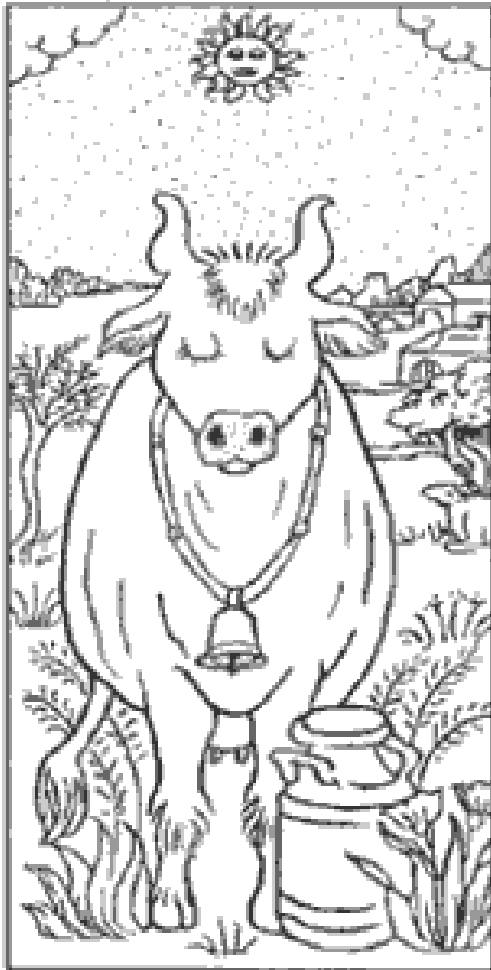


# A Campaign for

*Real Milk*

**FULL-FAT  
PASTURE-FED  
UNPROCESSED**



## The Safety and Health Benefits of Real Milk

A Campaign for Real Milk Is a Project of  
The Weston A. Price Foundation  
[westonaprice.org](http://westonaprice.org)

# RUDOLF STEINER ON MILK

Milk is completely different from meat in that it expresses in the weakest possible form the animalistic process brought forth by the astral body of the animal.

Milk is only partly an animal product and the animal or human astral processes do not participate in its production. For this reason milk is one of the most perfect foods. . .

Even from an external standpoint it can be seen that milk contains everything a person requires for his organism. . .

Weak as well as strong organisms can gain support from milk. If a person were to live exclusively on milk for a time, then not only would his regular forces be awakened but it would also be beyond this. He would receive from it an influx of forces giving him additional strength.

# RAW MILK MYTHS

“Research has shown that there is no significant difference in the nutritional value of pasteurized and unpasteurized milk.”

*Common claim of public health officials*

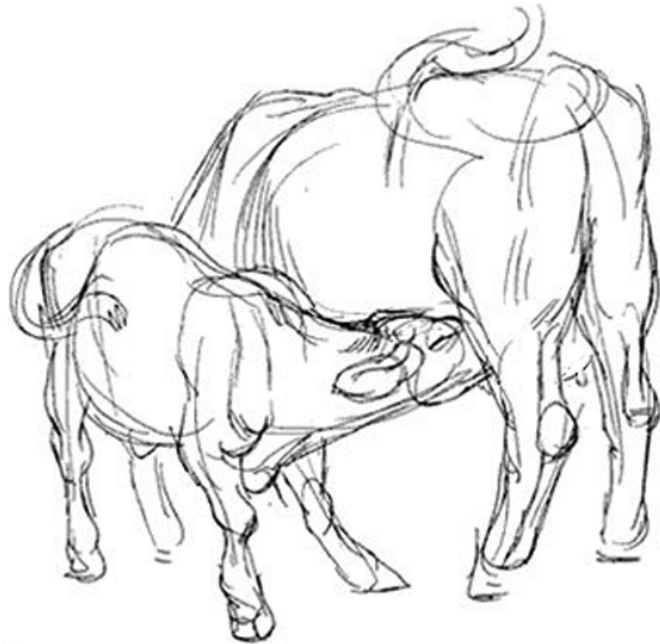
“Raw milk is inherently dangerous and should not be consumed by anyone under any circumstances at any time.”

*John F. Sheehan, Director,  
US Food and Drug Administration,  
Division of Dairy and Egg Safety  
FDA Consumer, Sept/Oct 2004*

“Pasteurization of milk is one of the most important public health initiatives in history.”

*Common claim of public health officials*

# RAW MILK IS **UNIQUELY SAFE**



Consider the calf, born in the muck, which then suckles on its mother's manure-covered teat.

**How can that calf survive?**

Because raw milk contains multiple, redundant systems of bioactive components that can reduce or eliminate populations of pathogenic bacteria.

# BUILT-IN PROTECTIVE SYSTEMS IN RAW MILK

## LACTOPEROXIDASE

**HYDROGEN PEROXIDE:** Uses small amounts of  $H_2O_2$  and free radicals to seek out and destroy pathogens

**WIDESPREAD:** In all mammalian secretions—breast milk, tears, etc.

**HIGHER IN ANIMAL MILK:** Lactoperoxidase levels *10 times higher* in goat milk than in breast milk

**ALTERNATIVE TO PASTEURIZATION:** Other countries are looking into using lactoperoxidase instead of pasteurization to ensure safety of commercial milk

*British Journal of Nutrition* (2000), 84, Suppl. 1. S19–S25.

*Indian Journal Exp Biology* Vol. 36, August 1998, pp 808–810.

1991 *J Dairy Sci* 74:783–787

*Life Sciences*, Vol 66, No 23, pp 2433–2439, 2000

# BUILT-IN PROTECTIVE SYSTEMS IN RAW MILK

## LACTOFERRIN

**PLENTIFUL** in raw milk; effectiveness reduced by pasteurization<sup>1</sup>

**STEALS IRON** away from pathogens and carries it through the gut wall into the blood stream; stimulates the immune system<sup>1</sup>

**TB:** In a study involving mice bred to be susceptible to tuberculosis, treatment with lactoferrin significantly reduced the burden of tuberculosis organisms.<sup>2</sup>

**CANDIDA:** Mice injected with *Candida albicans*, another iron-loving organism, had increased survival time when treated with lactoferrin.<sup>3</sup>

**WEIGHT LOSS:** Believed to cut visceral fat levels up to 40%<sup>4</sup>

**BENEFITS:** Many other health benefits—is sold as a supplement!

1. *British J Nutrition*, 2000;84(Suppl. 1):S11-S17.

2. *J Experimental Med*, 2002 DEC 02;196(11):1507-1513.

3. *Infection and Immunity*, 2001 JUN;69(6):3883-3890.

4. *MSN-Mainichi Daily News*, 2007 APR 11.

# BUILT-IN PROTECTIVE SYSTEMS IN RAW MILK:

## COMPONENTS OF BLOOD

**LEUKOCYTES**—Eat all foreign bacteria, yeast and molds (phagocytosis). Destroyed at 56C and by pumping milk. Produce  $H_2O_2$  to activate the lacto-peroxidase system. Produce anaerobic  $CO_2$  that blocks all aerobic microbes. Basis of immunity.

**B-LYMPHOCYTES** – Kill foreign bacteria; call in other parts of the immune system<sup>1,2</sup>

**MACROPHAGES** – Engulf foreign proteins and bacteria<sup>2</sup>

**NEUTROPHILS** – Kill infected cells; mobilize other parts of the immune system<sup>1</sup>

**T-LYMPHOCYTES** – Multiply if bad bacteria are present; produce immune-strengthening compounds<sup>1</sup>

**IMMUNOGLOBULINS (IGM, IGA, IGG1, IGG2)**--Transfer of immunity from cow to calf/person in milk and especially colostrum; provides "passive immunization"<sup>2</sup>

**ANTIBODIES**—Bind to foreign microbes and prevent them from migrating outside the gut; initiate immune response.

1. *Scientific American*, December 1995.

2. *British J of Nutrition*, 2000:84(Suppl. 1):S3-S10, S75-S80, S81-S89, S135-136.

# BUILT-IN PROTECTIVE SYSTEMS IN RAW MILK:

## FATS AND CARBOHYDRATES

**POLYSACCHARIDES**—Encourage the growth of good bacteria in the gut; ; protect the gut wall

**OLIGOSACCHARIDES**—Protect other components from being destroyed by stomach acids and enzymes; bind to bacteria and prevent them from attaching to the gut lining; other functions just being discovered.<sup>1,2</sup>

**MEDIUM-CHAIN FATTY ACIDS**—Disrupt cell walls of bad bacteria; levels so high in goat milk that the test for the presence of antibiotics had to be changed; may reduce intestinal injury and protect the liver.<sup>3</sup>

**PHOSPHOLIPIDS AND SPINGOLIPIDS**—bind to intestinal cells, prevent absorption of pathogens and toxins.<sup>3</sup> Spingolipids are important components in cell membranes, protect cells against toxins, support digestion and protect against cancer.

1. *British J Nutrition*, 2000:84(Suppl. 1):S3–S10.

2. *Scientific American*, December 1995.

3. *International Dairy Journal* 2006 16:1374–1382 and 1362–1373

4. Spingolipids and Cancer, scitopics.com; Koopman, J S, et al, *AJPH*, 1984, 74:12:1371–1373



# BUILT-IN PROTECTIVE SYSTEMS IN RAW MILK:

## OTHER BIOACTIVE COMPONENTS

**ENZYMES, E.G. COMPLEMENT AND LYSOZYME**—Disrupt bacterial cell walls. Complement destroyed at 56C; Lysozyme at 90C.<sup>1,2</sup>

**HORMONES AND GROWTH FACTORS** – Stimulate maturation of gut cells; prevent "leaky" gut.<sup>2</sup>

**MUCINS** – Adhere to bacteria and viruses, preventing those organisms from attaching to the mucosa and causing disease.<sup>1,2</sup>

**FIBRONECTIN** – Increases anti-microbial activity of macrophages and helps to repair damaged tissues.<sup>1</sup>

**GLYCOMACROPEPTIDE** – Inhibits bacterial/viral adhesion, suppresses gastric secretion, and promotes bifido-bacterial growth; supports immune system.<sup>3</sup>

1. *British J Nutrition*, 2000:84(Suppl. 1):S3–S10.

2. *Scientific American*, December 1995.

3. *British J Nutrition*, 2000:84(Suppl. 1):S3–S10, S39–S46

# BUILT-IN PROTECTIVE SYSTEMS IN RAW MILK:

## OTHER BIOACTIVE COMPONENTS

**BENEFICIAL BACTERIA** – *Lactobacilli* and *bifidus* bacteria, crowd out bad bacteria, product lactic acid that kills bad bacteria.

**BIFIDUS FACTOR** – Promotes growth of *Lactobacillus bifidus*, a helpful bacteria in baby's gut, which helps crowd out dangerous germs<sup>1,2</sup>

**B<sub>12</sub> BINDING PROTEIN** – Reduces Vitamin B<sub>12</sub> in the colon, which harmful bacteria need for growth<sup>1</sup>

**LACTOGLOBULINS** - Carry vitamins A and D and possibly other nutrients.<sup>3</sup>

1. *Scientific American*, December 1995.

2. *British J Nutrition*, 2000:84(Suppl. 1):S3–S10, S39–S46.

3. *FEBS Journal* 2009 276:2251–2265.

# FIVEFOLD PROTECTIVE SYSTEM IN RAW MILK

1. Destroys pathogens in the milk.
2. Stimulates the immune system.
3. Builds healthy gut wall.
4. Prevents absorption of pathogens and toxins in the gut.
5. Ensures assimilation of all the nutrients.

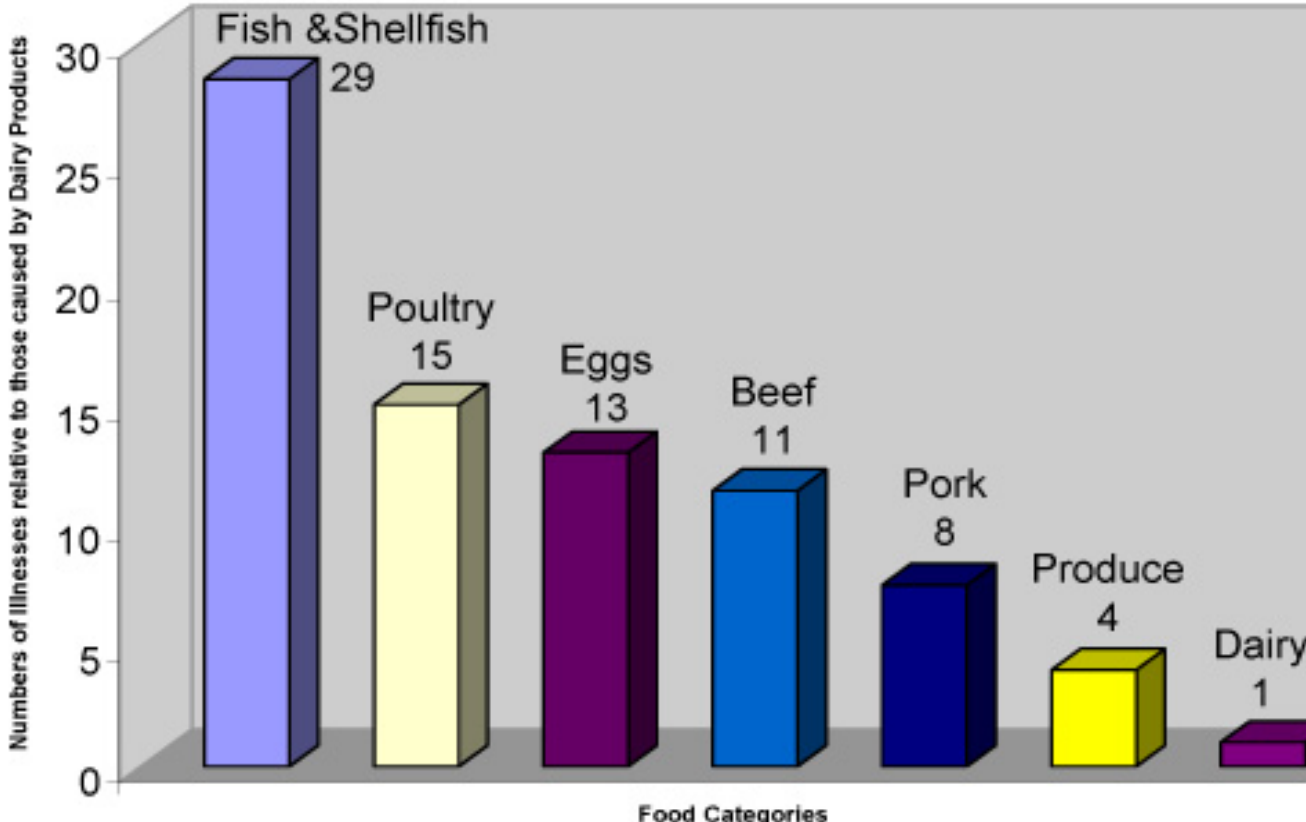
# DESTRUCTION OF BUILT-IN SAFETY SYSTEMS BY PASTEURIZATION

Component	Breast Milk	Raw Milk	Pasteurized Milk	UHT Milk	Infant Formula
B-lymphocytes	Active	Active	Inactivated	Inactivated	Inactivated
Macrophages	Active	Active	Inactivated	Inactivated	Inactivated
Neutrophils	Active	Active	Inactivated	Inactivated	Inactivated
Lymphocytes	Active	Active	Inactivated	Inactivated	Inactivated
IgA/IgG Antibodies	Active	Active	Inactivated	Inactivated	Inactivated
B <sub>12</sub> Binding Protein	Active	Active	Inactivated	Inactivated	Inactivated
Bifidus Factor	Active	Active	Inactivated	Inactivated	Inactivated
Medium-Chain FAs	Active	Active	Reduced	Reduced	Reduced
Fibronectin	Active	Active	Inactivated	Inactivated	Inactivated
Gamma-Interferon	Active	Active	Inactivated	Inactivated	Inactivated
Lactoferrin	Active	Active	Reduced	Inactivated	Inactivated
Lysozyme	Active	Active	Active	Inactivated	Inactivated
Mucin A/Oligosaccharides	Active	Active	Reduced	Reduced	Inactivated
Hormones/Growth Factors	Active	Active	Reduced	Reduced	Inactivated

1. *Scientific American*, December 1995.
2. *The Lancet*, 17 NOV 1984;2(8412):1111-1113.

# FOOD-BORNE ILLNESS 1999-2006

Relative Number of Foodborne Illnesses Linked to Outbreaks Caused by Various Food Categories, Adjusted for Consumption 1999-2006



\*Using the yearly average illnesses linked to Dairy outbreaks as the baseline

# FOODBORNE ILLNESS **DEATHS**, since 1999

- Cantaloupe: 29 (2011)
- Spinach: 5 (2007)
- Luncheon Meat: 12 (Canada, 2008); 2 (2011)
- Peanuts: 9 (2009)
- Eggs: 30 PER YEAR
- Oysters: 15 PER YEAR
- Pasteurized Cheese: 7 (Europe, 2009)
- Pasteurized Milk: 3 (2007)
- Pasteurized Mother's Milk: 4 (2003)
- **Raw Milk: NONE\***

FDA claims 2 deaths, one in a woman who never drank raw milk, and one anonymous complaint from our 2015 conference.

# Outbreaks and Deaths from Pasteurized Milk and Pasteurized Milk Products – since 1966

- 60 Outbreaks
- 153,657 Illnesses
- 73 Deaths



# Some Outbreaks Due to Pasteurized Milk

- 1976**—1 outbreak *Y. enterocolitica* in **36** children, 16 of whom had appendectomies, due to pasteurized chocolate milk<sup>1</sup>
- 1982**—Over **17,000** cases *Y. enterocolitica* in several states from milk produced in Memphis, TN<sup>2</sup>
- 1983**—1 outbreak, **49** cases, **14 deaths** from *L. monocytogenes* in MA<sup>2</sup>
- 1984**—3 outbreaks of antibiotic-resistant *S. typhimurium*, at plant in Melrose Park IL. The third wave had **16,284** confirmed cases; surveys indicated as many as 197,581 persons may have been affected<sup>2</sup>
- 1985**—**1,500+** cases, *Salmonella* culture confirmed, in Northern IL<sup>2</sup>
- 1993**—1 outbreak, **2014** cases/**142** confirmed *S. enteritidis* due to pasteurized in MN, SD, WI<sup>6</sup>
- 1995**—Outbreak of *Yersinia enterocolitica* in **10 children**, 3 hospitalized due to post-pasteurization contamination<sup>7</sup>
- 2000**—1 outbreak, **98** cases/**38** confirmed *S. typhimurim* in PA and NJ<sup>7</sup>
- 2005**—1 outbreak, **200** cases *C. jejuni* in CO prison<sup>9</sup>
- 2006**—1 outbreak, **1592** cases/**52** confirmed *C. jejuni* infections in CA<sup>10</sup>
- 2007**—1 outbreak, **3 deaths** from pasteurized milk in Massachusetts
- 2009**—1 outbreak, **7 deaths** from pasteurized cheese in Europe
- 2012**—1 outbreak, **4 deaths** from pasteurized cheese in the US



# Heat Resistant Pathogens in Pasteurized Milk

JOHNE' S BACTERIA (paratuberculosis bacteria) suspected of causing Crohn' s disease, now routinely found in pasteurized milk.

*B. CEREUS* SPORES survive pasteurization.

BOTULISM SPORES survive pasteurization.

PROTOZOAN PARASITES survive pasteurization.

Elliott Ryser. Public Health Concerns. In: Marth E, Stelle J, eds. *Applied Dairy Microbiology*, New York, Marcel Dekker, 2001.

# RAW MILK CHALLENGE TESTS

- Large amounts of *Campylobacter* (an amount found in 20,000 grams manure) added to chilled raw milk (4° C):
- Most strains showed a dramatic decline  
Day 0 = 13,000,000/ml  
Day 9 = less than 10/ml
- The only stain that did not decline was a non-human strain.

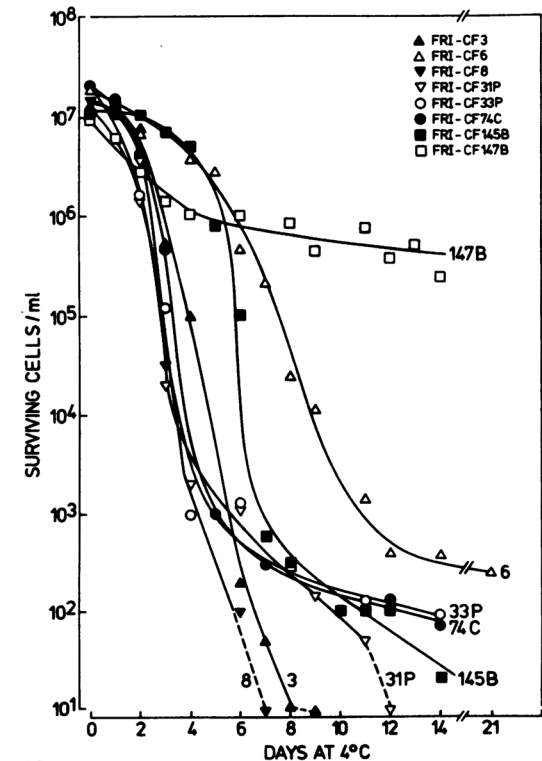


FIG. 1. Survival of *C. jejuni* and NARTC in unpasteurized milk held at 4°C. No campylobacters were detected at the <10-CFU/ml level (minimum level of sensitivity) in the final sampling.

# MILK SAFETY IN CALIFORNIA

Since 1999:

MILLIONS OF SERVINGS of Organic Pastures  
raw milk, with a superlative safety record.

MANY RECALLS of  
pasteurized milk  
products during  
the same period.



# LISTERIA – THE BAD ACTOR!

- Around 300 deaths per year from listeria; thousands of illnesses.
- Most common sources
  - Luncheon Meats
  - Soft un-aged cheeses
- **NO cases of listeria from raw milk**

# COMPARATIVE SAFETY OF **RAW MILK**

Based on statistics compiled by Dr. Ted Beals

- 42 government–reported illnesses from raw milk per year for the period 1999–2011. This number includes **unconfirmed** cases.
- According to a 2007 CDC survey, there are about 9 million raw milk drinkers in the US (3.04% of population). (This number is probably higher today.)
- Rate of illness from raw milk can be calculated at .00046%. The actual percentage is probably much lower.
- There are about 48,000,000 confirmed cases of foodborne infections per year in the US.
- Population about 300,000,000
- Rate of illness from all foods can be calculated at 16%
- **Thus, you are at least 35,000 times more likely to contract illness from other foods than from raw milk. PLUS, drinking raw milk protects you against illness from other foods!**

Source: <http://www.realmilk.com/real-milk-pathogens.html>

# 2014 JOHNS HOPKINS STUDY

**CLAIM:** risk of illness almost 150 times greater per unit of nonpasteurized dairy product, compared to pasteurized.

**DERIVED FROM 2012** Langer Study which found no statistical difference in the rate of illness (as opposed to the number of “outbreaks”) attributed to raw milk or products produced from raw milk compared to those produced from pasteurized milk.

**TIME FRAME** limited to 1993-2006. Excluded largest outbreak of pasteurized milk in 1985 in which at least 150,000 people were sickened.

**NUMBER OF RAW MILK DRINKERS UNDERESTIMATED:** Using 9 million people rather than 1 million makes pasteurized milk appear up to twice as dangerous as raw milk on a per-serving basis.

# Techniques for Blaming Raw Milk

- When testing raw milk, use cultures to promote pathogen multiplication and highly sensitive milk testing techniques that find pathogens in extremely small numbers, levels that would not cause illness. (Any substance you test will show pathogens if the test is sensitive enough.)
- Use new rapid testing techniques developed for the food industry that err on the side of finding false positives.
- When there is an outbreak, use food questionnaires that leave out likely vectors of disease but ALWAYS include raw milk.
- When there is an outbreak, test raw milk products first, and test open containers in the home setting rather than from the shelf. If a person is infected and has handled a raw milk product, the product may test positive for the organism. Omit testing other foods or raw milk products on the shelf (not handled by the consumer) but report a positive lab result for the opened container of raw milk product.
- Omit subjects who got sick but did not drink raw milk.
- Ignore equally likely or more likely sources of infection, such as visit to a farm or petting zoo, tap water or other foods.
- Assume that statistical association constitutes proof. It is easy to create a statistical association with raw milk using the above techniques.
- Issue inflammatory press releases accusing raw milk, which are not retracted when the dairy is exonerated.

# Solution to the “Milk Problem”

The “Milk Problem” was solved by:

- Outlawing inner city swill dairies
- Improved hygiene
- Improved water treatment and sewage systems
- Replacement of the horse with the car; cities no longer buried in manure
- The Certified Raw Milk movement
- Increased consumer access to refrigeration

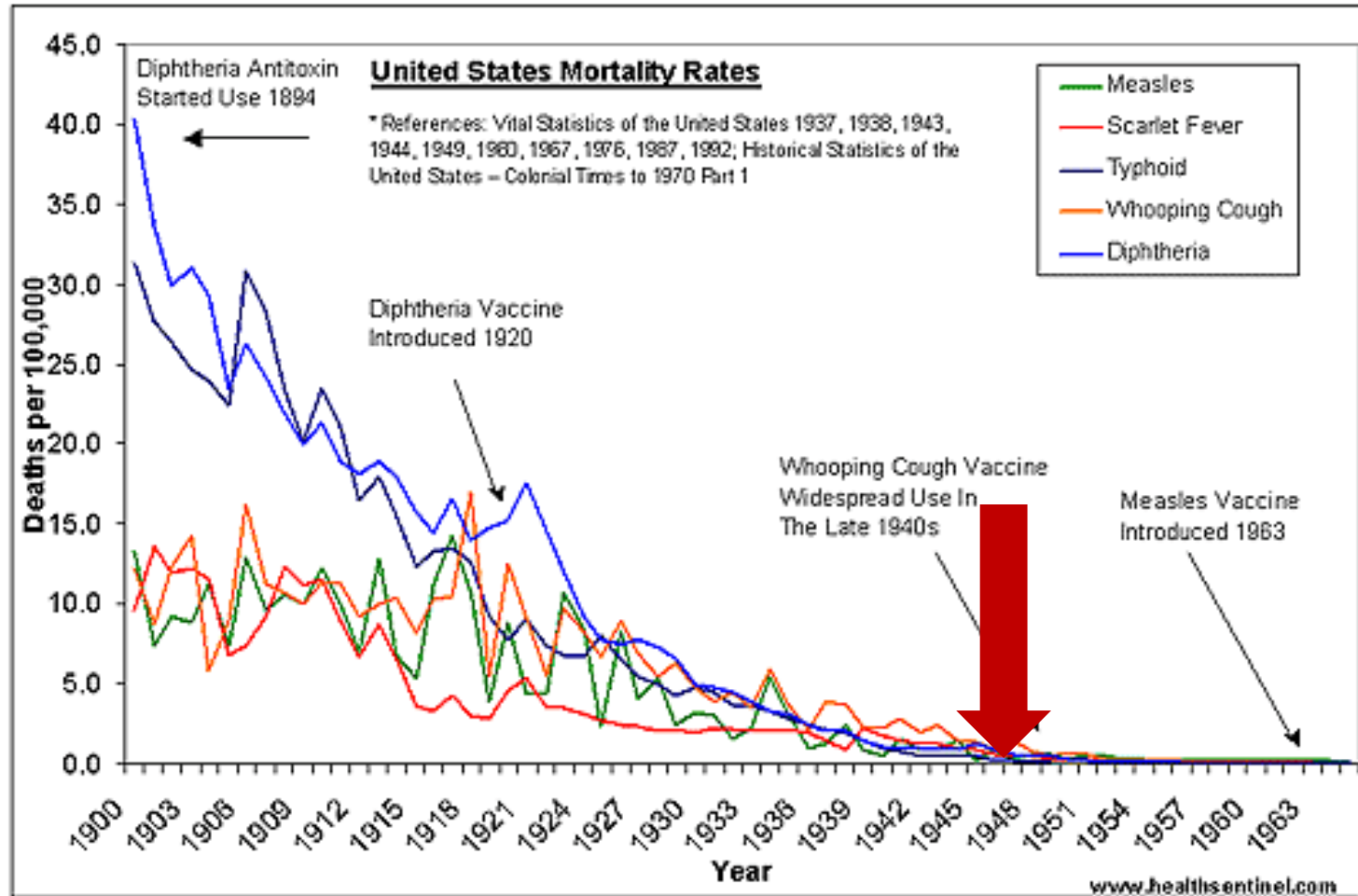
**NOT** by milk  
pasteurization laws!





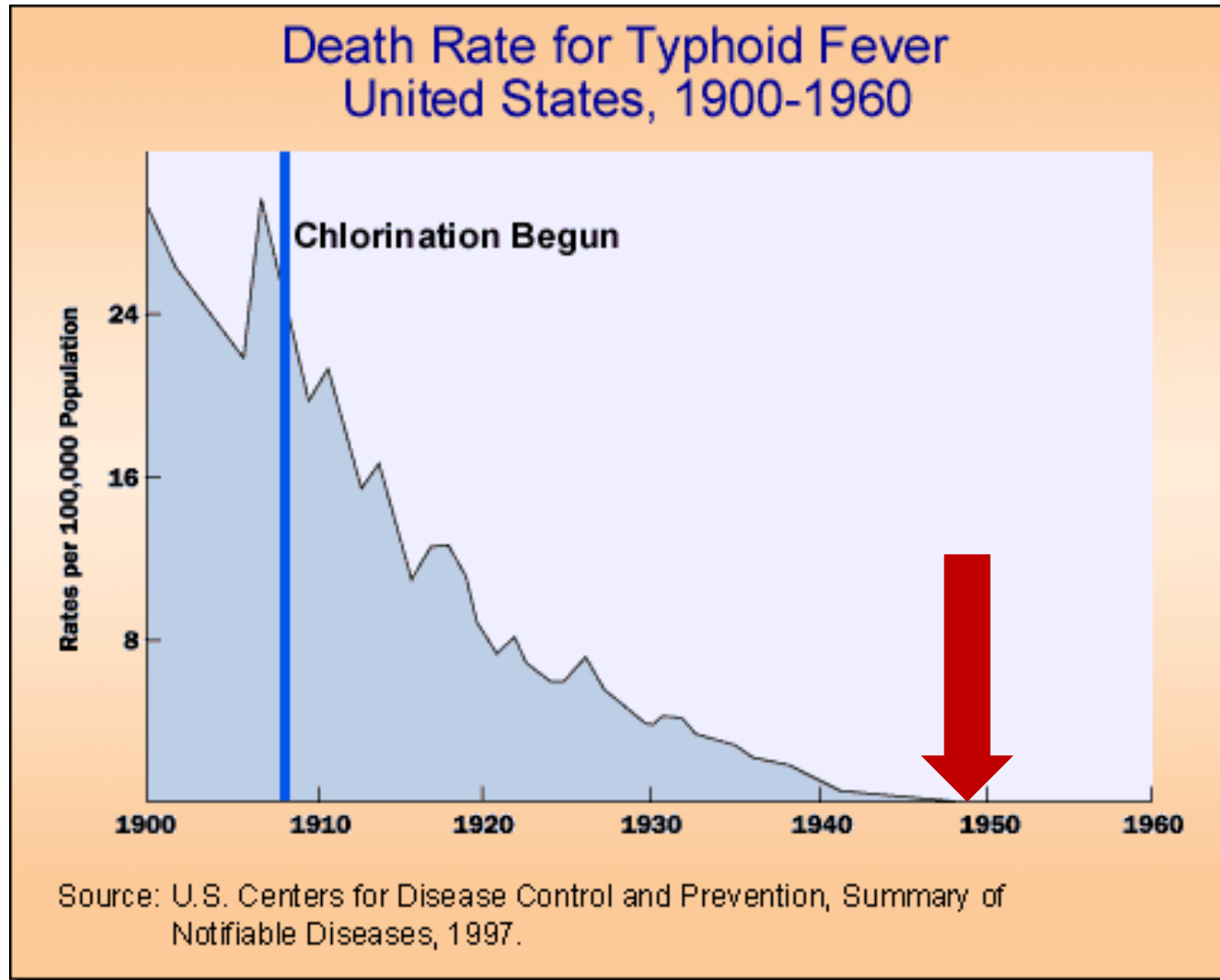
# Decline of Infectious Disease

## Not Related to Mandatory Pasteurization



1948: First State Mandatory  
Pasteurization Laws

# Raw Milk or Bad Water??



1948: First State Mandatory  
Pasteurization Laws

# SUMMARY OF RAW MILK SAFETY



- **SAFEST FOOD:** Raw Milk is safer than any other food.
- **BUILT-IN SAFETY MECHANISMS:** Raw milk is the ONLY food that has built in safety mechanisms.
- **40-YEAR-OLD SCIENCE:** Claims that raw milk is unsafe are based on 40-year-old science.
- **COURT OF LAW:** Claims that raw milk is unsafe would not hold up in a court of law.

# THE MILK CURE

**ANCIENT:** Since ancient times, an exclusive raw milk diet has been used to cure many diseases.

**MAYO CLINIC:** In the early 1900s, the "Milk Cure" was used at the Mayo Clinic to successfully treat cancer, weight loss, kidney disease, allergies, skin problems, urinary tract problems, prostate problems, chronic fatigue and many other chronic conditions.

**ONLY WITH RAW MILK:** The Milk Cure only works with raw milk; pasteurized milk does not have these curative powers.

Crewe, JR. Raw Milk Cures Many Diseases, [www.realmilk.com](http://www.realmilk.com)



# Raw Milk and Children - 1926

STUDY: 224 Children at the Boston Dispensary were fed either:

- Raw Certified Milk, or
- Grade A pasteurized milk, or
- Grade A pasteurized milk plus cod liver oil, or
- Raw Certified Milk plus cod liver oil and orange juice

CONCLUSION: “The use of certified milk [raw] without orange juice or cod liver oil gave a considerably greater percentage of weight development than either pasteurized milk alone or pasteurized milk with orange juice and cod liver oil. . . **A larger use of certified milk in infant feeding should be encouraged by the medical profession.**

*Arch Ped 1926 JUN; 43:380*

# Raw Milk and Children - 1929

- COMPARISON of 2 groups of babies.
  - Group I (122 babies) received raw milk
  - Group II (112 babies) received pasteurized milk.
- WEIGHT GAIN was much better in group receiving raw milk
- RICKETS occurred more frequently in the group receiving pasteurized milk; cases of rickets in the raw milk group were milder.
- DIARRHEA
  - 24 cases with 9 deaths in raw milk group
  - 36 cases with 15 deaths in pasteurized milk group
- MORTALITY

Group I Raw Milk	10%
Group II Pasteurized Milk	16%

## Studies of Mattick and Golding - 1931

“Our results show definitely that some dietetic factors are destroyed when milk is sterilised, and to a definite but lesser degree when it is pasteurised, and that although fresh milk is capable of supporting sustained growth and reproduction in rats, heated milk is no longer capable of doing so.”

Mattick EC and Golding J. *The Lancet*. Mar 22, 1931, p 667.

# RAT STUDIES OF SCOTT AND ERF

Ohio State University, 1931



**WHOLE  
RAW MILK**

Good growth; sleek coat; clear eyes; excellent dispositions; enjoyed being petted.

**WHOLE  
PASTEURIZED  
MILK**

Rough coat; slow growth; eyes lacked luster; anemia; loss of vitality and weight; very irritable, often showing a tendency to bite when handled.



# Studies of Mattick and Golding - 1935

- Rats fed sterilized milk had hair loss; those fed raw milk did not.
- **Lowered reproductive capacity** in rats fed sterilized milk.
- “Two females which had received sterilized milk for about eight months showed remarkable improvement after receiving raw milk for about eleven weeks, and one gave birth to a litter when mated to a buck from the raw milk group. Previous to this, 15 matings had been attempted with does and bucks both reared on sterilized milk, and no signs of pregnancy were shown on any one of these occasions.”

Mattick EC and Golding J. *The Lancet*. Sep 19, 1936, 703-704.

# British Orphanage Study - 1937

## TWO GROUPS:

Group I: 750 boys got pasteurized milk for 5 years.

Group II: 750 boys got raw milk for 5 years.

## RESULTS FOR TB:

Group I had 14 cases of TB

Group II had 1 case.

OTHER BENEFITS: “The child on raw milk is very fit. Chilblains are practically eliminated. The teeth are less likely to decay. The resistance to tuberculosis and other infections is raised.”

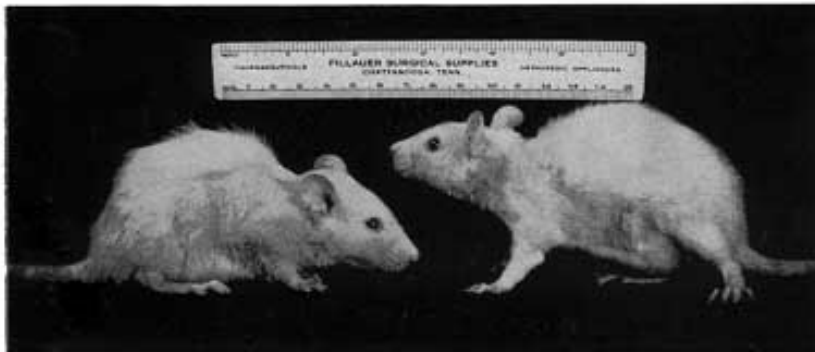
*Lancet, May 8, 1937:1142*

# Randleigh Farm Rat Studies – 1935-1940

## HISTORY OF RANDLEIGH FARM



Rat fed only raw milk from cows fed dry ice grass silage and grain. Notice absence of acrodynia.



Rats fed only pasteurized milk from cows fed dry ice grass silage. Hairless areas (acrodynia) are due to a deficiency of vitamin B<sub>6</sub>.

## Raw vs. Pasteurized Milk at Randleigh Farm, 1935-1940

Above: Rat fed only raw milk. Good development, healthy fur.

Below: Rats fed only pasteurized milk. Poor development. Hairless areas (acrodynia) due to deficiency of vitamin B-6.

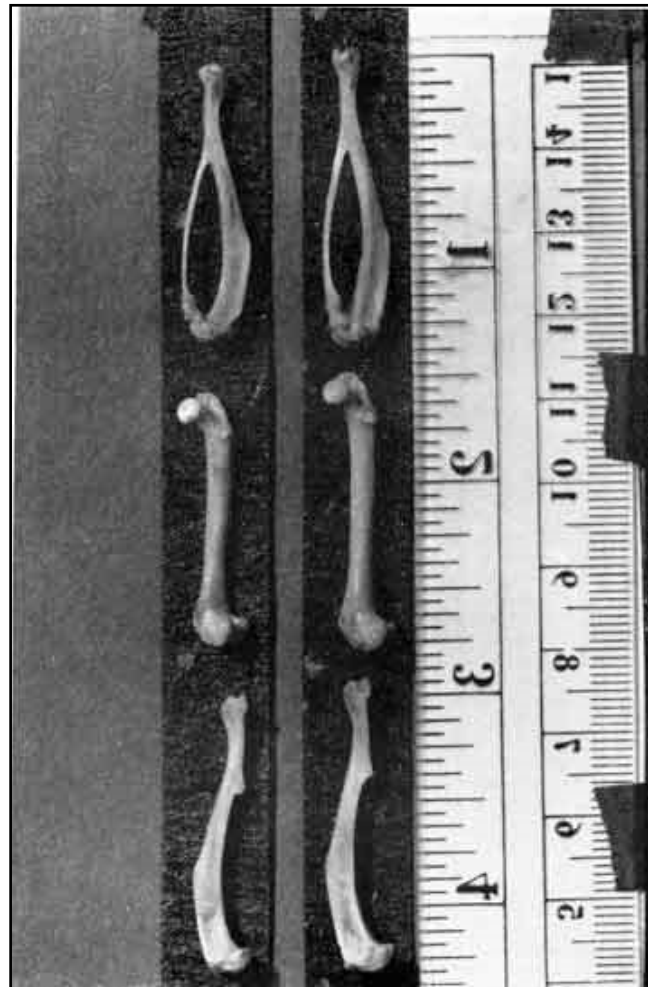
# Bone Development

## Randleigh Farm Study

**PASTEURIZED-  
Milk-Fed Rat**

**Weighed 146  
grams**

**Bones shorter  
and less dense**



**RAW-Milk-Fed  
Rat**

**Weighed 206  
grams**

**Bones longer  
and more dense**

One-to-One Exposure of Femur, Tibia and Fibula

# GUINEA PIG STUDIES OF WULZEN AND BAHRS

Department of Zoology, Oregon State College, 1941



**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; tricalcium deposits under skin, in joints, heart and other organs.

# Study on Calves

1941 STUDY carried out at the West of Scotland Agricultural College at Auchincruive.

TWO GROUPS, each of eight calves, were fed, one group on raw milk, the other on pasteurized milk for 90 days

NO DEATHS IN RAW MILK GROUP: All the animals in the raw milk group finished the trial without mortality.

THREE DEATHS IN PASTEURIZED MILK GROUP: In the pasteurized milk group, two died before they were 30 days old, and a third died on the 92nd day; that is, two days after the experiment.

ILL HEALTH IN PASTEURIZED MILK GROUP: The remaining calves in the pasteurization group were in ill health at the end of the experiment, while all of the animals in the raw milk group were in excellent health.

JM Mercer. An Experiment in Milk Pasteurization. *Nature's Path*, March 1941. In Bryant CP. *The Truth About Pasteurization*, National Nutrition League, Seattle, Washington, 1943.

# Raw Milk and Tooth Decay - 1943

Dr. Evelyn Sprawson of the London Hospital:  
“. . . In certain institutions, children who were brought up on raw milk. . . had perfect teeth and no decay. **The result is so striking and unusual that it will undoubtedly be made the subject of further inquiry.**”

James C. Thomson, Pasteurized Milk, A National Menace.  
*The Kingston Chronicle*. Edinburgh, Scotland, 1943,5.

What happened?

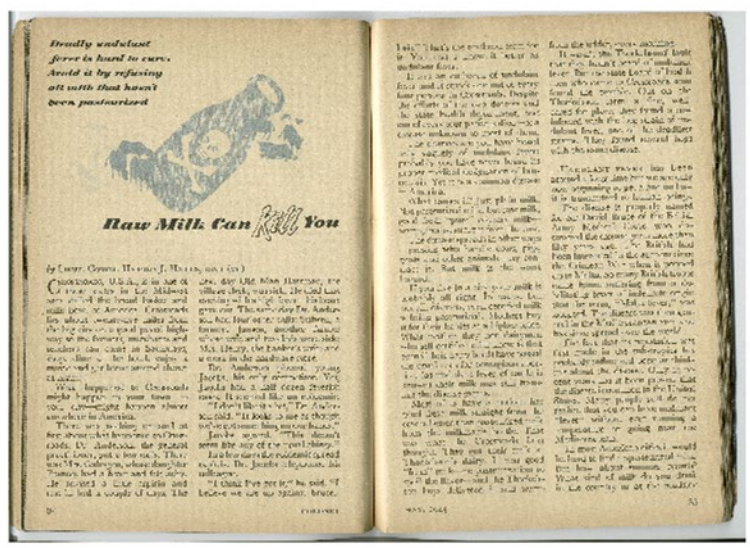
Why was there no further inquiry??

# The Campaign Against Raw Milk

## Coronet Magazine, May 1945



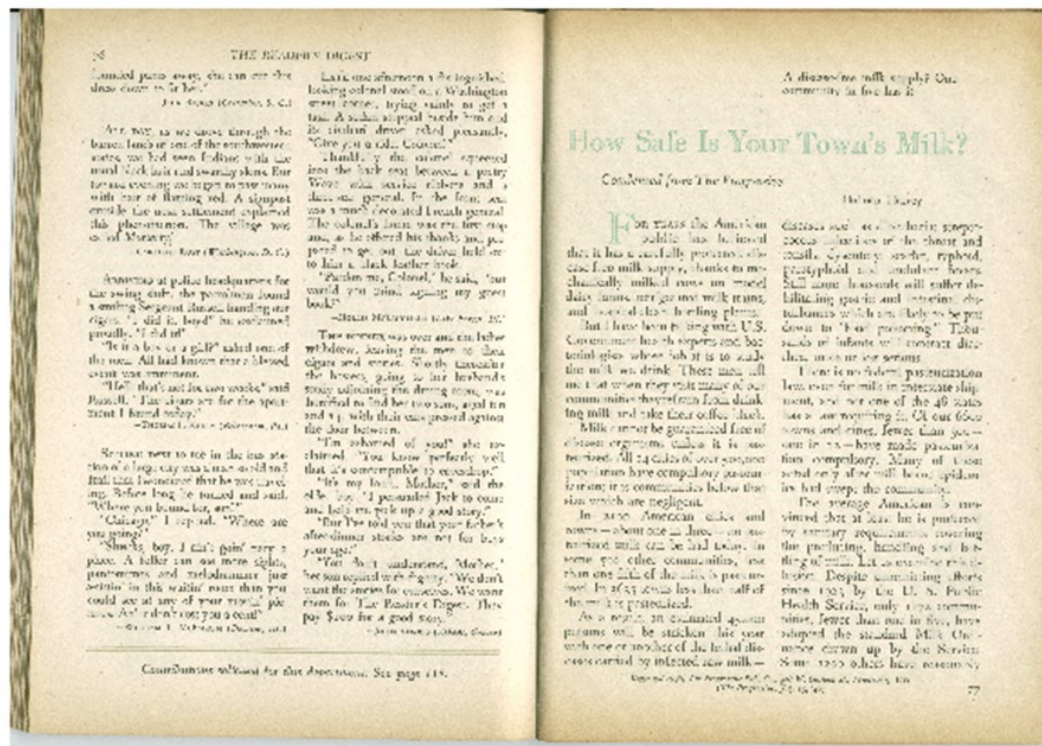
- Article in *Coronet Magazine*, May, 1945
- Seemingly factual article about a town called Crossroads, USA, where many died from undulant fever, contracted from raw milk
- One small problem: the whole story was made up, there was no Crossroads, USA, and no outbreak of undulant fever!





# The Campaign Against Raw Milk

## August, 1946, *Reader's Digest* repeated false story about Crossroads, USA



# Lies about raw milk continue to this day!

# PROTEINS IN MILK

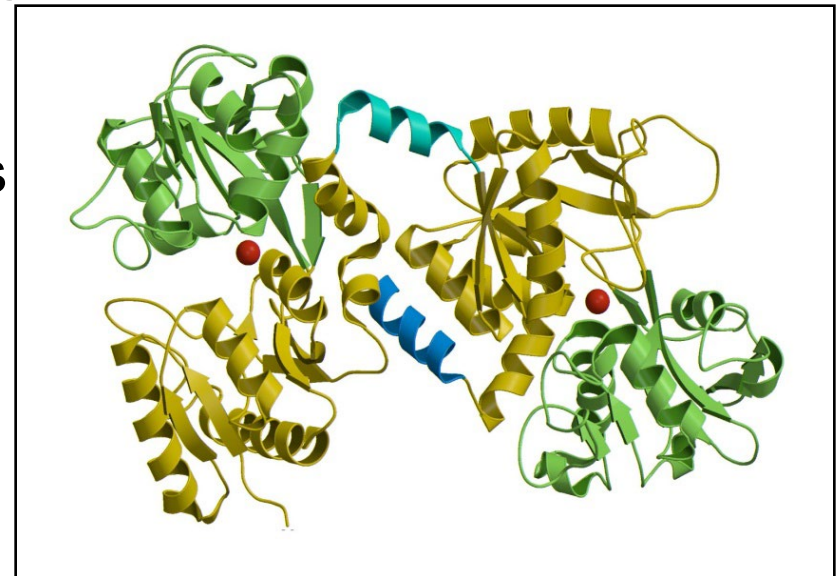
**MILK PROTEINS:** Three dimensional, like tinker toys, very fragile

**CARRIERS:** Carry vitamins and minerals through the gut into the blood stream; comprise enzymes; enhance the immune system; protect against disease

**IMMUNE DEFENSE:** Pasteurization and ultra-pasteurization flatten (de-nature) the three-dimensional proteins, destroying their biological activity; the body thinks they are foreign proteins and mounts an immune defense.

**DISEASES:** Immune attacks lead to juvenile diabetes, asthma, allergies and other disorders later in life.

**ALLERGIES:** More and more people unable to tolerate pasteurized milk; one of the top eight allergies; some have violent reactions to it.



Lactoferrin Molecule

# Lowered Nutrient Availability in Pasteurized Milk

Vitamin C	Raw milk but not pasteurized can resolve scurvy. “. . . Without doubt. . . the explosive increase in infantile scurvy during the latter part of the 19 <sup>th</sup> century coincided with the advent of use of heated milks. . .” Rajakumar, <i>Pediatrics</i> . 2001;108(4):E76
Calcium	Longer and denser bones on raw milk. Studies from Randleigh Farms.
Folate	Carrier protein inactivated during pasteurization. Gregory. <i>J. Nutr.</i> 1982, 1329-1338.
Vitamin B12	Binding protein inactivated by pasteurization.
Vitamin B6	Animal studies indicate B6 poorly absorbed from pasteurized milk. Studies from Randleigh Farms.
Vitamin A	Beta-lactoglobulin, a heat-sensitive protein in milk, increases intestinal absorption of vitamin A. Heat degrades vitamin A. Said and others. <i>Am J Clin Nutr.</i> 1989;49:690-694. Runge and Heger. <i>J Agric Food Chem.</i> 2000 Jan;48(1):47-55.
Vitamin D	Present in milk bound to lactoglobulins, pasteurization cuts assimilation in half. Hollis and others. <i>J Nutr.</i> 1981;111:1240-1248; <i>FEBS Journal</i> 2009 2251-2265.
Iron	Lactoferrin, which contributes to iron assimilation, destroyed during pasteurization. Children on pasteurized milk tend to anemia.
Minerals	Bound to proteins, inactivated by pasteurization; Lactobacilli, destroyed by pasteurization, enhance mineral absorption. <i>BJN</i> 2000 84:S91-S98; MacDonald and others. 1985.

# ANEMIA AND BEHAVIOR

- “Infants with chronic, severe iron deficiency have been observed to display increased fearfulness, unhappiness, fatigue, low activity, wariness, solemnity and proximity to the mother during free play, development testing and at home.”
- Anemic infants who did not receive iron supplementation “never smiled, never interacted socially, and never showed social referencing.”

Lozoff B and others. *Journal of Nutrition* 137:683-689.

# Infants on Pasteurized Human Milk - 1986

- Did not gain weight as quickly compared to those fed raw human milk. *J Pediatr Gastroenterol Nutr.* 1986 Mar-Apr;5(2):248-53.
- More rapid weight gain in premature babies given raw human milk compared to pasteurized human milk. Problems attributed to destruction of lipase. *J Pediatr Gastroenterol Nutr.* 1986 Mar-Apr;5(2):242-7.
- CDC website notes that breast milk is best protection to infants “against salmonellosis and many other health problems.” Yet the agency warns against raw milk as a cause of salmonellosis. [Cdc.gov/ncidod/dbmd/diseaseinfo/salmonellosis\\_g.htm](http://Cdc.gov/ncidod/dbmd/diseaseinfo/salmonellosis_g.htm).

## Pasteurization Reduces Protective Effects of Breast Milk

1984 study involving high-risk premature infants

Type of Milk	Rate of infection
Pasteurized human milk + formula	33.0%
Raw human milk + formula	16.0%
Pasteurized human milk	14.3%
Raw human milk	10.5%

*Lancet.* 1984 Nov 17;2(8412):1111-1113

## Pasteurized Milk=Increasing Health Problems in Children

- Allergies
- Asthma
- Frequent Ear Infections
- Gastro-Intestinal Problems
- Diabetes
- Auto-Immune Disease
- Attention Deficit Disorder
- Constipation

During a period of rapid population growth, the market for fluid pasteurized milk has declined at 1-3% per year for the past 30 years. Fewer and fewer consumers can tolerate pasteurized (and ultrapasteurized) milk.

# ASTHMA CRISIS

- Nine persons per day die from asthma in the United States, **many of them children.**
- What if we could prevent most of these cases through something as simple as offering raw milk in childhood?





## ASTHMA & RAW MILK

- 2001 Lancet: Less asthma, allergies
- 2006 PARSIVAL Study: Less asthma, allergies
- 2011 GABRIELA Study: Less asthma, allergies
- 2012 AMISH: Less asthma, allergies

# PROTECTION AGAINST RESPIRATORY INFECTION

- 2014 Study showed that raw cow's milk can protect against respiratory infection in infants
- When compared with processed milk, raw milk consumption was inversely associated with occurrence of rhinitis, respiratory tract infections, otitis, and fever.
- Very well done study
- Convinced European governments to continue to allow the sale of raw milk.

# Raw Milk in Europe – Available in Vending Machines!



# Location of Raw Milk Vending Machines in Italy



# LACTOSE INTOLERANCE

- Results from a survey by Opinion Research Corporation (commissioned by the Weston A. Price Foundation) indicate that about 29 million Americans are diagnosed lactose intolerant.
- Results from a private survey carried out in Michigan indicate that 82 percent of those diagnosed as lactose intolerant can drink raw milk without problem.
- Thus, almost 24 million Americans diagnosed as lactose intolerant could benefit from raw milk.

# CASEIN INTOLERANCE

- Milk allergy is usually attributed to casein intolerance.
- Pasteurization destroys *L. lactis* and other lactic-acid bacteria indigenous to milk.
- These bacteria produce enzymes that break down the casein molecule.
- These findings suggest that raw milk could be consumed by those with milk allergy, including autistic children.
- We have received testimonials indicating that raw milk can be used to treat and even completely reverse symptoms of autism.

Meisel and others. *Antonie Van Leeuwenhoek*. 1999;76(1-4):207-15

# BE KIND TO YOUR PROTEINS. . .

“Processing milk causes the formation of protein oxidation products which impair spacial learning and memory in rats.” (*RSC Adv.*, 2019, 9, 22161)

- Milk subjected to boiling, microwave heating, spray drying and freeze drying
- All four techniques caused oxidative damage to the milk proteins
- Feeding damaged milk proteins to rats resulted in learning and memory impairment.
- “This means that humans should control milk protein oxidation and improve the processing methods applied to food.”

# Protective Components in Milk Fat

- **Short and Medium Chain Fatty Acids:** Disrupt cell walls of bad bacteria.
- **Sphingolipids:** Bind to intestinal cells, prevent absorption of pathogens and toxins.
- **Arachidonic acid:** Helps build gut wall, skin and brain
- **Fat-soluble vitamins A and D** strengthen the immune system.
  
- Pasteurized reduced-fat milk 3-5 times more likely to cause diarrhea in children and the elderly than pasteurized whole milk (Koopman, J S, et al, *AJPH*, 1984, 74:12:1371-1373).
- People on lowfat diets tend to have weakened immune systems.
- Drink only raw **WHOLE** milk!!



# RAW MILK DIGESTIBILITY

## · RAW MILK DIGESTS ITSELF!

- Enzymes in raw milk are activated in the digestive tract
- Enzymes and carrier proteins in raw milk ensure all nutrients are absorbed
- Friendly bacteria in milk aid in digestion
- No energy required to digest raw milk; net energy gain

## · PASTEURIZED MILK IS VERY DIFFICULT TO DIGEST

- The body must supply the enzymes needed to digest the milk
- Proteins warped and distorted by pasteurization put additional strain on digestion
- Much energy required to digest pasteurized milk; net energy loss

# RAW MILK & GLUTATHIONE

- Glutathione: Key compound for detoxification
- High levels in whey protein
- Research in 1991 discovered that whey proteins only boost glutathione status in their raw, undenatured state.
- Explains the success of the Milk Cure

Source: <http://www.westonaprice.org/blogs/cmaterjohn/2010/09/11/the-biochemical-magic-of-raw-milk-and-other-raw-foods-glutathione>

# MICROSCOPIC STRUCTURE OF RAW MILK



Raw milk magnified 175 times. Complex colloidal structure similar to that of all life forms. **Raw milk is a “living” food.**



Pasteurized milk magnified 175 times. Complex colloidal structure is lost. **Pasteurized milk is “lifeless.”**

Photographs by Dr. Beverly Rubik

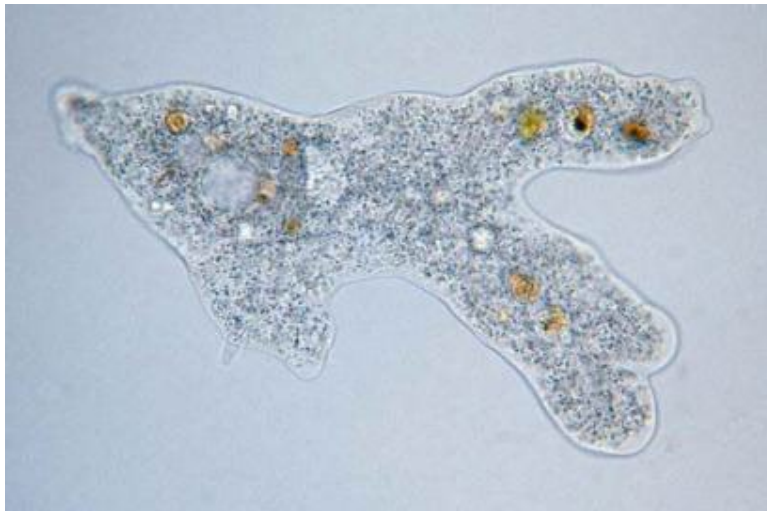
# Similarity of Life Forms—Colloidal Structure



Surface of the sun



Forest of trees

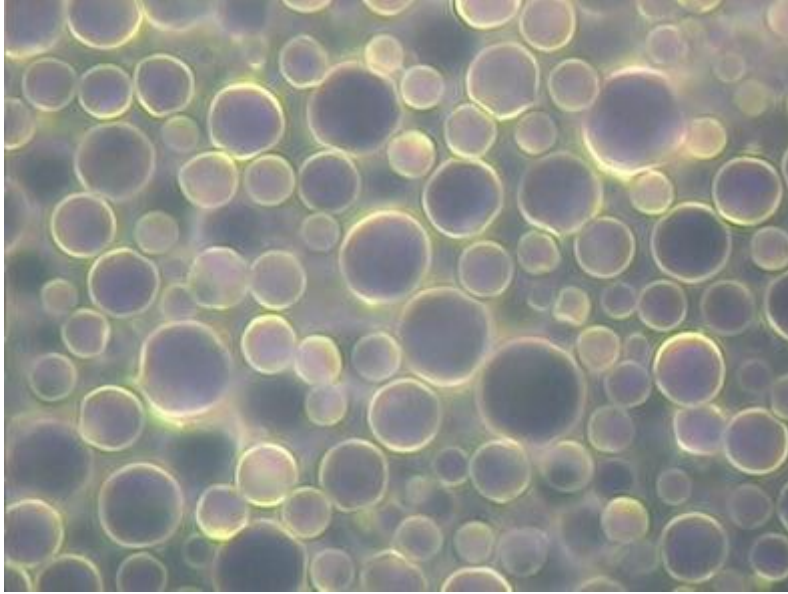


Internal structure of ameba

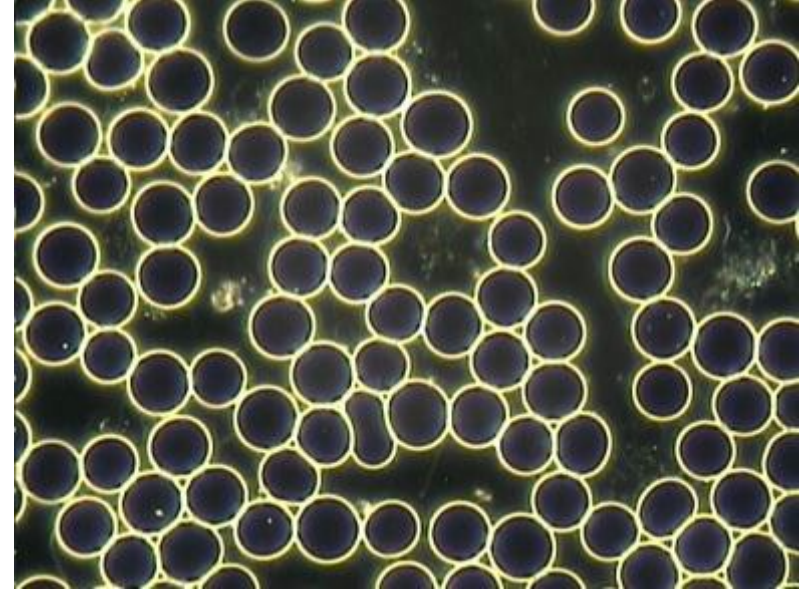


Raw milk

# Microscopic Structure of Raw Milk



Raw milk magnified 4200 times. Structure is similar to that of blood.



Structure of blood under darkfield microscope.

# SUMMARY

Research has shown that there is a very significant difference in the nutritional value of unpasteurized milk versus pasteurized milk.

Raw milk is inherently safe.

Pasteurization of milk is one of the greatest public health disasters in history.

What's at stake: The health of millions of children worldwide. Raw milk can mean the difference between a healthy productive life and a miserable life.

# RAW MILK FOR CHILDREN

- Calcium for optimal growth, strong bones, strong teeth.
- Protection against asthma, allergies, eczema
- Builds immune system.
- Glutathione for protection against toxins.
- Builds healthy gut wall.





Beautiful babies brought up on raw milk!



# CONFINEMENT DAIRY SYSTEM

Cows never leave stalls. Life span averages 42 months.



# THE MODERN COW – THREE MILKINGS PER DAY

Often milked for 600 days without a break, or until death.





# MODERN MILK AT THE FACTORY



**A RUST BELT  
TECHNOLOGY!!**



# Feed Given to Confinement Cows

<b>Feed</b>	<b>Result in Milk</b>
Soy	Allergenic soy protein and estrogenic isoflavones
GMO Grains	Aflatoxins (liver poisons)
Bakery Waste	Trans fatty acids
Citrus Peel Cake	Cholinesterase inhibitors (pesticides that act as nerve poisons)
Hormones and Antibiotics	Hormones and Antibiotics
Swill from Ethanol Production!	Chemicals used in ethanol production

# THE WASTELAND



Compulsory pasteurization laws are largely responsible for the decline of American small towns and rural life.

Pasteurization laws transform what should be a local value-added product into a commodity product.

Dairy farms go out of business at rate of 16 per day.

California: 600 dairy farms lost in 10 years.

Maryland: 1900 dairy farms in 1990; less than 400 today.



# THE IMPORTANCE OF GRASS FEEDING



More vitamins – A,  
D and K

More minerals

Richer in butterfat

More CLA

No harmful  
industrial chemicals





**CONFINEMENT BUTTER**

**GRASS-FED BUTTER**

**10-13 TIMES MORE VITAMIN A AND  
3 TIMES MORE VITAMIN D IN GRASS-FED BUTTER**

# WWW.REALMILK.COM

- Detailed scientific information about raw milk
- Raw milk regulations by state
- Sources of raw milk at [realmilk.com](http://realmilk.com) or through local chapters of the Weston A. Price Foundation (at [www.westonaprice.org](http://www.westonaprice.org))



**2000**

Raw milk available in 27 states

**2017**

Raw milk available in 43 states

*(thanks to the efforts of A Campaign for Real Milk)*

**Our Goal**

Raw milk available in all 50 states by 2020!

***Help us make raw milk sales legal in the remaining 7 states:***

Delaware

Hawaii

Iowa

Louisiana

Nevada

New  
Jersey

Rhode  
Island





# A Campaign for Real Milk

A Project of the Weston A. Price Foundation

[Home](#) [Health](#) [Safety](#) [Resources](#) [Hot Topics](#) [Testimonials](#) [Policy & Economics](#) [About](#) [Blog](#)



[Raw Milk Finder](#)

**RAW MILK FINDER**

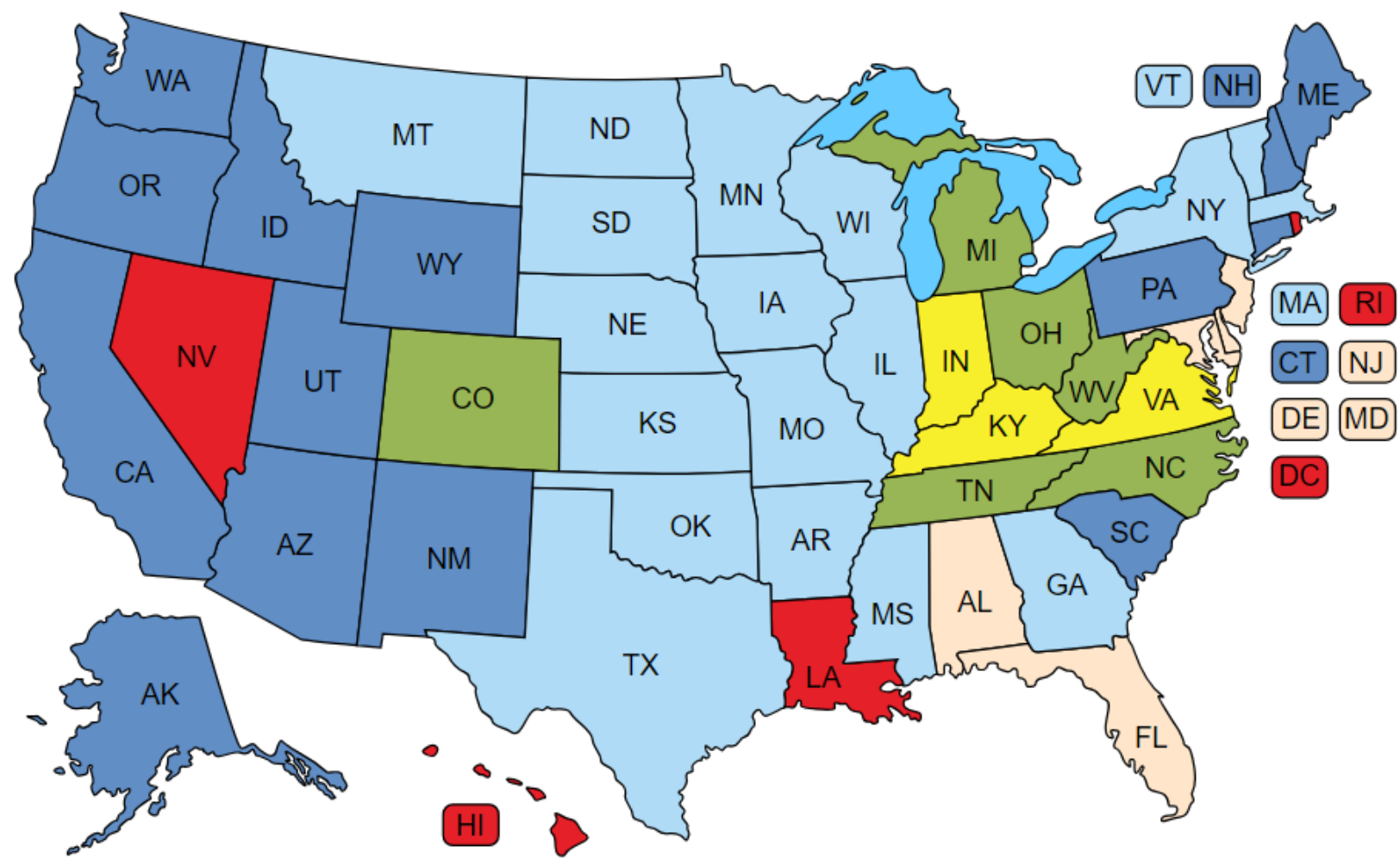


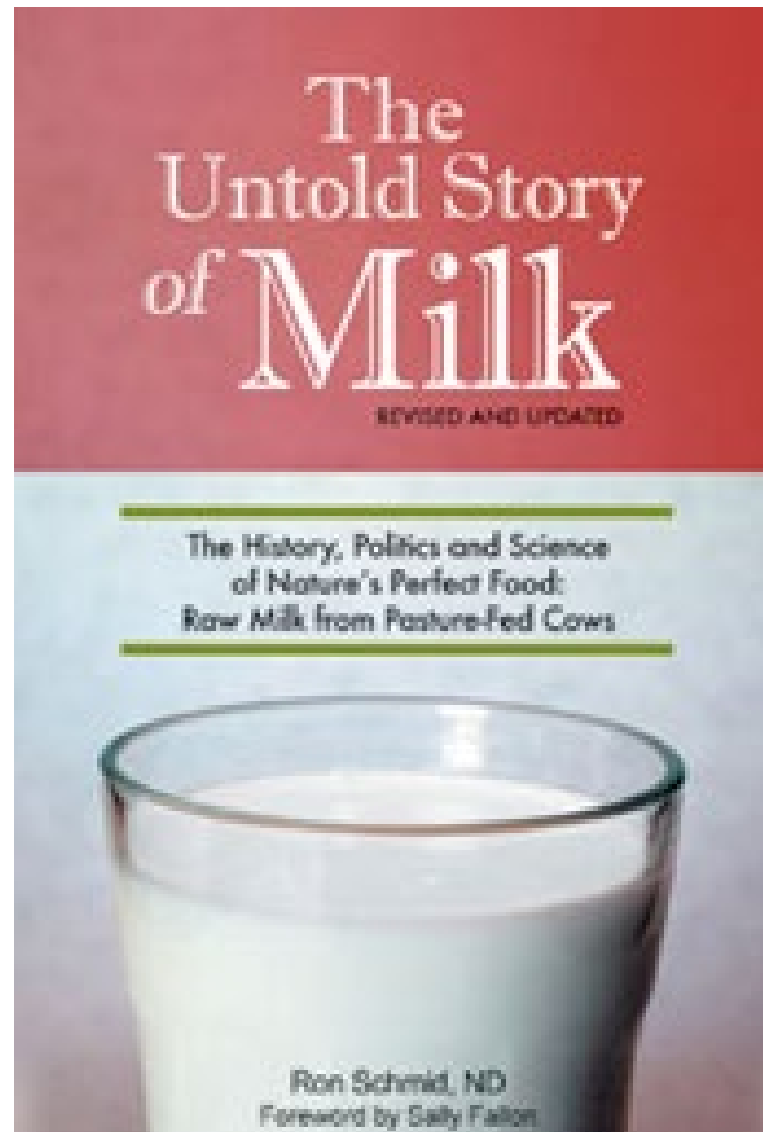
**Keep the Raw Milk Flowing**

[DONATE NOW](#)

**Get Updated on Raw Milk**

[JOIN WAPF](#)





# **ALL TRUTH PASSES THROUGH THREE STAGES:**

First, it is ridiculed.

Second, it is violently opposed.

Third, it is accepted as self-evident.