Section 5: Let us return to the topic of what is in nutrient dense diets. In addition to vitamins A and D, another critical nutrient is calcium. This will begin our discussion of milk.

Calcium is not only vital for strong bones and teeth, calcium is also needed for the heart and nervous system and for muscle growth and contraction.

… and bone broths made from chicken, beef and fish. In cultures where dairy products are not used, bone broth is essential. Calcium in meats, vegetables and grains is difficult to absorb. Sufficient vitamin D is needed for calcium absorption as is a proper phosphorous/calcium ratio in the blood. Sugar consumption, stress and soft drinks all leach calcium from the bones.

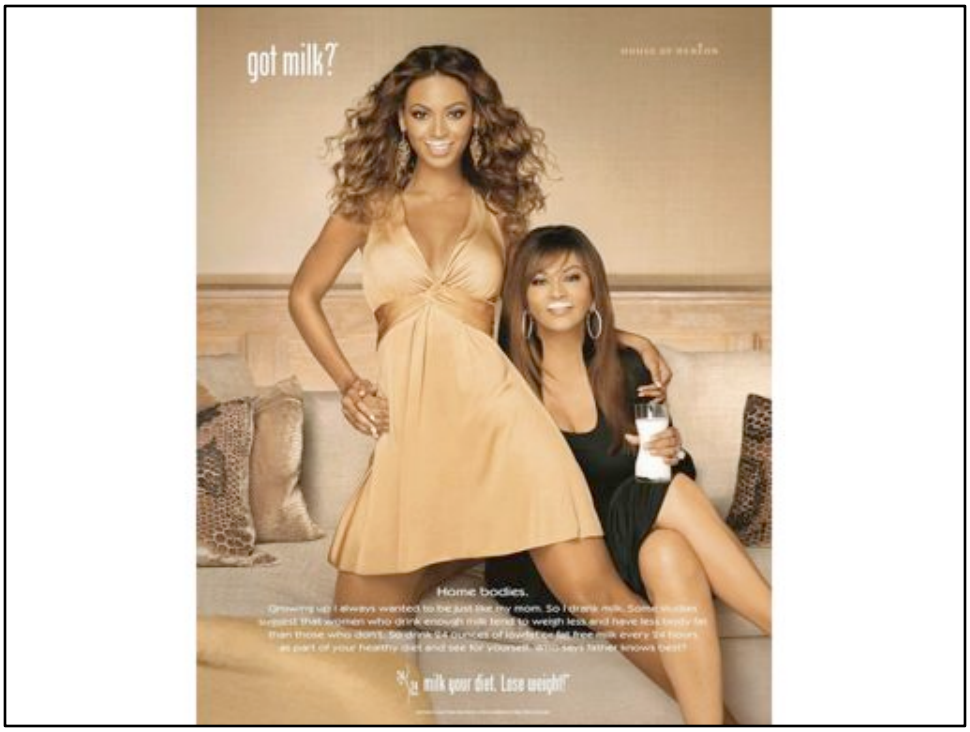
The best sources of usable calcium are dairy products, such as raw whole milk, raw cheese and cultured or raw yogurt. Dairy products are one of the best sources of calcium, yet many question whether we should be drinking milk and if so, what kind?

Got Milk?

Got Milk? has been described as one of the most famous commodity brand and influential ad campaigns in the United States.

The campaign, which encourages the consumption of cow's milk, was created for the California Milk Processor Board in 1993 and later licensed for use by other milk processors and dairy farmers.

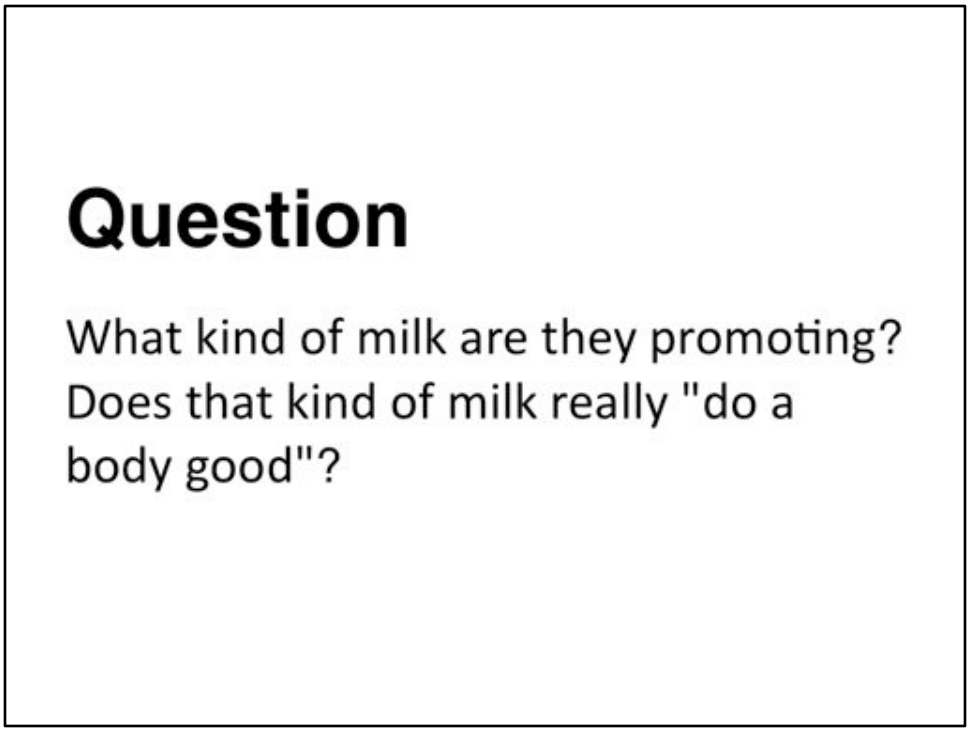
This long running series of print ads feature a variety of ethnically diverse celebrities, athletes and fictional characters sporting their own "milk mustache".



The campaign has been credited with greatly increasing milk sales in California |1| though not nationwide. |2|

1. Advertising Educational Foundation. "Got Milk? case history". Aef.com. Retrieved 2010-11-23.http://www.aef.com/on_campus/classroom/case_histories/3000

2. "Marketing campaign case studies: Got Milk?". Marketing-case-studies.blogspot.com. 2008-04-21. Retrieved 2010-11-23. http://marketing-case-studies.blogspot.com/2008/04/got-milk-campaign.html



But what kind of milk are they promoting? And does that kind of milk really “do a body good”? Is all milk created equal? What do you think?

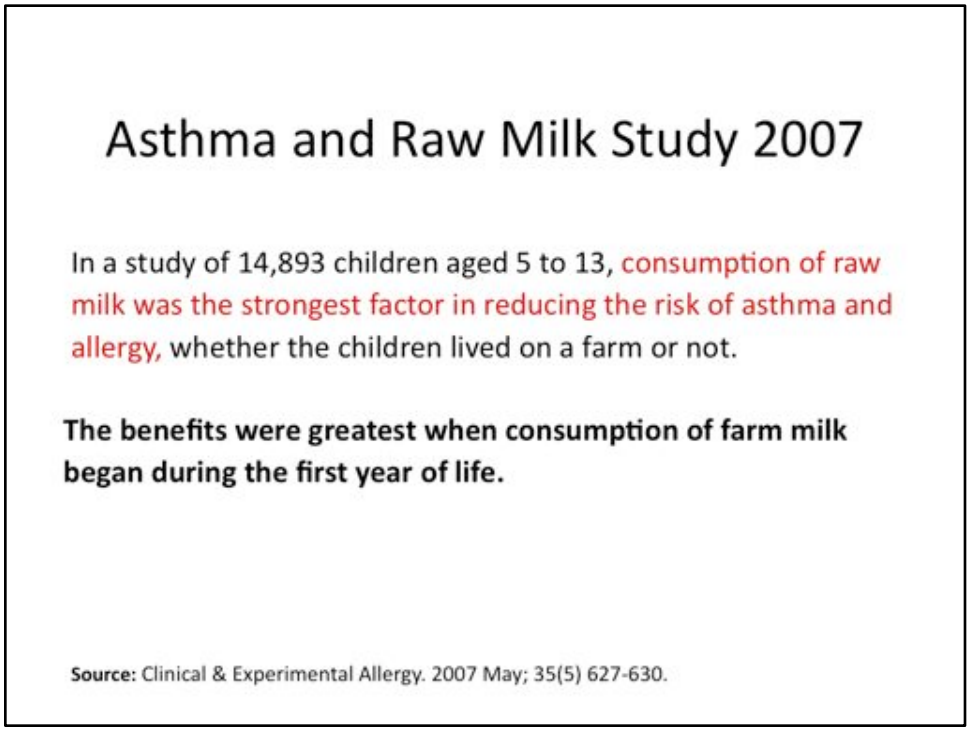
The kind of milk that the "got milk" campaign has been promoting for over a decade is pasteurized, or ultra-pasteurized, homogenized, conventional milk produced from cows in confinement eating corn or other grains which are often genetically modified and pesticide treated. They may also eat bakery waste, soy, citrus peel cake laden with pesticides and even manure from chickens, none of which constitute an appropriate diet for cows. Not what we would consider real milk.

What is Real Milk?

Real milk comes from old fashioned cows such as the Jersey and Guernsey.
Real milk comes from herds allowed to graze on green pasture.
Real milk is not pasteurized.
Real milk is not homogenized.
Real milk contains butterfat and lots of it.
Real milk contains no additives.

Back in the 20s, Americans could buy fresh, raw, whole milk, real clabber and buttermilk, luscious naturally yellow butter, fresh farm cheeses and cream in various colors and thicknesses. Raw milk is high in vitamins (including B12), all 22 essential amino acids, natural enzymes (including lactase), natural probiotics, and good fatty acids.

Today's milk is accused of causing everything from allergies to heart disease to cancer, but when Americans could buy Real Milk, these diseases were rare. In fact, a supply of high quality dairy products was considered vital to American security and the economic well being of the nation.



A study in 2007 indicates that raw milk actually reduces the risk of asthma and allergy. In a study of 14,893 children aged 5 to 13, consumption of raw milk was the strongest factor in reducing the risk of asthma and allergy, whether the children lived on a farm or not. The benefits were greatest when consumption of farm milk began during the first year of life.

Let us take a look at where most milk comes from – starting with the modern dairy cow.

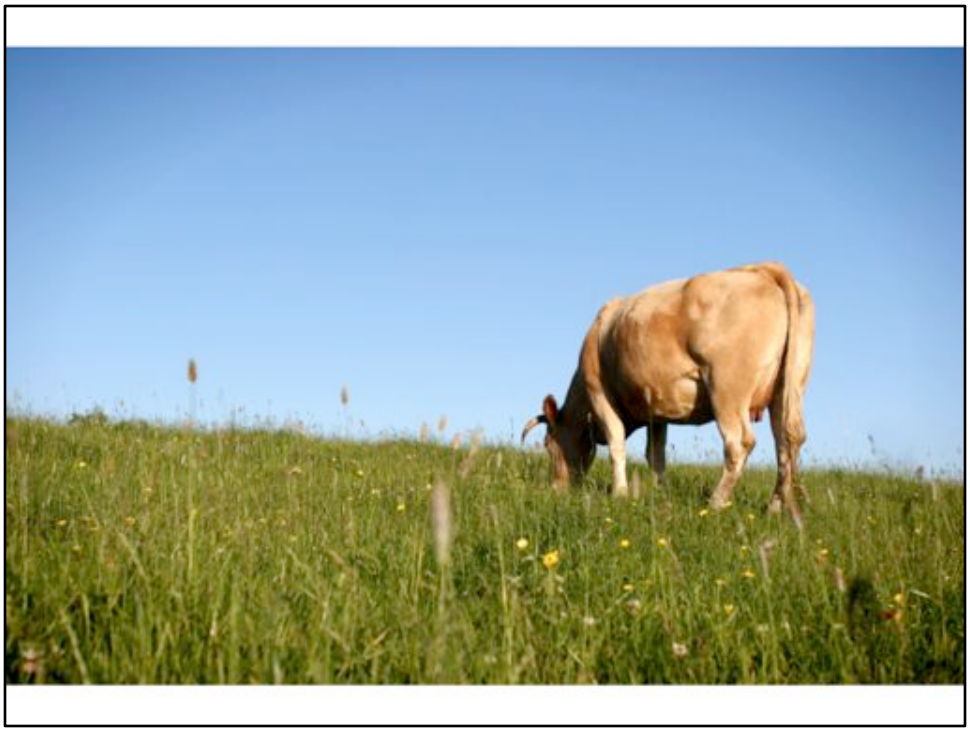
Most milk (even most milk labeled "organic") comes from dairy cows that are kept in confinement their entire lives and never see green grass!

This photos shows a typical confinement operation, sometimes housing up to 2,500 cows under one roof. The cows are inside eating feed completely unnatural for cows, often while beautiful green grass – the perfect food for cows – is mowed outside.

The average lifespan of cows in confinement is less than four years, whereas a cow on pasture has a life span of 12 to 15 years.

The source of most commercial milk is the modern Holstein. She is bred to produce almost twice as much as an old-fashioned cow and must be milked three times per day. Look at the size of her udder! She is very stressed and produces a low-quality milk. She needs special feed and sometimes antibiotics to keep her well. Her milk contains high levels of growth hormone from her pituitary gland. If she is given genetically engineered Bovine Growth Hormone she will be pushed to the udder limits of milk production.

Healthy milk comes from contented cows on pasture, eating the foods that cows were designed to eat. The cows have normal-sized udders and are not stressed. They have no need for antibiotics and have a life span of 12 to 15 years. The cows in these photographs are old fashioned Jersey, Guernsey and Ayreshire (pronounced air-sure) cows, which produce milk with a high fat content.



The cows have normal-sized udders and are not stressed. They have no need for antibiotics and have a life span of 12 to 15 years

The cows in these last photographs are old fashioned Jersey, Guernsey and Ayreshire (pronounced air-sure) cows, which produce milk with a high fat content.

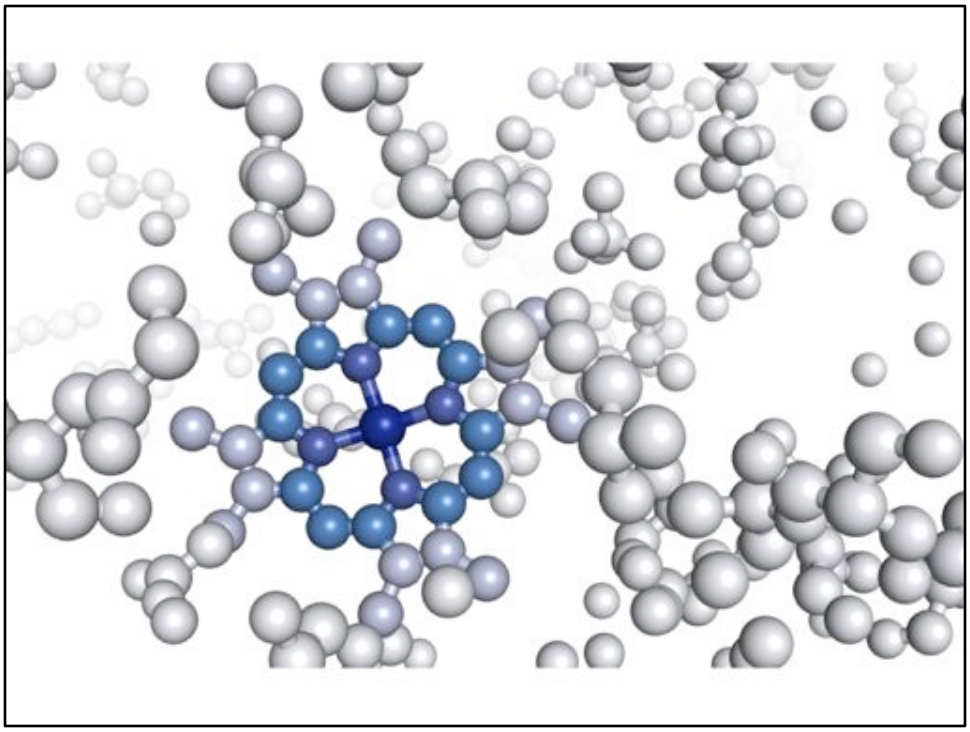
Real feed for cows is green grass in Spring, Summer and Fall; green feed, silage [sie-lage], hay and root vegetables in Winter. It is not soy meal, cottonseed meal or other commercial feeds (organic or otherwise), nor is it bakery waste, chicken manure or citrus peel cake, laced with pesticides.

Vital nutrients like vitamins A and D, as well as crucial minerals like zinc, are greatest in milk from cows eating green grass, especially rapidly growing green grass in the spring through fall. Vitamins A and D are greatly diminished when milk cows are fed commercial feed. Tryptophan, a precursor to the mood-enhancing serotonin, is also found at higher levels in Real Milk..

Soy meal has the wrong protein profile for the dairy cow, resulting in a short burst of high milk production followed by premature death.

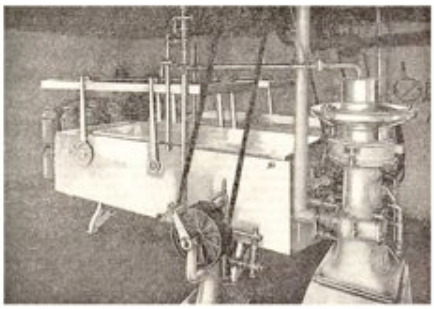
What harm is there in pasteurization?

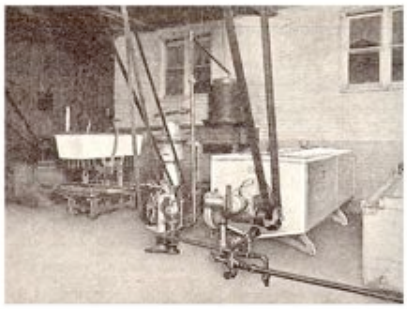
First lets define the process. With standard pasteurization, milk is heated to a temperature of at least 161 degrees Fahrenheit for no less than 15 seconds, followed by rapid cooling. For ultra-pasteurization, the temperature is 230 degrees, above the boiling point. The National Dairy Council states: "All milk intended for direct consumption should be pasteurized - it's a matter of food safety." They claim pasteurization is a simple, effective method to kill potentially harmful bacteria without affecting the taste or nutritional value of milk.



What isn't as widely published is the fact that pasteurization destroys enzymes. Enzymes are specialized proteins that assist in the breaking down and digestion of foods into useful elements that can be utilized, absorbed, or stored by the body. Without those vital enzymes, one cannot properly utilize the nutrients found in milk and many people develop an allergic reaction when the body rejects this altered substance.

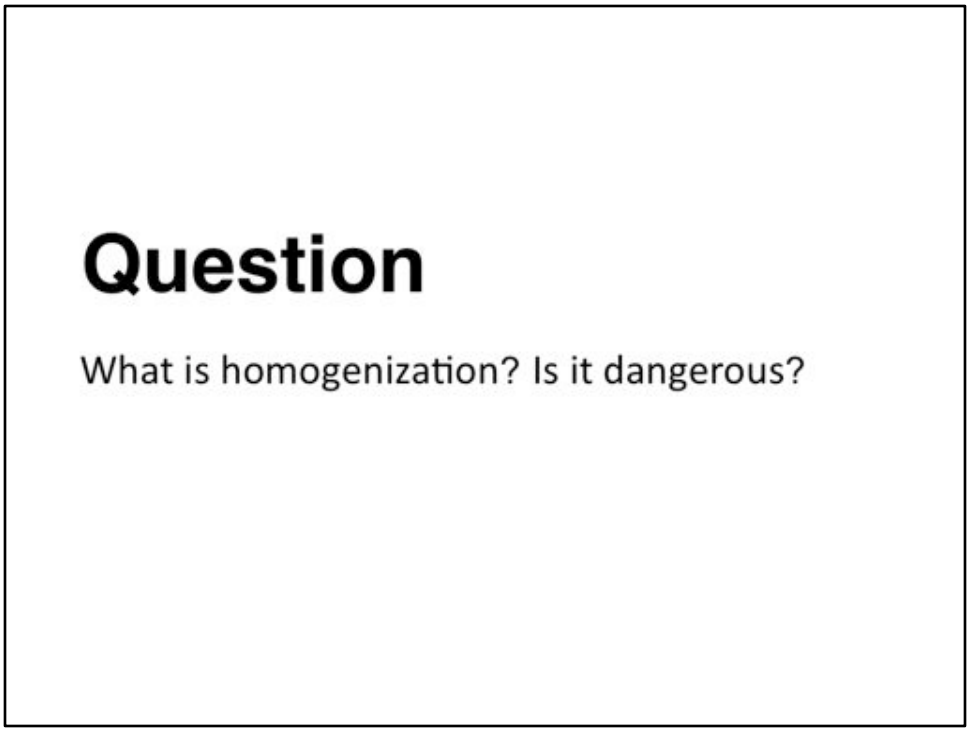
Pasteurization also diminishes vitamin content, denatures fragile milk proteins, destroys vitamins C, B12 and B6, kills beneficial bacteria, promotes pathogens and is associated with allergies, increased tooth decay, colic in infants, growth problems in children, osteoporosis, arthritis, heart disease and cancer. Calves fed pasteurized milk do poorly and many die before maturity. Raw milk sours naturally but pasteurized milk turns putrid; processors must remove slime and pus from pasteurized milk by a process of centrifugal clarification. Inspection of dairy herds for disease is not required for pasteurized milk..



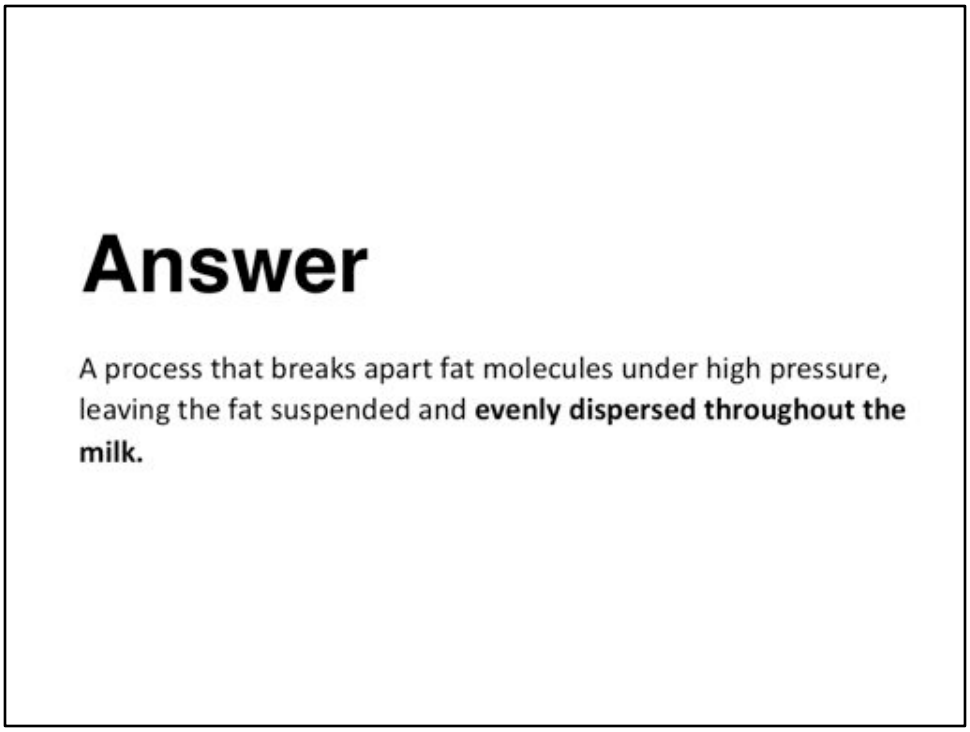


Pasteurization, named after the French chemist Louis Pasteur, was instituted in the 1920s to combat TB, infant diarrhea, undulant fever and other diseases caused by poor animal nutrition and dirty production methods

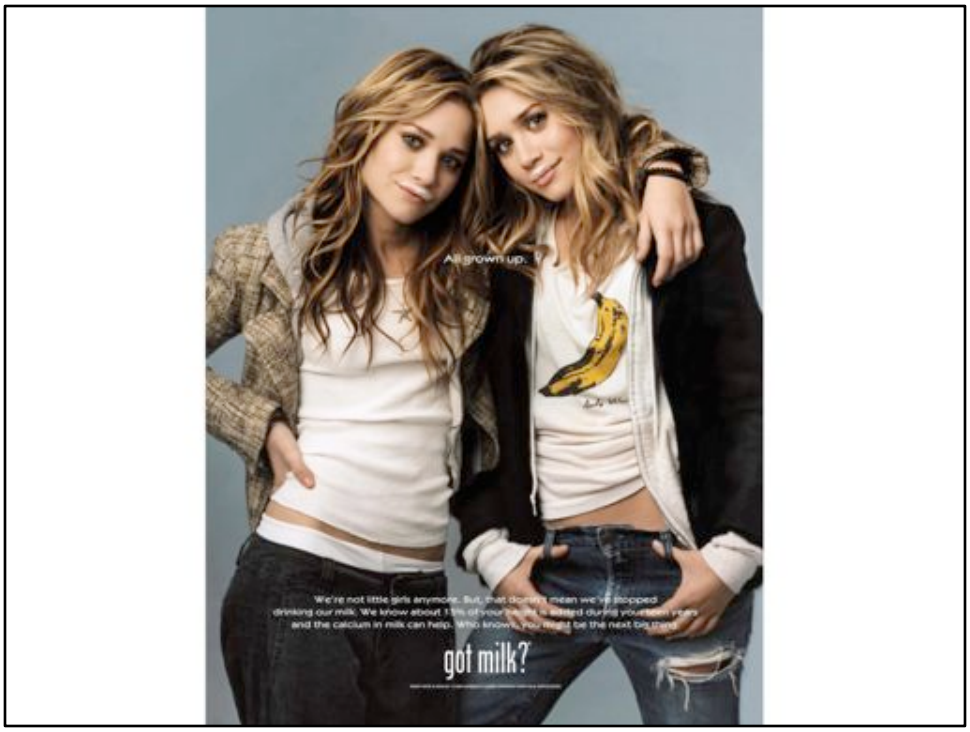
But times have changed and modern stainless steel tanks, milking machines, refrigerated trucks and inspection methods make pasteurization absolutely unnecessary for public protection.



What is homogenization?

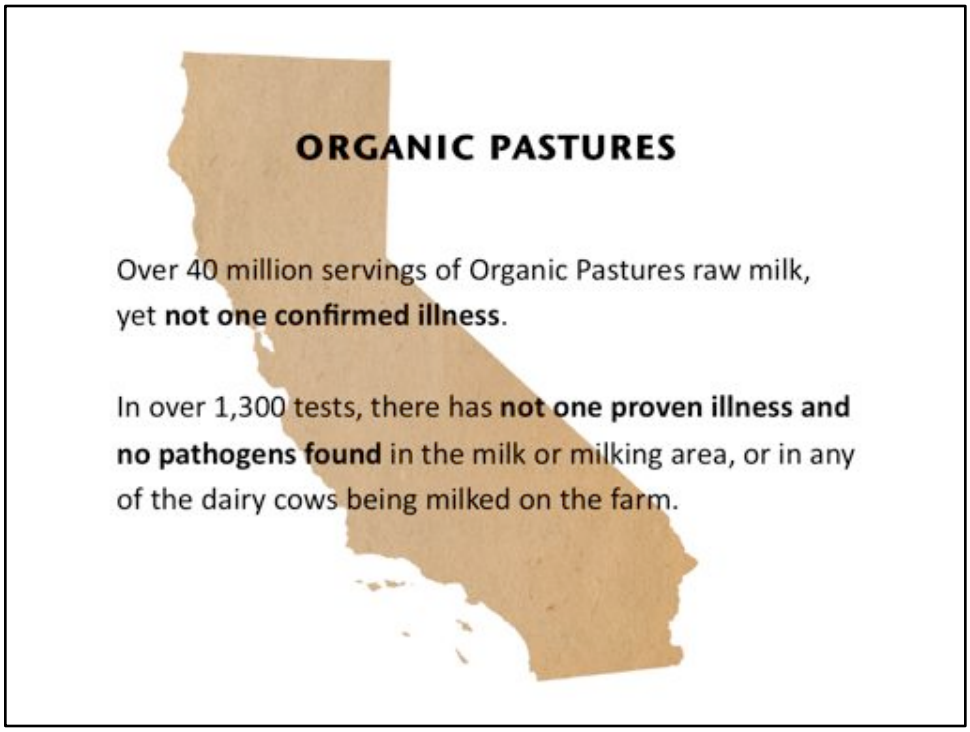


When a cow gives milk, it is actually producing two things: nonfat milk and cream. Left to sit, the cream, which is lighter, will naturally rise to the top. Introduced in 1932, homogenization breaks apart fat molecules under high pressure, leaving the fat suspended and evenly dispersed throughout the milk. Homogenized milk has been linked to heart disease |1|. Clean, raw milk from certified healthy cows is available commercially in San Francisco and in other Bay Area cities. It is also available around the country. To learn more see realmilk.com.



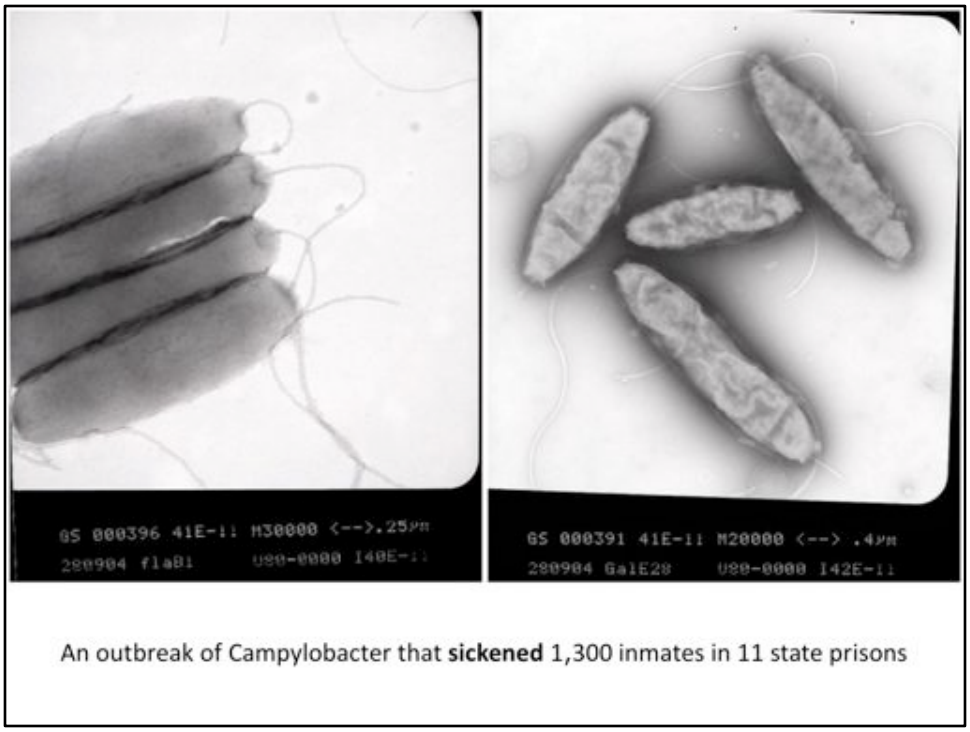
As a point of clarification, homogenization, from the root word "homo" meaning "same or alike" is a term that refers to a process in which **any mixture** is made the same throughout the entire substance.

Is Raw Milk Safe? Let's look at raw milk safety in California, where Nourishing Our Children is based. Currently, there are two commercial raw milk dairies, which are highly regulated and arguably over-regulated.



Since 1999, there have been over 40 million servings of Organic Pastures raw milk, yet not one confirmed illness; in over 1,300 tests, there has not one proven illness and no pathogens found in the milk or milking area, or in any of the dairy cows being milked on the farm.

In Claravale Farm's 80-year history, no consumers of their milk have ever gotten sick from milk-borne pathogens and no pathogens have ever been detected in the milk.



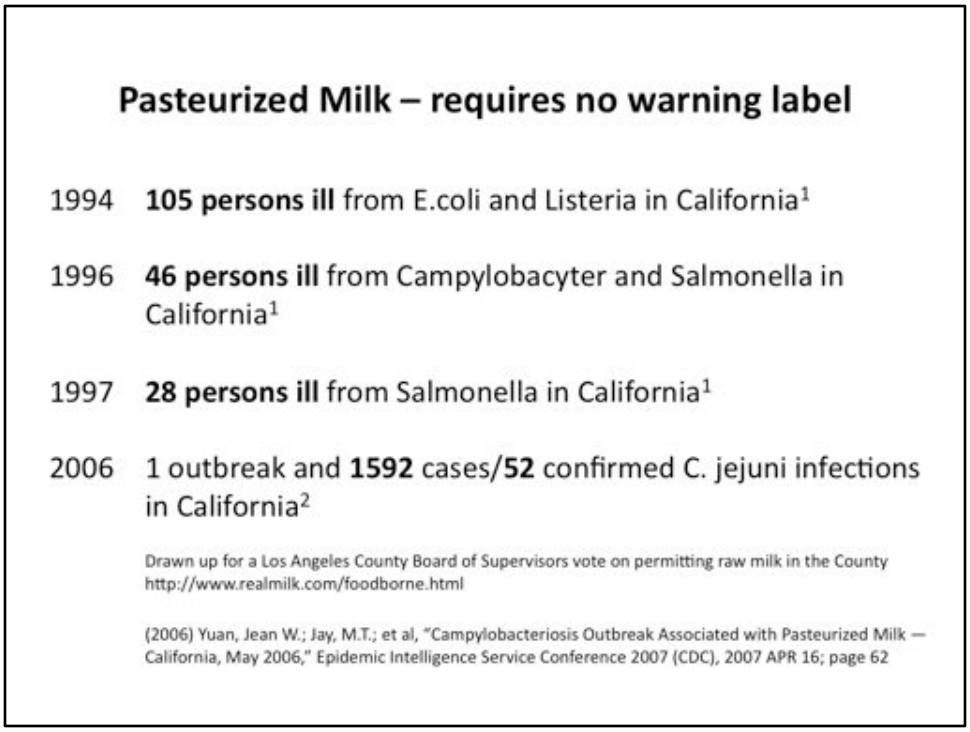
Pasteurized Outbreaks – Since 1999, there have been several pasteurized milk products recalled in California and one publicized outbreak of illness due to pasteurized milk during the same period, an outbreak of Campylobacter that sickened 1,300 inmates in 11 state prisons |1|.

|1| http://www.campylobacterblog.com/2006/06/articles/campylobacter-watch/spoiled-milk-apparently-sickened-1300-inmates-at-11-prisons

Still not convinced?

In California, raw milk must be labeled with the following Government Warning: "Raw, meaning un-pasteurized milk and raw milk dairy products, may contain disease-causing microorganisms. Persons at highest risk of disease from these organisms include newborns and infants, the elderly, pregnant women, those taking corticosteroids, antibiotics or antacids and those having chronic illnesses or other conditions that weaken their immunity."

Yet – there have been no proven outbreaks of human illness that have been reported from the consumption of commercially sold raw milk in California.



Conversely there are repeated reports of illness caused by pathogens found in pasteurized milk and other foods. You will see only a few highlighted on this slide.

1994—105 persons ill from E.coli and Listeria in California

Drawn up for a Los Angeles County Board of Supervisors vote on permitting raw milk in the County http://www.realmilk.com/foodborne.html

1996—46 persons ill from Campylobacyter and Salmonella in California

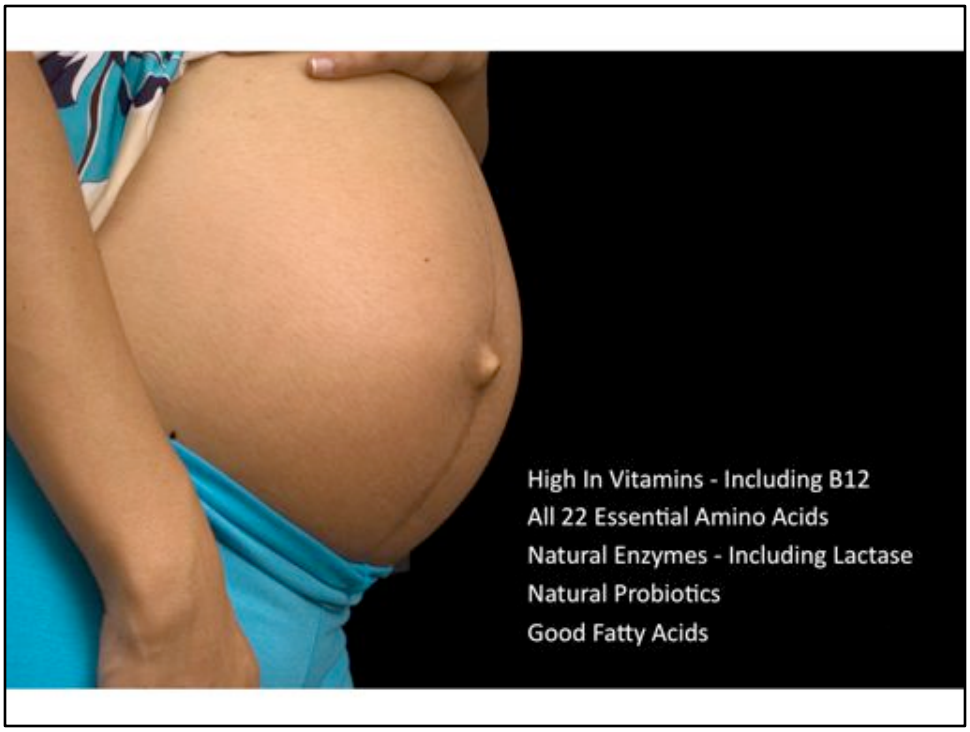
Drawn up for a Los Angeles County Board of Supervisors vote on permitting raw milk in the County http://www.realmilk.com/foodborne.html

1997—28 persons ill from Salmonella in California

Drawn up for a Los Angeles County Board of Supervisors vote on permitting raw milk in the County http://www.realmilk.com/foodborne.html

2006—1 outbreak and 1592 cases/52 confirmed C. jejuni infections in CA

(2006) Yuan, Jean W.; Jay, M.T.; et al, "Campylobacteriosis Outbreak Associated with Pasteurized Milk — California, May 2006," Epidemic Intelligence Service Conference 2007 (CDC), 2007 APR 16; page 62. Available at http://www.cdc.gov/eis/conference/archives/EIS_program%20indd.pdf, accessed 28-May-2007. This was a paper presented at a conference.



Keep in mind that the human race existed long before Louis Pasteur proposed heat-treatment as a way to control micro-organisms. Our position is that those whose immune systems are weak or taxed are the ones who would benefit most from the vital nutrients found in raw milk.

High In Vitamins - Including B12
All 22 Essential Amino Acids
Natural Enzymes - Including Lactase
Natural Probiotics
Good Fatty Acids

The money that pays for our food is a source of pathogens.

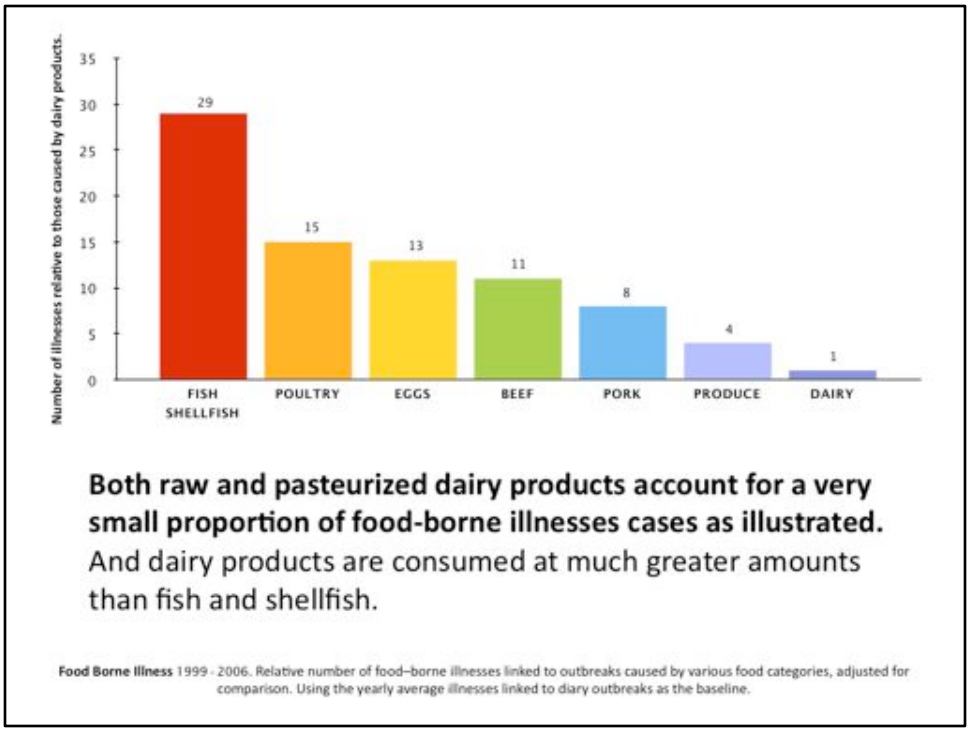
E. COLI has been shown to survive on coins for 7-11 days at room temperature.

Salmonella enteritidis can survive 1-9 days on pennies, nickels, dimes and quarters.

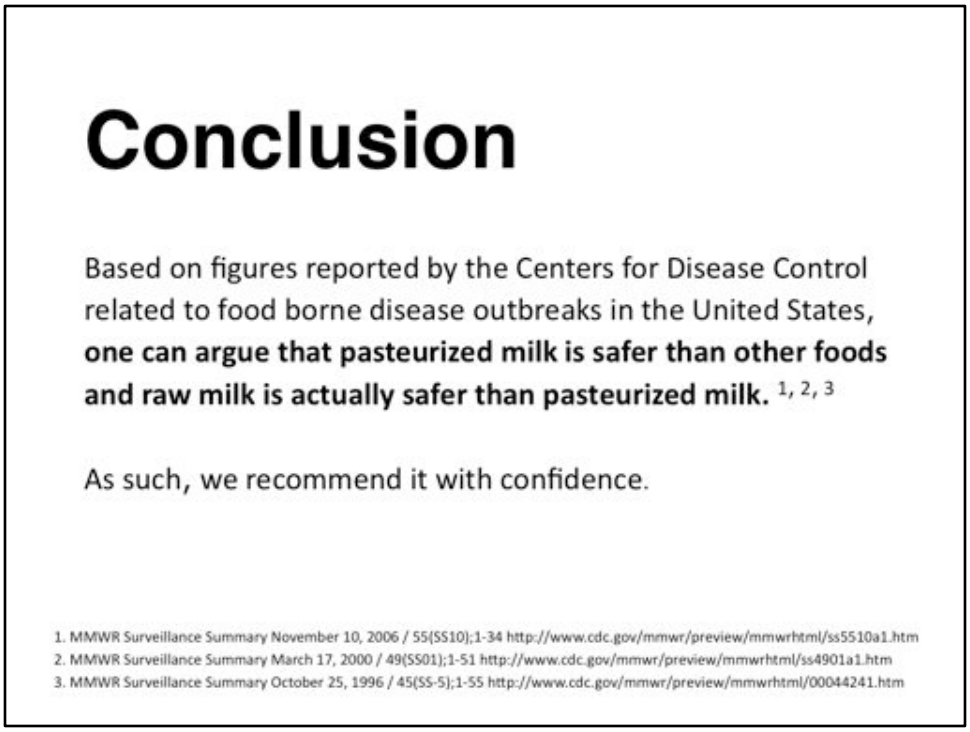
Salmonella enteritidis can also survive on glass and teflon for up to 17 days.

Jiang and Doyle. **Journal of Food Protection** 1999;62(7):805-7

Please keep in mind that we are always exposed to pathogens! We believe that the solution is not to remove pathogens by pasteurization, but to build the immune system. Raw milk builds the immune system.



So to answer the question, “is raw milk safe”, we would assert that the consumption of all foods, including milk, whether pasteurized or unpasteurized, inherently carries some degree of risk. Not all raw milk dairies have the same safety record as Organic Pastures and Claravale in California and it is true that some people have gotten ill from raw milk. Nonetheless, both raw and pasteurized dairy products account for a very small proportion of food-borne illnesses cases. And dairy products are consumed at much greater amounts than fish and shellfish. Yet you can still purchase raw oysters without a warning label!



Based on figures reported by the Centers for Disease Control related to food borne disease outbreaks in the United State, one can argue that pasteurized milk is safer than other foods and raw milk is actually safer than pasteurized milk |1. 2. 3|. As such, we recommend it with confidence.

2. MMWR Surveillance Summary November 10, 2006 / 55(SS10);1-34 http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5510a1.htm
3. MMWR Surveillance Summary March 17, 2000 / 49(SS01);1-51 http://www.cdc.gov/mmwr/preview/mmwrhtml/ss4901a1.htm
4. MMWR Surveillance Summary October 25, 1996 / 45(SS-5);1-55 http://www.cdc.gov/mmwr/preview/mmwrhtml/00044241.htm

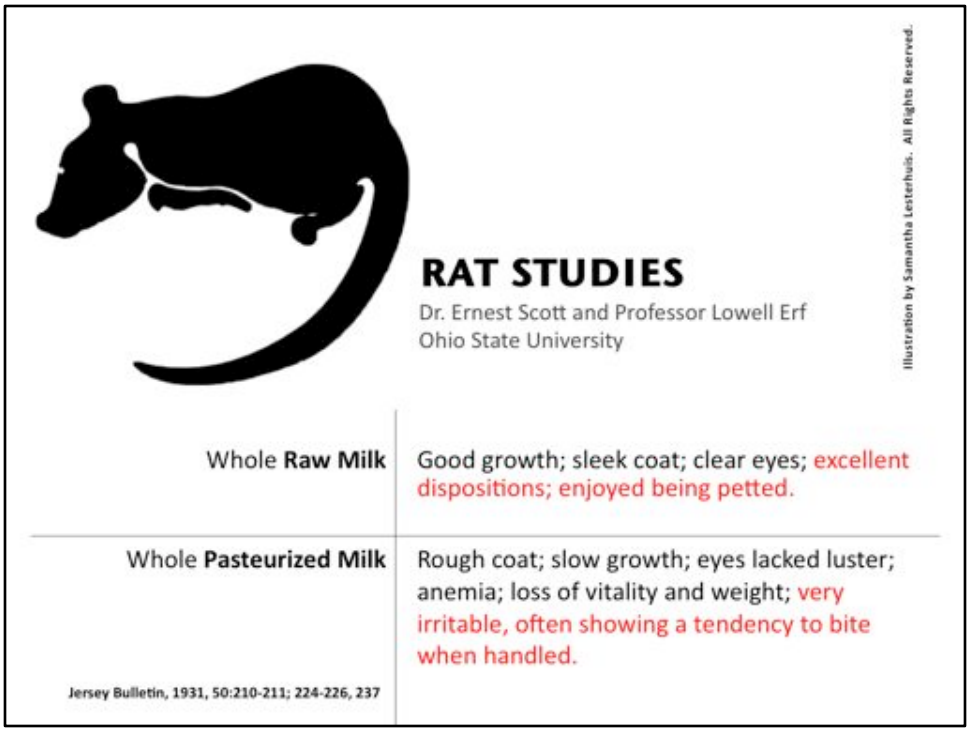
GUINEA PIG STUDIES

Dr. Rosalind Wulzen and Alice Bahrs
Department of Zoology, Oregon State College

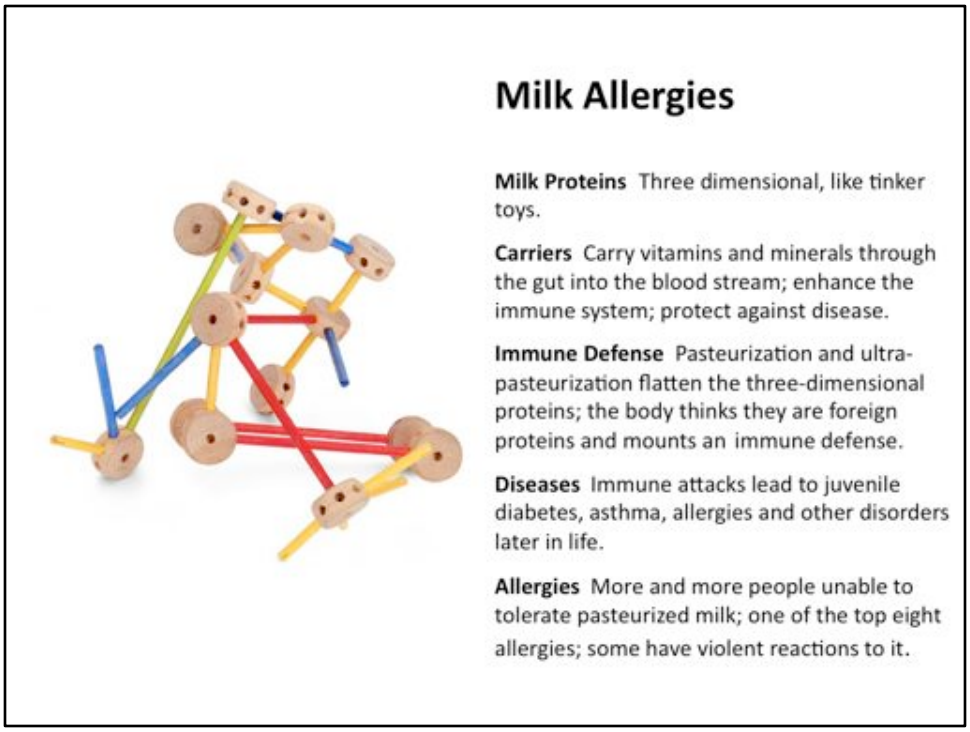
Whole **Raw Milk**	Excellent growth; no abnormalities.
Whole **Pasteurized Milk**	Poor growth; muscle stiffness; emaciation and weakness; death within one year. Autopsy revealed atrophied muscles streaked with calcification; tri-calcium deposits under skin, in joints, heart and other organs.

The American Journal of Physiology, 1941, 133, 500

In a milk study, the guinea pigs that were fed whole raw milk had excellent growth with no abnormalities, while those fed pasteurized milk had poor growth and were dead within one year.



Notice in this study that the rats fed whole raw milk had excellent dispositions and enjoyed being petted, while those fed whole pasteurized milk were very irritable, often showing a tendency to bite when handled.



Milk proteins are three dimensional, like tinker toys. They serve as carriers of vitamins and minerals through the gut into the blood stream; they enhance the immune system; they protect against disease. Pasteurization and ultra-pasteurization flatten and distort the three-dimensional proteins; the body thinks they are foreign proteins and mounts an immune defense. Immune attacks lead to juvenile diabetes, asthma, allergies and other disorders later in life.