

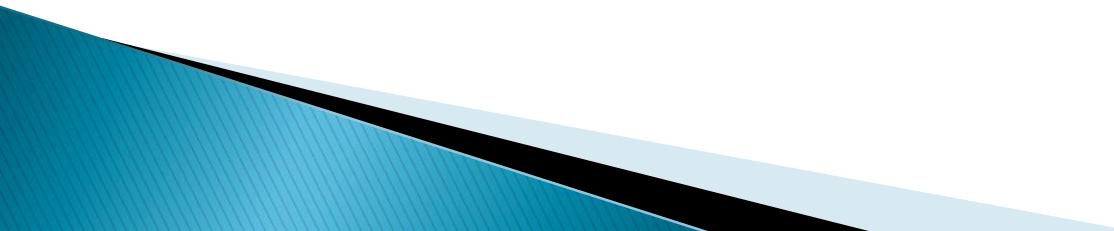
Identifying and Managing Coeliac Disease in Primary Care

Kristin Kenrick, FRNZCGP

Department of General Practice and Rural Health
Dunedin School of Medicine

(Supported by Coeliac New Zealand)

Objectives for this Session

- ▶ That you will go away thinking about your practice population, and which of your patients you are going to test for Coeliac Disease.
 - ▶ That you will think about your patients with Coeliac Disease and whether there are things that you and your team could be or should be doing to optimise their care, and support them in the management of their condition.
- 

Outline of Presentation

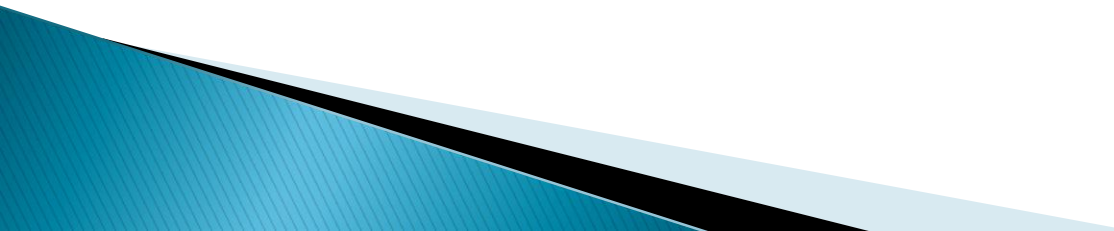
▶ **Overview of Coeliac Disease**

- Definition and characteristics
- History
- Classification
- What is gluten?

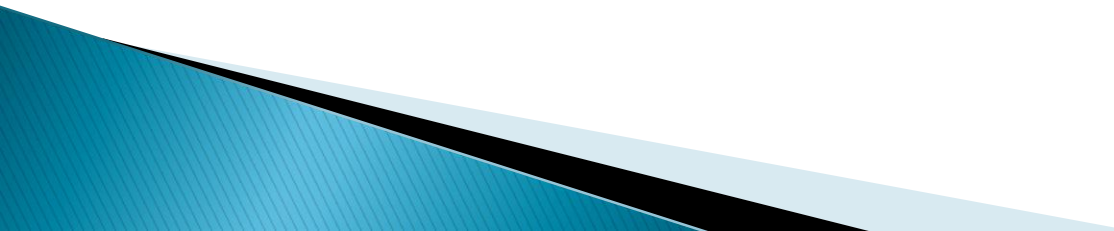
▶ **Looking for Coeliac Disease**

- Could this patient have Coeliac Disease?

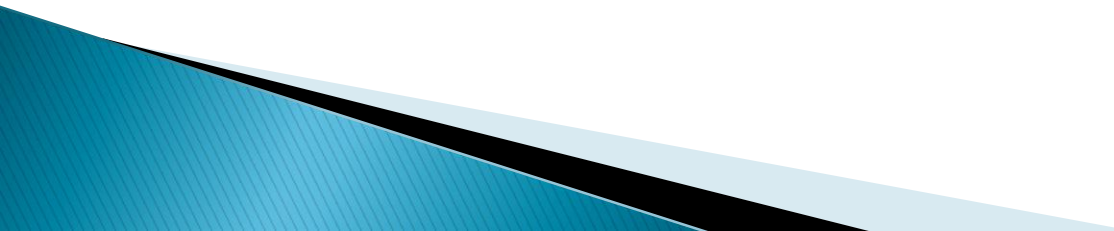
▶ **Managing Coeliac Disease**

- What can we and should we be doing?
- 

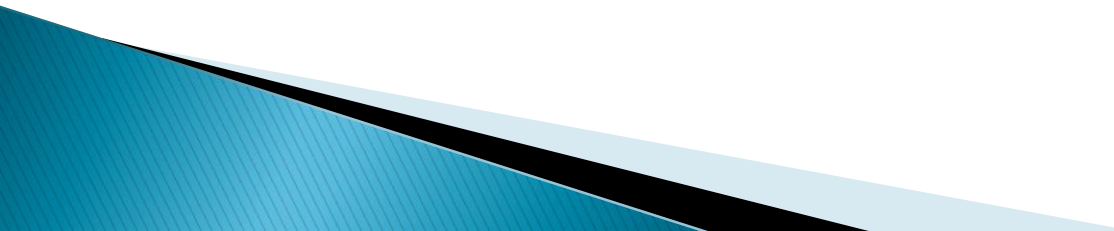
Definition of Coeliac Disease

- ▶ An immune-mediated condition in which the target organ is the small intestine and the environmental trigger is gluten.
 - ▶ Characterised by chronic inflammation of the intestinal mucosa which ultimately leads to malabsorption and a variety of clinical manifestations.
 - ▶ Associated with raised anti-tissue transglutaminase, anti-endomysial, and anti-gliadin antibodies.
 - ▶ Removal of gluten from the diet brings about normalisation of antibody levels, resolution of symptoms and improvement in histological changes.
- 

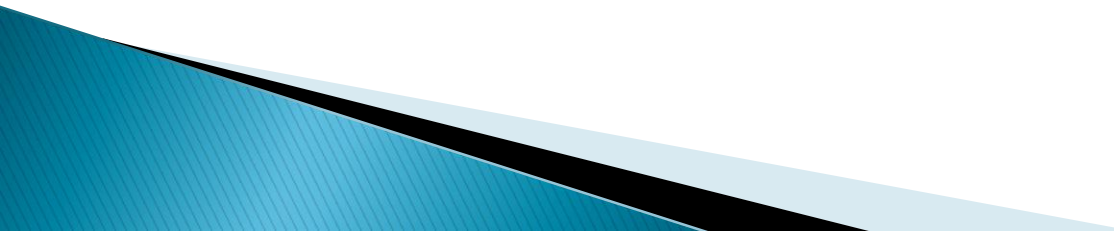
How common is Coeliac Disease?

- ▶ Now thought to be the most common hereditary autoimmune condition.
 - ▶ Estimated prevalence of **1%**.
 - ▶ Upwards of 80% of patients remain undiagnosed.
- 

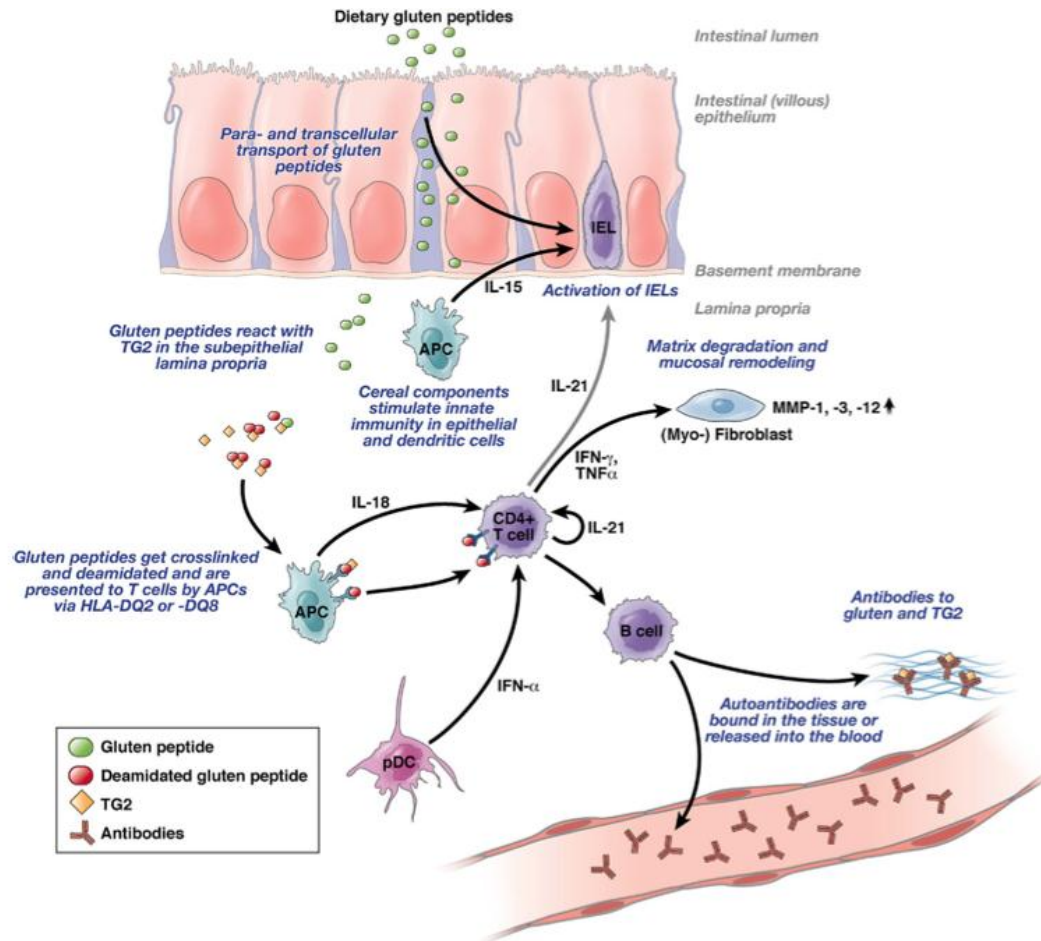
What is gluten?

- ▶ The collective name given to a group of proteins found in wheat, barley and rye.
 - ▶ Technically gluten is specific to wheat; barley proteins are hordeins, and rye proteins are secalins.
 - ▶ Contains two major components: glutenins and gliadins. The gliadins are the more toxic of the two.
- 

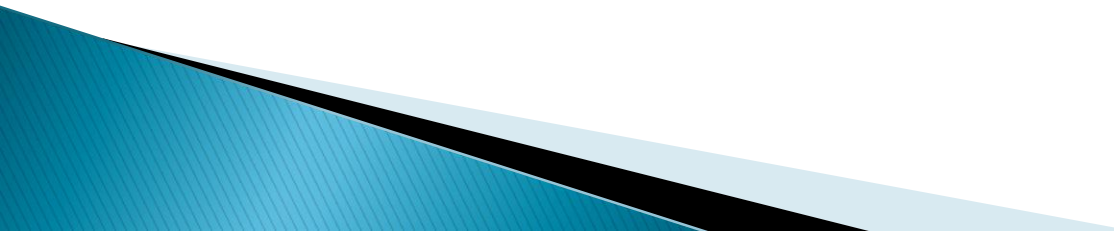
What is gluten (contd)?

- ▶ Wheat, barley and rye are closely related and have a common ancestral origin in the grass family.
 - ▶ Oats are more distantly related. Still some controversy about their safety.
 - ▶ Millet, rice, maize, and sorghum are even more distantly related and are not toxic.
- 

How is gluten harmful?

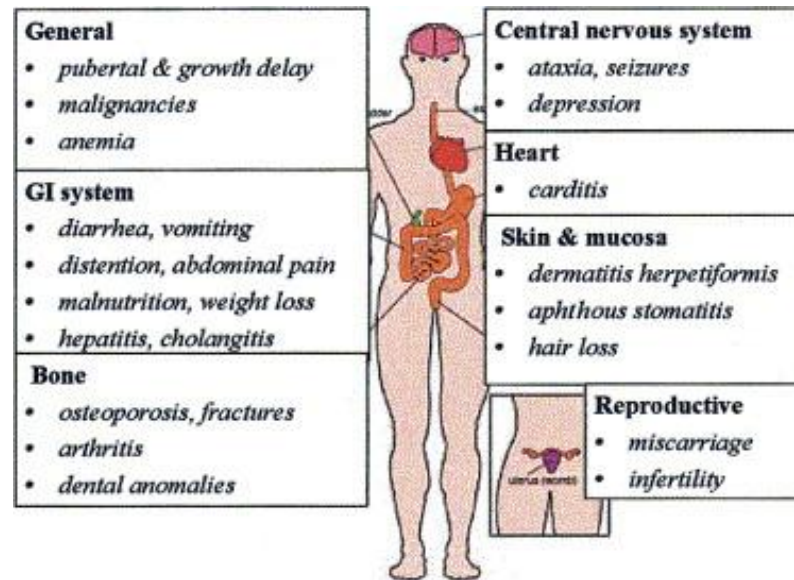


History of Coeliac Disease

- ▶ **1st century AD:** Areteus of Cappadocia
 - ▶ **1887:** Samuel Gee
 - ▶ **1940s:** Willem Karel Dicke
 - ▶ **1954:** Paulley et al
 - ▶ **1950s and 60s:** The Crosby Capsule
 - ▶ **1970s:** Fibre-optic endoscopy
 - ▶ **1990s:** Antibody tests become increasingly more sensitive and specific; HLA genetic markers identified.
- 

The Clinical Spectrum of CD

- ▶ The clinical spectrum of what we now know to be Coeliac Disease has broadened considerably, especially in the past 20 years.



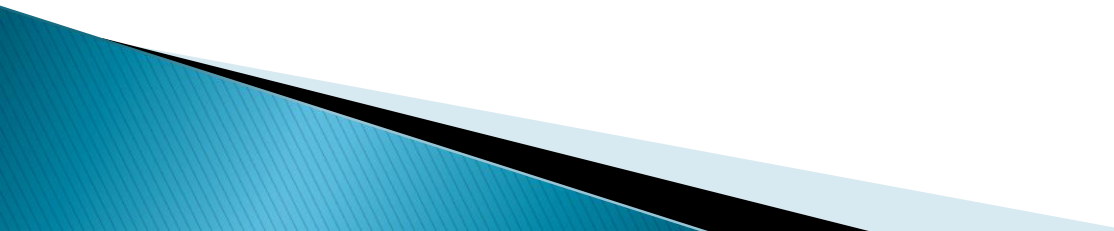
- Should also include fatigue and peripheral neuropathies in this image.

Classification of Coeliac Disease

▶ **Classical Coeliac Disease**

- Dominated by symptoms and sequelae of gastrointestinal malabsorption
- Patients have positive antibodies, and villous atrophy on biopsy

▶ **Coeliac Disease with Atypical Symptoms**

- Few or no GI symptoms, with extra-intestinal symptoms predominating
 - Patients have positive antibodies and villous atrophy
- 

Classification (contd.)

▶ **Silent Coeliac Disease**

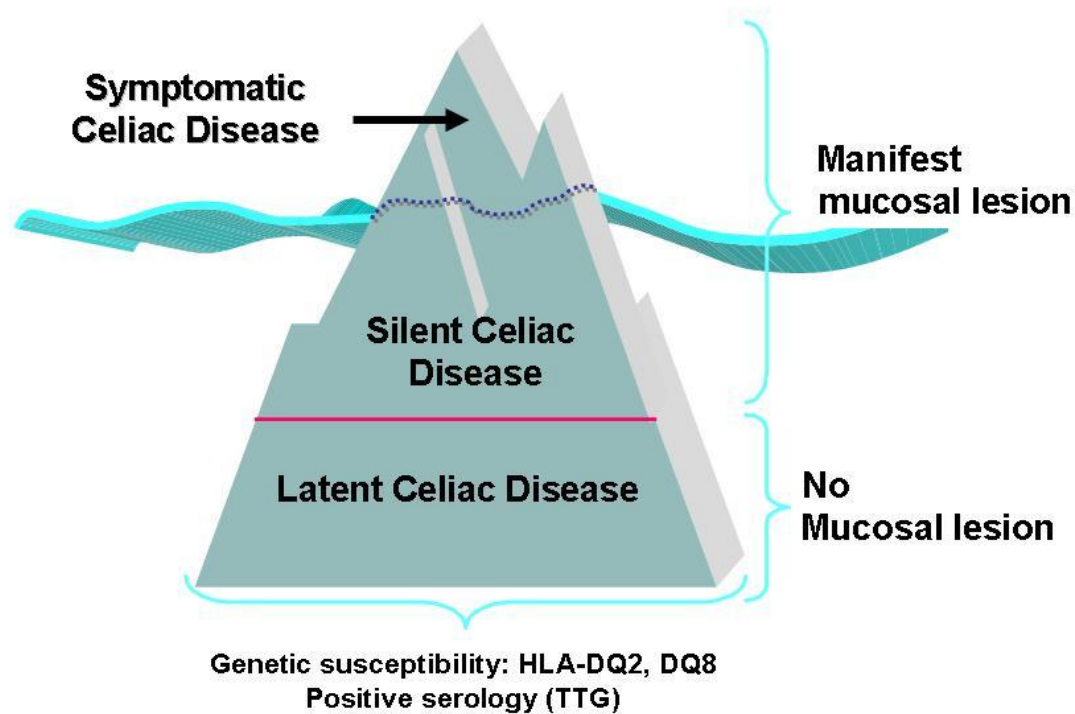
- Asymptomatic
- Patients have positive antibodies and villous atrophy
- Usually detected through screening high risk individuals

▶ **Latent Coeliac Disease**

- Said to be the diagnosis in patients with positive antibodies but normal histology on biopsy.

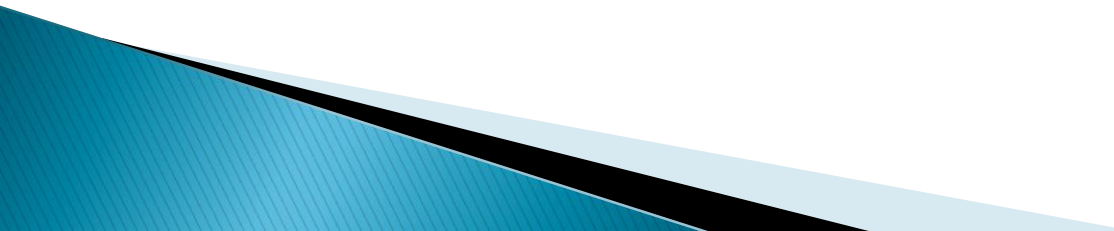
The Coeliac Iceberg

The Celiac Iceberg

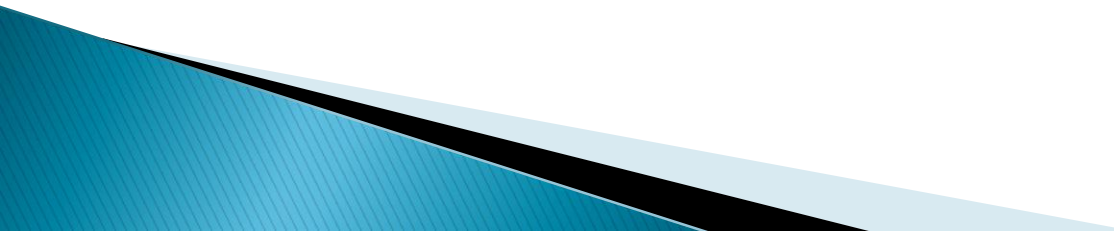


Could this patient have Coeliac Disease?

The NICE Guidelines: Offer testing for the following ..

- Chronic or intermittent diarrhoea
 - Failure to thrive or faltering growth (in children)
 - Persistent or unexplained GI symptoms, including nausea and vomiting
 - Prolonged fatigue (“TATT”)
 - Recurrent abdominal pain, cramping or distension
 - Sudden or unexplained weight loss
 - Unexplained iron-deficiency anaemia, or other unspecified anaemia
 - Autoimmune thyroid disease
 - Dermatitis Herpetiformis
 - Irritable Bowel Syndrome
 - Type 1 Diabetes
 - 1st degree relative with CD
- 

Are they on a gluten-containing diet?

- ▶ Essential for the accurate interpretation of serology tests (and biopsy results also).
 - ▶ If not: patient needs to have a gluten challenge
 - Gluten in at least 2 meals/day for 6 weeks OR
 - 4 slices of bread/day for 4 weeks for adults OR
 - 2 to 3 slices of bread/day for 4 weeks for children (increase amount for older children).
- 

Testing for Coeliac Disease

- ▶ “Coeliac Antibodies”
 - IgA-TTG (= tissue transglutaminase antibodies)
 - Total IgA levels
 - +/- EMA (=endomysial antibodies)
 - +/- Deamidated gliadin antibodies
- ▶ Both TTG and EMA tests are IgA based; have high sensitivity and specificity (though probably not as high in reality as claimed in the literature).
- ▶ If IgA deficient the labs can do IgG based test but you need to ask for it, and not all labs offer this.
- ▶ Gliadin antibodies no longer recommended and not available from most of the labs.

Negative Serology

- ▶ IgA levels low: ask for IgG test if possible.
- ▶ If low level suspicion and IgA normal: Not Coeliac Disease.
- ▶ If high level suspicion: Refer for biopsy (adults) or to Paediatrics (children).
- ▶ Consider HLA DQ2/DQ8 testing:
 - 99.6% of people with coeliac disease carry this gene therefore a negative result more-or-less rules out coeliac disease.
 - Approx 30% of population carry the gene therefore a positive result does **not** confirm the presence of the disease, but does mean the diagnosis is possible.

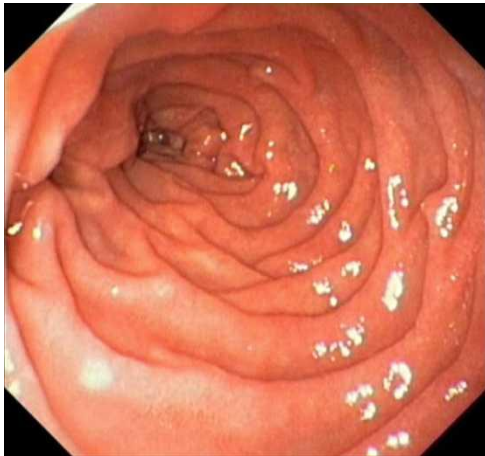
Positive Serology

- ▶ Refer adults for endoscopy and biopsy to confirm the diagnosis
 - Biopsy is still the gold standard for diagnosis.
- ▶ Refer children to paediatrics to arrange further investigation (which will also include gastroscopy).

Characteristic Intestinal Appearance

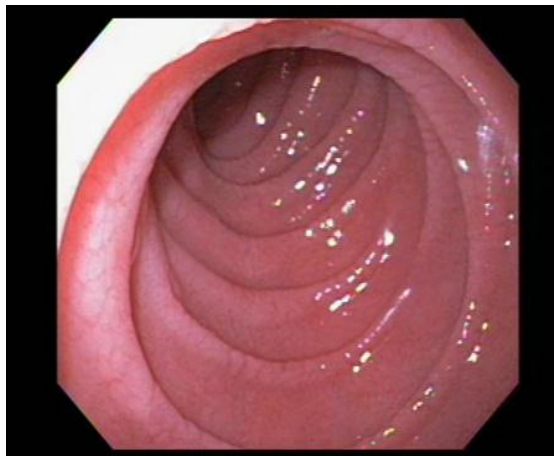
► Macroscopically

- Loss of duodenal folds, scalloping of folds, mucosal fissures and a mosaic or nodular appearance



(1)

(1) Normal Duodenum



(2)

(2) Loss of duodenal folds and scalloping



(3)

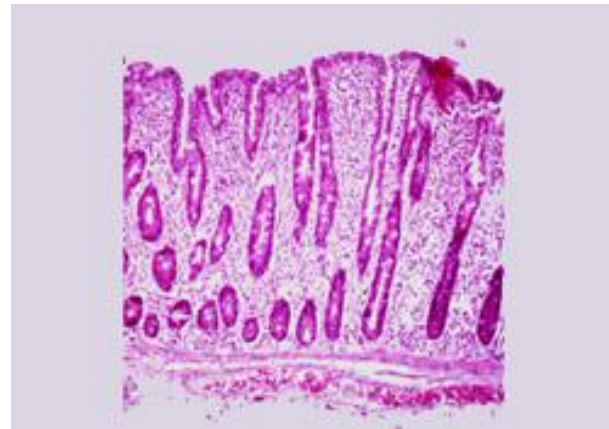
(3) Severe CD with nodular appearance

Histological appearance

- Villous atrophy
- Crypt hyperplasia
- Flat mucosal surface
- Abnormal epithelial cells
- Increased intra-epithelial lymphocytes



Normal histology



Typical changes of CD

The Modified Marsh Classification

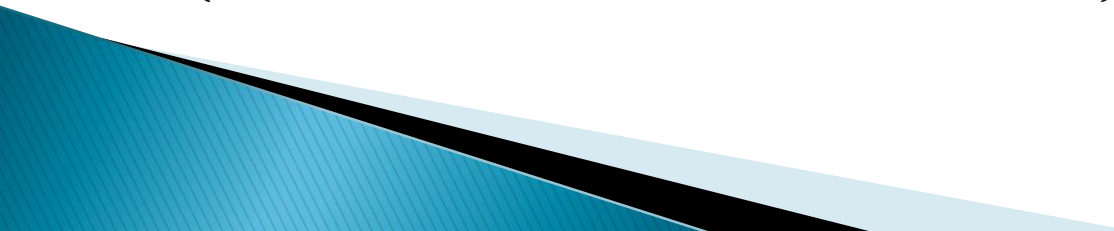
Marsh Type	IEL/100 enterocytes*	Crypt hyperplasia	Villi
0	<30	Normal	Normal
1	>30	Normal	Normal
2	>30	Increased	Normal
3a	>30	Increased	Mild atrophy
3b	>30	Increased	Marked atrophy
3c	>30	Increased	Complete atrophy

* Intraepithelial lymphocytes per 100 enterocytes in the duodenum

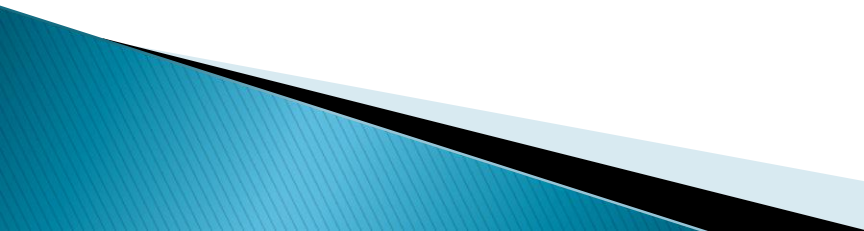
My patient is refusing a biopsy

- ▶ Biopsy remains important because of risk of false positive blood tests and implications of the diagnosis: a gluten-free diet for life is a big ask if someone doesn't really need it.
- ▶ The higher the TTG result the more likely it is to be a true positive.
- ▶ So what to do?
- Encourage them to proceed.
- Do a second, different serology test (EMA) to confirm the first → do this on a second blood sample.
- Check HLA type → will be helpful if negative.

(Based on new ESPGHAN recommendations)

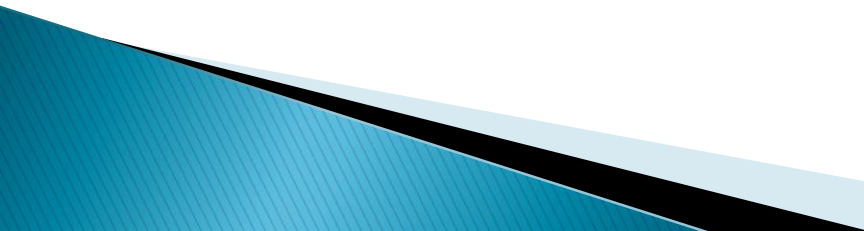


Management of Coeliac Disease

- ▶ Lifelong gluten-free diet
 - Requires dietician guidance.
 - Checking in with your patient from time to time on how this is going has been shown to be helpful with adherence.
 - Aim for gluten-free not low-gluten
 - ▶ Evaluate bone mineral density
 - ▶ Assess micronutrient deficiencies
 - ▶ Recommend screening of 1st degree relatives
 - ▶ Assess response to diet
 - ▶ Annual review:
 - adherence, complications, associated diseases
- 

Complications of Coeliac Disease

- ▶ Osteoporosis
 - ▶ Other autoimmune diseases
 - ▶ Small increased risk of GI malignancy
 - ▶ Increased mortality from infection: due to increased incidence of hyposplenism

 - ▶ Potential complications if the diet:
 - Low fibre, high saturated fat and sugar, low B vitamins
 - Weight gain and increased cholesterol due to better absorption from healed gut.
- 

Issues to Consider

- ▶ The gluten-free diet is expensive:
 - Consider eligibility for Disability Allowance and/or Child Disability Allowance.
 - Special Authority number for subsidised prescriptions: (PHARMAC have decided not to add to the list of subsidised gluten-free foods and will not increase the subsidies to keep pace with inflation but g-f foods remain available through this scheme).
- ▶ Changing to a gluten-free diet is also a major issue from a practical and social perspective:
 - Food labelling complicated to negotiate.
 - Contamination of foods is common.
 - Some medications include gluten (e.g. Codalgin; Folic Acid).

Issues to consider (contd.)

- ▶ Recommend patient joins Coeliac NZ, at least when they are first diagnosed.
- ▶ Patient not recovering:
 - ?Adhering to the diet → may be intentional or unintentional
 - ?Correct diagnosis
 - ?Refractory Coeliac Disease