

Bringing Back Traditional Cheese-Making — A Movement to Redefine Cheese as a Superfood

By [Dr. Joseph Mercola](#)

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[Mercola](#)

Theme: [Biotechnology and GMO](#)

Industrial cheese production has compromised the quality of cheese. Most cheese is now made using synthetic, lab-produced rennet that alters the nutritional profile

Traditionally made cheese with animal rennet is a superfood, providing benefits like lactoferrin, beneficial saturated fats, vitamin K2, tyrosine and probiotic bacteria

Cheese made from A2/A2 milk from grass fed cows, and using traditional cheesemaking techniques is more nutritious and easier to digest than industrial cheese

Expanding access to traditionally made cheese can help shift consumer preferences toward healthier, more sustainable dairy options

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Cheese has been a staple in human diets for millennia. However, the advent of industrial cheese production has dramatically altered its quality, making real, traditional cheese increasingly hard to find in the U.S. Instead, the market is now flooded with cheese made using synthetic, lab-produced rennet, which alters its nutritional profile and fails to match the quality and benefits of traditionally made cheese.

Fortunately, exciting developments are underway to make high-quality cheese more accessible to a broader audience. This initiative is spearheaded by Ashley Armstrong, cofounder of Angel Acres Egg Co., which specializes in low-PUFA (polyunsaturated fat) eggs, and the Nourish Cooperative, which provides some of the healthiest food in the United States. Ashley is also an expert on the late Dr. Ray Peat's principles of bioenergetic medicine.

In our interview above, Ashley and I discuss the crucial differences between traditionally made cheese and its industrial counterparts, and how their efforts to expand the production and distribution of high-quality, artisanal cheese can allow more people to get access to this superfood and help shift consumer preferences toward healthier, more sustainable options.

The Emergence of Synthetic Cheese Rennet

Cheese is often said to be as good as the milk it's made from, but an equally important factor is the rennet used in its production. Rennet is an enzyme complex responsible for coagulating milk. It comes in four types — animal rennet, vegetable rennet, microbial rennet and fermentation-produced chymosin (FPC), a rennet made from genetically modified

organisms (GMOs) that is often misleadingly labeled as “plant-based” for greenwashing purposes. Ashley explains:

“In the early 1990s, Pfizer generated FPC ... It is produced in a lab from a genetically modified enzyme, so it’s not natural. They take a gene out of an animal cell’s DNA string and insert it into a bacteria, commonly a yeast or a mold.

They take that DNA, put it into the yeast or mold DNA string, and then that will initiate the production of the chymosin enzyme, [which is] what coagulates the milk. That is what’s naturally occurring inside the stomach chamber of a cow. The host culture is then cultivated and fermented.”

In a [previous article](#), Ashley detailed how cheese was traditionally made with animal rennet, which is found naturally in the stomach lining of ruminant animals and is known to produce superior flavor. True vegetable rennet, on the other hand, often compromises the flavor of cheese. This is why most cheeses labeled as “vegetable rennet” today are not made with real vegetable rennet.

There’s no regulation on the terms used for rennet in cheese labeling, so most are actually made with either microbial rennet made from mold or FPC. Nowadays, manufacturers primarily use FPC because it’s cheaper, more stable, and meets the growing demand for vegetarian-friendly cheese. In fact, 90% of cheese produced in the U.S. uses synthetic rennet.¹

How GMO Rennet Can Impact Your Health

While “plant-based” GMO rennet may sound like a good option, it can actually compromise your health. Ashley asserts:

“The biggest problem here is that this is made in a lab. Trace amounts of mold and fungus have been found in these enzymes, which are then used to make the cheese. [For] people who are allergic to mold or fungus, it can cause toxicity or allergenic responses ...

It’s also been shown to disrupt gut health, likely because you’re inserting strange microbial populations into your gut. So, there are toxicity, allergenic and gut health concerns about FPC.”

Despite the safety of GMO rennet being evaluated only by a 90-day trial in rats,² the U.S. Food and Drug Administration (FDA) approved its use in food. It was also given Generally Recognized as Safe (GRAS) status, exempting Pfizer from the stringent pre-approval requirements for new food additives.

However, Ashley clarifies that its GRAS status is essentially meaningless, as it simply places all the responsibility on the producer to evaluate its effectiveness. This means we don’t really know the long-term repercussions of consuming GMO rennet.

Even when you start with the finest raw milk to make cheese, the use of GMO rennet can compromise the final product’s quality and nutritional value. In fact, I believe that most of the cheese consumed in this country should be avoided because it contains this ingredient, which is what makes most cheeses today so hard to digest.

How Dairy Misconceptions Contribute to Calcium-to-Phosphorus Imbalance

Ashley emphasizes that one of the key benefits of consuming cheese is its rich calcium content:

“Eating adequate calcium is going to be important for bone health and dental health, but there’s so many other benefits. One of the main things is maintaining that proper cell structure, which can lead to improved energy production, improved metabolism and make it easier to lose weight.

[Eating adequate calcium is] also going to lead to better blood pressure regulation, since low dietary calcium has been shown to increase blood pressure. It’s also going to lower oxalate absorption ... [T]he more calcium consume, the less oxalates you absorb through your intestines, so it helps reduce the chances of oxalate toxicity.”

Unfortunately, the vilification of dairy products by the mainstream media has led many to avoid cheese, or to choose plant-based alternatives. This shift, driven by misconceptions that dairy causes digestive problems and calcification, leads to a cascade of health issues. As Ashley explains:

“When your calcium intake is low, it causes the parathyroid hormone (PTH) to rise, and that leads to an influx of calcium into the cells. Meanwhile, phosphorus, which is more readily available in our diet, remains in abundance, creating an imbalance in the calcium-to-phosphorus ratio ...

The biggest thing that PTH does is it’s one of the main bone regulators, so when PTH is elevated, that causes an increase in bone resorption and a decrease in bone formation. It’s increasing the body’s requirements to go mine for calcium in your bones because you’re not consuming enough dietarily.”

Ashley also reveals that manufacturers add phosphate to commercial cheese as a preservative and to improve melting capabilities, which further exacerbates the imbalance between calcium and phosphorus.

“It’s becoming increasingly challenging to get [adequate] calcium intake,” Ashley notes. “We want our calcium-to-phosphorus ratio to be as close to 1-1 as possible.” This underscores the need to incorporate traditionally made cheeses into your diet, not just as a “guilty pleasure” but as a staple, health-supporting food choice.

Traditionally Made Cheese Is a Superfood

In addition to having impressive calcium content, high-quality artisanal cheese is also a good source of the following nutrients:

- **Lactoferrin** — Lactoferrin is an iron-binding glycoprotein with a range of pharmacological benefits for both infants and adults, including immunomodulatory, antioxidant, antitumor and antimicrobial properties.³

It also plays a role in enhancing iron absorption and regulating cellular functions such as activation, differentiation and proliferation.⁴ Lactoferrin is significantly reduced during

pasteurization,⁵ hence the importance of choosing raw milk cheese.

- **Saturated fats** — One of the standout components in cheese is the odd-chain fat C15:0 (pentadecanoic acid). This essential fat, which is more abundant in milk from grass fed cows, has been associated with an array of health benefits, including improved metabolic health.

According to a 2023 study published in the journal *Nutrients*,⁶ low levels of C15:0 are linked to an increased risk of developing Type 2 diabetes, heart disease, nonalcoholic fatty liver disease, nonalcoholic steatohepatitis and certain cancers.

The authors concluded there's strong evidence that this essential nutrient supports healthy aging and longevity in humans, with cell-based activities that are as good as, or better than, leading longevity-enhancing prescription therapeutics.⁷

- **Vitamin K2** — This form of vitamin K plays a role in calcium metabolism, helping direct calcium to the bones where it's needed. By doing so, it helps support both bone and cardiovascular health.⁸
- **Tyrosine** — An amino acid that's found in higher amounts in raw milk cheese than heavily processed ones,⁹ tyrosine influences your body's production of important neurotransmitters like dopamine and norepinephrine, which are vital for mood regulation, cognitive function and stress response.¹⁰ Tyrosine also contributes to thyroid hormone production, which is essential for regulating your metabolism.¹¹
- **Beneficial bacteria** — Raw milk cheeses contain live lactic acid bacteria that can act as probiotics. The consumption of raw cheese has been documented to improve microbiome balance due to these beneficial bacteria, which are typically killed in pasteurized cheeses.¹² According to a study published in the journal *Foods*:¹³

“Current scientific evidence suggests that LAB [lactic acid bacteria], mainly *Lactobacillus* and *Bifidobacterium*, are beneficial to the host in correcting imbalances in the intestinal microbiota, and consequently in maintaining and regulating health. These bacteria are traditionally associated with fermented foods and are the most studied probiotic organisms.

Probiotic organisms can protect the host from intestinal disease by inhibiting toxin production, producing antibacterial compounds, blocking pathogen adhesion sites, competing for nutrients and stimulating immunity.

In addition to pathogen exclusion, probiotics may offer other beneficial properties to the host's health, including nutrient synthesis (certain vitamins), reduction in lactose intolerance and production of bioactive compounds such as CLA [conjugated linoleic acid], SCFA [short-chain fatty acids] and EPS [exopolysaccharides].”

The Characteristics of a High-Quality Cheese

High-quality, traditionally made cheese, like the one Ashley aims to provide, is characterized by several key factors:

- **Made from A2/A2 milk** — Raw milk (not pasteurized) with the A2/A2 beta-casein protein can be easier to digest if you're experiencing digestive issues with conventional A1 milk.
- **Sourced from 100% grass fed cows** — Cheese made from the milk of vaccine-free cows that are exclusively grass fed on diverse pastures contains higher levels of beneficial nutrients compared to conventionally made cheese, which typically comes from cows fed genetically modified feeds and raised in concentrated animal feeding operations (CAFOs).
- **Animal rennet** — Traditional animal rennet is used instead of synthetic or microbial alternatives, which can lead to better taste, texture and digestibility.
- **Handcrafted using traditional techniques** — The cheese is made in small batches using traditional techniques by skilled cheesemakers to avoid compromising the quality.

Artisanal Cheese Boxes Now More Accessible

Ashley and I also discussed her exciting plans to address the increasing demand for high-quality, traditionally made cheese. She reveals that as of today, they are offering delicious cheese boxes sourced from small-scale Amish farmers, now exclusively available to the Mercola audience. You can order [here](#).

These cheeses are made according to the standards mentioned above, preserving the traditional cheesemaking techniques that ensure beneficial enzymes and nutrients remain intact. This approach contrasts sharply with industrial cheese production, which often sacrifices quality and nutritional value for mass production.

While the initial supply is limited to between 1,000 to 1,500 boxes per month, Ashley shares they have plans to gradually increase production. However, she emphasizes that this expansion will not compromise quality. Instead of pushing farms to become industrial complexes, the goal is to increase the number of small-scale producers involved in the project.

Eggshell Powder — An Alternative Source of Calcium

In our interview, Ashley also highlighted another good source of calcium for those who cannot consume dairy products — eggshell powder. Eggshells are primarily composed of calcium carbonate and also contain a variety of trace minerals,¹⁴ making them a nutrient-dense supplement. This often-discarded part of the egg can easily be repurposed into a valuable nutritional resource. Ashley explains:

“[I]t’s so easy to make yourself. Save your eggshells in a bag, put it in the freezer. When you have enough of it, you can either boil or lightly bake to sterilize or get rid of any impurities. Grind them in a little coffee grinder, and then you’ve got your eggshell powder.”

This powder can be added to various foods or used as a natural toothpaste when mixed with

coconut or MCT oil. It's been shown to have remineralizing effects on teeth. I personally take a teaspoon of eggshell powder twice a day.

For those raising chickens, Ashley points out that feeding crushed eggshells back to the hens can help ensure they have enough calcium to produce strong eggshells, creating a sustainable cycle that adheres with the principles of regenerative agriculture.

About Angel Acres Egg Co. and the Nourish Cooperative

What your food eats, matters — as pigs and chickens are vehicles for health-harming polyunsaturated fats (PUFAs). If their diet is high in PUFAs, the final product will contain more PUFAs. With the current agriculture system, knowing where your food comes from is vital. Angel Acres Egg Co. specializes in low-PUFA eggs. We [discussed the importance of low-PUFA eggs in a previous interview](#), embedded above for your convenience.

[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. [Join the waitlist for low-PUFA egg boxes here.](#)

Armstrong also cofounded Nourish Cooperative, which ships the best low-PUFA pork, beef, cheese and A2 dairy, 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](#).

In the video segment above, Ashley reflects on the timeline of her decision to invest her free time into regenerative farming, considering how just a few years ago, her health was far from ideal. She struggled with mitochondrial energy production and her body was in a low thyroid state. Your body prioritizes energy for essential tasks, and decision-making requires significant energy.

Your brain consumes about 20% of your body's energy despite being only 2% of its weight. Ashley simply would not have had enough cellular energy to supply her brain to make a decision like she did unless she improved her health. Factors like excess linoleic acid, estrogen and endotoxins were depleting her cellular energy, which is crucial for making energy-intensive decisions.

Her transformation underscores the power of nurturing your health to gain the energy necessary for making significant life changes. Avoiding dietary pitfalls like seed oils played a key role in this journey, enabling her to tap into a newfound capacity for brave decisions — a testament to the profound impact of regaining cellular energy on her ability to navigate life's choices.

It is my sincere desire and hope that you consider her journey to inspire and empower you to make similar choices in your own life and reclaim the Joy that you deserve. Imagine experiencing the nearly limitless Joy that Ashley has with her 1,000 chickens and four livestock guard dogs below.

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Notes

¹ [Trends in Food Science & Technology January 2022; 119: 467-475](#)

² [EFSA August 3, 2022](#)

^{3, 4} [Pharmaceutics 2023, 15\(6\), 1569](#)

⁵ [Animals 2023, 13\(10\), 1610](#)

^{6, 7} [Nutrients 2023, 15\(21\), 4607](#)

⁸ [Foods 2024, 13\(11\), 1646](#)

⁹ [Food Chemistry Volume 460, Part 2, 1 December 2024, 140622](#)

¹⁰ [Bulletin of Problems in Biology and Medicine, 2023, Issue 3 \(170\)](#)

¹¹ [Mount Sinai, Tyrosine](#)

^{12, 13} [Foods. 2022 Aug; 11\(15\): 2276](#)

¹⁴ [J R Soc Interface. 2021 Sep; 18\(182\): 20210502](#)

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Articles by: **Dr. Joseph
Mercola**

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