

## Milk Proteins and Diabetes

Insulin-dependent (type 1 or childhood-onset) diabetes is linked to consumption of dairy products.<sup>i</sup> A 2001 Finnish study of 3,000 infants with genetically increased risk for developing diabetes showed that early introduction of cow's milk increased susceptibility to type 1 diabetes.<sup>ii</sup> See also the Sergio Muntoni study stating the link among dietary items of animal origin, meat ( $r = 0.55$ ,  $P < 0.001$ ) and dairy products ( $r = 0.80$ ,  $P < 0.0001$ ) were predictors of elevated incidence rates of diabetes.<sup>iii</sup> There are many other studies with similar conclusions.<sup>iv</sup> In fact a 1994 study showed a relationship between type I diabetes and either cow's milk exposure or diminished breast-feeding and concluded that early cow's milk exposure may be an important determinant of subsequent type I diabetes and may increase the risk approximately 1.5 times.<sup>v</sup>

Cow's milk contains bovine insulin, which is similar to human insulin, and can cause immune reactions in humans. Some researchers propose that an immune reaction to bovine insulin may spread to react with the body's own insulin, and eventually, in combination with other factors such as viruses, could result in an autoimmune attack against the insulin-producing beta cells, resulting in type 1 diabetes.<sup>vi</sup> A recent study found that children who later developed type 1 diabetes had higher levels of cow's milk antibodies in infancy.<sup>vii</sup> Because of this autoimmune reaction, The American Academy of Pediatrics no longer recommends milk for infants under one year of age.<sup>viii</sup>

Dr. Colin Campbell reports in "The China Study" that type 1 diabetes is believed to be initiated when a baby is not nursed long enough and is fed cow's milk protein. During digestion, milk proteins are not fully digested, and amino acid fragments are left in the intestine and potentially absorbed into the blood. The immune system does its job and destroys the foreign protein. These fragments are thought to resemble the pancreas' beta-cells. The immune system is no longer able to distinguish pancreas cells from the proteins and begins to destroy the pancreatic cells, eliminating the child's ability to produce insulin. This is currently a hypothesis of a potential mechanism for the development of type 1 diabetes.<sup>ix</sup>

For people who have diabetes type 1, Dr. Ben Kim strongly recommends limiting or avoiding intake of cow's milk and products made with cow's milk, as we just don't know how much regenerative capacity each person's insulin-producing cells have.<sup>x</sup> Regular intake of dairy amounts to regular autoimmune activity against the insulin-producing cells in the pancreas, making it near impossible for a type 1 diabetic to experience improvement and less dependency on meds.<sup>xi</sup>

Dr. Colin Campbell in his book also sets forth his study conclusion that the consumption of animal protein, especially casein in cow's milk, results in higher concentrations of calcium in the blood. This inhibits the process by which the body activates vitamin D in the kidneys to a form that helps repress the development of autoimmune diseases such as type 1 diabetes. So casein, also found in countless products from granola bars to bread, decreases the human's ability to stop autoimmune diseases.<sup>xii</sup>

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<sup>i</sup> Saukkonen T, Virtanen SM, Karppinen M, et al. Significance of cow's milk protein antibodies as risk factor for childhood IDDM: interaction with dietary cow's milk intake and HLA-DQB1 genotype. Childhood Diabetes in Finland Study Group. *Diabetologia*. 1998;41:72-8.

<sup>ii</sup> Kimpimäki T, Erkkola M, Korhonen S, et al. Short-term exclusive breastfeeding predisposes young children with increased genetic risk of Type I diabetes to progressive beta-cell autoimmunity. *Diabetologia*. 2001;44:63-69.

<sup>iii</sup> <http://ajcn.nutrition.org/content/71/6/1525.abstract>

<sup>iv</sup> Early exposure to cows' milk raises risk of diabetes in high risk children at <http://www.bmj.com/content/321/7268/1040.5>.

<sup>v</sup> Gerstein HC study at National Institute of Health- <http://www.ncbi.nlm.nih.gov/pubmed/8112184?dopt=Abstract>

<sup>vi</sup> See the (Vaarala 2006) and Mäkelä et al. (2006) studies, links at <http://www.diabetesandenvironment.org/home/other/diet/wheat-dairy>

<sup>vii</sup> See the (Luopajarvi et al. 2008) study at <http://www.diabetesandenvironment.org/home/other/diet/wheat-dairy>

<sup>viii</sup> Journal of the American Medical Association"; Lack of Association Between Early Exposure to Cow's Milk Protein and Beta-Cell Autoimmunity; Jill M. Norris, PhD, et al; August 1996

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- ix The China Study"; T. Colin Campbell, PhD, et al.; 2006
- x <http://drbenkim.com/diabetes-type-1-dairy.htm>
- xi <http://drbenkim.com/diabetes-type-1-dairy.htm>
- xii The China Study"; T. Colin Campbell, PhD, et al.; 2006