

Still Drinking Milk?

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DR OCEANSIDEDR JESSICA WALKER, DC & DR JOSHUA WALKER, DC

Despite having a low Glycemic Index and Load, milk (even fermented milk such as yogurt) has been shown to elicit a very high insulin response. This has been shown repeatedly in intervention studies¹⁻⁶. You may ask, "What's wrong with causing this high insulin response?" Constantly increasing insulin levels may make the insulin receptors less sensitive (Type 2 Diabetes). This can lead to insulin resistance. This is the primary defect causing The Metabolic Syndrome, and can also be a driving force in Obesity. In addition, a chronic state of high insulin levels have also been associated certain cancers, acne and juvenile myopia, among other diseases.

Various studies have associated dairy consumption with Type 1 Diabetes⁷⁻¹⁴, especially when the initial exposure begins in the first months of life. In addition, studies have repeatedly shown a strong correlation between cow's milk consumption and Multiple Sclerosis¹⁵⁻¹⁹ as well as Rheumatoid Arthritis²⁰. What may be astonishing to some, case studies have shown that elimination of milk and dairy products from the diets of patients with RA improved symptoms, and the disease was markedly exacerbated on re-challenge. As if this weren't enough, cow's milk is also appears to have adverse effects in other auto-immune diseases, such as Crohn's disease²¹, Sjögren's syndrome²², IgA nephropathy²³⁻²⁵, and even Celiac Disease²⁶.

While milk does contain proteins, fats, lactose, vitamins and minerals, it also contains various growth-stimulating steroid and peptide hormones.

Insulin

Cow's milk, as well as human milk (and presumably milk from all mammals) contains insulin²⁷⁻³¹. Bovine insulin - BI (which differs from human insulin) survives pasteurization. We know this because immunity to this hormone is common in children who consume cow's milk or who have been exposed to infant formulas containing cow's milk³²⁻³⁵. Moreover, there is evidence that BI survives the human digestive processes and crosses the gut barrier intact. This is especially troubling for infants because they have higher intestinal permeability than older children and adults. Chronically high insulin levels have been associated with insulin resistance and Metabolic Syndrome.

IGF-1 (Insulin Growth Factor-1)

Cow's milk contains active IGF-1³⁶. While pasteurization and fermentation appear to reduce its content, cow's milk consumption, compared to various foods, is associated with higher plasma IGF-1 concentrations in humans (both children³⁷⁻⁴⁰ and adults⁴¹⁻⁴⁵). In addition, to containing active IGF-1, milks effect on insulin levels could lead to higher plasma IGF-1⁵⁸. IGF-1 is a hormone similar in molecular structure to insulin. It plays an important role in childhood growth and continues to have anabolic effects (increased body size) in adults. Several studies have shown that increased levels of IGF lead to an increased risk of cancer.⁵⁵



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Betacellulin

Betacellulin (BTC) is quite new in the realm of investigating issue with dairy. It belongs to the Epidermal Growth Factor (EGF) family of hormones, and it is found not only in cow's milk⁴⁶ and whey⁴⁶, but also in cheese⁴⁶, so it survives pasteurization and processing. Although no direct evidence exists yet, bovine milk contains peptidase inhibitors which prevent human gut enzymes from degrading EGF² (and most likely BTC). A low pH, such as may be found in the gut, does not impair or prevent BTC from binding its receptor and there are EGF receptors in the gut, through which BTC may enter circulation⁴⁷. BTC has a significant growth stimulatory effect on pancreatic cancer cells.⁵⁶

Steroid Hormones

Most milk for human consumption is obtained from cows in the latter half of pregnancy. This is when estrogen metabolites are greatly elevated⁴⁸⁻⁵⁰. The next question is "do the estrogens survive pasteurization?". US researchers have measured estrogen metabolites in various milks and found that buttermilk contains the highest total amount of estrogen metabolites, followed by skim milk, 2% milk and whole milk⁴⁸. This confirms the estrogens do in fact survive pasteurization and therefore are consumed when one drinks milk. Consuming milk and dairy products can account for 70–80% of the total estrogens consumed in the human diet⁴⁸⁻⁴⁹. Estrone sulphate has high oral bioactivity and is the most prevalent form of estrogen in cow's milk⁴⁸⁻⁴⁹. You should also know that estrone sulphate comprises 45% of the conjugated estrogens in Premarin and Prempro, the most frequently prescribed hormone replacement therapy for menopausal women⁴⁹. The evidence is accumulating concerning the adverse health effects associated with dairy consumption. Although evidence doesn't always show *how* dairy consumption can cause the adverse effects, dairy avoidance is highly recommended.

Calcium

Milk has a very high calcium/magnesium ratio and may contribute to some micronutrient imbalances. The role of calcium in preventing and treating osteoporosis is unclear — some populations with extremely low calcium intake also have extremely low rates of bone fracture, and others with high rates of calcium intake through milk and milk products have higher rates of bone fracture. Other factors, such as protein, salt and vitamin D intake, exercise and exposure to sunlight, can all influence bone mineralization, making calcium intake one factor among many in the development of osteoporosis.^{82, 83-85, 89}

Calcium intake in the U.S. is one of the highest in the world, yet the US has one of the highest rates of osteoporosis in the world. Bone mineral content is dependent upon calcium intake and calcium excretion. Most people focus upon the calcium intake side of the calcium balance equation; however few consider that calcium excretion is just as important.

Bone health is very dependent on dietary acid/base balance. Simply put, generally speaking a high protein diet is 'acidic' and a high fruit/vegetable diet would be considered "alkaline". When you consume food that's highly "acidic", the acid must be buffered by the alkaline stores in the body. Calcium salts in the bones represent the largest alkaline stores in the body. These calcium stores are depleted and eliminated in the urine when the diet produces a high acid load. Because the average American diet is loaded with acid producing grains, cheeses, salted processed foods, and fatty meats, it produces a net acid load and promotes bone de-mineralization. Don't get us wrong! You need protein! But you must consume plenty of green vegetables and fruits so your body doesn't use excess calcium from the bones to neutralize a highly acidic diet. In addition, consider your status of Vitamin D, Vitamin K and Magnesium levels. You may be missing something! Get tested to determine your status.

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1. Your individual health status and any required health care treatments can only be properly addressed by a professional healthcare provider of your choice. Remember: There is no adequate substitution for a personal consultation with your chosen health care provider. Therefore, we encourage you to make your own health care decisions based upon your research and in partnership with a qualified health care professional.

2. The Constitution guarantees you the right to be your own physician and to prescribe for your own health.

May 2010 Health Alert References:

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