

## Celiac Disease: Patient Follow-Up

Melanie Pinchbeck, MD, FRCPC  
GI Update  
May 10, 2014.

---

---

---

---

---

---

---

---

## Faculty/ Presenter disclosure

- Faculty: Dr. Melanie Pinchbeck
- Relationships with commercial interests:
  - Not Applicable

---

---

---

---

---

---

---

---

## Objectives

- Describe the role of repeat celiac serology & biopsy in the celiac patient
- List celiac comorbidities that should be assessed at the periodic health examination
- Determine what nutrients may be lacking in the gluten free diet

---

---

---

---

---

---

---

---

## Celiac disease: definition

- ***“Celiac disease is an immune-based reaction to dietary gluten (storage protein for wheat, barley, and rye) that primarily affects the small intestine in those with a genetic predisposition and resolves with exclusion of gluten from the diet.”***

Rubio, et. al. 2013. *Am J Gastroenterol.* **108**: 656–676.

## Associated conditions

### PREVALENCE > 2X GENERAL POPULATION

- Irritable bowel syndrome
- Diarrhea with weight loss
- Iron deficiency anemia
- Premature osteoporosis
- Abnormal liver enzymes
- Dermatitis herpetiformis
- Peripheral neuropathy
- Oral aphthous ulcers
- Growth failure
- Down's syndrome
- Thyroid disease

### LESS COMMON

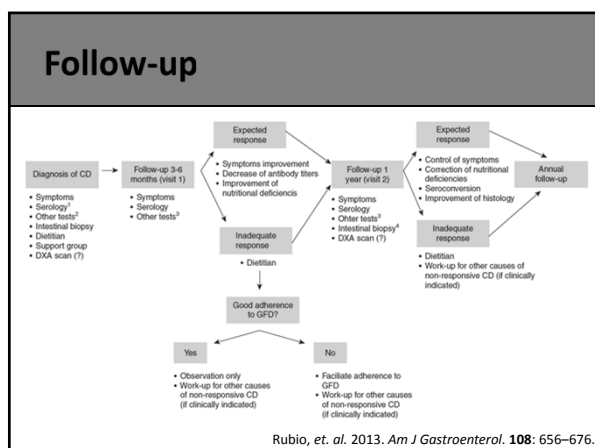
- Dyspepsia
- Amenorrhea
- Chronic fatigue
- Constipation
- Recurrent abdominal pain
- Epilepsy
- Ataxia
- Unexplained infertility

Rubio, et. al. 2013. *Am J Gastroenterol.* **108**: 656–676.

## Newly diagnosed celiac disease

- Referral to a registered dietician
- Strict gluten free diet for life
  - No products containing proteins from wheat, barley & rye
  - Pure oats can be introduced slowly/carefully
- Baseline bone mineral density test
- Test for vitamin and mineral deficiencies
- Direct to the Canadian Celiac Association
  - [www.celiac.ca](http://www.celiac.ca)

## Follow-up



Diagnosis of  
celiac disease  
confirmed

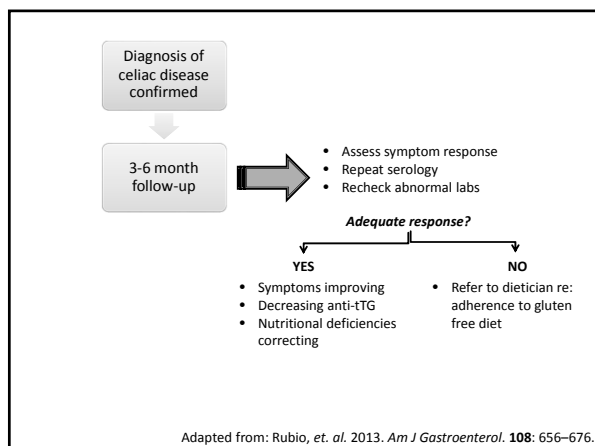


- Gluten free diet
- Referral to registered dietitian
- Canadian Celiac Association
- Baseline DEXA
- Baseline blood tests (e.g. CBC, iron indices, liver enzymes, vitamin levels)

Adapted from: Rubio, et. al. 2013. *Am J Gastroenterol.* **108**: 656–676.

## Nutrient deficiencies – untreated disease

- vitamins A, D, E, B12
- zinc
- copper
- carotene
- folic acid
- ferritin, iron
- thiamine, vitamin B6, magnesium, selenium




---

---

---

---

---

---

---

---

## Monitoring - serology

- Anti-tissue transglutaminase IgA
  - Half-life = 6-8 weeks
  - Levels should gradually decline on gluten free diet
  - Normalization in 3-12 months
  - Check at baseline, after 3-6 months and 12 months on a gluten free diet, then annually

---

---

---

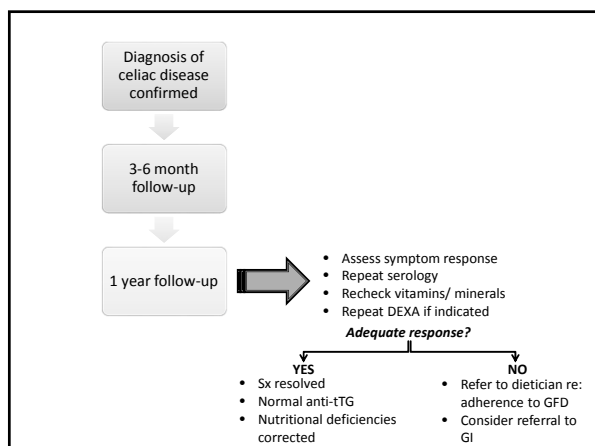
---

---

---

---

---




---

---

---

---

---

---

---

---

## Monitoring – indications for bx

- Routine biopsy not routinely performed
- Indications:
  - Failure to respond to a gluten free diet
  - Recurrence of symptoms
- Non-responsive celiac disease
  - “persistent symptoms, signs or laboratory abnormalities typical of CD despite 6 – 12 months of dietary gluten avoidance”

Rubio, et. al. 2013. *Am J Gastroenterol*. **108**: 656–676.

---

---

---

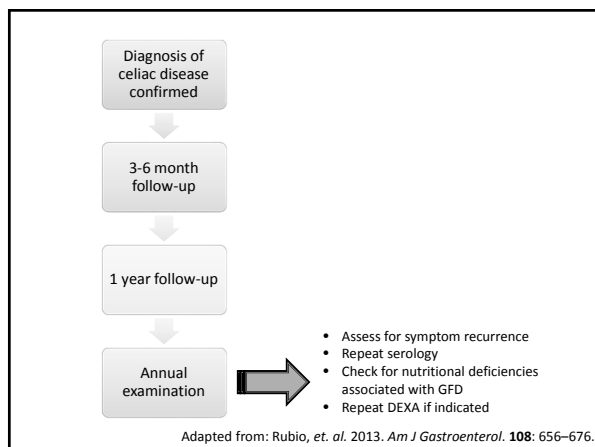
---

---

---

---

---




---

---

---

---

---

---

---

---

## Gluten Free Diet (GFD)

- Processed GFD foods have high levels of lipids, sugars, salt
- Patients on GFD tend to eat a diet high in fat, sugars, & calories
- High intake of total and saturated fats
- Increased trans fats

Saturni, L., et al. 2010. *Nutrients* **2**:16-34.

---

---

---

---

---

---

---

---

### Nutrient deficiencies – gluten free diet

- Vitamin A
- Thiamine
- **Fibre**
- Folate
- Magnesium
- Calcium
- Iron
- Zinc

Shepherd, S.J. & Gibson, P.R. *J Hum Nutr Diet.* **26**, 349–358

### GFD: nutritional tips

- Increase dietary fruits/ vegetables to avoid micronutrient deficiencies (5+ servings/day)
- Choose gluten free products which are fortified with vitamin and minerals
- Alternative cereals (e.g. oats, quinoa, buckwheat) are a good source of vitamins, folic acid & fiber

Saturni, L., et al. 2010. *Nutrients* **2**:16-34.

### GFD: nutritional tips

Nutritional deficiency	Counselling
Iron deficiency	<ul style="list-style-type: none"> <li>• Adherence to strict gluten free diet</li> <li>• Ingest sources of both heme (e.g. meat, fish, poultry) &amp; non-heme containing iron sources (e.g. nuts, seeds, legumes, dark green vegetables, dried fruits, eggs, quinoa, rice bran, soy flour)</li> <li>• Foods high in Vitamin C aid non-heme iron absorption</li> </ul>
Lactose intolerance	<ul style="list-style-type: none"> <li>• Can occur in untreated patients secondary to villous atrophy and decreased production of lactase</li> <li>• Temporary lactose free diet or use of lactase enzyme supplement</li> </ul>

Adapted from Case S, & Kaplan CR. 2003. *Today's Dietitian*: 44-49

## GFD: nutritional tips

Nutritional deficiency	Counselling
Folate	<ul style="list-style-type: none"> <li>Folate rich sources: legumes, green leafy vegetables, broccoli, asparagus, orange juice, liver, peanuts, walnuts, sesame seeds, sunflower seeds, bean flour, amaranth, flax</li> </ul>
Vitamin B12	<ul style="list-style-type: none"> <li>B12 rich sources: liver, eggs, milk, meat, poultry, fish, seafood</li> </ul>
Osteopenia/osteoporosis	<ul style="list-style-type: none"> <li>Choose foods rich in calcium and vitamin D</li> <li>Calcium and Vitamin D supplements</li> <li>Weight bearing exercise</li> </ul>

Adapted from Case S, & Kaplan CR. 2003. *Today's Dietitian*: 44-49

---

---

---

---

---

---

---

---

## Summary & Take Home Points

- Symptoms, serology & other lab tests must be considered in evaluating response to a GFD
- Anti-tTG should normalize within 12 months of initiating a gluten free diet, but mucosal healing may take 2-3 years
- Indications for repeat mucosal biopsy include: failure to seroconvert, persistent symptoms or abnormal labs despite no evidence of inadvertent gluten exposure

---

---

---

---

---

---

---

---

## Summary & Take Home Points

- The restrictive gluten free diet is low in fiber & several vitamins/ minerals
- Patients on a GFD tend to ingest a high fat, high calorie diet
- Consultation with a dietician experienced in celiac disease/ gluten free diet counselling is instrumental in achieving patient adherence & good outcomes

---

---

---

---

---

---

---

---

Questions?

---

---

---

---

---

---

---