HOW IMPORTANT IS MILK?

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WELLNESS
7 Ways Milk and Dairy Products Are Making You Sick
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Today, Americans consume an enormous amount of dairy. The intake of the average American is estimated to be *over 600 pounds* of dairy products per year.[1]
Dairy foods (including cow's milk) have not been part of the diet of adults for the vast majority of human evolution.[2] We've only been consuming these foods for about 7,500 years,[3] compared to the roughly 200,000 years humans have been around (with our basic biochemical functionality evolving still a few million years before that).[4]
Intensive and successful marketing by the dairy industry (including slogans like "Milk – It Does a Body Good" and "Got Milk") have reinforced a broadly ingrained belief that dairy is good for our health. But is it, really?
Dairy has come under fire and scrutiny from nutritional experts, scientists and physicians for its associations with a number of serious health issues.

1. Even Organic Milk Usually Contains Hormones

Dairy is a significant source of female hormone exposure.[5] Commercial cow's milk contains large amounts of estrogen and progesterone, which is a serious concern. This is further exacerbated by modern dairy cows being genetically altered to continuously produce milk – even throughout their repeated pregnancies.
Even milk products labeled "organic" or "no hormones added" usually contain high levels of these problematic hormones, which are *naturally* produced by cows (even if those cows have not been given any *additional* hormones for purposes of the product label).
In both adults and children, milk consumption has resulted in markedly increased levels of estradiol and progesterone in blood and urine, and dairy consumption in general has been associated with increased levels of circulating estradiol.
The data show that men who drink milk will absorb the estrogens in the milk, which has been found to result in significantly decreased testosterone production/levels.
Pediatricians have expressed concern regarding childhood exposure to the exogenous estrogens in commercial milk, given studies showing that early

sexual maturation in prepubescent children can be caused by the "ordinary intake of cow milk."

A broad array of multi-centered, peer-reviewed studies has shown that dairy consumption is one of the most concerning and consistent risk factors for hormone-dependent malignant diseases, including ovarian, uterine, breast, testicular and prostate cancers.

Also, while there is a culturally popular idea that soy foods may cause feminizing effects, several studies have found that isoflavones (the plant-derived compounds in soybeans with estrogenic activity) do not exert feminizing effects on men, even at high consumption levels. Other studies have found that soy food consumption is even protective against breast cancer. I think we should be far more concerned about the high levels of *real* female sex hormones found in dairy, the consumption of which results in measurably higher circulating levels of these problematic hormones.

2. Casein From Dairy = Increased Risk of Cancer Development

Casein is the main protein in dairy, and studies have shown that it facilitates the growth and development of cancer. In fact, some studies even found that cancer development could be controlled more by casein levels in diet than by exposure to the underlying carcinogen.

Insulin-like growth factor-1 (or IGF-1), a hormone that promotes cell growth and division in both normal and cancer cells, is thought to be one of the mechanisms responsible for this association. IGF-1 appears to be nutritionally regulated, and animal protein consumption (including casein from dairy foods) leads to higher circulating levels of this cancer-promoting hormone. For this reason, consuming casein from dairy (as well as animal protein in general) is associated with increased risk of cancer development and proliferation.

3. Higher Risk of Type 1 Diabetes and Multiple Sclerosis

Our immune system normally protects us from microbes and other harmful substances. But if it loses its ability to recognize and distinguish harmful substances from normal tissues and cells, it can instead mount attacks against our own bodies.

These "auto-attacks" can be triggered by exposure to foreign peptides (including animal protein fragments found in dairy), which have similarities to components in the human body. This can result in our immune system becoming "confused" and misidentifying tissues in our body as "foreign" and thus in need of being attacked and destroyed.

Dairy is associated with increased risk of several immune-related disorders (from allergic conditions to autoimmune diseases), many being life-changing and difficult to treat. The associations with type 1 diabetes and multiple sclerosis are particularly concerning:

Type 1 Diabetes. In type 1 diabetes (also called juvenile diabetes or insulin-dependent diabetes mellitus (IDDM)), the immune system attacks the pancreas, resulting in the body no longer being able to produce insulin to regulate glucose.

Multiple large-scale studies have identified an association between cow's milk consumption and increased prevalence of type 1 diabetes. One such study found that "cows' milk may contain a triggering factor for the development of IDDM," and another found that "[e]arly cow's milk exposure may be an important determinant of subsequent type 1 diabetes and may increase the risk approximately 1.5 times."

Multiple Sclerosis. In multiple sclerosis (MS), the immune system attacks the insulating sheath of our own nervous system, resulting in a variety of difficult-to-treat and unpredictable neurologic problems. As with type 1 diabetes, numerous studies have reported that cow's milk consumption may be a significant risk factor for developing MS.

4. Even Pasteurized Milk Contains Microorganisms

Milk and other dairy products are important vehicles for foodborne pathogens due to a variety of microorganisms they harbor. Even with modern sanitation requirements, including pasteurization and curing, outbreaks still occur, resulting in severe and sometimes even fatal outcomes.

Salmonella, *Listeria*, and *E. coli* are some of the more common foodborne outbreaks associated with dairy.[35] Just last year, for example, three people tragically died from Listeria infections linked to Blue Bell Ice Cream (prompting a large-scale recall by Blue Bell Creameries).

Not even our food regulatory agencies expect milk will be sterile after pasteurization; the heating process is done merely to reduce (not eliminate) the amount of microorganisms.

5. Dairy Products Accumulate Pesticides in High Concentrations

Exposure to organochlorine pesticides (OCP) is another problem associated with dairy. While pesticide contamination affects water and agricultural lands generally, dairy products have a greater capacity to accumulate these pesticides in higher concentrations, due in part to their high fat content.

Even pesticides that have long been banned still show up when dairy products are tested. Some OCPs (like DDT, which was widely used in the past and now banned as a human carcinogen) still persist in the environment and can more easily accumulate in animal food products, including dairy.

In India, milk and other dairy products (like cheese and butter) have been reported as the major sources of dietary DDT and hexachlorocyclohexane (HCH), and routine monitoring detected that milk from dairy farms in Italy's Sacco River Valley had levels of ß-HCH twenty times higher than the legal limit.

6. Increased Exposure to Antibiotic Residue

The largest use of antibiotics worldwide is for livestock. Much of that use is for non-therapeutic purposes, such as infection prevention and to promote feed efficiency and animal growth.

Apart from the dire warnings from scientists that agricultural overuse is leading to antibiotic resistance, another problem is that antibiotic residues persist in milk and other dairy products despite protocols aimed to minimize this.
It is difficult to prevent and control these antibiotic residues because milk from individual cows and farms is usually pooled together, and the administration, handling and record-keeping of animal drug use can vary significantly from one dairy operation to another.
The resulting low-dose antibiotic exposure can lead to a variety of problems, from developing antibiotic resistance to allergic reactions to experiencing side-effects of the medication to which a person is exposed.

7. Dairy Can Lead to Bone Problems Too

This may come as a surprise to many, but dairy does not appear to be good for bone health, either.
Not only has the body of scientific evidence been found inadequate to support the idea that dairy consumption promotes bone health, but numerous large-scale studies have found that consuming dairy may actually be detrimental to bone health. In fact, there is substantial data linking higher milk intake with significantly increased risk of bone fractures.
There are several mechanisms thought to be responsible for the pathophysiology. One is dairy's high calcium content, which can cause vitamin D dysregulation and therefore disrupt bone homeostasis. Another is that the high animal protein content of dairy can induce acidosis from its high proportion of sulfur-containing amino acids, which in turn leads to the body compensating by leaching calcium from the bones to help neutralize the increased acidity. Over time, all of this can have a detrimental effect on bone health.
While several other factors, such as physical activity, can affect bone health, it's significant to note that the U.S. has one of the highest rates of hip fractures in the world, despite our high milk intake. By contrast, in countries like Japan and Peru, where average daily calcium intake is as low as 300 milligrams per day (less than a third of the U.S. daily recommendation for adults), the incidence of bone fractures is actually quite low.
Fortunately, calcium is abundant in plant foods, including leafy green vegetables, legumes and seeds, often with higher absorption rates than the calcium in dairy—and of course without all of dairy's associated health problems.
(**RELATED:** Getting Clarity About Calcium)

CONCLUSIONS

Each mammalian species produces milk for its own babies, and the content of proteins, fats, carbohydrates and minerals is specific to provide optimum nutrition for a baby of that particular species. The milk from an elephant, tiger, sea lion and cow are each different from one another, and they are all different from human milk.

When we think about it, the health problems associated with consuming the milk and dairy products of other species should not come as any surprise. No other species consumes milk regularly past the weaning period and certainly not from another species – and, as mentioned above, we humans have also not being doing so for the vast majority of our own evolutionary history. Fortunately, with plant milks, such as soy, almond and rice now available, as well as delicious plant-based versions of other dairy products, it's never been easier or more convenient to completely avoid dairy.

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The need for Calcium

The subject of calcium is a hotly debated one. ***One of the biggest controversies is whether or not we can really get enough calcium following a whole-food, plant-based diet that excludes dairy.***

Here are some of the more common questions:

- How much calcium do I really need?
- Can I really get enough calcium eating just plants?
- What is calcium absorption, and why is it important?
- What factors (or foods) make me lose calcium?
- Can't I just fix everything by taking calcium supplements?

To help clarify this important topic, let's tackle each of these calcium questions one at a time:

How Much Calcium Do I Really Need?

The current daily recommended allowance for calcium for most adults is 1,000 to 1,200 milligrams. However, plant-based health experts believe these requirements are high for a simple reason: a diet high in animal protein has a high excretion rate, which means you are forced to consume more calcium to make up for the inherent calcium excretion. When

following a whole-food, plant-based diet (that is also low in sodium and caffeine), calcium excretion rates are much lower, which logically means that a plant-based eater's calcium intake can also be much lower.

How much lower? A study published by the *American Journal of Clinical Nutrition* showed that "individuals with low, but nutritionally adequate, intakes of sodium and protein may have calcium requirements as low as 500–741mg/day."

Can I Really Get Enough Calcium Eating Just Plants?

Like iron, magnesium, and copper, calcium is a mineral. It is found in the soil, where it is absorbed into the roots of plants. Animals get their calcium by consuming these calcium-rich plants. So even though we are all conditioned to believe that calcium comes from milk and dairy products, the real source of calcium richness is the earth. No wonder that a whole-food, plant-based diet has plenty of calcium.

A varied diet of starches, vegetables, and fruits (*without* dairy) has sufficient calcium to meet our needs. If you eat a relatively low-calcium diet, your body will adjust. Studies show that when fed a relatively low-calcium diet (415 mg/day), our intestines become more efficient at absorbing calcium, and our kidneys conserve it better. Equally, when overfed with calcium (1,740 mg/day) our bodies adjust as well: our intestines block the calcium absorption, while our kidneys eliminate more. This is an example of how our bodies protect us: if not eliminated, the excess calcium would get deposited in our soft tissues (heart, kidneys, muscles, and skin), making us vulnerable to illness and even death … a true testament to how smart our bodies really are!

So your needs are met. *Always*.

At the end of the day, the "disease" of calcium deficiency from a calorically sufficient *natural whole-food plant-based* diet is nonexistent.

How Much of the Calcium I Eat Is Actually Absorbed?

The amount of calcium we ingest may be less important than how much we actually absorb. For example, 1 cup of milk contains about 300 mg of calcium. But only about 30% of it (90 mg) is actually absorbable, and thus ***bioavailable*** (available to our bodies).

Let's compare the calcium content and absorption rate of cow's milk versus some plant-based alternatives:

- The calcium in firm tofu has about the same absorption rate as dairy products, hovering around 31%. And while ½ cup of tofu yields the same amount of calcium as 1 cup of milk (300 mg), it contains more protein, far less saturated fat, and about a tenth of the sodium.
- Calcium-intense vegetables like Chinese mustard greens enjoy absorption rates of around 40%. In terms of calcium content, 1/2 cup of these cooked greens will give you as much calcium as one glass of milk.
- One cup of bok choy, 1½ cups of kale, or 2 cups of broccoli contain the same amount of calcium as a glass of milk, due to their much better calcium absorption rate (in the 50–60% range!)

What Factors (or Foods) Make Me Lose Calcium?

Many factors contribute to calcium loss, from age (older people lose more calcium) to vitamin D status (people who test low for vitamin D3 tend to lose more calcium) to the concurrent contents of your intestines. Sodium, protein, and caffeine play primary roles in calcium loss.

- **Sodium**: Sodium is our biggest enemy when it comes to calcium loss. For each 1000 mg of sodium (2,500 mg of table salt) excreted by the kidneys, about 40–60 mg of calcium goes with it.
- **Protein**: As the intake of dietary protein increases, so does the urinary elimination of calcium. So when you double your protein, your calcium loss through urination increases by 50%.

The propensity of protein to cause calcium loss is particularly interesting when it comes to dairy products, which have always been considered as one of the best calcium sources. You lose 1/3 of the calcium you get from milk and over 2/3 of the calcium you get from cheeses.

- **Caffeine:** Caffeine also seriously affects the body's ability to retain calcium, as it acts as a diuretic and pulls calcium out from the body.

In stark contrast, many leafy green vegetables provide lots of easily absorbed calcium without causing calcium loss!

Can't I Just Fix Everything by Taking Calcium Supplements?

Even though studies show that supplementing with calcium can reduce the risk of fractures by 10% (hip fractures excluded), doing so can also increase our chances of cardiovascular disease and strokes, cause kidney stones, and induce gastrointestinal distress.

According to the results of a recent randomized, double-blind, placebo-controlled study of over 36,000 post-menopausal women, "Calcium supplements with or without vitamin D are associated with an increased risk for MI (myocardial infarction) and stroke, and this risk appears to apply across subgroups defined by important baseline characteristics. These findings suggest that targeted prescription of calcium supplements to specific population subgroups, such as younger people and those with low dietary calcium intake, should not be endorsed."

But If We Don't Drink Milk or Take Calcium Supplements—What Happens to Our Bones?

A recent study addressed this very important question, comparing the bone mineral density of long-term vegans versus omnivores. The results were astounding; even though the vegans have vastly lower dietary calcium and protein intakes, they enjoyed the exact same bone density as their meat-eating counterparts.

In conclusion, you don't need dairy or supplements to get enough calcium (in fact they may be a hindrance rather than a help). As long as you eat a calorically sufficient whole-food,

plant-based diet that drastically reduces or completely eliminates added sodium, you'll get all the calcium you need.

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