

Virus infections may be contributing factor in onset of gluten intolerance

March 5 2010

Recent research findings indicate a possible connection between virus infections, the immune system and the onset of gluten intolerance, also known as coeliac disease. A research project in the Academy of Finland's Research Programme on Nutrition, Food and Health (ELVIRA) has brought new knowledge on the hereditary nature of gluten intolerance and identified genes that carry a higher risk of developing the condition. Research has shown that the genes in question are closely linked with the human immune system and the occurrence of inflammations, rather than being connected with the actual breakdown of gluten in the digestive tract.

"Some of the [genes](#) we have identified are linked with human [immune defence](#) against viruses. This may indicate that virus infections may be connected in some way with the onset of gluten intolerance," says Academy Research Fellow Päivi Saavalainen, who has conducted research into the hereditary risk factors for gluten intolerance.

Saavalainen explains that the genes that predispose people to gluten intolerance are very widespread in the population and, as a result, they are only a minor part of the explanation for the way in which gluten intolerance is inherited. However, the knowledge of the genes behind gluten intolerance is valuable in itself, as it helps researchers explore the reasons behind gluten intolerance, which in turn builds potential for developing new treatments and preventive methods. This is essential, because the condition is often relatively symptom-free, yet it can have serious complications unless treated.

Researchers have localised the risk genes by using data on patients and on entire families. The material in the Finnish study is part of a very extensive study of thousands of people with gluten intolerance and control groups in nine different populations. The research will be published in a coming issue of *Nature Genetics*.

Research into hereditary conditions has made great progress over the past few years. Gene researchers now face their next challenge, as a closer analysis is now needed of the risk factors in the genes that predispose people to gluten intolerance. It is important to discover how they impact on gene function and what part they play in the onset of gluten intolerance.

Gluten intolerance is an autoimmune reaction in the small intestine. Roughly one in a hundred Finns suffer from this condition. The gluten that occurs naturally in grains such as wheat, barley and rye causes damage to the intestinal villi, problems with nutrient absorption and potentially other problems too. Gluten intolerance is an inherited predisposition, and nearly all sufferers carry the genes that play a key part in the onset of the condition. The only known effective treatment is a lifelong gluten-free diet.

Provided by Academy of Finland

Citation: Virus infections may be contributing factor in onset of gluten intolerance (2010, March 5) retrieved 9 April 2024 from

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