Raw Milk Reality: Is Raw Milk Dangerous?

by **CHRIS KRESSER**

Back in February, the Center for Disease Control (CDC) **published a study** targeting raw milk as dangerous and unsafe for human consumption. The media jumped on it in typical fashion. You may have seen headlines like this:

"Raw Milk Causes Most Illnesses From Dairy, Study Finds."
- USA Today

"CDC: Raw Milk Much More Likely to Cause Illness."
- Food Safety News

"Raw Milk is a Raw Deal, CDC Says."
- LiveScience

While two of these headlines are *technically* accurate – raw milk is responsible for more illnesses than pasteurized milk when the number of people who consume each is taken into account – the concern they convey about the risk of drinking unpasteurized milk is dramatically overstated.

I'm going to break this series into three parts. In this first article, we're going to examine what the research *really* says about raw milk safety, and compare the risks associated with drinking unpasteurized milk with other foods and activities. In the second article, we'll explore the benefits of drinking raw milk from several different perspectives: nutritional, health-related, social, environmental and ethical. Finally, in the third article I'll make recommendations and provide guidance on finding a safe and responsible raw dairy producer in your area.

This series is called "Raw Milk Reality" because, as is the case with other hot button issues like vaccination and homebirth, propaganda and hype have overshadowed facts and common sense. If you only saw the headlines from the CDC and FDA reports, you'd be left with the impression that raw milk is a dangerous food and anyone that consumes it or gives it to their children is reckless and irresponsible. The purpose of this series is to present the other side of the argument, and give you the bare facts without bias or hyperbole so you can make an informed decision about whether unpasteurized milk is a good choice for you and your family.

I'm not here to *convince* anyone that they *should* drink raw milk. That's a decision each individual has to make on their own by weighing the potential risks against the potential benefits. But to do that, you need an accurate understanding of the risks (which we'll cover in this article) and the benefits (which we'll cover in the next.)

Just how "dangerous" is raw milk? A little perspective...

Before we do that, however, let's put the current discussion of unpasteurized milk safety into a wider context. Foodborne illness is a concern for many types of food. According to the **most recent review** of foodborne disease outbreaks in the U.S. in 2008 by the Center for Science in the Public Interest (CSPI), seafood, produce and poultry were associated with the most outbreaks. Produce is responsible for the greatest number of illnesses each year (2,062), with nearly twice as many illnesses as poultry (1,112). Dairy products are at the **bottom of the list**. They cause the fewest outbreaks and illnesses of all the major food categories – beef, eggs, poultry, produce and seafood.

According to the CDC, during the period from 1990 − 2006, there were 24,000 foodborne illnesses reported each year on average. Of those, 315 per year are from dairy products. This means dairy products account for about **1.3% of foodborne illnesses each year**. That's not exactly an alarming number, considering that **more than 75% of the population** consumes dairy products regularly.

It's also important to note that the outbreaks and illnesses associated with dairy products are generally mild compared to other foods. According to the CSPI report above, **approximately 5,000 people are killed every year** by foodborne illness. From 2009 − 2011, three high profile outbreaks involving **peanuts, eggs and cantaloupe** alone accounted for **2,729 illnesses and 39 deaths**. (1) Yet there have only been a handful of deaths from pasteurized dairy products in the last decade, and there **hasn't been a single death attributed to raw fluid milk since the mid-1980s**, in spite of the fact that **almost 10 million people** are now consuming it regularly.

The takeaway is that thousands of people are killed each year by foodborne illness, but they're dying from eating fruits, nuts, eggs, meat, poultry, fish and shellfish – **not from drinking unpasteurized milk**.

Why the CDC report can't be taken at face value

The CDC report claimed that unpasteurized milk is 150 times more likely to cause foodborne illness than pasteurized milk, and such outbreaks had a hospitalization rate 13 times higher than those involving pasteurized dairy products.

According to senior author of the CDC study, Barbara Mahon:

> When you consider that no more than 1% of the milk consumed in the United States is raw, it's pretty startling to see that more of the outbreaks were caused by raw milk than pasteurized.

But can these claims be taken at face value? No.

There are several problems with the CDC report:

- First and foremost, the CDC doesn't include the dataset they used, so we can't analyze how they reached their conclusions. Fortunately, the CDC data for foodborne illness, as well as data from other institutions and peer-reviewed studies, are readily available online.
- There are about 24,000 foodborne illnesses reported each year. Yet by the CDC's own admission, this represents only a tiny fraction of the true number of foodborne illnesses that occur. In 1999, CDC scientists used an estimate of the overall prevalence of diarrhea and vomiting to calculate the "true" incidence of foodborne illness as **76 million cases per year**! Put another way, **99.97% of foodborne illnesses go unreported**.
- A food vehicle was identified in **only 43% of the reported outbreaks** and **only half of these were linked to a single food ingredient**. What this means is that the true prevalence of foodborne illness that can be attributed to a particular food is much higher than

what is reported. It also means that the data linking specific outbreaks with specific foods is such a tiny sample of the total that **even small errors or biases** in the reporting of outbreaks would **seriously skew the results**.

- To calculate the number of people that drink unpasteurized milk, the CDC used an older, lower estimate (1%) of the number of people that drink raw milk. This is curious because a **FoodNet survey** done by the CDC itself in 2007 found that 3% of the U.S. population – **about 9.4 million people** - regularly consumes raw milk. That number is **likely even higher today** with the growing popularity of raw milk. (In 2010 alone, raw milk sales increased by 25% in California.) Why did they do this? If you're a cynic, you might conclude that they used the lower estimate to exaggerate the risk of drinking raw milk.
- They combined data from outbreaks and illnesses associated with "bathtub cheese" (i.e. Mexican-style Queso Fresco made illegally at home) made from raw milk, and raw fluid milk. Queso Fresco is inherently more dangerous than raw milk, and is associated with more serious outbreaks and illnesses. Again, this **distorts the data and makes raw milk seem more dangerous than it really is**. (Note: commercial, properly aged raw milk cheese has never been implicated in a disease outbreak.)

(For a more detailed analysis and critique of the CDC report, see **this article** from the Weston A. Price Foundation.)

In light of these weaknesses, I decided to conduct my own analysis using a more comprehensive data set including the **CDC foodborne disease outbreak surveillance tables**, an online outbreak database published by the **Center for Science in the Public Interest** (CSPI), public health reports such as the **Morbidity and Mortality Weekly (MMWR)**, a **CDC line list** produced in response to a Freedom of Information Act (FOIA) request to CDC by the **Farm to Consumer Legal Defense Fund (FTCLDF)**, and peer-reviewed studies in the scientific literature (**2**,**3**,**4**).

I purposely excluded outbreaks associated with Queso Fresco cheeses, because we are concerned here with the safety of raw milk and not raw cheese made in a bathtub, which I would never eat and would never advise anyone else to eat. I chose to focus on the most recent data available, from 2000 – 2007, since unpasteurized milk consumption increased significantly over the last decade.

I also included two notable outbreaks in California that were missing from both the CDC and CSPI databases: a large outbreak of campylobacteriosis in 2006, involving over 1,644 illnesses among prison inmates that was linked to pasteurized milk produced by an on-site prison dairy and another campylobacteriosis outbreak in 2007, that caused 8 illnesses following consumption of commercial raw milk and/or raw colostrum. (**5**,**6**)

What does this more reliable, peer-reviewed dataset tell us about the safety of raw milk?

The chart below lists all outbreaks and illnesses associated with unpasteurized milk from 2000 − 2007. Click the link to display the chart.

Raw milk data

There were 37 outbreaks and 800 illnesses from unpasteurized milk during from 2000 − 2007, with an **average of 100 illnesses per year**. The estimated U.S. population as of today is approximately 313,500,000. Using the CDC's own 2007 FoodNet Survey data indicating that 3% of the population consumes raw milk, we can estimate that approximately 9.4 million people drink unpasteurized milk (as I said above, the number is likely higher because of the explosive growth in the popularity of raw milk over the past 5 years, but 2007 is the latest reliable estimate we have).

This means you had a roughly **1 in 94,000 chance** of becoming ill from drinking unpasteurized milk during that period.

Now let's compare this to pasteurized milk, as the CDC did in their study. The chart below lists all outbreaks and illnesses associated with pasteurized milk from 2000 − 2007. Click the link to display the chart.

Pasteurized milk data

There were 8 outbreaks with 2,214 illnesses, with an **average of 277 illnesses per year**. According to the CDC FoodNet survey, 78.5% (246,097,500) of the U.S. population consumes pasteurized milk.

This means you had a roughly **1 in 888,000 chance** of becoming ill from drinking pasteurized milk.

According to these data, it's true that you have a higher chance of getting sick from drinking raw milk than pasteurized milk. But the risk is **9.4 times higher, not 150 times higher as the CDC claimed**.

Perhaps this is a good time to review the difference between absolute and relative risk. When you hear that you have a roughly 9 times greater (relative) risk of getting sick from drinking raw milk than pasteurized milk, that might sound scary. And indeed it would be, if we were talking about the absolute risk moving from 5% to 45%.

But when the absolute risk is extremely small, as it is here, a relative 9-fold increase is rather insignificant. If you have a 0.00011 percent chance of getting sick from drinking pasteurized milk, and a 9.4 times greater risk of getting sick from drinking unpasteurized milk, we're still talking about **a miniscule risk of 0.00106% (one one-thousandth of a percent)**.

But to truly gauge the risk, **we should ask how serious these illnesses are**. An "illness" in these data can mean everything from an upset stomach to mild diarrhea to hospitalization for serious disease. One of the reasons most foodborne illnesses go unreported is that they are only a passing nuisance. When is the last time you had a bout of diarrhea that you suspect was caused by something you ate? Did you report it to your doctor or the county public health department? Probably not.

The statistic we should be more concerned with is hospitalizations for serious illnesses such as kidney failure and hemolytic uremic syndrome (HUS) caused by unpasteurized milk. This does happen, and children and the elderly are particularly vulnerable and more likely to experience a serious illness. That said, hospitalizations from raw milk are **extremely rare**. During the 2000 − 2007 period, there were **12 hospitalizations** for illnesses associated with raw fluid milk. That's an **average of 1.5 per year**. With approximately 9.4 million people drinking raw milk, that means you have about a **1 in 6 million chance of being hospitalized from drinking raw milk**.

To put this in perspective, according to the **U.S. Department of Transportation**, you have a roughly **1 in 8,000** chance of dying in a motor vehicle accident if you live in the U.S.. Therefore, you have a **750 times greater chance of dying in a car crash** than becoming hospitalized from drinking raw milk.

The risk of dying in a plane crash (**1 in 2,000,000**) is orders of magnitude lower than dying in a car accident (**1 in 8,000**) – and yet most people who are afraid of flying don't hesitate to get in their car.

But as unlikely as dying in a plane crash is, it's about **3 times more likely** than becoming hospitalized (**not dying**) from drinking unpasteurized milk.

As I said earlier in the article, there has not been a single death attributed to drinking unpasteurized milk since the mid-1980s. There were 5 stillbirths attributed to an outbreak linked to bathtub-style Queso Fresco in 2000 in North Carolina. These were the only deaths during the 2000 − 2007 period I analyzed.

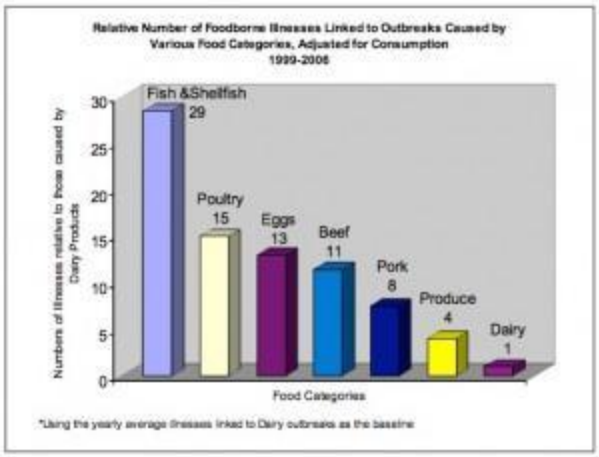
How does the risk of drinking raw milk compare to other foods?

Now let's put some of these abstract numbers into perspective.

According to the CDC Morbidity and Mortality Weekly (MMWR), from 2006 − 2008 there were an average of 13 outbreaks and 291 illnesses per year associated with shellfish and mollusks. According to the CDC FoodNet Survey, about 5.7% of the population (17,869,500) consumes shellfish. This means you had a roughly 1 in 61,000 chance of becoming ill from eating shellfish. That's about **1.5 times the risk of becoming ill from drinking raw milk** (1 in 94,000).

The risk is even greater – and more serious – if you eat raw oysters. 7.4% of people who eat oysters consume them raw (1,322,343). There are 15 deaths a year on average attributed to raw oyster consumption. This means you have about a **1 in 88,000 chance** of dying from raw oysters. In other words, you have a greater chance of **dying** from eating raw oysters than you do of **getting sick** from drinking unpasteurized milk.

What about other more commonly eaten foods? Check out the chart below, from the **2008 CSPI report**. It shows the relative incidence of foodborne illness from 1999 – 2006, **adjusted for consumption**.



As you can see:

- Seafood caused **29 times** more illnesses than dairy
- Poultry caused **15 times** more illnesses than dairy
- Eggs caused **13 times** more illnesses than dairy
- Beef caused **11 times** more illnesses than dairy
- Pork caused **8 times** more illnesses than dairy
- Produce caused **4 times** more more illnesses than dairy

What this chart clearly shows is that **when it comes to foodborne illness, dairy should be the least of your concerns**.
I hope this helps you understand the true risk of drinking unpasteurized milk within the context of other risks most of us take on a daily basis without a second thought. Of course, the next question that naturally arises is why someone might be willing to take *any* additional risk with raw milk - however miniscule it is on an absolute basis – when pasteurized milk is readily available.

Raw Milk Reality: Benefits of Raw Milk

by **CHRIS KRESSER**

In **Raw Milk Reality: Is Raw Milk Dangerous?**, we took a closer look at the claims made by groups like the FDA and CDC that raw milk is "dangerous". We found that, though the *relative* risk of becoming ill from drinking raw milk is about 9 times greater than it is from drinking pasteurized milk, the *absolute* risk of developing a serious illness (i.e. one that would require hospitalization) from drinking raw milk is **exceedingly small: about 1 in 6 million**.

Nevertheless, as small as the risk of drinking raw milk is, we still need to answer the question: why take the risk? What benefits does raw milk have over pasteurized milk that have convinced nearly 10 million people in the U.S. alone to actively seek it out?

Why drink raw milk in the first place?

There are many reasons one might prefer raw milk over pasteurized milk, ranging from nutritional to ethical to environmental. Different people will resonate with different reasons, depending on their value system, worldview and priorities.

Nutrition

Many consumers believe that raw milk is higher in nutritional content than conventional milk, which may have some merit. Raw milk comes from cows that graze on grass. Some evidence suggests that milk from these cows is likely to have higher levels of fat-soluble vitamins and other nutrients. Cows fed fresh green forage, especially those grazing grass, have been shown to have higher levels of conjugated linoleic acid (CLA) and essential fatty acids in their milk. (1,2) Cows are natural herbivores

and are healthiest when they eat grass, rather than the grain they are fed in confinement dairy operations.

The pasteurization process also reduces the nutritional quality of milk products. Research has shown a decrease in manganese, copper, and iron after heat treatment. (3) The FDA acknowledges that pasteurization destroys a substantial portion of the vitamin C in milk, and sterilization is also known to significantly impair the bioactivity of vitamin B6 contained in milk. (4, 5) Beta-lactoglobulin, a heat-sensitive protein in milk that is destroyed by pasteurization, increases intestinal absorption of vitamin A, so the supplemental vitamin A in conventional milk may be harder to absorb. (6) While pasteurized milk does retain some level of nutritional value, it seems that unpasteurized milk is superior in vitamin and mineral content overall.

Tolerance

Many people experience digestive and other problems when they consume pasteurized milk, but have no trouble with raw milk. It's not entirely clear why this is the case. The FDA insists that unpasteurized milk has no probiotic effect or any other characteristic that could explain this phenomenon. But the collective experience of raw milk consumers suggests otherwise. The Weston A. Price Foundation conducted an informal survey of over 700 families, and determined that over eighty percent of those diagnosed with lactose intolerance no longer suffer from symptoms after switching to raw milk. (7)

While this is certainly not rigorous evidence, it matches my own anecdotal experience and that of many of my patients, blog readers and radio show listeners. I do not feel well when eat pasteurized dairy. It gives me sinus congestion, headaches and intestinal discomfort. Yet I thrive on raw dairy, and fermented raw dairy in particular played a substantial role in **my own healing journey**.

Is it possible that the millions of people that tolerate raw milk but not pasteurized milk are experiencing a massive placebo effect? Sure. Anything is *possible*. But a likelier explanation is that raw milk has some quality that makes it easier to digest than pasteurized milk. The fact that this has not been proven in clinical research doesn't make it untrue. **Lack of proof is not proof against**.

Fortunately, we shouldn't have to wait long for more reliable evidence on this topic. A clinical study is currently being performed at Stanford University to help determine whether raw milk actually reduces the incidence of lactose intolerance. (8) The results have yet to be published, but will provide scientific evidence to support or refute the anecdotal claims of many raw milk drinkers.

Health

There is substantial epidemiological evidence from studies in Europe that consumption of raw milk during childhood may protect against asthma, allergies and other immune-mediated diseases. A large cross-sectional study demonstrated a significant inverse association between "farm milk" consumption and childhood asthma, rhinoconjunctivitis, sensitization to pollen and other allergens. (9) While we must always remember that correlation does not prove causation, the findings were consistent across children from farming and non-farming environments, indicating that farm milk consumption may have had an independent effect on allergy development.

This protective effect may be related to the hygiene hypothesis, which I **recently wrote about**. It is thought that low dose exposure to a variety of commensal bacteria may help regulate immune responses outside the gut. Another hypothesis is that the higher level of omega-3 fatty acids in grass-fed dairy, particularly in full-fat dairy products, may help reduce childhood atopy risk. (10) More research is necessary before a definitive mechanism for a reduction in allergies in children drinking raw milk can be established.

Additionally, some research suggests that unpasteurized milk contains antimicrobial components absent in pasteurized milk. (11, 12, 13, 14) These studies found that pathogens grow more slowly or

die more quickly when added to raw milk than when added to heat-treated milk. **This does not mean that raw milk cannot be contaminated with bacteria, nor does it mean that raw milk "kills pathogens".** Rather, unpasteurized milk may be *somewhat* less susceptible to contamination than pasteurized milk due to its probiotic bacteria and antimicrobial enzymes. The evidence for this is not conclusive, however, so there is **no excuse** for subpar hygiene standards when dealing with unpasteurized dairy products.

Flavor

Many people think that raw milk has a superior flavor and texture to pasteurized, homogenized milk. They often use words like "fresh", "real", "alive" and "rich" to describe it. They also appreciate the subtle shift in the flavor of the milk through the seasons as the grasses change. Consumer research demonstrates that flavor is one of the top reasons that consumers choose raw milk in states where it is legal to buy. (15, 16) Emily Weinstein, blogging for **The New York Times**, describes her first raw milk experience:

"The milk — oh man, the milk! — was creamy and full of flavors, not white like supermarket milk, but yellow-tinged. It was milk with a taste that wasn't just defined by it texture — it was distinct, satisfying, delicious. All food should be like this, I thought, so natural it seems to redefine the word."

I'm sure those of you who drink raw milk can attest to the significant flavor differences between raw and conventional milk. While flavor alone is not reason enough for choosing raw milk, it is clearly a driving force in many consumers' decisions.

Community

Raw milk is almost exclusively produced by local farmers. A growing segment of the population is choosing to support local, family farms and businesses over multi-national conglomerates. There is significant economic potential in the direct sales of milk from small farms, which is often the method of producing and distributing unpasteurized milk in most states. (17) The direct sale of raw milk allows farmers to set a price that allows profit for the farm and equals the fair market value of the product for the consumer. (18) This way, farmers are able to cover their costs while still earning a living to support themselves and their families. Consumers are reconnected with their food supply, and farmers are held accountable for their products, allowing for the stimulation of the local economy and the promotion of sustainable farming practices.

Environment

Similar to above, consuming milk that is produced by local farmers using sustainable methods has far less of an environmental impact than drinking milk produced in large confinement feeding operations thousands of miles away. Conventional dairy operations are highly destructive to the environment. Air and water pollution from dust and feedlot manure, plus fertilizers and pesticides used in grain production, are damaging to the environment and to the health of farmers, farm workers, and nearby residents. (19) Manure runoff into water can cause the death of aquatic life, as well as contamination of drinking water by nitrate, harmful microorganisms, and antibiotics and hormones.

Raising dairy cows on well-managed pastures decreases soil erosion, increases soil fertility, and improves water quality due to decreased pollution. Cows grazing on pasture reduce the energy needed to grow grains or to mow, bale, and move hay, requiring less fuel consumption. (20) Sustainable small dairy farms that produce raw milk are much more environmentally friendly as compared to typical large-scale dairy farms that are energy intensive.

Ethics

Cows that live on small farms and spend their days on green pasture are are much better off than those that live in overcrowded and inhumane "factory farm" conditions. This is important to those of us that care how animals are treated. When confined in small spaces under stressful conditions, cows often

become ill and are treated with large quantities of antibiotics. (21) They are more prone to morbidity and mortality from diseases including dust-related respiratory conditions, metabolic diseases, and other ailments that can be directly attributed to their confined conditions, as well as their unnatural diet of corn, soy, and other grains. Pasture-raised cows have longer lifespans than conventionally raised cows, as corn-based diets contribute to health problems such as liver abscesses, and breeding practices designed to maximize milk production have caused reproductive problems. (22) There are plenty of horror stories and disturbing videos that portray the inhumane treatment of cows in conventional dairy operations. (23, 24) By visiting small farms and purchasing raw milk from pastured cows, compassionate consumers can be assured that the animals are properly treated.

A personal decision

Any one of these reasons might be enough justification for choosing raw milk for a given individual or family. But when viewed together, it's easy to understand why raw milk consumption has increased so significantly over the last two decades. Consuming unpasteurized milk and dairy products has several positive benefits that, for many people, may outweigh the possible risks. You must consider both the positive and negative qualities of raw milk consumption when making the decision for you and your family.

In the next article, I will discuss the important variables to consider when deciding whether raw milk is right for you and offer guidance on how to find a safe source of raw milk and minimize the potential risk, should you choose to consume it.

HOME: THE FACTS ABOUT REAL RAW MILK WWW.REALMILK.COM

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Q. What is real, raw milk?

Real milk is milk that comes from pastured cows, that contains all the fat and that has not been processed in any way—it is raw and unhomogenized.

Q. Is it safe to drink real, raw milk?

Real milk that has been produced under sanitary and healthy conditions is a safe and healthy food. It is important that the cows are healthy (tested free of TB and undulant fever) and do not have any infections (such as mastitis). The cows should be eating food appropriate to cows, which is mostly grass, hay or silage, with only a small amount of grain, if any. The milk should be full-fat milk, as many important anti-microbial and health-supporting components are in the fat. The cows should be milked under sanitary conditions and the milk chilled down immediately.

For information on safe handling of raw milk, see Safe Handling – Consumers' Guide Preserving the Quality of Fresh, Unprocessed Whole Milk available from the Farm-to-Consumer Legal Defense Fund.

For information on safe production of raw milk, see the Raw Milk Production Handbook available from the Farm-to-Consumer Legal Defense Fund.

To read David Gumpert's remarks from the Raw Milk Debate at Harvard Law School, see "Raw Milk Safety vs. Rights: Striking a Balance."

Q. What makes real raw milk safe?

Raw milk contains many components that kill pathogens and strengthen the immune system. These include lacto-peroxidase, lacto-ferrin, anti-microbial components of blood (leukocytes, B-macrophages, neutrophils, T-lymphocytes, immunoglobulins and antibodies), special carbohydrates (polysaccharides and oligosaccharides), special fats (medium chain fatty acids, phospholipids and spingolipids), complement enzymes, lysozyme, hormones, growth factors, mucins, fibronectin, glycomacropeptide, beneficial bacteria, bifidus factor and B12-binding protein. These components are largely inactivated by the heat of pasteurization and ultrapasteurization. For further information, see Part I of our Campaign for Real Milk PowerPoint Presentation.

This five-fold protective system destroys pathogens in the milk, stimulates the Immune system, builds healthy gut wall, prevents absorption of pathogens and toxins in the gut and ensures assimilation of all the nutrients.

So powerful is the anti-microbial system in raw milk that when large quantities of pathogens are added to raw milk, their numbers diminish over time and eventually disappear. For a discussion of scientific papers showing the pathogen-killing properties of raw milk, see Does Raw Milk Kill Pathogens? by Dr. Ted Beals.

It is important to stress, however, that even this magnificent anti-microbial system can be overwhelmed by highly unsanitary conditions. That is why we do not recommend raw milk from confinement dairies, or raw milk that is produced under unsanitary conditions.

Q. How safe is real raw milk compared to other foods?

It is very difficult to determine the risk of drinking raw milk on a per-serving basis compared to pasteurized milk and to other foods. For starters, the risk of illness from all dairy foods, raw and pasteurized, is very low compared to other foods—amounting to only 1 percent of all illnesses.

A government document published in 2003 indicates that on a per-serving basis, deli meats are ten times more likely to cause food-borne illness than raw milk (*Listeria Monocytogenes Risk Assessment: Interpretive Summary*, Center for Food Safety and Applied Nutrition, Sept. 2003, page 17).

For an analysis of the comparative safety of raw versus pasteurized milk see Those Pathogens, What You Should Know by Dr. Ted Beals. On a per-serving basis, raw milk is as safe or several times safer than pasteurized milk. See our press release on these findings, Government Data Proves Raw Milk Safe, and this Safety of Raw Milk Summary PowerPoint Presentation.

Q. Why do we hear about raw milk causing health problems so frequently?

Health officials are highly biased against raw milk and published reports reflect that bias. Very often raw milk is blamed for an outbreak of illness without proof, or even for an outbreak that affected many people who did not consume raw milk. For example, an outbreak in Wisconsin in 2001 that sickened many

hundreds of people was blamed on a raw milk cow-share program even though only a few of the hundreds of cow-share participants got sick (see Wisconsin Campylobacter Outbreak Falsely Blamed on Raw Milk).

For a discussion of the bias against raw milk and some of the techniques used to create that bias, see the following:

- Summary: Response to Anti-Raw Milk Position Paper by Bill Marler, JD (PDF)
- Rebuttal to the FDA article: "Raw Milk Misconceptions and the Danger of Raw Milk Consumption" (PDF)
- "The Safety of Raw vs. Pasteurized Milk" (PDF), chapter 15 of *The Untold Story of Milk* by Ron Schmid, New Trends Publishing
- For an analysis of every published report claiming that raw milk caused illness, see Response to Anti-Raw Milk Article Published in Clinical Infectious Diseases (PDF)
- For a response to testimony by John Sheehan, head of dairy safety at the FDA, see Response to the Testimony of John F. Sheehan (PDF)

Q. Is real, raw milk safe for babies?

A homemade formula made from real, raw milk is safe for babies and has saved hundreds from having to consume commercial formula—indeed has saved many lives. In the formula, raw milk is diluted with water and whey and supplemented with lactose, cod liver oil and certain oils to give it a profile more in line with human milk. For a discussion on the use of raw milk for babies, see Is Raw Milk Safe for Babies? For instructions on making raw milk formula along with questions and answers, see Recipes for Whole Foods Baby Formula.

The alternative to our raw milk formula is commercial formula, which has been a source of many outbreaks of infection, often fatal. Recently in China, many infants developed kidney failure after consuming infant formula tainted with melamine.

In studies comparing raw and pasteurized human milk, there were fewer infections and better growth in children receiving raw human milk (see Pasteurization Does Harm Real Milk).

See also "Raw Milk and Children" (PDF), chapter 16 from *The Untold Story of Milk* by Ron Schmid, New Trends Publishing.

Q. Are there any health benefits to consuming real raw milk?

There are many health benefits to consuming raw milk. Early studies showed that children consuming raw milk had greater resistance to disease, better growth and stronger teeth than children consuming pasteurized milk. Animal studies indicate that raw milk confers better bone structure, better organ development, better nutrient assimilation, better fertility and even better behavior than pasteurized milk. (See Part II of our Campaign for Real Milk PowerPoint Presentation.)

Q. Can real raw milk cure asthma and allergies?

We have received many testimonials of raw milk curing asthma and allergies. Several recent European studies indicate that children who receive raw milk are much less likely to develop allergies and asthma, especially if the raw milk is given at a young age, in the first year of life. See:

- Studies Showing Raw (Farm) Milk Protective Against Asthma and Allergies

- How Glutathione Protects Against Asthma

Q. Is real raw milk helpful for adult diseases?

Although there are no published studies on the use of raw milk in adults, we have received many testimonials on the beneficial effects of raw milk for osteoporosis, arthritis, digestive disorders, fatigue, weight loss and even cancer.

Q. Is real raw milk easier to digest than pasteurized milk?

Raw milk contains enzymes and encourages beneficial bacteria that contribute to easy digestion and ensure that all the vitamins and minerals are absorbed.

Pasteurization warps and distorts the enzymes and other proteins in milk so that the body thinks they are foreign, and has to mount an immune response. This makes pasteurized milk very difficult to digest. In fact, the market for fluid milk has been declining at 1 percent per year for the past thirty years. Fewer and fewer people can digest processed milk.

Q. Can people with lactose intolerance drink real raw milk?

In 2007, the Weston A. Price Foundation conducted a survey of raw milk drinkers in Michigan. Of those diagnosed with lactose intolerance, 82 percent stated that they could drink raw milk without any problems (Pilot Survey of Cow Share Consumer/Owners, Lactose Intolerance Section).

Q. What are the state laws about selling real raw milk?

For a summary of state laws on selling real, raw milk, see our Raw Milk Nation map on the State Updates page. In summary, raw milk can be sold in stores in ten states and purchased at the farm in about 28 states. Raw milk is available as pet food in four states, and through cow- and herd-share agreements in several other states.

In no state is it illegal to purchase, possess or consume raw milk.

For details about various state laws, see our Summary of Raw Milk Statutes and Administrative Codes.

Q. Why is real, raw milk a good thing for farmers?

In the conventional dairy system, farmers receive about $12 per hundredweight of milk, less than their operating costs. This is why small and medium dairy farms are going out of business at such a high rate—in 2002, dairy farms went out of business at the rate of 16 per day.

When the farmer produces raw milk and sells directly to the public, he gets from $50 to $250 per hundredweight—enough to make a decent living.

ASTHMA OR BRUCELLOSIS: THE DANGERS AND BENEFITS OF RAW MILK

Posted on March 31, 2000 Published in British Medical Journal – The Lancet

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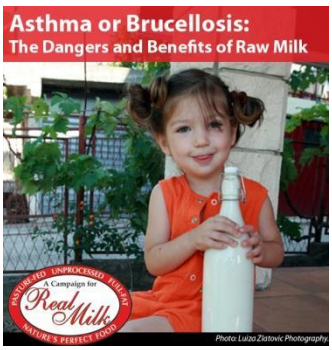

By Sally Fallon Morell

Two articles appearing recently in the prestigious British medical journal, *The Lancet*, illustrate the ongoing debate on the dangers and merits of raw milk. One article describes the case of a woman who contracted brucellosis after eating some raw goat cheese during a trip to Italy.[1] The cause of her fibromyalgia-like symptoms was determined after exhaustive tests to be brucellosis or undulant fever, and the source traced to ingestion of unpasteurized soft cheese during her European holiday. She was treated successfully with the appropriate antibiotics.

The second article describes a study carried out by scientists in Salzburg, Austria. Researchers examined the history of allergy, asthma and "atopic sensitization" or skin problems in 812 children, 319 of whom had grown up with a "regular exposure to a farming environment" including the consumption of "farm milk," that is, raw, whole, unprocessed milk.[2] The remaining group of 493 non-farming children acted as a control. Frequency of asthma was reduced from 11 percent found in the control group to 1 percent among the farming-exposed children. Similarly, hay fever occurred in only 3 percent of the farming-exposed children, compared with 13 percent of the controls, and atopic sensitization occurred in 12 percent of the farming group and in 29 percent of the controls.

The researchers found that the timing of exposure to the farm environment and raw milk was critical. Those children exposed during the first year of life showed the greatest protective effect. Continual long-term "exposure to stables" until age five years was associated with the lowest frequencies of asthma, hay fever and atopic sensitization.

Subsequent comments on this article[3] stress "exposure to stables" as the determining factor but we wonder whether this is any different than exposure to pets in the typical urban home. It is much more likely that consumption of raw milk is the determining factor because this variable can be uniquely determined.

These two articles perfectly describe the dilemma confronting health officials. Should our milk be pasteurized to prevent the rare case of brucellosis transfer; or should raw milk be made available to avoid asthma and dermatitis in our growing children?

Any mother who has observed the suffering of her asthmatic child, or wracked her brain to find a product that will stop her youngster's unsightly and itchy rash, would opt for the latter. These illnesses—for which modern medicine can offer only palliatives—cause so much lost school, missed activities, and physical and psychological suffering that any mother would gladly risk contracting brucellosis herself in order to have protective raw milk available for her growing children, particularly when undulant fever is easily cured with a dose of antibiotics.

And particularly when modern science makes it possible to have brucellosis-free herds. Tests are widely available to detect brucellosis in cattle, goats and sheep. In addition, studies have shown that the risk of brucellosis increases as herd size goes up.[4] Nutrition of the animals almost certainly plays a role. Small herds on fertile pasture or appropriate feed, regular testing, clean barns, milking machines, stainless steel tanks and refrigerated trucks all make it entirely possible to get healthy, clean, certified raw milk to the public.

The alternative—pasteurized, processed milk from large herds crowded into barns and given hormones and antibiotics—causes problems in an increasing number of people. How many customers does the dairy industry have to lose to putative "milk allergies" before it sees the light and opts for quality rather than quantity, for thousands of prosperous small dairies delivering directly to the consumer rather than small numbers of huge herds, confined to barns and producing dirty milk that must have its vital elements destroyed by pasteurization and processing.

1. *Lancet* 1999 Jul 24;354(9175):300.
2. *Lancet* 2001 Oct 6;358(9288):1129-33.
3. *Lancet* 2002 Feb 16;359(9306):623-4.
4. *Preventive Veterinary Medicine*, 1998 Dec;1(37):185-196.