



11th Cyprus Dietetic & Nutrition Association International Conference

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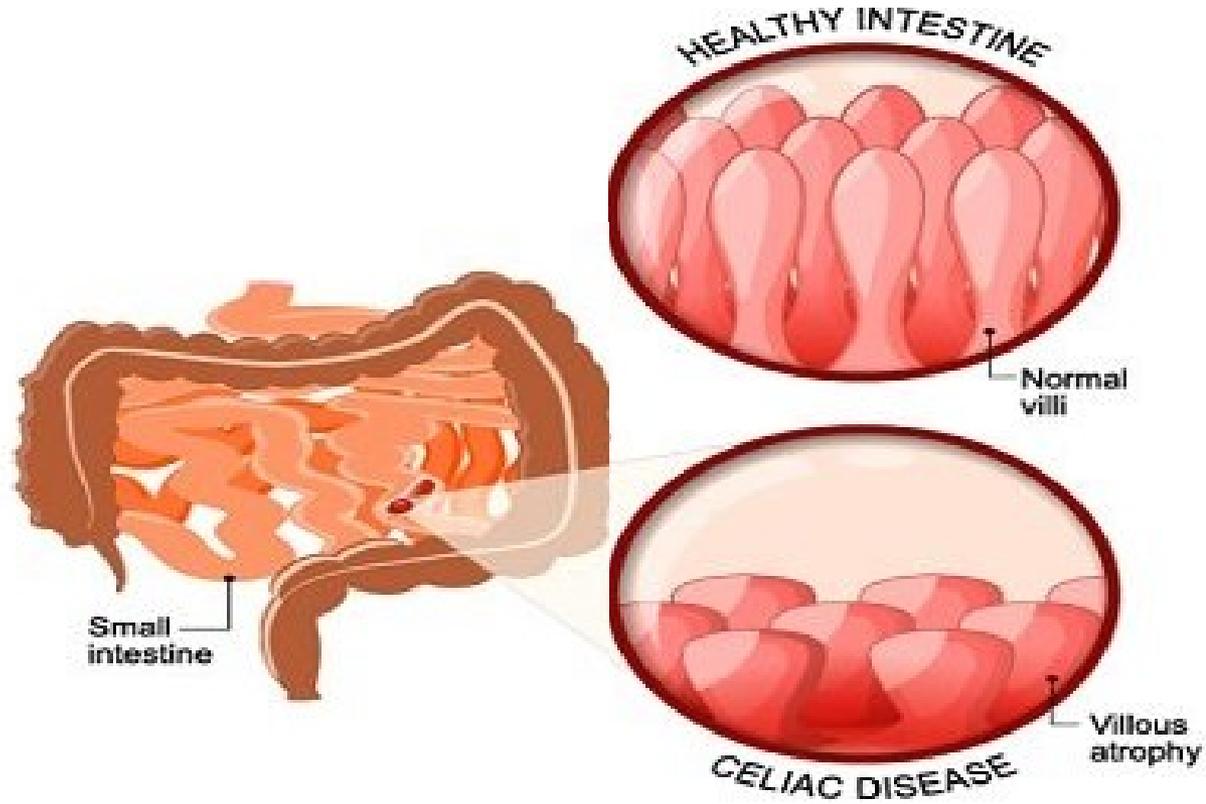
Nutritional Guidelines for Celiac Disease

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Celiac Disease

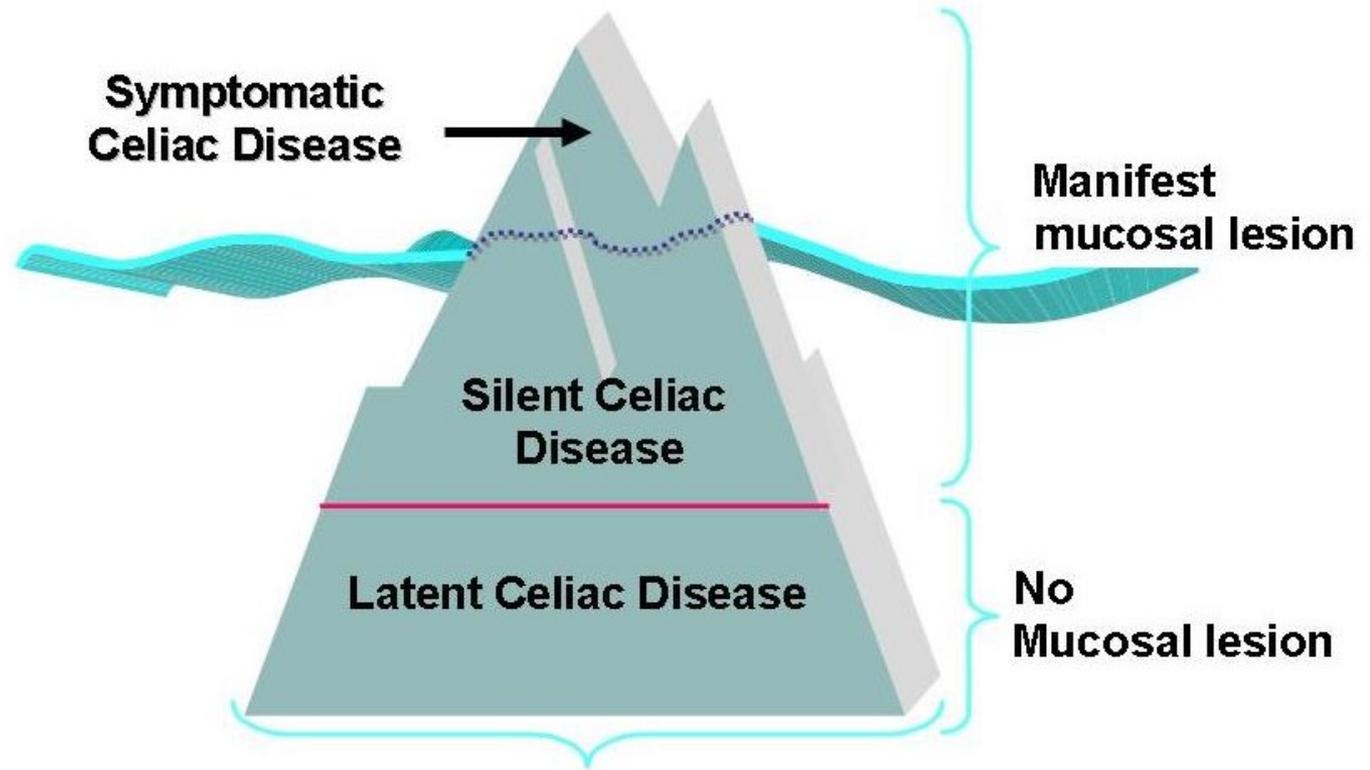


1. Shan L, Molberg Ø, Parrot I, Hausch F, Filiz F, Gray GM, et al. Structural basis for gluten intolerance in celiac sprue. *Science* 2002; 297:2275-2279.

2. Dieterich W, Ehnis T, Bauer M, Donner P, Volta U, Riecken EO, et al. Identification of tissue transglutaminase as the autoantigen of celiac disease. *Nat Med* 1997; 3:797-801.



Celiac Disease



Genetic susceptibility: HLA-DQ2, DQ8
Positive serology (TTG)

CLASSIC CELIAC DISEASE

- Chronic diarrhea
- Weight loss
- Iron-deficiency anemia
- Abdominal distension due to bloating and/or pain
- Chronic Fatigue
- Edema (hypoproteinemia)
- Osteoporosis

NON CLASSIC CELIAC DISEASE

- Chronic constipation especially in children
- Chronic migraine
- Dermatological manifestations (such as rash, psoriasis, blisters)
- Peripheral neuropathy
- Unexplained chronic hypertransaminasemia
- Folic acid, Vitamin D and /or Vitamin B12 deficiency
- Reduced bone density
- Delayed puberty, late menarche/early menopause
- Unexplained infertility or miscarriages
- Defects of dental enamel
- Depression, anxiety, irritability, brain fog





Barley
large & pale



Rye
small & green



Wheat
smallest & red



Oats
largest & tan



AVOID

- Bulgur
- Couscous
- Durum flour
- Einkorn (*Triticum monococcum*)*
- Emmer (*Triticum dicoccum*)*
- Farro*
- Graham flour
- Kamut™ (Khorasan wheat)*
- Malt, malt extract, malt flavoring, malt syrup
- oat bran, oat syrup — not labeled as gluten-free
- Semolina (durum wheat)*
- Spelt (dinkel wheat, *Triticum spelta*)
- Triticale
- Wheat germ, wheat starch, wheat bran
- Any item with wheat, barley, or rye in its name

* Varieties of wheat



Balanced Diet Choices

Treats
Desserts

Liquids
Water

Fruits

Gluten
Free
Whole
Grains

with Protein
Fiber
Beans & Starches

Vegetables

Green
Red
Yellow
Orange
Purple
White

Eggs - Dairy
Nuts

Proteins
Meats
Fish



Hidden sources and or potential sources
contamination add significant stress to people
living with CD while traveling or eating out
where access to suitable options could be
limited and contamination risks are higher.



Nicosia:



Paphos:

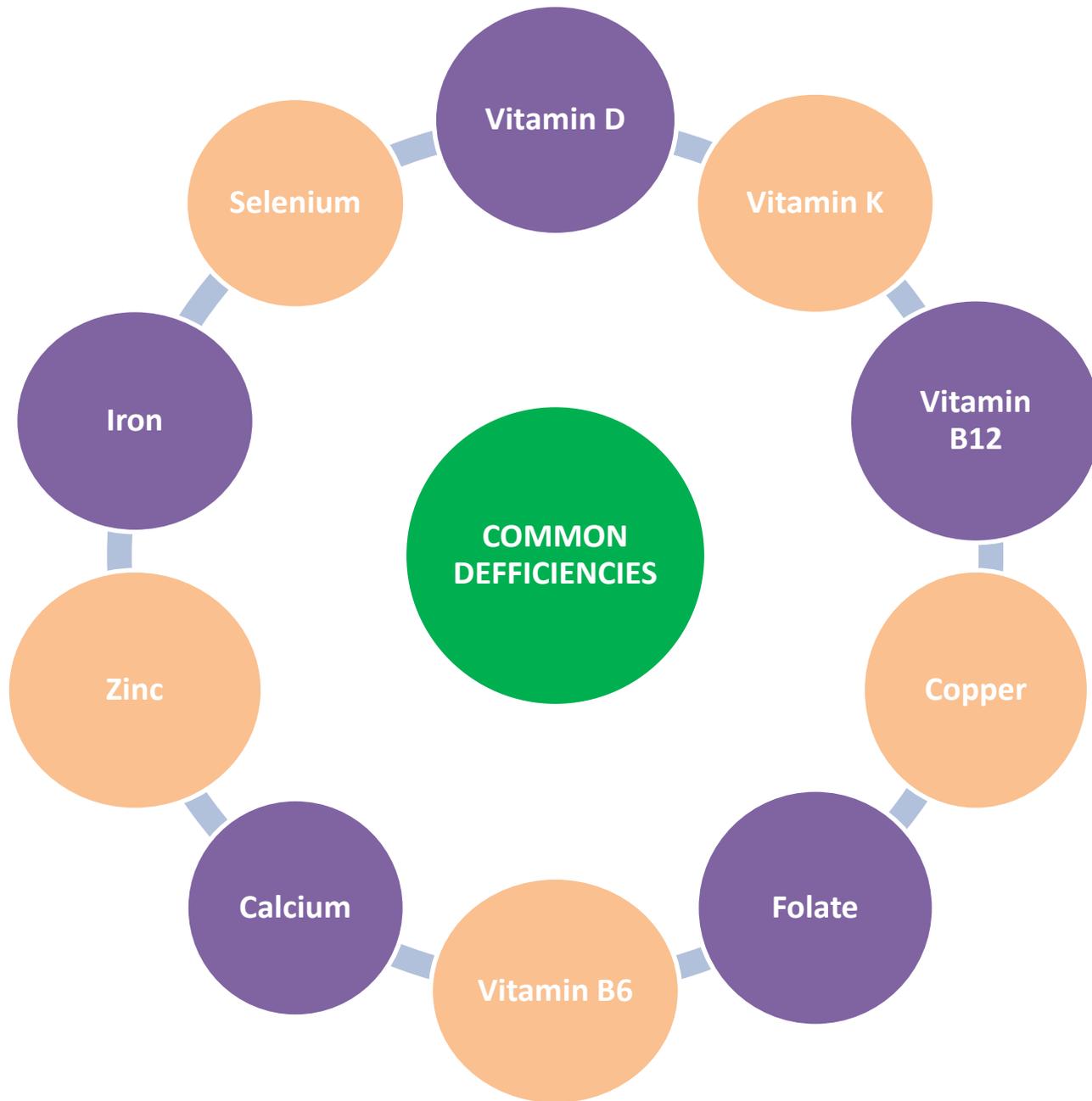


Larnaca



Limassol:





↑ concentrations of heavy metals have been seen in people following GF diet



increased reliance of monograins could increase the risk of excessive intakes of certain metals



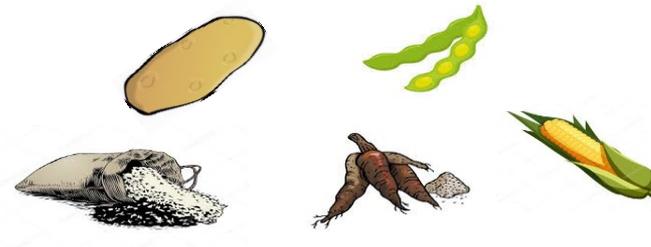
individuals consuming predominantly rice based products



high arsenic levels



- GF processed products: rice, tapioca, potato, soy



- Gluten free products are:

↓ proteins and fibers

↓ folic acid, Fe, niacin, thiamin and riboflavin

↑ fat, sugar and Na compare to regular products



➤ Gluten free bread:

has at least twice the total fat content of their gluten-containing counterparts - way to improve mouthfeel

➤ Gluten free pasta:

↑ carbohydrates and ↑ Na content

➤ maize and/or rice starch have ↑ glycemic index

→ affect glycaemia



1. Kulai T. and Rashid M. 2014. Assessment of Nutritional Adequacy of Packaged Gluten-free Food Products. *Canadian Journal of Dietetic Practice and Research*, [online] 75(4), pp.186–190. Available at: <<http://dcjournal.ca/doi/abs/10.3148/cjdpr-2014-022>>
2. Miranda J., Lasa A., Bustamante M.A., Churrucal. and Simon E. 2014. Nutritional Differences Between a Gluten-free Diet and a Diet Containing Equivalent Products with Gluten. *Plant Foods for Human Nutrition*, 69(2), pp.182–187.

- Coeliacs in contrast with healthy adults, consume significantly
 - ↑ amounts of fat and/or sugar and ↓ amount of fibers
- High adherence to GFD → ↑ body weight (BW) of celiac patients

↓ BW during diagnosis	↑ BW during diagnosis (no dietary advice)
→ beneficial effect on health	→ long-term health risks

- ↑ risk to develop metabolic syndrome from the first year on GF diet.

1. Barone M., Della Valle N., Rosania R., Facciorusso A., Trotta A., Cantatore F.P., Falco S., Pignatiello S., Viggiani M.T., Amoroso A., De Filippis R., Di Leo A. and Francavilla R. 2016. A comparison of the nutritional status between adult celiac patients on a long-term, strictly gluten-free diet and healthy subjects. *European Journal of Clinical Nutrition*, 70(1), pp.23–27.
2. Kabbani T. a., Goldberg a., Kelly C.P., Pallav K., Tariq S., Peer a., Hansen J., Dennis M. and Leffler D. a. 2012. Body mass index and the risk of obesity in coeliac disease treated with the gluten-free diet. *Alimentary Pharmacology & Therapeutics*, [online] 35(6), pp.723–729.
3. Tortora R., Capone P., De Stefano G., Imperatore N., Gerbino N., Donetto S., Monaco V., Caporaso N. and Rispo A. 2015. Metabolic syndrome in patients with coeliac disease on a gluten-free diet. *Alimentary Pharmacology and Therapeutics*, 41(4), pp.352–359.



Conditions associated with an increased risk for celiac disease

- Type 1 diabetes mellitus
- Autoimmune thyroid disease
- Autoimmune disease
- Down syndrome
- Turner syndrome
- Williams syndrome
- Selective immunoglobulin A (IgA) deficiency
- Unexplained elevated serum aminotransferase levels



Meditus Celiac



Complications in patients with :

- HbA1c higher → increased need for insulin
- more hypoglycemic episodes
- lower bone density
- more frequent deficiency of iron and vitamin B12
- faster development of diabetic kidney disease or retinopathy
- higher risk for hypertension and coronary heart disease

1. Joshi AS, Varthakavi PK, Bhagwat NM, Chadha MD, Mittal SS. Coeliac autoimmunity in type I diabetes mellitus. *Arab J Gastroenterol* 2014; 15:53-57.

2. Rohrer TR, Wolf J, Liptay S, et al. Microvascular complications in childhood-onset type 1 diabetes and celiac disease: a multicenter longitudinal analysis of 56 514 patients from the German-Austrian DPV database. *Diabetes Care* 2015; **38**: 801–07.



Cooperation of Celiacs with a Clinical Dietitian

- clinical evaluation every 3-6 months during the first year of diagnosis and then annually
- assess the patient's current nutritional status
- identify macronutrient and/or micronutrient intake and detect deficiencies and/or excesses.
- analyze eating habits and potential factors affecting access to the diet
- provide dietary education for safe preparation and consumption of gluten-free meals
- evaluation of adherence to dietary therapy and its serological response
- common challenges with dietary compliance, especially during adolescence
- additional visits: poor adherence, nutrition problems



Thank
you

