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Lactase persistence, milk intake and risk of ischemic heart disease and type-2 diabetes

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Previous meta-analyses have shown a reduced risk of ischemic heart disease and type-2 diabetes in individuals consuming dairy products vs. those who do not. We investigated the association between lactase persistence, milk intake and risk of ischemic heart disease and type-2 diabetes in three general population studies of approximately 100,000 adult Danes. We used the genetic variant *LCT-13910 C/T* (rs4988235) as proxy/surrogate for long-term milk intake in Mendelian randomization studies to assess indirectly whether there may be a causal association between milk intake and risk of ischemic heart disease and type-2 diabetes. The genetic variant *LCT-13910 C/T* is associated with down-regulation of the lactase enzyme activity in adults of European descent, referred to as lactase non-persistence (genotype *CC*) and lactase persistence (genotypes *TC* and *TT*) and affects the ability of adults to digest the lactose in milk. We found no association between milk intake and risk of ischemic heart disease or type-2 diabetes in our observational studies. We found a higher intake of milk among lactase persistent participants (*TC/TT*) than among lactase non-persistent (*CC*) corresponding to a difference of approximately 2 glasses per week. However, we found no association between the genetic variant *LCT-13910 C/T* (proxy/surrogate for milk intake) and risk of ischemic heart disease and type-2 diabetes. The result from our Mendelian randomization studies thus supports the findings from the observational studies. These are important results, as many people, in Denmark as well as worldwide, consume milk.

Biography

Christina Ellervik has completed her MD in 2002 and PhD in 2007 from University of Copenhagen, Denmark and was board certified in Clinical Biochemistry in 2009 from National Board of Health, Denmark. She was working as an Associate Professor at University of Copenhagen, Denmark from 2010 to 2015. She is currently a Visiting Scientist at Boston Children's Hospital and Department of Preventive Medicine, Brigham and Women's Hospital, Boston, MA, USA. She is also the Founder of the Danish General Suburban Population Study (N=21000) and Co-Editor for *Clinical Chemistry*. She has published more than 50 papers in reputed journals.

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