

FACT FILE 30

Coeliac disease and Type 1 diabetes

Coeliac disease is more common among people with Type 1 diabetes, but its diagnosis is sometimes missed. In light of the recently updated NICE guidance on this condition, **Natasha Marsland**, Senior Clinical Advisor at Diabetes UK, reviews the diagnosis and management of coeliac disease

Coeliac disease is an autoimmune disorder characterised by inflammation of the small intestinal mucosa caused by ingestion of gluten, the protein found in wheat, barley and rye. Some people also need to avoid oats. Currently, the only treatment for coeliac disease is a lifelong gluten-free diet.

Coeliac disease affects one in 100 individuals in the UK. However, it is thought that only 24 per cent have the condition diagnosed, which leaves nearly half a million people in the UK with undiagnosed coeliac disease. NICE guidelines¹ recommend that serological testing for coeliac disease should be offered to both children and adults with Type 1 diabetes when they are first diagnosed.

Coeliac disease and Type 1 diabetes

Coeliac disease is more common in people with Type 1 diabetes and occurs in 4–9 per cent of people with the condition^{1–4}. This association is probably because both diseases have a common genetic predisposition. However, there is no evidence to suggest a link between coeliac disease and Type 2 diabetes.

Symptoms of coeliac disease

The symptoms of coeliac disease vary from person to person and range from mild to severe. Common symptoms include:

- chronic or intermittent diarrhoea
- failure to thrive or faltering growth
- persistent or unexplained gastrointestinal symptoms, including nausea and vomiting
- prolonged fatigue
- recurrent abdominal pain, cramping or distension
- sudden or unexpected weight loss
- unexplained iron deficiency anaemia, or other unspecified anaemia.

Anyone who presents with any of these symptoms should be offered serological testing for coeliac disease.

The presentation of coeliac disease in Type 1 diabetes

In around 90 per cent of cases, Type 1 diabetes is diagnosed before coeliac disease. This may be because Type 1 diabetes generally has an acute onset and the symptoms are more easily identified.

A diagnosis of coeliac disease can often be missed, as the symptoms of ill health are attributed to the already diagnosed diabetes. Symptoms to look out for in individuals with Type 1 diabetes who have undiagnosed

coeliac disease include malabsorption and recurrent hypoglycaemia. In children, unstable diabetes and growth failure may indicate the presence of coeliac disease.

Some people with Type 1 diabetes have an asymptomatic form of coeliac disease, where there are no obvious symptoms and the diagnosis is only picked up via screening. Evidence suggests that when coeliac disease is diagnosed before diabetes, the clinical presentation of diabetes tends to be more severe and there is higher prevalence of multiple autoimmune diseases⁵.

Diagnosis and screening

There is a clear diagnosis process for coeliac disease. First of all, people should be advised when they are following their normal diet that they need to eat some gluten in more than one meal every day for at least six weeks before testing. It should be explained that this is necessary to ensure the test is accurate.

In the first instance, an individual should be offered serological testing for either IgA tissue transglutaminase (tTG) or endomysial antibodies (EMA). If the result is positive, they should then be referred to a gastroenterologist for an intestinal biopsy, which will either confirm or exclude the presence of coeliac disease.

It is possible to have a negative antibody blood test but still have coeliac disease. Some individuals with Type 1 diabetes may be negative for coeliac disease antibodies early in their diagnosis, but may become antibody positive at a later stage. In some cases a coeliac disease diagnosis may be missed if testing for the condition only happens at diagnosis of diabetes and is not repeated later on⁶.

Diagnosis in children

Guidelines have been published by the British Society of Paediatric Gastroenterology, Hepatology and Nutrition (BSPGHAN) and Coeliac UK on the diagnosis of coeliac disease in children⁷. These differ from previous guidelines in recommending that, in some cases, a biopsy may not actually be required.

In symptomatic cases, where IgA tTG results are greater than 10 times the upper limit of normal, the diagnosis can be confirmed by either performing a small bowel biopsy or taking a further blood test to check IgA EMA and carrying out genetic testing for HLA DQ2 or HLA DQ8. If IgA EMA is positive, and either HLA DQ2 or DQ8 is present, the diagnosis may be confirmed without the need for biopsy. For more information, go to www.coeliac.org.uk/healthcare-professionals/diagnosis/diagnosis-in-children

Dietary management

Once an individual is diagnosed with coeliac disease, the treatment is a strict gluten-free diet, which should be supervised by their healthcare team. After diagnosis, it is important that patients receive regular follow up to assess symptom improvement and how they are managing with the gluten-free diet. If there are no concerns, an individual should then be reviewed annually, or sooner if problems arise. Children should be reviewed six to twelve months after diagnosis, followed by a yearly check up.

Once gluten is removed from the diet, the gut will start to heal and nutrient absorption will improve. However, this is very likely to affect an individual's diabetes control and may result in changes having to be made to their insulin regimen. The primary aim of dietary management for those with both coeliac disease and diabetes is to improve blood glucose control, as well as support people with the gluten-free diet. This requires professional guidance from a dietitian. Children with both conditions should have their growth and development carefully monitored.

Maintaining a gluten-free diet can result in:

- normal growth in children
- improved absorption of nutrients, including iron, folate, calcium and carbohydrate
- improvements in HbA1c and diabetes control
- reduced risk of anaemia and osteoporosis.

Dietary management of the combined diseases always requires professional guidance from a dietitian.

Acknowledgement

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The new NICE Quality Standard

Diabetes UK supports the NICE Quality Standard on coeliac disease. The Standard¹, which is the first to be issued for the condition, was developed with the help of Coeliac UK and aims to improve diagnosis and care. It emphasises the annual review and equitable access to gluten-free foods. The latter is particularly significant, as some clinical commissioning groups have stopped or restricted supplies of these products to those with coeliac disease. The Standard offers guidance in five areas, namely:

- serological testing
- specialist referral
- endoscopic intestinal biopsy
- advice about a gluten-free diet
- annual review.



Coeliac UK

For nearly 50 years, Coeliac UK has been the expert on coeliac disease and the gluten-free diet. It is an independent charity helping people living without gluten to live happier, healthier lives.

Coeliac UK is pleased to offer healthcare professionals free membership of Coeliac UK. Benefits include a copy of our Welcome Pack for new members, electronic access to our Food and Drink Directory and our Gluten free on the move and Gluten-free food checker smartphone apps and our annual Food and Drink Directory, which lists over 20,000 foods that are suitable for a gluten-free diet. We also offer a copy of our glossy members' magazine, *Crossed Grain*, three times a year, the latest research findings into coeliac disease and the gluten-free diet, with exclusive access to our research conferences and videos, our quarterly professional email newsletter and an online forum, where you can share best practice and information with other healthcare professional members.

To register, go to www.coeliac.org.uk

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*Calls may be recorded for quality and training purposes.

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