



COELIAC DISEASE

WHAT IS COELIAC DISEASE?

Coeliac Disease (CD) is a non-curable auto-immune disease whereby the immune system produces antibodies which attack the body's own tissues [1].

The immune system reacts abnormally to gluten, a protein found in wheat, rye, barley and oats, causing the lining of the small bowel to become inflamed and damaged.

'Villi' are small finger-like structures on the wall lining of the small intestine. The small intestine plays an important role in digesting and absorbing nutrients into the blood stream. With repeated exposure to gluten, the villi become inflamed and flattened (villous atrophy) and the surface area of the small intestine decreases significantly which leaves inadequate area for normal nutrient absorption.

How common is Coeliac Disease?

Approximately 1% of Australians are affected by CD, however, 75- 80% remain undiagnosed [1,3]

What are the symptoms?

The presentation of symptoms from person to person can vary greatly. Some people may have a number of symptoms while others have none [1,3].

- ❖ Anaemia and other micronutrient deficiencies
- ❖ Fatigue
- ❖ Bloating, cramping, flatulence
- ❖ Diarrhoea
- ❖ Steatorrhoea
- ❖ Constipation
- ❖ Nausea and or vomiting
- ❖ Weight changes – loss or gain
- ❖ Growth failure in children
- ❖ Recurrent mouth ulcers
- ❖ Skin rashes eg dermatitis herpetiformis
- ❖ Infertility & miscarriage [1,2,4]



How is it diagnosed?

GLUTEN DEPENDENT TESTS:

Prior to requesting any of the following tests it is essential that the patient has been consuming adequate amounts of gluten or will be willing to reintroduce gluten (4 slices bread/day for at least 6 weeks) prior to testing. This ensures that test results are reliable and helps to avoid false negative results [3].

Initial Screening - Coeliac Serology: measures immune system responses (specific antibody levels). Antibody levels are typically elevated in untreated CD [3]. Serology tests detect 85-90% of cases of CD [3].

- i) Transglutaminase antibodies (tTG) and
- ii) Anti-Gliadin antibodies (AGA)

Total immunoglobulin level (IgA). Normal levels can be helpful to exclude the ~3% of patients with CD who are unable to produce antibodies. Should IgA levels be low, a small bowel biopsy is recommended, as serology results are unreliable [3].

NOTE: If any of the serology results are POSITIVE it is advised to confirm diagnosis with a small bowel biopsy because the serology results can occasionally be either falsely negative or falsely positive.

NOTE: CD is unlikely if antibody results are normal. Should the doctor still suspect CD despite serology due to additional risk factors it is advisable to consider small bowel biopsy [3].

NOTE: Serology results can be less accurate in children under 5 years of age [4]. Levels can fluctuate in children so testing antibodies on 2 occasions, 3 months apart can be a helpful way to get meaningful serology results [3].

Confirm diagnosis - Small Bowel Biopsy:

Several biopsies (4) are taken from different areas of the small bowel by gastroscopy. These samples are viewed under microscope and if they show damaged, inflamed tissue and villous atrophy a diagnosis of CD is confirmed.

NOT DEPENDENT ON GLUTEN INTAKE TEST

HLA gene testing

It has been found that 99.6% of people with coeliac disease have either one or both genes HLA DQ₂ or HLA DQ₈. Having either one or both of these genes is necessary for CD to develop. A DNA test using a blood sample or buccal swab can be performed to determine if an individual has either of these genes.

If a person has neither gene, risk of CD is <1%. There is no need for further testing with such a result however, if a person has one or both genes they are susceptible to developing CD. Only 1 in 30 people who test positive for one or both genes have/develop CD so it is recommended to perform a small bowel biopsy to confirm the diagnosis (**ensuring gluten has been included in the diet for at least 6 weeks**).

How is CD treated?

- ❖ Strict life-long gluten free diet as even minute quantities of gluten is capable of damaging the bowel.
- ❖ Short term supplementation of any nutritional deficiencies (iron, folate, vitamin D)
- ❖ Repeat gastroscopy at 12 months to assess bowel recovery and confirm adequate compliance to gluten free diet

What are the risks of untreated CD?

- ❖ Strict life-long gluten free (gluten is present in wheat, rye, barley and oats)
- ❖ Correction of nutrient deficiencies iron, folate and vitamin D)
- ❖ Repeat biopsy at 12 months to assess small bowel recovery and confirm adherence to necessary restrictions

REFERENCES Tye-Din J: *Making sense of your diagnosis – what your doctor should know. The Australian Coeliac 2008.*

<http://www.coeliacsociety.com.au>