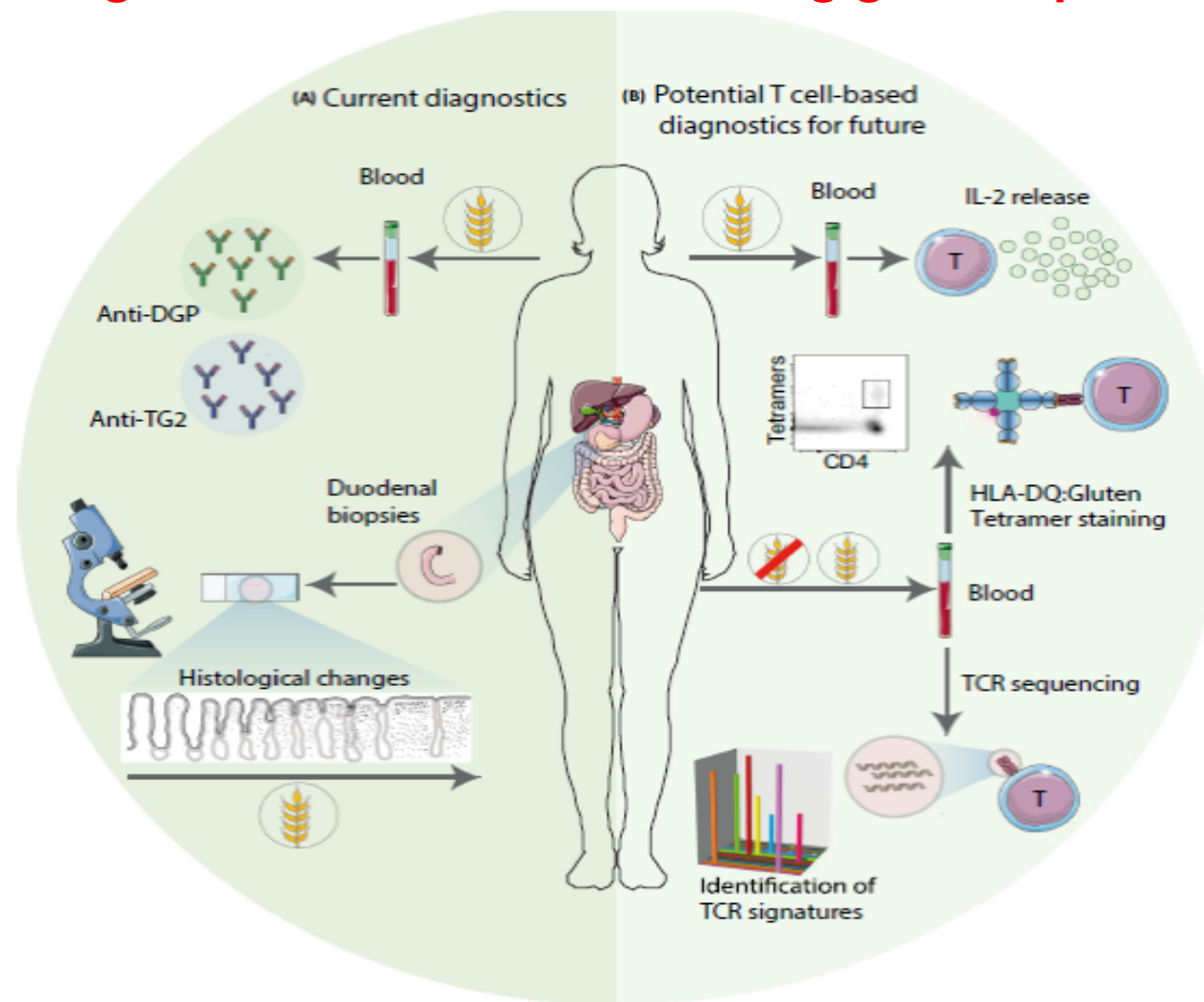


Targeting phenotypic markers on gluten-specific T cells



Trends in Molecular Medicine

Diagnosis of celiac disease using gluten-specific CD4+ T cells



Trends in Molecular Medicine

QUESTIONS?

5 min of pause

PRIMEVIEW

COELIAC DISEASE

nature
REVIEWS

DISEASE
PRIMERS

For the Primer, visit doi:10.1038/s41572-018-0054-z

→ Coeliac disease was historically defined as an immune-mediated enteropathy that is driven by the ingestion of dietary gluten. However, coeliac disease is increasingly recognized as a systemic disorder characterized by diverse extraintestinal manifestations.



EPIDEMIOLOGY

Before the 1990s, coeliac disease was considered an uncommon disorder, limited largely to children in western Europe. Since then, the implementation of specific serological tests has led to the recognition that coeliac disease is a major global public health problem, and that the prevalence of coeliac disease is increasing. Screening studies indicate that coeliac disease affects ~1% of the European population. Similar studies performed in areas with high levels of European ancestry have yielded comparable prevalence figures. Coeliac disease remains rare in far east Asia and sub-Saharan Africa; however, large epidemiological studies are lacking from these regions. Notably, screening data suggest that for each clinically diagnosed patient there are 5–10 undiagnosed seropositive individuals.

! Coeliac disease almost exclusively occurs in individuals with human leukocyte antigen (HLA)-DQ2 and/or HLA-DQ8 haplotypes. However, the presence of these HLA haplotypes is not sufficient for disease development.



MECHANISMS

Wheat gluten is a complex mixture of proteins named gliadins and glutenins

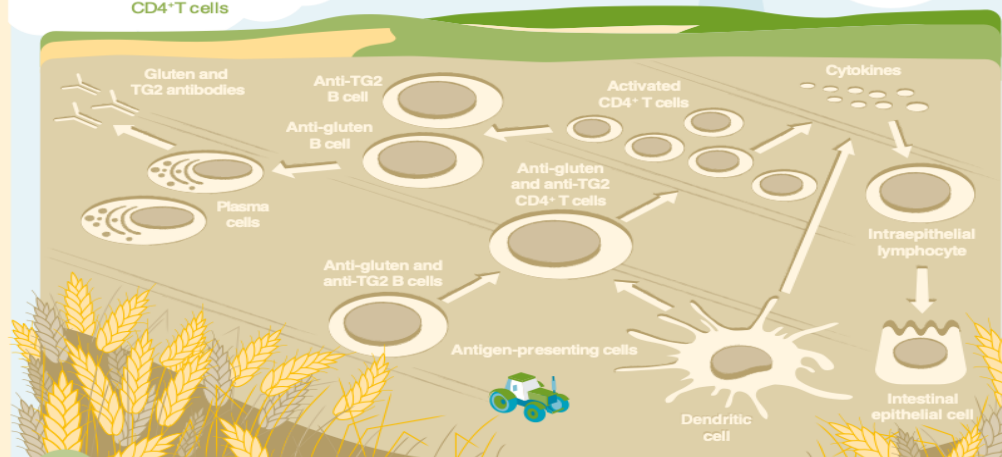
Gliadins and glutenins are resistant to gastrointestinal proteolytic processing, leading to the generation of long gluten peptides

Gluten peptides are deamidated by transglutaminase 2 (TG2), which enhances the binding affinity of gluten peptides to HLA-DQ2 and HLA-DQ8

Activated CD4⁺ T cells induce production of anti-gluten and anti-TG2 antibodies

Gluten peptides presented by HLA on antigen-presenting cells activate gluten-specific CD4⁺ T cells

Cytokines, such as IL-15, activate intraepithelial lymphocytes to kill intestinal epithelial cells, thus contributing to enteropathy



OUTLOOK

The diagnosis of coeliac disease is proceeding towards non-invasive procedures. In symptomatic children with high levels of TG2-autoantibodies, small intestinal biopsy samples are no

longer required, and trials are underway to see if this approach can be adopted in other patient subgroups. Several drugs are in development, including drugs to correct the intestinal barrier and

inhibit modification of gluten by TG2, enzymes to digest gluten and monoclonal antibodies to block IL-15. A vaccine is also being developed aiming to induce regulatory T cell responses.



DIAGNOSIS

The clinical signs and symptoms of coeliac disease may include severe or mild gastrointestinal symptoms and/or signs of malabsorption, or extraintestinal manifestations such as dermatitis herpetiformis, arthritis, peripheral neuropathy or anaemia. Moreover, some seropositive individuals are asymptomatic. As such, a diagnosis of coeliac disease is based on serological tests and small intestinal morphology. Serological assays include those to detect TG2-autoantibodies and antibodies against deamidated gliadin peptide. Individuals who are seropositive and symptomatic can undergo gastroscopy to obtain a small intestine biopsy. The diagnosis is confirmed upon histological demonstration of villous atrophy, crypt hyperplasia and infiltrates of intraepithelial lymphocytes.

MANAGEMENT



Coeliac disease can be effectively managed in most patients by life-long adherence to a strict gluten-free diet. However, in practice, this diet is difficult to maintain and requires a lot of knowledge and motivation from patients, and their friends and families. Dietary lapses may prevent normalization of small intestinal morphology; therefore, patient follow-up is important. A small proportion of patients with coeliac disease can develop complications, such as refractory coeliac disease (defined as villous atrophy and ongoing symptoms in the presence of a gluten-free diet), enteropathy-associated T cell lymphoma, certain types of non-Hodgkin lymphoma or intestinal adenocarcinoma.



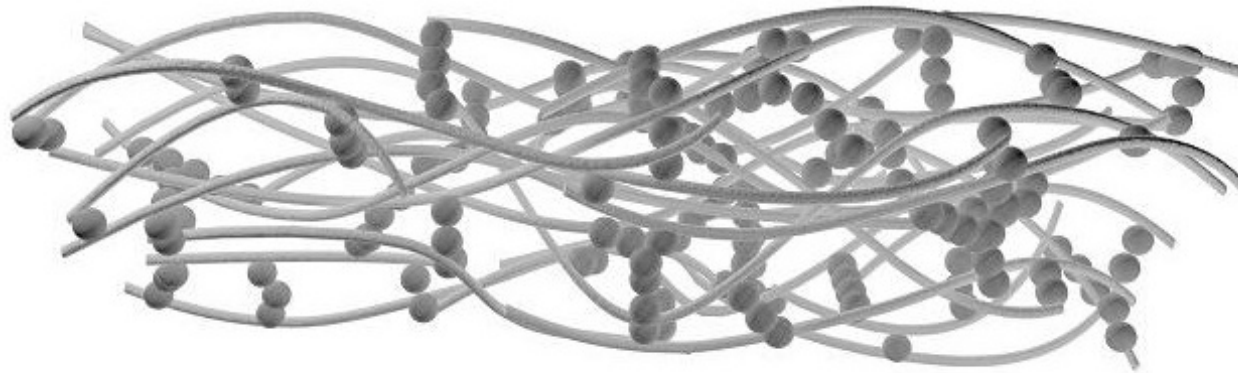
doi:10.1038/s41572-019-0059-2; Article citation ID: (2019) 5:4

Written by Shimona Starling; designed by Neil Smith

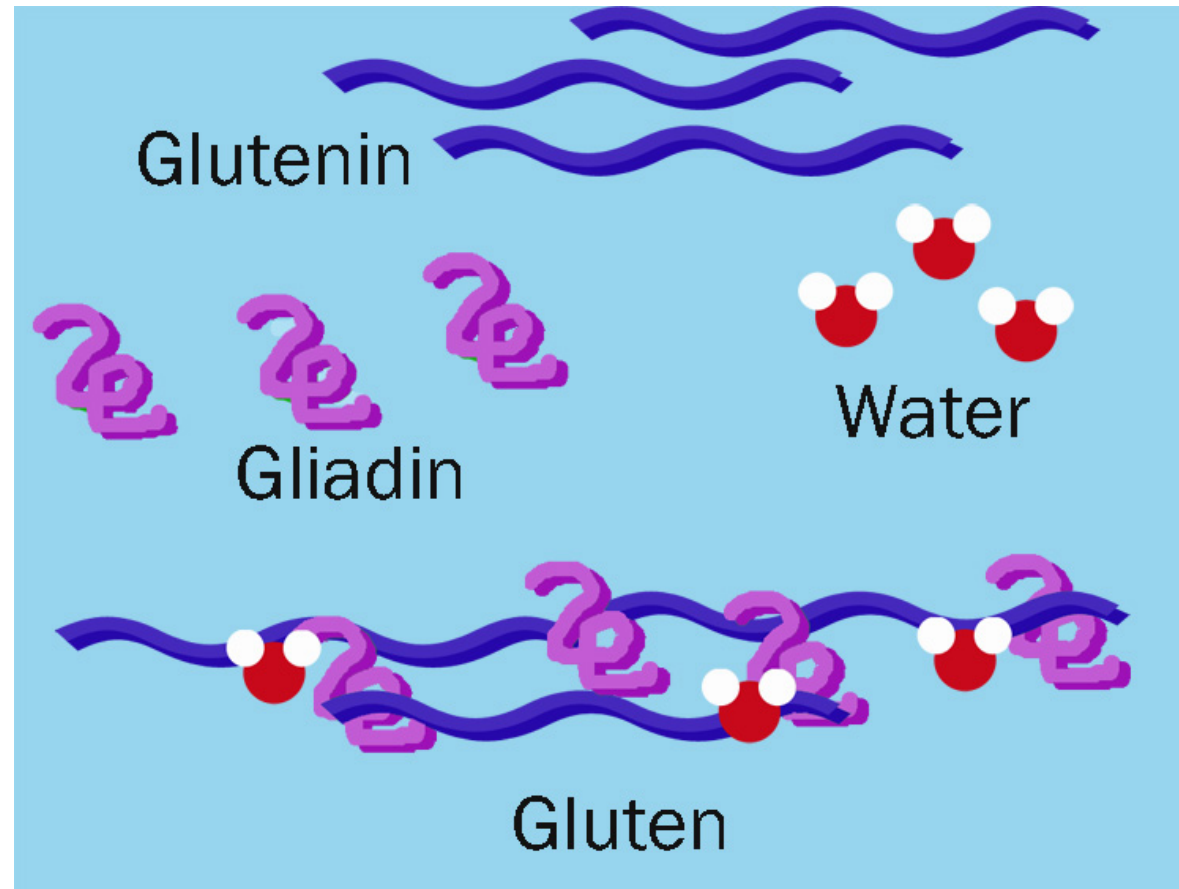
What is the gluten?

Gluten is a set of reserve proteins contained in cereals prohibited for celiacs.

It occurs in foods where it is contained as a viscous and elastic mass that retains the carbon dioxide molecules produced during fermentation and this allows the growth of dough volume.



What is the gluten?



Gluten and food

Gluten may be present in food products on the market:

- ❖ as the main ingredient: in all products that derive from the processing of cereals with gluten
- ❖ as a secondary ingredient: thickeners, vegetable proteins, ...
- ❖ for contamination: during the industrial processing of food, or in the preparation of dishes in the kitchen



Secondary contamination

Secondary contamination can be distinguished into:

- **cross-contamination**, defined as the possible contaminations due to the "crossings" of the gluten-free product with that with gluten throughout the production process, from raw materials to delivery to the final consumer.
- **environmental contamination**, defined as possible contamination due to incorrect behavior by people during the production process, and environmental conditions not perfectly under control.

The risk of gluten contamination increases with each manipulation: products whose production process involves many manipulations are more at risk than those that have undergone few manipulations



Gluten and food

The complete and permanent elimination of gluten from the diet is the only treatment, currently available to obtain the remission of symptoms and signs dependent on the disease, such as the normalization of plasma levels of gluten-dependent autoantibodies and lesions of the duodenal mucosa, and the prevention of complications associated with it.

The Gluten-Free Diet (DSG) is based on the elimination of all foods containing cereals that contain gluten and their replacement with other foods permitted or specially formulated for celiacs.



Gluten free-food

- Naturally gluten-free foods
- “Gluten-Free” Foods:
 1. For general use transformed but obtained with a production process not at risk "suitable for celiacs" or "suitable for people intolerant to gluten"
 2. Specially formulated "gluten-free" foods can be accompanied by the words "specifically formulated for people who are intolerant to gluten" or "specifically formulated for celiacs" present in the National Register of the Ministry of Health of "gluten-free" products
- Products under the BRAND NAME SPIGA BARRATA
- Products included in the AIC Prontuario



Products for special nutrition

D. Lgs 111/92



Notifica al Ministero
della Salute



Spiga Sbarrata

Art. 10. Production and packaging.

1. The production and packaging of the products referred to in art. 1 must be carried out in establishments authorized by the Minister of Health.
2. The authorization referred to in paragraph 1 shall be issued after verification of the existence of the hygiene and sanitary conditions and the technical requirements prescribed ...
6. The Minister for Health shall publish annually in the Official Journal of the Italian Republic a list of establishments authorized for the production and packaging of foodstuffs intended for particular nutritional use . . .

On the label from July 20, 2016 Reg. 1169/11 and Reg. 828/2014

NATURALLY GLUTEN-FREE foods: A food containing naturally gluten-free ingredients should be able to bear a label indicating the absence of gluten provided that the general conditions on loyal information practices laid down in Regulation (EU) No. 1169/2011: the information must not mislead the consumer by suggesting the possession of particular characteristics, when in reality all similar foods have the same characteristics, in particular by explicitly highlighting the presence or absence of certain ingredients.

Foods bearing the label "GLUTEN-FREE":

In order to be able to include the indication "gluten-free" on the label, a food sold to the final consumer must have a gluten content not exceeding 20 mg/kg, i.e. 20 parts per million (ppm).



On the label from July 20, 2016 Reg. 1169/11 and Reg. 828/2014

To inform consumers about the absence of gluten or its presence to a limited extent it is necessary to use the following words:

- **GLUTEN-FREE:** the gluten content in the food sold to the final consumer must not exceed 20 mg/kg
- **WITH VERY LOW GLUTEN CONTENT:** the gluten content in the food sold to the final consumer must not exceed 100 mg/kg

The information on the above foods may be accompanied by the words 'suitable for people who are gluten intolerant' or 'suitable for celiacs'.



Attention!

The Ministerial sticker affixed to the label indicates that the product has been included in the list of the Ministry of Health exclusively for purposes related to the availability of supplementary health care pursuant to D.M. 17/05/2016 that modified The D.M. 08/06/2001.



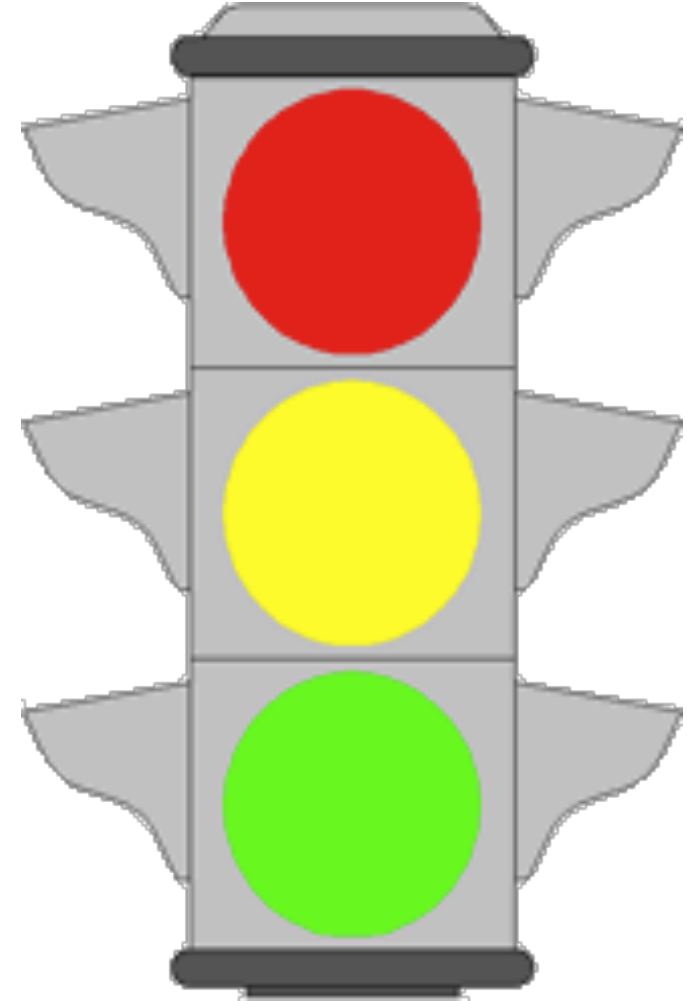
Gluten and food

All foods based on their toxicity to celiacs can be divided into foods: prohibited, suspected and permitted

Prohibited (with gluten)

Suspect
Evaluate carefully
(may contain gluten)

Permits
"gluten free"
"specifically formulated"



The «Celiac Traffic Light»



Wheat
Barley
Rye
Triticale
Couscous
Spelt
Malto
Whisky
Beer
Gin
Vodka
Sordough
Surimi
Oats

FOOD PROHIBITED ☹️
Foods derived from cereals containing gluten are prohibited

Wheat



Barley



Rye



Oats



Spelt



Kamut



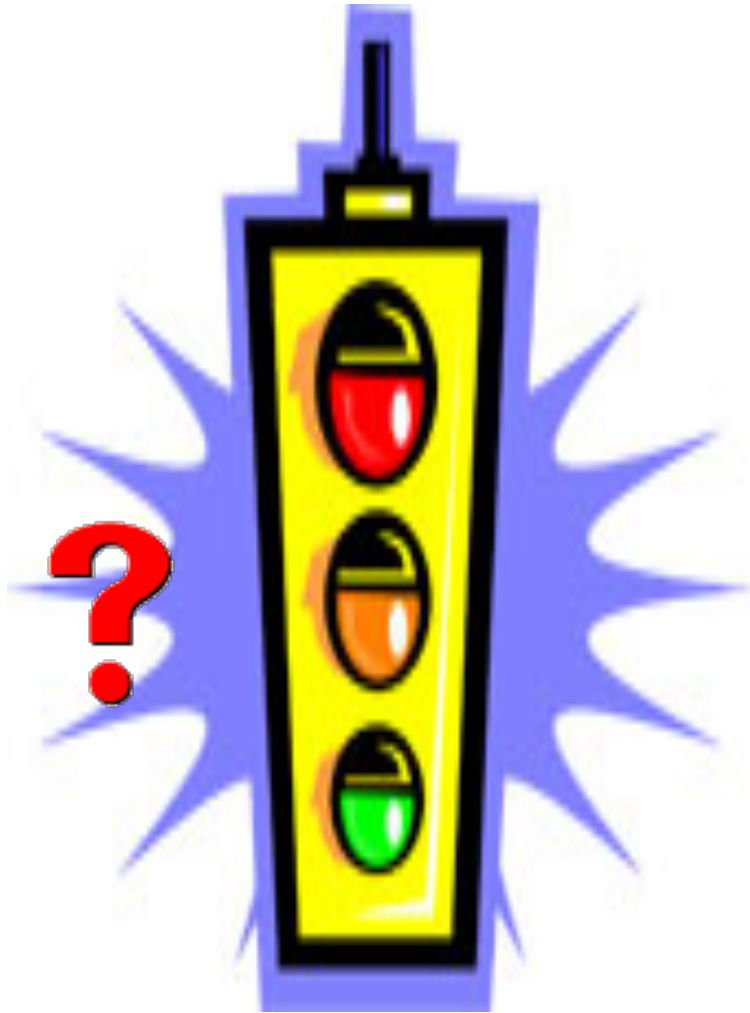
Spelta



Triticale



The «Celiac Traffic Light»



Cold cuts

Mustard

Sliced cheeses

Ice cream

Mayonnaise

Chocolate

Puddings

Snack Potato

Candy

SUSPICIOUS FOODS ☹️
attention to particular foods that may contain gluten!!!

foods composed of many ingredients and/or who have undergone complex (processed) processes



for contamination of the product and/or individual ingredients during the machining process (or for the presence of gluten among the ingredients)



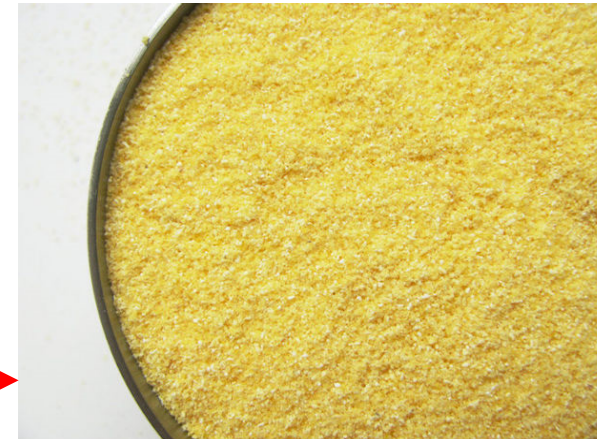
Example of foods to be carefully evaluated!!!



Corn grain = NO DISCOUNTED GLUTEN



Corn flour = ABSENCE OF GLUTEN
NOT TAKEN FOR GRANTED



WHAT TO DO?

PERMITTED PRODUCTS 😊 use of any brand

PROHIBITED PRODUCTS not use them

'CAREFUL' PRODUCTS ensure that they do not contain more than 20 ppm of gluten (check the labelling: read the ingredients, presence of declarations of absence of gluten pursuant to Reg. EC 1169/11 or ministerial sticker)

The «Celiac Traffic Light»



Cheese

Succhi di frutta

Carbonated beverages

Potatoes

Fruits

Eggs

Milk

But

Yogurt

Fish

Wine ...

Rice

Tequila

Legumes

Put

Buckwheat

Rhum

PERMITTED FOODS 😊

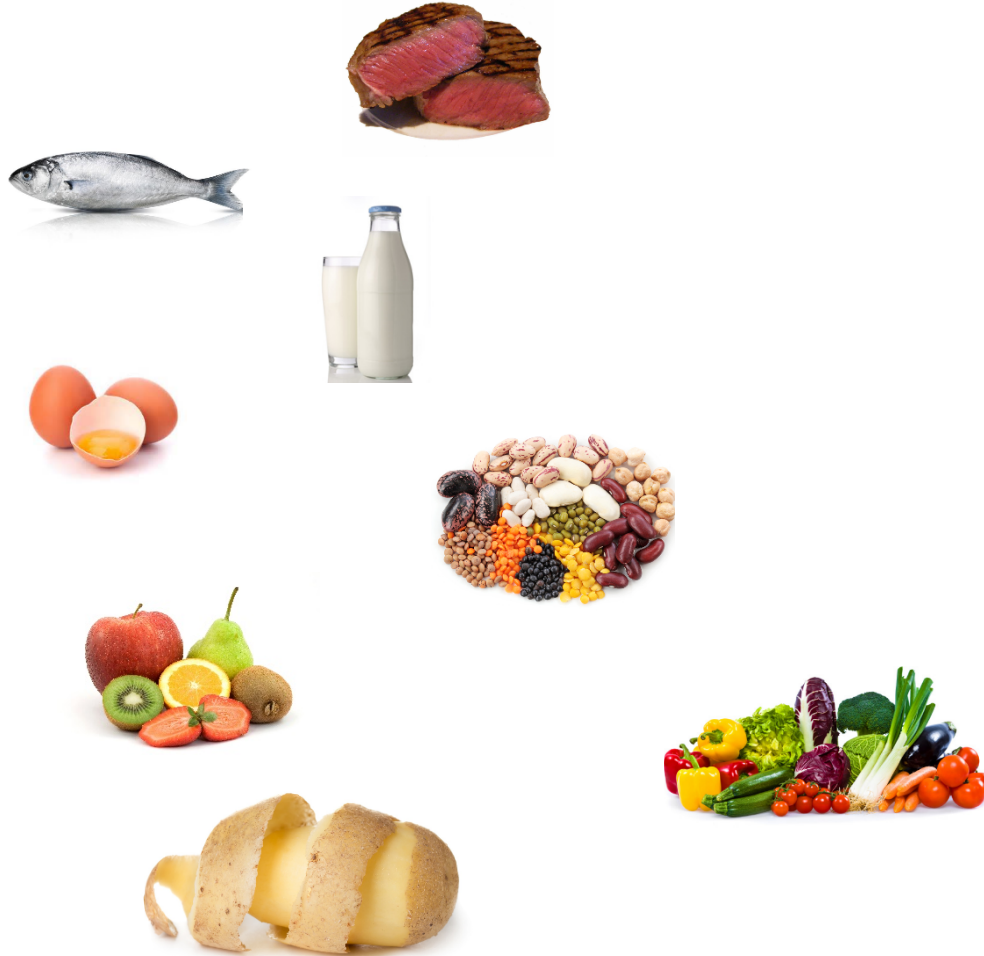
They can be:

naturally gluten-free foods that do not contain gluten and **have not been processed** (e.g. rice, corn, meat, fish, milk, eggs, legumes, vegetables, fruits, used as such)

processed foods (and which do not contain gluten) but for which, during their production process, **there is no risk of cross-contamination or environmental contamination** (e.g. canned tuna or tomato puree)

NATURALLY GLUTEN FREE FOODS😊

- Meat
- Fish
- Milk
- Eggs
- Legumes
- Fruits
- Vegetables
- Potatoes



CEREALS, FLOUR AND DERIVATIVES

Rice, corn (maize), millet, buckwheat, amaranth, quinoa, sorghum, teff

Rice flours, corn, millet, buckwheat

Wheat, barley, oats, rye, spelt, spelta, triticale bulgur (boulgour or burghul), couscous (from prohibited cereals), tabulè, seitan, frik, cracked wheat, greunkern, greis, Bran of prohibited cereals, Malt of prohibited cereals, Breakfast products from prohibited cereals (puffed cereals, flakes, granules, porridge)



PERMITTED FOOD
Naturally gluten-free cereals

- **RICE**



CORN



BUCKWHEAT



MILE



- **AMARANTH**



QUINOA



SORGHUM



MEAT, FISH AND EGGS

All types of meat, poultry, fish, molluscs and crustaceans fresh or frozen without the addition of any other ingredient

Preserved fish: natural, in smoked, frozen oil, free of additives, aromas and other substances.

Eggs.

Raw ham, Lardo di Colonnata PGI and Lardo d'Arnad PDO

All other sausages (wurstel, sausage, cotechino, zampone, cooked ham, speck, bresaola, coppa, bacon, mortadella, salami, etc.).

Preserved meat.

Homogenized meat, fish, ham.

Eggs (whole, yolks or egg whites) liquid, pasteurized or powdered



MEAT, FISH AND EGGS

Breaded meat and fish (e.g. cutlet, sticks, pre-packaged burgers) or floured or cooked in sauces and sauces thickened with flour (roasted, braised, oxybuchi, etc.).

- Pre-cooked frozen fish (e.g. paella, surimi, etc.) or ready to cook or fry (e.g. fried fish)



MILK AND MILK PRODUCTS

Fresh (pasteurized) and long-lasting milk (sterilized UHT), not added with vitamins, flavourings or other substances - Early childhood milk.

Natural, lean or whole yogurt. Fresh or aged cheeses.

Fresh (pasteurized) and long-lasting cream (UHT) not mixed with other ingredients, excluding carrageenan.

Long-lasting cream (UHT)seasoned cream, whipped cream, vegetable cream, spray cream.

Fruit yoghurt, "to the taste of ..", creamy.

Sliced cheeses, melted, light, spreadable, dessert, light butter.

Creams, puddings, desserts, panna cotta based on milk, soy, rice.

Milk powder, condensed, flavored (e.g. cocoa, strawberry...).

Homogenized cheese.

Malt, cereal, biscuit yoghurt



MILK PRODUCTS

"Italian-produced" cheeses, fresh and seasoned, do not contain gluten, as they must be produced from milk and its constituents, with the addition of appropriate rennet, salt and starter crops. For example mozzarella, ricotta etc.



VEGETABLES AND LEGUMES

All types of vegetables, as such (fresh, dried, frozen, frozen, freeze-dried).

- Preserved vegetables (pickled, pickled, oiled, etc.).
- All legumes such as (fresh, dry and canned): carob, chickpeas, beans, beans, lupins, peas, soybeans.



Chips stored in a bag (snacks).

- Ready meals based on frozen vegetables.
- Instant or frozen mashed.
- Pre-fried, pre-cooked frozen potatoes.
- Vegetables preserved and mixed with other ingredients.
- Homogenized vegetables.



Vegetables (soups, soups, etc.) with prohibited cereals.

- Breaded, floured vegetables, in batter with prohibited ingredients.

FRUITS

All types of fruit as such (fresh and frozen).

- Fruit in syrup.
- All types of nuts with and without shells (as such, toasted, salty).
- Dehydrated, dried fruit not floured (dried plums, sultanas, dates, etc).

Candied, glazed, caramelized fruit.

- Mousse and fruit passes.
- Homogenized fruit.
- Floured dehydrated fruit (dried figs, etc.)



DRINKS

Nectar and fruit juices not containing vitamins or other substances (preservatives, additives, flavourings, colours, etc.) excluding: Ascobic (E300) and ac. Citricus (E330).

- Carbonated and sparkling beverages.
- Sachet, filter of: coffee, decaffeinated coffee, chamomile, tea, tea deteinate, herbal teas.
- Wine, sparkling wine.
- Coffee, decaffeinated coffee, coffee in waffles.
- Distillates (cognac, grappa, rum, tequila, whisky, gin, vodka) not containing flavourings or other substances.

- Fruit drinks, light drinks.
- Drinks based on milk, soy, rice, almonds.
- Preparations for chocolate/cocoa drinks, cappuccino.
- Syrups for soft drinks and granite.
- Soluble coffee or coffee substitutes containing barley or malt.
- Drinks containing malt, barley, rye (e.g. barley soluble products and similar products).
- Barley malt and/or wheat beer.



SWEET

Honey and sugar (white and brown).

- Raw liquorice root.
- Maltodextrins and glucose syrups, including dextrosis.
- Cakes, biscuits, homemade desserts with gluten-free flours.
- Homemade creams, chocolate, desserts and puddings with gluten-free flour

Jams and jams.

- Icing sugar, grained, flavored.
 - Chocolate in bars, chocolate with filling, creams to spread chocolate or hazelnut.
 - Cocoa powder.
 - Packaged ice cream and semi-finished artisanal ice cream.
 - Creams, puddings, trade desserts.
 - Candies, candied fruit, trade jellies, confetti, chewing gum.
-
- Chocolate with cereals.
 - Cakes, biscuits and sweets prepared with prohibited flours and/or ineligible ingredients.



FATS AND CONDIMENTS AND MISCELLANEOUS

Butter, lard, lard.

- Vegetable oils.
- PDO balsamic vinegar, unflavored vinegar.
- . Apple cider vinegar.
- . Pepper, salt, saffron, spices, and herbs, as such.
- . Tomato puree, peeled tomatoes and tomato paste not mixed with other ingredients.
- . Yeast so-called "Brewer's yeast" fresh or lee-dried. • Yeast extract
- Royal gruel, pollen.

Nuts or extracts of meat of the trade, prepared for broth.

- Chemical yeast.
- Light butter, margarine and light margarine.
- Sauces (also soy sauces), mayonnaise, mustard, ketchup, anchovy
- Condiments with an undefined composition.

- Béchamel.
- Sourdough or sour yeast



FOOD SUPPLEMENTS

DIETARY SUPPLEMENTS should be evaluated on a case-by-case basis



Since they are not drugs they cannot fall within the Italian Pharmacopoeum that has established that **ALL DRUGS ARE SUITABLE FOR CELIAC**



Legislation on gluten-free foods and their labelling Regg. 609/2013, 1169/2011, 828/2014

Gluten-free foods intended for celiacs, as of July 20, 2016, are no longer attributable to the qualification of "dietary", do not fall within the scope of the Food for specific group Regulation (FSG), because the indication "gluten-free" or "very low gluten content" must be regulated as information to be provided with voluntary labelling pursuant to Article 36 of the Regulation (EU) In fact it falls under the full responsibility of the OAS :

1. Statements regarding the gluten content of the product;
2. Self-control procedures adequate to control the gluten risk at all stages of the production process.

Normativa vigente Europea e Nazionale:



Reg. CE N. 178/2002;
Reg. CE N. 852/2004;
Reg. UE N. 1169/2011



Reg. UE 609/2013
Reg. UE 828/2014;
Legge 123 del 4/07/05
D. L. 27 gennaio 1992 , n. 111;
D. P. R. 19 gennaio 1998, n. 131;
D. M. 8 Giugno 2001 modificato dal D.M. 17 Maggio 2016;

Provvedimenti Regionali

DGR n. 890 del 09/05/2012;

DGR n. 1722 del 07/08/2012;

D.D. n. 352 del 09/10/12;

DGR n. 2272 del 13/11/2012;

GENERAL REQUIREMENTS

Transport of raw materials

Products and raw materials intended for the preparation of gluten-free foods must not come into contact with food matrices containing gluten; therefore, if transported promiscuously with other foods of current use, they must be adequately identified, separated and protected in order to avoid contamination by gluten.

Avoid contact with foods containing gluten.



GENERAL REQUIREMENTS

Storage of raw materials

Gluten-free raw materials and semi-finished products must be stored in special rooms or at least in well-separated and clearly identifiable areas or furnishings.

The separation must be particularly strict for flours, even those naturally gluten-free and can also be made through closed and labelled containers, in which the raw materials must be stored in the original packaging.

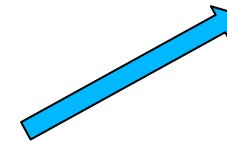
Products intended for all preparations, normally stored, immediately after their opening, when used for gluten-free preparations and, in the case of partial use, must be stored in a protected manner and taken with tools specifically intended or at least always perfectly clean, in order to avoid the risk of contamination during subsequent use.

In doubt, the product will no longer have to be used for the preparation of gluten-free foods.

GENERAL REQUIREMENTS

Storage of raw materials

Perishable products, if a dedicated refrigerator is not available, must be stored in containers with a special indication and placed in the upper shelf of the refrigerator for common use and, once opened, must be carefully covered, closed or otherwise protected in order to avoid any form of contamination (airtight containers or with a sealed lid, bags and films suitable for the type of product and suitable for food).



GENERAL REQUIREMENTS

Storage of raw materials

These warnings also apply to ready-to-eat foods prepared in advance of administration. Frozen ready meals, if not stored in a dedicated freezer, must be stored in a specific sector of the equipment for promiscuous use and protected from contamination by containers having the same characteristics as those described above, bearing the date of preparation and expiry. It is advisable to store ready meals in single portions and use containers suitable for the use of the microwave



PIZZA'S PRODUCTION

If the production of pizza cannot take place in a physically separate way, there must be a dedicated work plan and use for the dusting of all gluten-free flour pizzas; condiments intended for filling must be stored in dedicated containers and placed separately and if used utensils for the purpose, the same must be dedicated. For the cooking of gluten-free pizzas should preferably be used a dedicated oven (or physically separate the pizza from contact with the oven that of course should not be ventilated).



ADMINISTRATION, DISTRIBUTION AND SALE

ADMINISTRATION

- Use identification signals for dishes intended for celiacs (e.g. flags, basil leaves, etc.);
- Place the breadmaking products with gluten remotely from the celiac person;



ADMINISTRATION, DISTRIBUTION AND SALE

DISTRIBUTION AND SALE

- food is stored in dedicated, identified and protected containers, distributed with tools intended exclusively for this purpose (e.g. pliers, ice cream palettes, etc.).
- bags, trays and other pre-wrapping containers of the gluten-free product are stored separately from those used for gluten-free and properly protected products.
- The product administered/sold directly must be clearly identified



STAFF REGULATIONS

The OSA must pay particular attention to the general rules on staff hygiene; in particular, it must adopt specific procedures to avoid contamination of gluten. Before starting the preparation of gluten-free foods and in general in all cases where there may be a risk of gluten contamination, in addition to taking care of the hygiene of the person and washing their hands thoroughly, the staff must wear clean, dedicated or disposable workwear; at all stages of the production cycle, up to administration and sale, must take any necessary behavioral precautions useful for the safety of products intended for celiacs.



CATERING

- The canteens of school and hospital facilities and in the canteens of public facilities, in accordance with Law 123/2005, must be guaranteed, if requested, gluten-free meals, adapting the standard menu as much as possible to the gluten-free meal.
- In particular, in school catering, since the gluten-free diet is a 'special diet', for a service in line with current regulations, the procedures indicated in the National Guidelines for School Catering should be followed.
- The celiac meal must arrive directly from the production kitchen to the person suffering from celiac disease in a special container, suitably marked or with a distinctive sign.





PRACTICALLY what should NOT be done !!

- ✓ The promiscuous use of toasters, fryers and ventilated ovens is not allowed, given the possibility of dusting flours.
- ✓ Do not flour meat or fish, before cooking, with flours derived from prohibited
- ✓ Do not use breadcrumbs or crumbs of common bread.
- ✓ Do not flour the molds for sweets or cakes, preferably use silicone molds that do not need to be dusted with flours of any kind
- ✓ Do not use cooking water used for foods containing gluten such as pasta cookers already used for gluten pasta.
- ✓ Do not use frying oil already used for food products containing gluten; if you do not have a dedicated fryer, change the oil and fry the "gluten-free" first.



PRACTICALLY what should NOT be done !



- ✓ Do not use the coffee machine, if it is also used for barley coffee (not allowed) it is mandatory to have dedicated arms and slide running water to the top of the coffee machine before use (washing dispensing pipes).
- ✓ Do not use the oven at the same time for gluten-free and gluten-free products. Before cooking gluten-free clean the oven with appropriate procedures
- ✓ Do not use multi-cooking baskets
- ✓ Do not use products whose exact composition is not known;
- ✓ Do not handle food with floured hands or with un washed utensils (pots, drains, ladles, cutlery, etc.) after using them for foods not permitted to celiac disease;



PRACTICALLY what should NOT be done !



Do not place food directly on contaminated surfaces, such as:

- the work top,
- floured baking trays,
- the base of the oven where the pizza is cooked or the bread is heated,
- plates and grills on which floured or gratin foods have been cooked with grated bread or on which bruschetta or the like have been prepared;



PRETTY MUCH what you have to do



Use tools/dishes exclusively (distinguished by color)

Wash the surfaces, dishes and utensils served for the preparation of other dishes containing gluten (e.g. pasta).

Use a pasta cooker exclusively for gluten-free pasta.

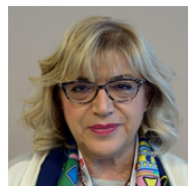
Use baking trays with raised edges and lid if using a shared oven

Prefer fresh products to preserved ones.

Always check the labels for the absence of cereals containing gluten such as wheat, barley or rye, but also among the ingredients of pre-packaged products such as potato flakes, meat sauce, cooked preparations for dessert, sauces, ready meals, yogurt.

ARRIVEDERCI!!

Prof. Carla Giordano



Dott. Licia Panto'



Dott. Valentina Guarnotta



Dott. Enrica Vigneri

