



Lower economic status and inferior hygienic environment may protect against celiac disease

In this epidemiological investigation, the prevalence of celiac disease was assessed in 2 neighboring regions (Karelia, part of Russia, and Finland). The populations in these regions are equally exposed to grain products and share partly the same ancestry, but live in completely different socioeconomic environments. Tissue transglutaminase antibodies and HLA-DQ alleles were screened from about 2000 schoolchildren from Karelia and 3600 children from Finland. Children with high transglutaminase antibodies were invited to small-bowel biopsy. Results. Transglutaminase antibodies were less frequent in Russian Karelia than in Finland (0.6% versus 1.4%). Celiac disease was confirmed by duodenal biopsy in four of the eight transglutaminase antibody-positive Karelian children, giving a prevalence of 1 in 496 compared to 1 in 107 children in Finland. The authors could therefore conclude that the prevalence of high transglutaminase antibodies and celiac disease is lower in Russian Karelia than in Finland. This may be associated with a protective environment characterized by inferior prosperity and standard of hygiene in Karelia.

This study is of paramount interest, as it supports, albeit indirectly, one of the prevailing theories concerning the unquestionable rise in the prevalence of celiac disease, as well as of other autoimmune conditions, in developing countries: the so-called hygiene hypothesis. Our society has become “too clean”, and infants are not exposed to the massive load of antigens (mostly from bacteria) that would have otherwise presented to their gastrointestinal tract. This in turn results in a lack of proper stimuli for the developing gut immune system, that therefore is skewed toward reacting with abnormal immune processes when presented with alimentary antigens, creating the conditions for the development of both allergic and autoimmune disorders.

Bottom line: One more way of preventing celiac disease therefore (since we don't want our babies to lick the floor....) may well be that of giving them throughout the first year of life or so the antigenic stimuli they lack by feeding them daily an adequate probiotic.

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