Bones of contention: Bone mineral recovery in celiac disease

Low bone density is common in newly diagnosed patients with celiac disease (CD). Untreated CD leads to bone fractures and osteoporosis in young and older patients. The gluten-free diet (GFD) is the primary treatment for CD. Bone density does not fully recover during the first 12 months of the diet, and as a result clinicians question whether the current practice of nutritional supplementation is effective while the gut is still healing. Nutrient malabsorption due to the erosion of small intestine tissues, known as villus atrophy, is thought to be the major cause. This review of the literature looked at all of the potential variables that result in bone strengthening, such as diet, physical activity and nutritional supplementation.

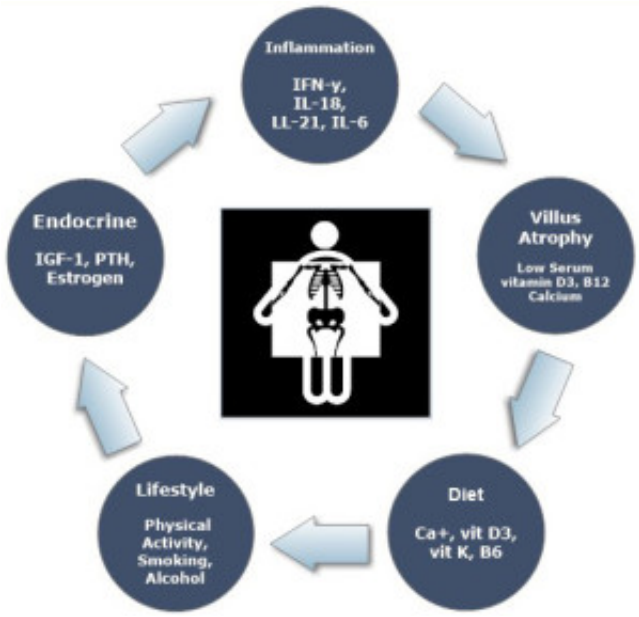

Fig. 1. Dysfunctional bone metabolism in celiac disease..

There was 20 high quality papers that reported the results of dual-energy X-ray absorptiometry (DXA) scans, also known as T-scores, at CD diagnosis and at least 12 months after treatment. Healing times varied by age with full recover taking up to 5 years, with young patients responding much faster. In CD, long-term malnutrition from intestinal inflammation is common, but supplementation protocols varied by treatment center making comparisons more difficult. Because gluten-free grain-based products are generally not enriched with vitamins and minerals, many patients may benefit from supplementation with iron, folate, B12, vitamin D3, vitamin K, calcium, and magnesium. There are few studies on the effects of physical activity or physical inactivity on bone mass. The effects of exercise on bone density is a critical area for future study as the majority of new patients with CD are older adults and at high risk of falls and fractures. It is important for people with CD to get an individualized assessment by a Registered Dietitian Nutritionist to

determine the type and amount of supplementation needed and get support through motivational counseling as they must adhere to the GFD for the rest of their life.

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