



# National Environmental Health Association

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The National Environmental Health Association (NEHA) represents more than 6,700 governmental, private, academic, and uniformed service sector environmental health professionals in the U.S. and its territories, and internationally. NEHA is the profession's strongest advocate for excellence in the practice of environmental health as it delivers on its mission to build, sustain, and empower an effective environmental health workforce.

## NEHA Policy Statement on Raw Milk

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The National Environmental Health Association (NEHA) recognizes the nutritional value of milk, as well as the scientific evidence that raw milk can transmit pathogenic bacteria to the consumer. NEHA further recognizes the scientific and public health evidence that pasteurization of milk is proven to be a sound method of preventing milk-borne disease.

NEHA specifically recommends the following:

- Legislation that requires pasteurization of all milk prior to sale or distribution to the final consumer, regardless of if a fee is charged.
- Prevent arrangements such as cow shares, herd sharing, bartering, exchange, or any other action that would allow the consumer to obtain a portion of the production of raw, unpasteurized milk from a cow, sheep, or goat.
- The adoption of current best practices in food safety by state, local, tribal, territorial, and government agencies, as well as industry food safety professionals, to identify, eliminate, and/or mitigate potential food safety hazards inherent to their operations.
- Efforts to educate the consumer about the dangers inherent in consuming unpasteurized milk or products made from raw milk.

NEHA has long supported preventive measures to protect the safety of food for the public. NEHA acknowledges the importance of milk as a source of nutrition and is concerned about the safety of milk and milk products. NEHA's position regarding raw milk is consistent with sound, science-based, preventive public health measures.

### Analysis

The U.S. Public Health Service (USPHS) milk sanitation program states that no other food surpasses milk as a single source of obtaining essential nutrients needed for optimal health across all life stages. (U.S.

Department of Health and Human Services, 2019). Milk is a nutrient-rich food that provides essential nutrients such as protein, calcium, phosphorus, and vitamins A, D, B12, riboflavin (B2), niacin (B3), and pantothenic acid (B5) (National Dairy Council, 2018). In its raw state, milk contains a diverse bacterial population, some of which might be pathogenic such as *Salmonella* spp., *Staphylococcus aureus*, *Listeria* spp., *E. coli*, *Campylobacter* spp., *Brucella* spp., *Yersinia enterocolitica*, and *Shigella* spp. (Quigley et al., 2013). These bacteria are present in raw milk from all dairy animals, including cows, goats, and sheep. The process of pasteurization has been used for 100 years to destroy pathogenic bacteria that are present in raw milk (Schmidt & Davidson, 2008). The U.S. Department of Agriculture, Food and Drug Administration (FDA, 2017), World Health Organization (2001), and Centers for Disease Control and Prevention (CDC) endorse the process of pasteurizing milk as a public health control measure.

Several regulatory, educational, and public health organizations have issued position papers regarding the dangers associated with the consumption of raw milk. These organizations include:

- American Academy of Pediatrics,
- American Medical Association,
- American Public Health Association,
- American Veterinary Medical Association,
- Association of Food and Drug Officials,
- Council of State and Territorial Epidemiologists,
- Food and Drug Administration,
- International Association for Food Protection,
- National Association of State Public Health Veterinarians, and
- United States Animal Health Association.

### **Justification**

Milk-borne disease has been reduced greatly through the use of pasteurization. Prior to 1938, milk-borne illness represented 25% of all foodborne illness outbreaks (Weisbecker, 2007). As a result of efforts by USPHS and individual states requiring the mandatory use of pasteurization, milk-borne illness represents <1% of all foodborne illness outbreaks today (Centers for Disease Control and Prevention [CDC], 2017). Illnesses and outbreaks caused by the consumption of unpasteurized milk, however, continue to be a public health concern and challenge (Mungai, Behraves, & Gould, 2015). From 2008–2018 (the most recent year available), CDC has recorded outbreaks associated with raw milk consumption every year with the exceptions of 2009 and 2013 (CDC, 2018).

Below is a sample of recent outbreaks:

- **January 2012:** Direct sales from a dairy farm in Pennsylvania led to 148 illnesses in Pennsylvania, Maryland, New Jersey, and West Virginia (Longenberger et al., 2013).

- **February 2012:** A total of 22 cases of *Campylobacter jejuni* were identified across nine counties in California. All cases reported illness and all had consumed raw milk from a designated farm. The age of the individuals from the reported cases ranged from 1–66 years (California Department of Public Health, 2013).
- **April 2012:** A herd share in Oregon led to 21 people becoming ill (19 cases of *E. coli*, 1 case of *Campylobacter*, and 1 case of *Cryptosporidium*). As a result, four children were hospitalized and one had to receive a kidney transplant (Marler, 2012; Marler Clark, 2017).
- **May 2014:** A total of 99 people became ill in seven counties in north Utah who reported cases of *Campylobacter jejuni* from the consumption of raw milk from a licensed dairy. As a result, 10 people were hospitalized and 1 person died. Of the cases, 11 were children <5 years old (Davis et al., 2016).
- **August 2014:** Idaho public health investigators reported that two children became ill with cryptosporidiosis from the consumption of raw goat milk from a licensed dairy operation. Samples of raw goat milk yielded positive results for *Cryptosporidium* (CDC, 2015).
- **September 2014:** Wisconsin Department of Health Services reported that 38 people became ill with *Campylobacter jejuni* from the consumption of raw milk at a football team dinner potluck. The raw milk consumed at the dinner was obtained from a local farm (Pepin County Health Department & Wisconsin Division of Public Health, 2014).
- **December 2014:** Public health officials in Kentucky reported that five children were infected with *E. coli* O157:H7 from the consumption of raw milk. Of the five children, four developed hemolytic uremic syndrome and some required dialysis (Ungar, 2014).
- **December 2014:** Multistate public health officials from California, Florida, and Pennsylvania reported that two people became ill with listeriosis from the consumption of raw milk from a farm. As a result, one person died (CDC, 2016a).
- **February 2015:** Public health investigators in California reported that six people became ill with *Campylobacter jejuni* after consuming raw milk from a farm (California Department of Public Health, 2015a).
- **May 2015:** Orange County Health Care Agency reported that three people became ill with campylobacteriosis after consuming raw goat milk from a farm. All infected individuals were children <5 years and one child was hospitalized (California Department of Public Health, 2015b).
- **July 2015:** The Tennessee Department of Health reported that two people became ill with cryptosporidiosis after consuming raw milk from a dairy cow share program (Tennessee Department of Health, 2015).

- **March 2016:** State and local public health officials and laboratory and agriculture agencies in Virginia reported that 14 people became ill after consuming raw milk from a herd share program. The vast majority of people that became ill were children. Of the cases, four individuals were confirmed to have had non-O157 Shiga toxin-producing *E. coli* and three developed hemolytic uremic syndrome (Ferrell, 2017).
- **August 2016:** State and local public health officials and agriculture agencies in Michigan reported that four people became ill with *E. coli* O157:H7 after consuming raw milk from a herd share program. As a result, two individuals were hospitalized. (CDC, 2016b).
- **August 2016:** Local and public health officials in Colorado reported that 17 people became ill after consuming raw milk from a herd share program. A total of 14 individuals were confirmed to have had *Campylobacter jejuni*. Two milk samples obtained from the herd share program and from an ill shareholder yielded positive results for the outbreak strain (CDC, 2016c).
- **December 2016:** Washington health and agriculture agencies reported that three people became ill with *Salmonella* after consuming raw milk from a retail store. All three individuals were hospitalized (CDC, 2016d).
- **2016–2018:** CDC’s National Outbreak Reporting System database identified 12 outbreaks of foodborne illness from 2016–2018 that implicated raw milk. The database also notes that between 2016–2018, these outbreaks accounted for 129 illnesses and 21 hospitalizations (CDC, 2018).
- **May 2018:** State and local public health officials in Tennessee reported that 17 people became ill with *E. coli* O157:H7 after consuming raw milk from a farm share program. From the investigation, 10 confirmed cases and 7 probable cases of *E. coli* were identified. Of the 10 cases, 7 people were hospitalized and 6 people were diagnosed with hemolytic uremic syndrome (Knox County Health Department, 2019).
- **September 2018:** The Washington Department of Health issued an alert informing consumers of an outbreak of non-O157 Shiga toxin-producing *E. coli* from the consumption of raw milk from a licensed creamery. Laboratory results concluded that one child <5 years and one person in their 70s got ill (Washington State Department of Health, 2018).

Moreover, the occurrence of outbreaks due to raw milk has been found to positively correlate with the legal status of raw milk sales within a state. In a review of raw milk-associated outbreaks reported to CDC during 1972–1992, Headrick and coauthors (1998) found that the rate of raw milk associated outbreaks was higher in states in which the sale of raw milk was legal. The authors concluded that banning the intrastate sale of raw milk could reduce the number of milk-associated outbreaks. This association was revalidated in an examination of outbreaks occurring between 2007–2012 (Mungai, Behraves, & Gould, 2015).

Recently, advocates for the consumption of natural foods have approached legislators to allow the sale of raw milk to consumers. They have contended that the pasteurization process destroys the nutritional benefits of milk. In some instances, these advocates are encouraging the adoption of legislation that would allow individuals to purchase a portion of the production of a milk cow through an arrangement known as a cow share.

John Sheehan, former director of FDA's Division of Plant and Dairy Food Safety, stated that research shows that there is no significant difference in the nutritional value of pasteurized and unpasteurized milk (Sheehan, 2007). He indicated that casein, the major family of milk proteins, is largely unaffected by pasteurization and any modification in whey protein that might occur is barely perceptible (Bren, 2004).

Sheehan (2007) further stated the following:

“Raw milk is inherently dangerous and should not be consumed. Raw milk continues to be a source of foodborne illness and even a cause of death within the United States. Pasteurization destroys pathogens and most other vegetative microbes which might be expected and have been shown to be present in milk.”

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