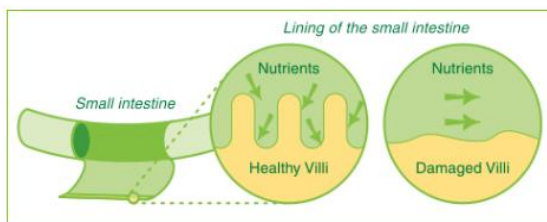


## It's a Gluten-Free World

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Coeliac disease is an autoimmune disease where people react abnormally to gluten, the protein found in wheat, barley and rye. There is no pharmacological cure. The only treatment is to eat a gluten-free diet for life. If a coeliac does eat gluten, the lining of the small intestine becomes damaged reducing the ability to absorb nutrients from food. This can lead to a variety of symptoms and complications if undiagnosed. In the small intestine there are small finger-like structures called villi which absorb the nutrients from food. When the villi are damaged they can no longer absorb nutrients properly. Even a grain of gluten can cause diarrhoea and other symptoms that can last for several days while the damage to villi can last a lifetime.



It is therefore very important that gluten-free food is nutrient dense to allow those with coeliac disease to have a better chance of absorbing the minerals so desperately needed by the body and to avoid further complications due to an inadequate diet. It is known that coeliac disease can lead to a number of other disorders including reduced bone density and osteoporosis, anxiety, depression, type-1 diabetes and infertility.

A gluten-free diet is of ultimate importance to the 1% of the global population that suffers from coeliac disease. It affects men and women equally across all races and ages. It follows that this market is very significant with gluten-free sales of over \$2.6 billion dollars in 2010. Sales are expected to exceed \$5 billion by 2015<sup>1</sup>.

It is obvious that the nutrient profile of gluten-free food is important. However, there is no point in having essential nutrients incorporated into food if they cannot be absorbed by the body. Aquamin is a natural, marine-derived, multi-mineral, from the *Lithothamnion* species of red algae, rich in calcium and magnesium as well as 72 other trace minerals. It is crafted naturally in the sea, providing bioavailable minerals in the same ratios as needed for optimal use by the human body. The exceptional bioavailability of Aquamin has been proven in many independent scientific studies by measuring the calcium sensitive hormone, PTH (see separate data sheet).

Therefore Aquamin not only provides a mineral-rich solution to improve quality of life but thanks to its unique physical structure it also acts as a technological aid improving texture and mouthfeel - always a challenge when formulating without gluten. Aquamin consequently improves the quality of foods in terms of texture, taste and visual appearance.

For the manufacturer, there exists a complete range of Aquamin ingredients for all food, beverage and nutraceutical applications. The high inclusion rate of minerals boosts RDA values while the unique structure allows for improved taste and texture. In addition, Aquamin is compatible with all 'clean label' and 'free from' declarations. For the coeliac customer, enhanced nutrition is delivered in an entirely natural way and the multiple health benefits have been proven in peer-reviewed publications.

1. Source: Packaged Facts 2011