

Raw milk consumption in the US: how safe is it?

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**Purpose:**

Raw milk consumption is increasingly popular in the US. Its potential contamination with pathogens poses a risk of foodborne illnesses. The objectives of this study were to 1) estimate the current risk of illness and hospitalization due to the consumption of milk and cheese contaminated with Shiga toxin-producing *Escherichia coli*, *Salmonella spp.*, *Listeria monocytogenes* and *Campylobacter spp.*, 2) estimate the excess risk associated with unpasteurized products, and 3) assess the public health impact of potential scenarios of consumption changes in the US.

**Methods:**

A novel stochastic risk attribution model developed for the study relied on historical outbreak reports, national statistics and surveys, and published studies.

**Results:**

In the US, dairy consumption causes on average more than 6,000 illnesses and 25 hospitalizations yearly, mostly due to *Campylobacter spp.* Eighty-nine percent of these illnesses are due to unpasteurized milk and cheese consumed by just 3% and 1.6% of the population, respectively. The mean annualized risks of illness and hospitalization were 237 (95%CrI: 147 - 371) and 84 (59 - 119) times higher for consumers of raw dairy products, respectively.

Raw milk consumption doubled between the mid-1990s and the mid-2000s. If it was to double again, the average number of yearly illnesses would increase by 89%. Better pathogen control on raw milk farms would reduce the disease burden, but not prevent it altogether.

In conclusion, the consumption of raw milk and cheese in the US is associated with a disease risk over 200-fold higher than for pasteurized products, and causes almost 90% of annual illnesses due to dairy consumption. Milk-borne illnesses (and hospitalizations) will increase steadily as raw milk popularity grows, and is likely to be largely driven by campylobacteriosis.

**Relevance:**

The present study highlights the US disease risk burden from milk and cheese consumption, and estimate the impact of further raw milk consumption increase. The study results have potential implications for policy management and prevention efforts on this hotly debated issue.