



people with weakened immune systems, such as pregnant women, small children, or elderly adults<sup>2</sup>. In the United States, the most common outbreaks linked to raw milk have been E. coli, salmonella, listeria, and campylobacter<sup>3</sup>. Other pathogens, such as Brucellosis, are rare in the United States, but are still a concern linked to consuming raw milk in some foreign countries<sup>4</sup>. In the 2017 CDC report, outbreaks most commonly occurred in states with legal sales of raw milk and raw milk products (Figure 1)<sup>1</sup>. These outbreaks can be linked to raw milk through DNA fingerprinting<sup>5,6</sup>.

### What are the benefits of raw milk consumption?

Studies from several countries have demonstrated beneficial health effects from drinking raw milk, particularly linked to a reduction in childhood asthma and other respiratory illnesses<sup>7</sup>. You can think of this like being exposed to allergens at a young age on a farm – you tend to build up an immunity which makes it less likely that you’ll be allergic to certain allergens in the future. Some researchers have linked this to the whey protein content in raw milk<sup>8</sup>. Pasteurization does not necessarily decrease whey protein content of milk, but it may start to break down components of the proteins<sup>9</sup>.

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## Scientific Limitations

- Structural differences between raw milk and pasteurized milk have not been extensively studied. With new technology, we may be able to detect small differences, such as protein structure.
- Studies that link raw milk consumption to decreased risk of respiratory problems have mostly been conducted in rural communities in Europe, and thus, they may not apply to people in the United States.
- The link between raw milk consumption and disease outbreaks has been clearly studied, whereas the link between raw milk consumption and beneficial health effects has not. It may be important to weigh the pros and cons of exposure to disease relative to health benefits.
- This science note does not consider any other externalities associated with raw milk consumption compared to commercial milk consumption, such as transportation, energy use, etc.

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## Citations and Other Resources

<sup>1</sup> <https://www.cdc.gov/foodsafety/rawmilk/nonpasteurized-outbreaks-maps.html>

<sup>2</sup> <https://www.fda.gov/food/buy-store-serve-safe-food/food-safety-and-raw-milk>

<sup>3</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5443421/pdf/15-1603.pdf>

<sup>4</sup> <https://www.sciencedirect.com/science/article/abs/pii/S0168160518309267>

<sup>5</sup> <https://www.cdc.gov/foodsafety/outbreaks/investigating-outbreaks/investigations/detection.html>

<sup>6</sup> <https://www.sciencedirect.com/science/article/pii/S0022030219309907>

<sup>7</sup> <https://www.ncbi.nlm.nih.gov/pubmed/23534445>

<sup>8</sup> <https://www.ncbi.nlm.nih.gov/pubmed/21875744>

<sup>9</sup> <https://www.sciencedirect.com/science/article/pii/S0022030215001162>

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