

Dairy Products and 10 False Promises

Milk is as pure white as fresh fallen snow and as familiar as a mother's warm touch. Common sense once led me to believe that if a single food, milk, could sustain a baby as the sole source of nutrients, then it must be "nature's most perfect food." Milk builds strong bones – I have learned over and over again – and since the hardest parts of my body are made mostly of calcium, this liquid food must be essential for my strength and stability. Milk is for life, because they tell me I never outgrow my need for milk. All these "facts" were the "truth" until I took the trouble to think a little about the subject on my own and to look into the scientific research. May I share with you some of my surprising discoveries?

Mother's Milk Can Be a Perfect Food

Within the same species – like cow for calf, cat for kitten, mare for foal – mother's milk can be the perfect food for the very young – not, after weaning, for older offspring, and certainly, not for the fully-grown. All mammals nourish their developing young with this ready-to-eat liquid synthesized by specialized sweat glands, called the mammary glands. This life-giving fluid contains the nutrients, antibodies and hormones that optimize the chances for growth and survival of the infant.

How essential is mother's milk? Human infants deprived of the advantages of human breast milk have:¹

- Two to four times the risk of sudden infant death syndrome (crib death),
- More than 60 times the risk of pneumonia in the first three months of life,²
- Ten times the risk of hospitalization during their first year
- Reduced intelligence as measured by IQ score

- Behavioral and speech difficulties
- An increased chance of suffering from infections, asthma, eczema, type I diabetes, and cancer (lymphoma and leukemia) in early life
- A greater risk of heart disease, obesity, diabetes, multiple sclerosis, food allergies, ulcerative colitis, and Crohn's disease later in life

No one argues against the fact that human breast milk is nature's most perfect food for human babies.

There is also no satisfactory substitute; therefore, every effort should be made to have every infant breast-fed exclusively for six months; and then, with the addition of healthy solid food choices, partially breast-fed until the age of two. (More information on this is found in *The McDougall Program for Women* book).

Mother's Milk is Species Specific

The nutritional needs of very young animals are met by the unique qualities of the milk of that particular species. The composition of this infant food has evolved over millions of years to be ideally suited for that animal. Let me explain in terms of one essential nutrient: protein.

The amount of protein in the milk of an animal varies to meet the growth demands of the very young – the faster an animal grows the greater the protein needs.

Comparisons of Milk of Different Species³

Animal	Protein*	Growth Rate(days)**
Human	1.2	180
Horse	2.4	60
Cow	3.3	47
Goat	4.1	19
Dog	7.1	8

Cat	9.5	7
Rat	11.8	4.5

* Grams per 100 milliliters (in terms of % of calories, cow's milk has four times more protein than human milk; 21% vs. 5%⁴)

** Time required to double birth weight

In addition to the much higher protein content, consider the other nutrient differences between cow's milk and human:

Nutrient	Human mg/100 Cal	Cow mg/100 Cal
Calcium	45	194
Phosphorus	18	152
Sodium	23	80
Potassium	72	246

Not surprisingly, since a calf doubles its birth weight nearly four times faster than a human infant does, the concentrations of protein and calcium are nearly four times greater. Rapid growth requires a much higher density of all kinds of nutrients.

Problems of Excess Nutrients

Most people think of health problems in terms of deficiencies of nutrients; this is the reason vitamin and mineral supplements are so popular. However, I do not see diseases of deficiency in my patients. For example, I see no vitamin C deficiency (scurvy), B1 deficiency (Beriberi), or protein deficiency in my patients. Rather, I see diseases of excess – such as excess dietary fat (obesity), cholesterol (heart disease), and salt (hypertension). Therefore, feeding an overly-concentrated food such as cow's milk to people (infants, children, and adults) promotes *diseases of excess*. (Some of you are still thinking cow's milk corrects calcium deficiency in people, preventing osteoporosis. Be patient, in a moment I will show you this is not true.)

Replacing human breast milk with cow's milk was once tried in the mid-1800s in the United States for emergency situations (such as when a mother died in childbirth). The result was a quick death for most of the infants, because the high protein content of the cow's milk forced fluid losses from the infant's kidneys, resulting in dehydration.⁵ Once this problem was recognized, then infant formulas were developed which added sugar to the cow's milk in order to reduce the protein concentration of the cow's milk and make it more resemble human milk. Some of you may be old enough to remember making or drinking infant formula made from Carnation evaporated cow's milk and Karo syrup (sugar).⁶ (This is a very unhealthy formula for infants – do not use this).

Consider the purpose of cow's milk. This is an ideal food to grow a calf from its 60-pound birthweight to a 600-pound young cow, ready to wean. This is a high “octane” fuel. One obvious consequence of people eating “calf food” is rapid fat gain – and dairy products are one of the leading contributors to the epidemic of excess body fat affecting 25% of children and 65% of adults in Western populations. Matters are made even worse when cow's milk is converted into even more concentrated products, like cheeses.

Cow's milk products have some important nutritional deficiencies.⁴ They are completely devoid of fiber; and contain insufficient amounts of vitamins, like C and niacin, and minerals, like iron, to meet the human body's needs.

False Promise #1: Milk Builds Strong Bones

If you ask people why they drink milk, they'll tell you it's for the calcium. Milk has lots of calcium and its supporters have “milked” that point for all it's worth. One of your first clues that cow's milk is not ideal for bone health comes from comparison of the calcium content of the two kinds of

milk (shown above). Cow's milk has more than four times the calcium content as human breast milk. If this exaggerated amount of calcium is not required during our greatest time of growth – babies double in weight in six months – then why should a concentration of calcium ideal for calves be required when we stop growing bones as adults? Without a doubt growing the hefty skeleton of a cow takes much more calcium than growing relatively small human bones.

Billions of people worldwide do not consume milk after weaning and they grow normal adult skeletons.⁷ For example, Bantu women in Africa consume no dairy products at all, and take in only about 250 to 400 mg of calcium each day through vegetable sources⁸ (about half the recommended daily intake in the U.S.). These women typically have ten children each and breast-feed each one for about 10 months. Yet despite a diet with no dairy products and the tremendous calcium drain of pregnancy and breast-feeding, osteoporosis is virtually unknown among these women.⁸ When rural African women migrate to cities or move to Western countries and adopt rich, high-calcium diets, osteoporosis becomes common.⁹ You will soon understand this is because their new diet becomes very high in animal protein.¹⁰

The world picture fails to support benefits claimed by the dairy industry. Countries that have the highest traditional consumption of dairy products (United States, Sweden, Israel, Finland, and the United Kingdom) also have the highest rates of osteoporosis-related hip fractures.¹¹ Places in the world with a traditionally low intake of dairy - Hong Kong, Singapore, countries in rural Africa - have the lowest incidence of osteoporosis.

If calcium is the key and milk is such a great source, why are there still 10 million Americans with osteoporosis? Long-standing recommendations to increase

calcium intakes have had little or no effect on the prevalence of osteoporosis or fractures in the United States.⁷

Worldwide, the incidence of osteoporosis correlates directly and strongly with animal protein intake. The highly acidic nature of animal protein is the major cause of bone loss.¹⁰ (You can read more about this at www.drmcDougall.com in the February 2003 McDougall Newsletter in the article, “Fish is not health food.”)

False Promise #2: Research Supports Dairy's Benefits

In September of 2000, two researchers compiled a review of the 57 studies on dairy products and bone health which had been published in the scientific literature since 1985. This review was published in the *American Journal of Clinical Nutrition*.¹² Not surprisingly, most of this research was financed by the dairy industry. The researchers reported that 53 percent of the studies showed no benefit from dairy. Then they excluded studies with weak evidence or poor techniques, which eliminated more than half of the studies. Of the 21 remaining studies, 57 percent again showed no benefit from dairy, and another 14 percent found that dairy products actually weaken bones. Think about that – this means that 71 percent of the scientifically sound research did not support the bone building benefits of dairy products and some showed actual harm.

Randomized controlled studies compare an experimental group with a control group and are considered the most valid form of scientific research. Of the seven randomized controlled studies which have been completed on the effects of dairy products on bone health, six were financed by the dairy industry. Only one looked at the benefits of fluid milk on the health of the women most likely to benefit: postmenopausal women.¹³ At the conclusion of this study, the women in the experimental

group, fed three eight-ounce glasses of skim milk daily for a year, were still losing more calcium from their bodies than they were absorbing (they were in negative calcium balance). Even though they consumed more than 1400 mg of calcium daily they still lost twice as much bone as the women in the control group, who were not getting the supplemental milk. Yet the industry continues to proclaim its pro-milk message from every rooftop.

False Promise #3: Dairy Foods Make Meeting Calcium Recommendations Easy

Recommended intakes of calcium to prevent osteoporosis are now so high that it is difficult, if not impossible, to make up practical diets that meet these recommendations.⁷ The National Institutes of Health Consensus Conference and The National Osteoporosis Foundation support a calcium intake of 1,500 milligrams per day for postmenopausal women not taking estrogen, and for adults 65 years or older. Assuming 300-400 mg of calcium comes from starches, vegetables, fruits, eggs, poultry, fish, and meats,⁴ then 1,200 mg would have to be obtained from dairy products daily. An average postmenopausal sedentary woman consumes 1500 calories a day. The amount of dairy required to meet her recommended calcium needs would be:⁴

* 6 ounces Cheddar cheese (which is 74% fat). This would mean that 46% of the calories in her diet must be from cheese; or

* One quart (32 ounces) of whole milk (which is 50% fat) which would mean 40% of her diet is from milk; or

* One quart (32 ounces) of non-fat milk (which is 3% fat) which would mean 23% of her diet would be non-fat milk.

The dairy industry is happy about these grand recommendations, but consuming that much cow's milk

product daily would replace too many other more filling (satisfying) and nutritious foods, and be unhealthy.

False Promise #4: We Require 1500 mg of Calcium a Day

Our requirements for calcium are far less than recommended. Scientific research demonstrates people need as little as 150 to 200 mg/day, even when pregnant or lactating.¹⁴

Consider the great variation in calcium intakes and recommendation:

Minimum Requirement Based on Research	150-200 mg
Calcium Intake for Underdeveloped Countries	300-500 mg
Calcium Intake for Average American	500-600 mg
World Health Organization Recommendation	400-500 mg
USA Food and Nutrition Board	1000-1300 mg
A National Institutes of Health	1000-1500 mg

Why the large variation in figures for calcium intakes and recommendations? The simple answer is the amount of calcium in the foods you eat has little effect on the quantity of calcium that is eventually taken into the body and on the health of your bones.¹⁵

Your intestine will always absorb sufficient calcium to meet your needs from the foods you eat. On a diet low in calcium, the efficiency of mineral absorption is increased, and the intestine takes in more calcium. On a high-calcium diet, more calcium is left in the intestine to be excreted, unused, in the feces.¹⁶ The intestine is so "smart" about calcium that it never fails to meet the body's needs. If you look over the last hundred years of scientific and nutritional literature you will find there is no evidence that dietary calcium deficiency occurs in humans, even though most people in the world don't drink milk after weaning – because of custom, lactose

intolerance, or simply because milk is not generally available in their part of the world.^{7,14, 17-20} This means there is no such disease as "dietary calcium deficiency" – think again if your mind drifts to osteoporosis – remember, populations with the lowest calcium intakes have the strongest bones; the least osteoporosis, worldwide.¹¹

False Promise #5: Milk is the Best Food for Bones

The truth is, milk is not the only source of calcium and it is not the best source of calcium. Consider that the original source of calcium is the ground. Calcium, and other minerals, are dissolved in watery solutions and absorbed by the roots of plants. These minerals are then incorporated in the roots, stems, leaves, flowers, and fruits of the plants. Humans can get plenty of calcium the same way it gets into cow's milk; from the plant foods they eat.

Inappropriate concern about calcium intake may divert attention and resources from more important nutritional issues. Calcium isn't the only nutrient that affects bone health. Studies have shown that potassium and magnesium may be even more critical in preventing bone loss, and that beta-carotene, phosphorus, and fiber play important roles as well.^{21,22} Plants are excellent sources of these nutrients. Milk provides no beta-carotene and no dietary fiber.⁴ Most important, bone health can be more about what you don't eat than what you do eat. Certain foods and substances – like animal proteins, cigarettes, soft drinks, caffeine, and salt – all affect your body's ability to absorb and use calcium vs. the loss of calcium from the body.^{23,24}

False Promise #6: Milk is Necessary for vitamin D

Some people will point out milk's vitamin D content as evidence of its critical place in a healthy diet. Well, that's a fabrication, too. Vitamin D is not really a vitamin; it's a hormone

that the body produces in reaction to sunlight. And it isn't present naturally in milk – it's added as a supplement at the dairy processing factory. This addition was supposedly done to prevent rickets, a painful, deforming bone condition that is caused by vitamin D deficiency. But rickets is really caused by limited exposure to sunlight, and the body levels of vitamin D are only slightly affected by dietary sources.^{25,26} The amount of sunlight we get during the summer holidays is reflected in our vitamin D levels all year long. More than 90% of the vitamin D in the body is produced by sunlight. Exposing the face and arms for as little as 15 minutes 3 times a week provides adequate amounts of vitamin D. However, this activity is modified by the use of sunscreens and by skin pigmentation.²⁷ So nearly everyone gets enough vitamin D every day just through normal activities – we don't need to drink milk to get it. Plus, vitamin D is fat-soluble, which means it is stored in our body fat for long periods of time – and most importantly, for periods of low sun exposure in the winter months.

Myth #7: Milk Cures Hypertension

A grant from the National Dairy Council supported a large review of the influence of dietary (dairy products) and nondietary (supplements) calcium supplementation on blood pressure and came to the conclusion “that calcium supplementation leads to a small reduction in systolic (top number) and diastolic (bottom number) blood pressure.”²⁸ Of the 67 studies published, 47 proved eligible for review. The actual decrease in blood pressure was paltry: Decreases of 1.44 mmHg systolic and 0.84 mmHg diastolic. The mechanism causing this almost undetectable reduction in blood pressure from consuming calcium is unknown.

By comparison, our results from the McDougall residential center show a 23/14 mmHg decrease in blood pressure in people with high blood

pressure (150/90 mmHg or greater) in less than 10 days; and almost all of these people were taken off all of their blood pressure medication during the 10 days.

False Promise #8: Milk Prevents Colon Cancer

Colon cancer is one of the most common cancers in the United States and other places where people eat the Western diet. There is general agreement in the scientific community that this form of cancer is due to the high-meat, high-fat, low-dietary fiber, low-vegetable diet that people eat.^{29,30} However, among those unfortunate people who eat this unhealthy diet, those who have a higher calcium intake also have a lower risk of colon cancer. The reason for this may be that calcium in the colon binds and neutralizes cancer-causing substances, such as fats and bile acids, which are produced by the Western diet.³¹

The recommendation to increase your calcium intake, rather than change to a healthy diet, makes good economic sense for the dairy and calcium supplement industry. However, as a sensible person, you would come to the conclusion that stopping the cause of colon cancer – the Western diet – should be the focus of your attention.

False Promise #9: Low-fat Dairy Products are Health Food

Low-fat or skim milk and dairy products are widely consumed today, but in some ways they may be even more of a health hazard than the high-fat versions. The process of skimming the fat from the milk increases the relative proportions of protein and lactose.

Making Low-fat Milk

When the fat is removed from whole milk to make low-fat and skim milk the relative amounts of proteins and carbohydrates (sugars) are increased.⁴

	Whole	Low-fat	Skim
Fat	49%	31%	2%
Protein	21%	28%	41%
CHO	30%	41%	57%

CHO = carbohydrate = lactose = milk sugar

Protein causes calcium loss^{10,11} and is the #1 source of food allergies in people; and the milk sugar (lactose) results in lactose intolerance (diarrhea, stomach cramps and gas). Although skim milk may have less fat, it is still devoid of fiber; and contains insufficient amounts of vitamins, like C and niacin, and minerals, like iron, to meet the human body's needs.⁴

False Promise #10: Milk Is As Pure White As Fresh Fallen Snow

Milk may be white but it is far from pure. Unfortunately, some of that white comes from white blood cells – commonly referred to as “pus cells” – which are cells produced by the cow's immune system to fight off infections, especially those of bacterial origin, such as mastitis. The dairy industry calls these *somatic cells* and refers to their presence as the *somatic cell count* (SCC). The SCC is the number of (mostly) white blood cells per milliliter (cells/ml) of milk. (There are 20 drops per milliliter; 30 milliliters to an ounce)

Beginning July 1, 1993, the SCC level in milk must be less than 750,000 SCC to comply with the State and Federal Pasteurized Milk Ordinance.³² This means one 8 ounce glass of milk (240 milliliters) can contain 180 million white blood cells and still be fine for you to drink and feed to your family. In a recent study of milk sold in New York State the average SCC was 363,000 cells/ml.³³ These white blood cells were produced by the cow to fight off the 24,400 bacteria/ml found in this milk.

I realize this is a disgusting way to end this article, but I must prepare you for next month's article concerning the health risks you take for yourself and your family by consuming dairy products, such as obesity, heart disease, cancer, type-1 diabetes, food allergies, and the potential for infections with AIDS and leukemia viruses found in almost all vats of milk in the United States.

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