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Are Dairy Products Good or Bad for Human Consumption?

We have all seen the advertisements and even government reports that consuming dairy products will have negative consequences on human health. Several media stories and organizations claim that dairy increases risk of chronic diseases including obesity, type 2 diabetes, cardiovascular disease, osteoporosis, and cancer. Therefore, there is an increasing skepticism among general consumers about the health consequences of eating dairy products. This is reflected in an increased consumption of plant-based drinks, for example, based on soy, rice, almond, or oats. I have taken the challenge in this article to review the science to look for evidence for or against these claims.

A large portion of the increase of type 2 diabetes is being driven by the obesity epidemic. There are many reasons in the U.S. for obesity that can be a future article. The research is clear in that children in the pre-school and school age there is no association between dairy intake and obesity. One recent meta-analysis found that children in a high dairy intake group were 38% less likely to be overweight or obese compared to those in a low dairy intake group. An increase in dairy intake of one serving per day was associated with a 0.65% lower body fat and a 13% lower risk of overweight or obesity. These research studies would indicate that dairy products actually help prevent obesity and subsequently reduce the incidence of type 2 diabetes. One could also easily make the case that milk is an essential component of a balanced diet. Milk and dairy products are good sources of high-quality readily digestible protein. Protein is important during weight loss and subsequent weight maintenance due to the high satiating effect that helps to prevent over-consumption of energy and thereby reduces body fat stores. Furthermore, dairy protein is a good source of essential amino acids for muscle protein synthesis and thus helps to maintain the metabolically active muscle mass during weight loss. Meta-analyses support that in adults, dairy products facilitate weight loss and improve body composition, that is, reduce body fat mass and preserve lean body mass during energy restriction. The research and actual data would indicate the dairy products can be an essential component of a diet with the objective of weight loss.

Several meta-analyses have been conducted on the relationship between intake of milk and dairy products and risk of developing cardiovascular disease. There was no consistent association between milk or dairy intake and cardiovascular disease, coronary heart disease or stroke in the meta-analysis that I reviewed. In a recent update there was a significant inverse association between milk intake and stroke, with a 7% lower risk of stroke per 200 ml milk/day. Accordingly, another analysis on dairy and cardiovascular disease found that intake of cheese and milk as well as yogurt was inversely associated with cardiovascular disease risk. A later meta-analysis found that dairy intake was associated with a 12% lower risk of cardiovascular disease, and 13% lower risk of stroke as compared to individuals with no or a low dairy consumption. Likewise, a recent and comprehensive meta-analysis, including 31 cohort studies, suggested that a high dairy intake was associated with a 9% lower risk of stroke, whereas no association

was found with total cardiovascular disease or coronary heart disease. Moreover, a high intake of cheese was associated with an 8% lower risk of coronary heart disease and a 13% lower risk of stroke. In addition, high plasma levels of the saturated fatty acid C 17:0, which primarily originates from dairy, were found to be associated with a reduced risk of coronary heart disease. The overall evidence indicates that a high intake of milk and dairy products does not increase the risk of cardiovascular disease. Specifically, there is an inverse association with risk of hypertension and stroke.

Osteoporosis has been described as a pediatric disease with geriatric consequences as low milk, and hence, low mineral intake during childhood and adolescence has been associated with significantly increased risk of osteoporotic fractures in middle and older age, particularly in women. A recent study indicated that in children and adolescents, except for those with very low calcium intakes, magnesium intake may be more important than calcium in relation to bone development. Calcium intake was found not to be significantly associated with total bone mineral content or density, whereas intake of magnesium and the amount absorbed were key predictors of bone mass. Milk and dairy products are important sources of magnesium and hence important supporters of bone growth during adolescence. A recent study documented that calcium and dairy are important contributors to bone health in adults. The present evidence suggests a positive effect of milk and dairy intake on bone health in childhood and adolescence, but with only limited evidence on bone health in adulthood and on the risk of bone fractures in older age.

In population studies, dairy has been associated positively and negatively with various cancers, but most have been based on limited evidence and very few findings remain repeatable. Dairy products contain a variety of compounds that could exert both positive and negative effects on cancer incidence in people. Colorectal cancer is the second most common cause of death among cancers in developed countries. Even though colorectal cancer generation is a complex process, experimental data indicate that milk and dairy products have a preventive role for these cancer types. In the 2011 WCRF report on colorectal cancer, it was concluded that consumption of milk and calcium probably reduces the risk of colorectal cancer. Dairy intake has consistently been associated with a decreased risk of colorectal cancer and colon cancer. A very recent study reported 26% lower colon cancer risk in males consuming 525 g of milk per day, whereas no association was found in females. Research with other types of cancer in both men and women has been inconclusive.

If we do the research, dairy is a healthy product that does not have the negative nutritional impacts that many have been led to believe. If we can share this truth with our neighbors, maybe they will consume more milk, which will ultimately increase our bottom line.