MERCOLA
Take Control of Your Health

Cheese, the Ultimate Superfood

Analysis by Ashley Armstrong | August 06, 2024

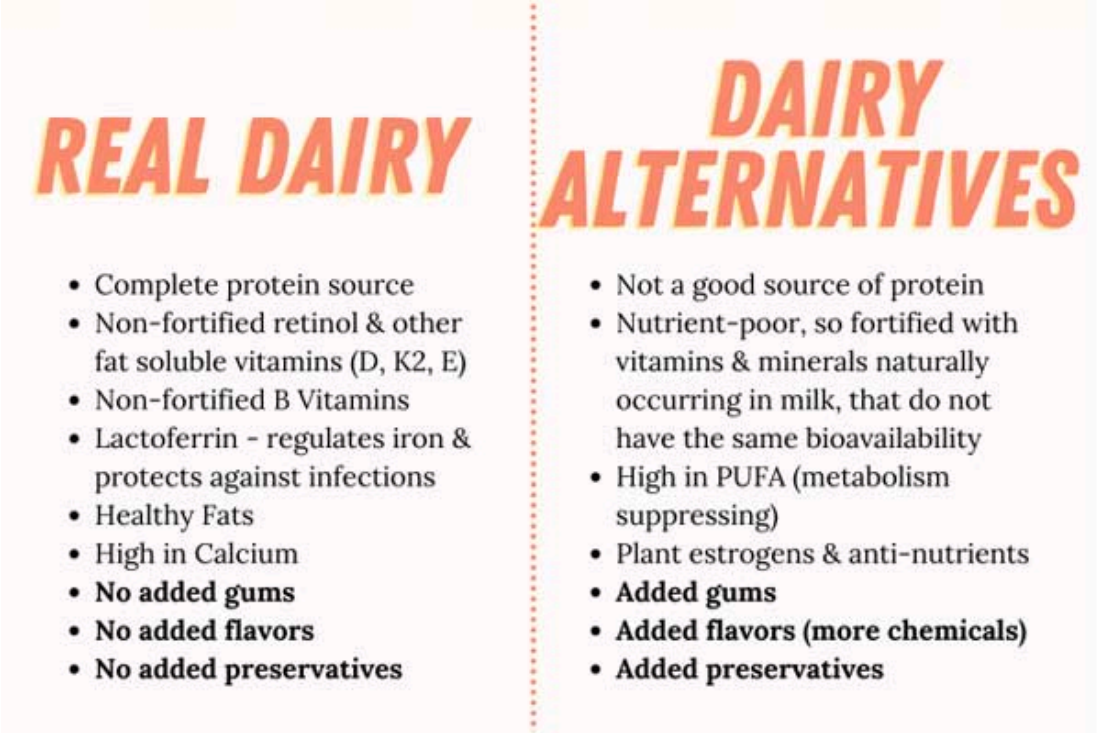
STORY AT-A-GLANCE

- Cheese is a nutrient-dense superfood that has been consumed for over 7,000 years, offering numerous health benefits beyond just taste
- Raw cheese is rich in lactoferrin, a multifunctional protein with antimicrobial, anti-inflammatory, and gut health-promoting properties. It's also an excellent source of dietary calcium, which is crucial for bone health and may help prevent soft tissue calcification when consumed adequately, and tyrosine, an amino acid that supports neurotransmitter production, stress management, and thyroid function
- Contrary to popular belief, the saturated fats in cheese can support metabolism and provide health benefits, including newly discovered odd-chain fatty acids
- Hard cheeses are one of the best sources of Vitamin K2, which directs calcium to bones and teeth while preventing arterial calcification
- When choosing cheese, opt for raw, grass fed varieties made with animal rennet and from A2 milk sources for optimal nutritional benefits and digestibility

Let's chat about something that's been gracing our tables for over 7,000 years — cheese.[1] Now, I know what you're thinking. "Cheese? Isn't that just a guilty pleasure?" Well, buckle up, because we're about to dive into why cheese isn't just delicious, it's a bonafide superfood that deserves a prime spot in your diet.

Before we get started, let's address the elephant in the room — dairy-free alternatives. Sure, they might mimic the texture of cheese, but nutritionally? They don't hold a candle

to the real deal. So, let's explore why cheese is truly a superfood and why you might want to consider making it a regular part of your diet.



What makes cheese a superfood? Well, it's packed with an impressive array of nutrients that support overall health. We're talking about:

1. Lactoferrin
2. Calcium
3. Healthy fats
4. Vitamin K2
5. Tyrosine
6. Beneficial bacteria
7. Bioavailable protein
8. And let's not forget — deliciousness!

Let's break these down one by one.

Raw Cheese: A Lactoferrin Powerhouse

First up on our list is lactoferrin. "Lacto-what?" you might ask. Lactoferrin is a powerful protein found in milk that's particularly abundant in raw cheese. And let me tell you, this little protein packs a serious punch when it comes to health benefits.

Lactoferrin is like the Swiss Army knife of proteins. It has antimicrobial properties that can help fight off overgrowths of bacteria, viruses, fungi, and even parasites. Lactoferrin binds to iron, which is an essential nutrient for microbial growth.

By hoarding all the iron, lactoferrin creates an environment where those pesky microbes can't thrive. It's been shown to inhibit the growth of pathogenic bacteria like E. coli,

Salmonella, Listeria, and Staphylococcus aureus[2] helping maintain a natural balance in the body.

Lactoferrin is also a champion when it comes to managing inflammation in your body. It blocks proinflammatory cytokines (those are molecules that promote inflammation) and boosts anti-inflammatory ones.[3]

Now, let's talk about the gut health benefits. Well, lactoferrin is like a personal trainer for your gut. It promotes the growth of good bacteria while keeping the troublemakers in check. It also helps maintain the integrity of your gut lining,[4] by binding to those nasty endotoxins and preventing them from leaking into your bloodstream and lymph system.[5]

Lactoferrin is also a bone health superstar. It plays a crucial role in bone remodeling by regulating various cells involved in bone formation and breakdown. Some studies have even shown that lactoferrin supplementation can promote bone fracture repair and potentially reverse osteoporosis in animal models.[6]

And for anyone looking for a brain boost — lactoferrin has been shown to improve cognitive function. It does this by reducing inflammation in the brain, repairing the gut barrier, and increasing beneficial bacteria. All of this leads to an improved gut-brain axis, which is crucial for cognitive health.[7]

Last but not least, lactoferrin has shown some promising anticancer activity,[8] and might even be helpful as a supportive treatment for conditions like obesity, diabetes, and cardiovascular diseases.[9]

Cheese: A Healthy Fat Powerhouse

Now, let's talk about dietary fats. Cheese is rich in saturated fat, which, contrary to popular belief, actually supports your metabolism. And cheese has a pretty impressive fatty acid profile: 64% saturated fat, 28% monounsaturated fat (MUFA), and only 2.5% polyunsaturated fat (PUFA). While mainstream nutrition advice often demonizes saturated fat, most research shows health benefits when consuming dairy fats.[10]

One particular type of saturated fat found in cheese is stearic acid, which can improve mitochondrial health,[11] reduce estrogen overload and hormonal imbalance,[12] and amongst numerous other health benefits.

Cheese is also a source of some newly discovered healthy fats called odd-chain fatty acids, specifically C15:0 and C17:0. Recent research suggests that these fatty acids might have some pretty impressive health effects.[13]

Studies have shown that higher levels of these odd-chain fatty acids are associated with a decreased risk of cardiovascular diseases. People with higher levels of C15:0 and C17:0 in their blood have been found to have a lower risk of heart attacks and coronary heart disease.[14,15]

The EPIC-InterAct study found an inverse relationship between these odd-chain fatty acids and diabetes risk, suggesting they might have broader metabolic benefits.[16] They've also shown anti-inflammatory capabilities in animal and lab studies.[17]

Calcium: Not Just for Your Bones

Now, let's talk about calcium. I know, you're probably thinking, "Calcium? That's old news." But hear me out, because there's more to the calcium story than you might think.

You might have heard that too much calcium can lead to hardened deposits in your soft tissues and arteries (calcification). But here's the kicker: it's not dietary calcium that's the problem. In fact, it's quite the opposite.

> *"It is extremely important to realize that calcium deposits in soft tissues become worse when the diet is low in calcium ... It is counterproductive to eat a calcium-deficient diet, since that leads to an increase in intracellular calcium at the expense of calcium from the bones ...*
>
> *There are several such paradoxes: As bones lose calcium, the soft tissues calcify; when less calcium is eaten, blood calcium may increase, along with calcium in many organs and tissues; if an organ such as the heart is deprived of*

> *calcium for a short time, its cells lose their ability to respond normally to calcium, and instead they take up a large, toxic amount of calcium.*" — Dr. Ray Peat

In other words, when you don't get enough calcium from your diet, your body starts to "steal" it from your bones, which can lead to all sorts of problems. And guess what? Cheese is one of the best sources of dietary calcium out there!

Unfortunately, dietary calcium deficiency is a big problem worldwide — leading to bone problems and increased calcification of soft tissues.[18]

But calcium isn't just about preventing problems. It's also about promoting good dental health. Regular cheese consumption can aid in the remineralization process of your teeth, making them more resistant to decay and erosion.[19] It can even reduce your chances of developing cavities.[20]

The Vitamin K2 Connection

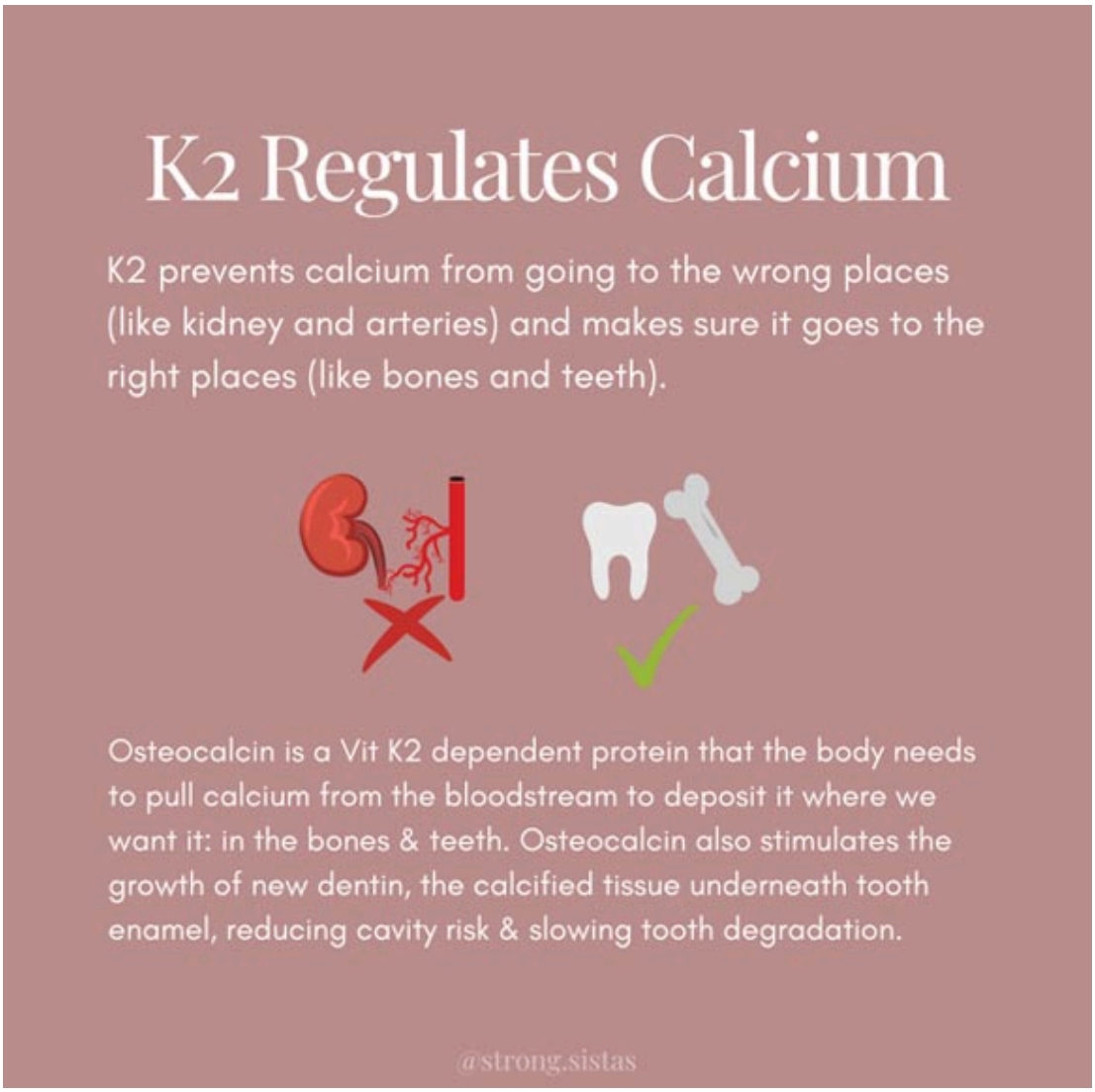
Hard cheeses are one of the best sources of this vital nutrient, and trust me, you want to make sure you're getting enough of it!

Vitamin K2 is like a traffic cop for calcium in your body. It makes sure calcium goes where it's supposed to (like your bones and teeth) and doesn't end up where it shouldn't (like your arteries and kidneys). This is crucial for both bone health and cardiovascular health.

When it comes to bone health, Vitamin K2 activates a protein called osteocalcin, which helps bind calcium to your bone matrix. This improves bone mineral density and strength, potentially reducing your risk of osteoporosis and fractures.

But the benefits of K2 don't stop with your bones. By directing calcium to your bones, K2 also helps prevent it from building up in your arteries. This can reduce arterial stiffness and lower your risk of cardiovascular diseases.[21]

In fact, one study followed nearly 5,000 people from 1990 to 2000. They found that people who had the highest intakes of vitamin K2 had the lowest risk of arterial calcification and were the least likely to suffer or die from a heart attack.[22]



Vitamin K2 also plays a role in the regulation of blood clotting, which is crucial for wound healing and preventing excessive bleeding.[23]

And if that wasn't enough, it can even help with energy production by supporting mitochondrial function and energy production. "Mitochondrial dysfunction was rescued by vitamin K(2) that serves as a mitochondrial electron carrier, helping to maintain normal ATP production."[24]

The Power of Tyrosine

Now, let's talk about an often-overlooked nutrient that cheese is rich in: tyrosine. This amino acid is a bit of an unsung hero when it comes to your health.

Tyrosine is a precursor for important neurotransmitters like dopamine, norepinephrine, and epinephrine. These neurotransmitters are like the chemical messengers in your brain, regulating mood, supporting stress response, and boosting cognitive function. These neurotransmitters are critical for the body's stress response and energy metabolism.

Some studies suggest that higher tyrosine intake correlates with better cognitive performance, regardless of age,[25] and it plays a role in mood regulation. As a precursor to dopamine, tyrosine may help support feelings of pleasure, reward, and motivation.

Tyrosine is also a team player when it comes to stress management.[26] It may help individuals experiencing stressful situations by replenishing neurotransmitters involved in stress response, potentially promoting a more balanced mood and emotional well-being.

Last but not least, tyrosine plays a role in thyroid function. It's a precursor for thyroid hormone synthesis, which means consuming tyrosine-rich foods like cheese may help support optimal thyroid function. And since your thyroid plays a crucial role in metabolism, tyrosine is important for optimal metabolic function.

Cheese: A Probiotic Powerhouse

You might associate probiotics with yogurt or supplements, but did you know that cheese, especially raw cheese, is also a great source of these beneficial bacteria?

The beneficial bacteria in raw dairy products have been shown to transfer to your gut microbiome,[27] supporting digestive health and microbiome balance. It's worth noting that these probiotic benefits are most pronounced in raw cheese, as pasteurization can destroy many of these beneficial bacteria.[28]

Cheese consumption has been associated with increased levels of short-chain fatty acids (SCFAs) in the gut, possibly induced by stimulation of beneficial gut microbiota.[29] SCFAs are like superfood for the cells lining your colon, helping maintain proper structure and function of your gut lining.

The Importance of Sourcing

Now that we've covered some of the amazing health benefits of cheese, let's talk about how to make sure you're getting the best cheese possible. Because let's face it, not all cheese is created equal.

When it comes to cheese sourcing, there are four main factors to consider: whether it's raw or pasteurized, A1 vs. A2, the type of rennet used, and what the animals ate and how they were raised.

1. **Raw vs. pasteurized —** Well first, it tastes better! Many people prefer the flavor and texture of raw cheese, which can be more complex and nuanced due to the presence of natural bacteria and enzymes. Raw cheese often has a richer, more varied taste and may develop unique characteristics depending on the aging process.

   But the benefits of raw cheese go beyond just taste. Raw cheese contains live probiotic bacteria that can support digestive health and immune function. It also contains natural enzymes that may make it easier to digest.

   Raw cheese also has higher levels of lactoferrin, since pasteurization significantly reduces lactoferrin levels.[30] And if you're getting your cheese from grass fed cows, raw cheese will have a better fatty acid balance, with less omega-6s and higher levels of conjugated linoleic acid (CLA), which has anti-inflammatory and metabolism-boosting properties.

2. **A1 vs. A2 —** Milk contains protein, and two of the main types include casein (~80% of the protein) and whey (~20%). In cheese, most of the whey is removed and the predominant protein is casein.

The two main subtypes of casein include A1 and A2, and there is quite a bit of scientific data documenting that A2 may be easier for you to digest.[31,32]

The ONLY difference between A1 and A2 molecules is a single amino acid at position 67. But this change can make a huge difference for some people, as it changes the behavior of this protein during digestion.

Many commercial cow breeds will contain more A1. And then dairy goats, sheep, some cow breeds (need testing), buffalo and human breast milk contain exclusively A2. So if you have trouble with conventional cheese, sourcing an A2 cheese source (either tested A2 cow cheese, or sheep or goat cheese) may improve your cheese digestion!

3. **The rennet question —** Traditionally, cheese was made using just four ingredients: milk, salt, starter culture, and animal rennet (which is used as the clotting agent to curdle the milk into cheese). Unfortunately, over 90% of the cheese made in the US uses enzymes from genetically modified organisms.

   While this is cheaper than animal rennet, it comes with potential toxicity, allergen, and digestive concerns. I discussed this extensively in a previous article **which you can check out here**.

   Ideally, you want to look for cheese made using animal rennet, NOT 'microbial rennet' or 'vegetable rennet'. I personally notice a huge difference in digestion between different rennet sources, and I do much better with cheese made using animal rennet.

   Tip — Sourcing authentic parmigiano reggiano or pecorino romano is likely always good quality as this cheese recipe can only be made with animal rennet!

4. **The importance of what the cows eat —** Most nonorganic cheese produced in the U.S. is made from the milk of cows that are fed genetically modified feed that are raised in confinement barns. But the highest quality cheese will come from cows

that are grazing on diverse pastures, which leads to a wider nutrient intake and thus a higher nutrient content in the cheese.

In fact, health-promoting phytonutrients found in fruits and vegetables are high in grass fed dairy products.[33] This is because the dairy animals consume these nutrients in pasture and pass them into the milk.

Wrapping It Up

So there you have it, folks. Cheese isn't just a guilty pleasure — it's a nutritional powerhouse that can support your health in numerous ways. From the antimicrobial and anti-inflammatory properties of lactoferrin, to the bone-building and heart-protecting effects of Vitamin K2, to the cognitive-boosting power of tyrosine, cheese has a lot to offer.

Of course, as with any food, quality matters. Opt for raw, grass fed cheese when possible, and pay attention to the type of rennet used. Your body (and your taste buds) will thank you.

So the next time someone gives you a hard time about your cheese habit, you can confidently tell them that you're not just indulging — you're nourishing your body with one of nature's most complete foods. Now, if you'll excuse me, I have a date with a cheese board!

About the Author

The article was written by Ashley Armstrong, who is on a mission to change the food system to produce the highest quality food possible (free of chemicals).

Armstrong is the cofounder of Angel Acres Egg Co., which specializes in low-PUFA (polyunsaturated fat) eggs. **Angel Acres Egg Co** ships low-PUFA eggs to all 50 states — but there is currently a **waiting list** as she slowly increases the number of chickens

within the network to fulfill the demand. More egg boxes will be available very soon this fall — join the waitlist for low-PUFA egg boxes here.

Armstrong also co-founded Nourish Cooperative which ships the best low-PUFA pork, low-PUFA chicken, vaccine free beef, raw A2 cheese made with animal rennet, and traditional sourdough to all 50 states. They are also close to accepting new members to the farm cooperative — join the waitlist here: nourishcooperative.com.

For both Angel Acres and Nourish Cooperative, Armstrong and her team have livestock AND row crop farm partners, so that they can have control of every step of their food production, from seed to fork. She has regenerative row crop farm partners that not only produce the heritage wheat for their sourdough products, but also feed ingredients for all their livestock (chickens, dairy goats, and hogs). Thus, bridging the gap between livestock and row crop regenerative farming.

Stay Tuned for an Exciting Offer

Be on the lookout for an exciting new offer later this month where the highest quality cheese will be readily accessible and delivered directly to your door. More information coming soon!

Sources and References

- [1] Phys.org, September 5, 2018, Evidence of 7,200-year-old cheese making found on the Dalmatian Coast
- [2] Pharmaceutics. 2023 Jun; 15(6): 1569, doi: 10.3390/pharmaceutics15061569
- [3] Front Nutr. 2021 Apr 16:8:660598. doi: 10.3389/fnut.2021.660598. eCollection 2021
- [4] Pharmaceutics. 2023 May 23;15(6):1569. doi: 10.3390/pharmaceutics15061569
- [5] Cell Mol Life Sci. 2005 Nov;62(22):2549-59. doi: 10.1007/s00018-005-5370-2
- [6] Front Endocrinol (Lausanne). 2023 Aug 23:14:1218148. doi: 10.3389/fendo.2023.1218148
- [7] Curr Res Food Sci. 2023 Jun 15:7:100533. doi: 10.1016/j.crfs.2023.100533. eCollection 2023
- [8] Biomolecules. 2020 Mar; 10(3): 456, doi: 10.3390/biom10030456
- [9] Foods. 2023 Jan; 12(1): 70, doi: 10.3390/foods12010070
- [10] Med J Islam Repub Iran. 2017 Dec 18:31:110. doi: 10.14196/mjiri.31.110. eCollection 2017
- [11] Nat Commun. 2018; 9: 3129, doi: 10.1038/s41467-018-05614-6
- [12] Freie Universität Berlin, Modulation of estrogen receptor alpha function through dietary fatty acids
- [13] Discover C15:0

- [14, 16] PLoS One. 2017; 12(5): e0178192, doi: 10.1371/journal.pone.0178192
- [15, 17] AOCS, New essential dietary lipids? October 2021
- [18] J Bone Miner Metab. 2000;18(4):234-6. doi: 10.1007/pl00010637
- [19] World Journal of Dentistry, Volume 14, Issue 12, Year 2023, doi: 10.5005/jp-journals-10015-2342
- [20] Aust Dent J. 1991 Apr;36(2):120-5. doi: 10.1111/j.1834-7819.1991.tb01340.x
- [21] Journal of the American Heart Association, Volume 10, Number 16, doi: 10.1161/JAHA.120.020551
- [22] J Nutr. 2004 Nov;134(11):3100-5. doi: 10.1093/jn/134.11.3100
- [23] U.S. Pharmacist, January 20, 2012, The Emerging Role of Vitamin K2
- [24] Science. 2012 Jun 8;336(6086):1306-10. doi: 10.1126/science.1218632. Epub 2012 May 10
- [25] Psychol Res. 2019; 83(6): 1097–1106, doi: 10.1007/s00426-017-0957-4
- [26] Food Components to Enhance Performance: An Evaluation of Potential Performance-Enhancing Food Components for Operational Rations
- [27, 28] Nature Communications, Volume 10, Article number: 1286 (2019)
- [29] J. Agric. Food Chem. 2015, 63, 10, 2830–2839
- [30] Pediatrics & Neonatology, Volume 54, Issue 6, December 2013, Pages 360-366
- [31] Nutr J. 2016 Apr 2:15:35. doi: 10.1186/s12937-016-0147-z
- [32] Nutrients. 2020 Dec; 12(12): 3855, doi: 10.3390/nu12123855
- [33] Front. Sustain. Food Syst., 01 February 2021 Sec. Agroecology and Ecosystem Services, Volume 4 - 2020, doi: 10.3389/fsufs.2020.555426