

GLUTEN-FREE DIET

Coeliac disease and other conditions related to gluten sensitivity.



Dr Mabel Blades
RD, PHD, MBA, DMS,
MIFST, RSPH
Freelance Dietitian
and Nutritionist

Coeliac disease and dermatitis herpetiformis are the most commonly known manifestations of intolerance to gluten. Both are autoimmune disorders which are caused by a response to gluten in the diet and both are lifelong conditions.¹ Coeliac disease causes gastrointestinal symptoms while dermatitis herpetiformis causes an itchy rash particularly on the knees, buttocks, elbows and face, which can form blisters.

In the UK and North America (US: celiac disease), the prevalence of coeliac disease is approximately 1.0% of the populations, while in mainly rice eating communities such as found in Asia, the prevalence is much less. Those with diabetes and an autoimmune condition have an increased risk of developing the disorder, while those with a first degree relative, such as a sibling or parent, have a tenfold increase.² Dermatitis herpetiformis is much less common, affecting only one in 3300 people.³

However, there are a number of other conditions which are caused by sensitivity to gluten which are much less well recognised. Sensitivity to gluten has long been quoted by various individuals who claimed to have experienced improvements in the symptoms of various types of gastrointestinal problems as well as other disorders, including neurological ones,

after they had removed gluten from the diet. Often, such considerations from individuals are not always favourably supported by healthcare professionals.

In 2012, at a second International Expert Meeting on Gluten Sensitivity, the matter of gluten sensitivity was debated by a group of interested consultants and it was decided to recognise and classify the condition as non-coeliac gluten sensitivity (NCGS) to differentiate it from coeliac disease.⁴

On investigation, sufferers were not found to have the intestinal involvement of flattened villi which is characteristic of coeliac disease. On blood testing, sufferers were also found to have had no antigens to gluten. In general, people with non-coeliac gluten sensitivity improve on a gluten-free diet, but some researchers suggest that some of the improvements may be due to a placebo effect.

At this meeting it was considered that NCGS

- is a wide-spread condition;
- is presumed to be linked to dysfunctional innate immunity;
- reacts positively to a gluten-free diet;
- has behavioural effects including anxiety and depression;
- is clinically variable.

At a third International Expert Meeting on Gluten Sensitivity held in ►

Mabel is a Registered Dietitian, a member of the BDA and NAGE, Food Counts and Freelance Dietitians Specialist Groups. All aspects of nutrition enthuse her and she is passionate about the provision of nutritional information to people to assist their understanding of any diet.



2014, the focus was to examine the subject of coeliac disease, plus other gluten sensitivities, further.⁵

COELIAC DISEASE

This is a well-known and recognised condition where an autoimmune response occurs when gluten from wheat, rye or barley is eaten. The standard for the diagnosis of coeliac disease is villous atrophy which is seen in a biopsy of the duodenum provoked when gluten has been eaten. Additionally, antibodies to gluten are found in the blood, therefore, blood tests are often used to give an indication of the disorder. This damage to the villi of the small intestine means that the body cannot properly absorb nutrients from food and, thus, the most common symptom of coeliac disease is diarrhoea due to malabsorption: stools can contain high levels of fat and be pale in colour, as well as foul smelling and difficult to flush away.

People can also suffer from bloating and abdominal pain, plus flatulence and a gurgling stomach. The malabsorption of nutrients can result in weight loss and anaemia due to a lack of iron or folate. Consequently, people may suffer from tiredness and lethargy.⁶ The only treatment is a lifelong adherence to a strict gluten-free diet.

The National Institute for Health and Care Excellence (NICE) has clear guidance on both the diagnosis and management of coeliac disease. It is recommended that groups with the following symptoms are assessed for coeliac disease⁷:

- Chronic diarrhoea
- Persistent or unexplained gastrointestinal symptoms such as nausea and vomiting

- A persistent feeling of tiredness or fatigue
- Persistent or recurrent abdominal pain or cramping
- Sudden or unexpected weight loss
- Unexplained iron deficiency anaemia

Due to the links of coeliac disease with other conditions, NICE recommends that the following groups are offered blood (serological) tests:

- Autoimmune thyroid disease
- Dermatitis herpetiformis
- Irritable bowel syndrome
- Type 1 diabetes
- First degree relatives

WHEAT ALLERGY

Wheat allergy is a reaction to proteins found in wheat, triggered by the immune system and usually occurs within seconds or minutes of eating. This reaction can be with skin involvement such as hives or urticaria, or more serious anaphylaxis symptoms.⁸

IRRITABLE BOWEL SYNDROME (IBS)

The IBS Network supports people with this condition by giving help and advice on various strategies to assist them in managing symptoms. According to the IBS network, many people with IBS are going on a gluten-free diet. 'It's not just the fact that coeliac disease is more common in people initially diagnosed with IBS, it's also that the concept of gluten sensitivity is gaining credibility.'⁹

Many people with IBS are also advised to follow a low-fodmap diet which reduces fructans found in bread.¹⁰

NCGS and wheat allergy has been described to be a factor in IBS in various studies of people diagnosed with IBS. In one study of 920 subjects 276 were found to be wheat intolerant.¹¹

BREAD

In a section on the NHS Choices website entitled: *Should you cut out bread to stop bloating*, Dr Isabel Skypala, Specialist Allergy Dietitian at the Royal Brompton and Harefield NHS Foundation Trust, says, "Probably one-third of patients in my allergy clinic complain of symptoms such as bloating, diarrhoea, vomiting and stomach

pain after eating bread." She also says that, "allergy is unlikely to be the culprit, but bread-related symptoms are real and wheat could be to blame." Dr Skypala goes on to discuss, "Is it wheat intolerance or sensitivity?" and suggests that if you are sensitive to wheat, or you have trouble digesting it, "the main way to relieve your symptoms is to embark on a wheat-free or partially wheat-free diet."¹²

UNDIAGNOSED CASES OF COELIAC DISEASE

Coeliac UK quote that the condition affects at least one in 100 people in the UK and in Europe; however, only about 24% of people with the condition are clinically diagnosed. Also, the average length of time taken for someone to be diagnosed with the disease from the onset of symptoms is a staggering 13 years.¹³ While there is much debate on the numbers of people affected by gluten sensitivity, the Gluten Intolerance Group estimates that it may affect up to 10 times more people than coeliac disease.¹⁴

Certainly, there are many more gluten-free products now available and in North America, marketers estimate that 15 to 25% of the population want gluten-free products.

OTHER CONDITIONS RELATED TO GLUTEN

Gluten sensitivity has been well documented in various other disorders, including neurological conditions with one well documented report from 1996 of a girl suffering hallucinations since childhood. Her symptoms totally abated when, in her twenties, she followed a gluten-free diet.¹⁵ Additionally, other neurological conditions have been described and the rationale postulated, which appears not to be due to an effect on the digestive tract or immunological factors.¹⁶

A form of ataxia (the term for neurological disorders where balance, gait and speech can be affected), related to the ingestion of gluten, has been described in some individuals as resolving when gluten is removed from the diet.^{17, 18}

Schizophrenia and also autism have been linked with gluten.¹⁹ Many parents with children suffering from autism spectrum disorders and the chronic behavioural issues that these disorders

can cause, wish to try such diets in order to assist their children. Some workers have postulated that excess levels of peptides from gluten (and also casein) cross into the brain from the blood with a resultant alteration of neurotransmission. Others have suggested that there is a degree of malabsorption which allows the passage of gluten and other proteins and peptides directly into the blood. However, there is little well validated research on the topic. Due to pressure from parents for Registered Dietitians to provide advice, the British Dietetic Association has provided guidelines:

- Advise parents about the lack of research.
- Examine the current nutritional adequacy of the diet.
- Advise on the introduction of both casein and gluten after a period when the behaviour is monitored.²⁰

THE LAW AND GLUTEN

To assist those with allergies and intolerances, the Food Standards Agency (FSA), along with DEFRA and in line with EU legislation, introduced new allergen labelling laws which came into effect from 13th December 2014. These are the Food Information Regulations EU1169/2011 (FIR Regs).²¹

These new regulations mean that producers of pre-packed foods must emphasise allergenic foods in the ingredients list and all information must be in a manner which makes the allergenic food easily seen; for example, the use of bold print, underlined type or a different colour font. Food producers will still be able to state 'may contain' on products, but any such products will require a thorough analysis of the level of risk. For those producing non-packaged food, such as cereals, biscuits, sweets, etc, information must be available for customers who ask what is in the product.

Similarly, for caterers, they need to know what is in the food they provide and must be able to provide this information to diners. Signs to remind people of this can be helpful in all dining areas. Information can also be placed on menus and order sheets. Caterers will also need to obtain information on the allergen contents of food and incorporate this into information on the dishes produced. This information can be ►

obtained from packaging and electronically from manufacturers.

There are 14 items which are required to be highlighted in ingredients lists:

- Peanuts, sometimes known as ground nuts
- Tree nuts such as walnuts, hazelnuts, Brazil nuts etc
- Milk/lactose
- Eggs
- Fish
- Shellfish
- Molluscs
- Soya
- Cereals containing gluten, such as wheat, rye and barley
- Sesame seeds
- Mustard
- Celery, found in items such as salads, celery salt
- Sulphur dioxide
- Lupin

Gluten-free products should contain no more than 20ppm and thus require analysis by laboratory methods. Therefore, if this isn't the case, 'no gluten-containing ingredients' should be printed on menus.

All this useful information will, of course, be helpful to those with any allergy or intolerance, especially coeliac disease sufferers or those who are sensitive to gluten.

CONCLUSIONS

While many individuals have considered gluten to be a factor in the causation of their symptoms for conditions, other than coeliac disease and dermatitis herpetiformis, this is a fairly new area and there is a need for more research to understand the condition and who is at risk.

NCGS is now being recognised as a problem in many countries across the world. It is regarded as a disorder which can only be properly diagnosed after ruling out other gluten-related disorders, such as coeliac disease and wheat allergy, when symptoms appear after consuming foods which contain gluten.

From research, it is increasingly being recognised that, in sensitive individuals, gluten can lead to not only coeliac disease but also a variety of other symptoms including gastrointestinal, psychiatric and neurological ones.

From the meetings of the Expert Meeting on Gluten Sensitivity it was considered that for some individuals with various health issues dietary elimination of gluten may lead to complete symptom resolution and health practitioners are advised to consider gluten elimination in patients with otherwise unexplained symptoms.

It is, therefore, essential that registered dietitians are involved in providing advice to those with, not just coeliac disease, but other types of NCGS, as they are uniquely placed to do so.

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Questions relating to: *Gluten-free diet*

Type your answers below and then **print for your records** or print and complete answers by hand.

Q.1	Describe the two most common manifestations of gluten intolerance.
A	
Q.2	What factors influence the risk of developing coeliac disease?
A	
Q.3	What are the most common symptoms of coeliac disease (CD)?
A	
Q.4	What is the standard for diagnosis of CD?
A	
Q.5	Describe the symptoms of non-coeliac gluten sensitivity.
A	
Q.6	Outline the current NICE guidelines on the diagnoses and management of CD.
A	
Q.7	Explain how a gluten-free diet can help with other conditions and symptoms.
A	
Q.8	Describe other conditions/disorders that have been linked to gluten-sensitivity.
A	
Q.9	What are the current FSA regulations on allergen labelling of pre-packed foods?
A	

Please type additional notes here . . .