

How to pasteurize milk at home

Milk, a natural liquid food, is one of our most nutritionally complete foods, adding high-quality protein, fat, milk sugar, essential minerals, and vitamins to our diet. However, milk contains bacteria that—when improperly handled may create conditions where bacteria can multiply. Most of the bacteria in fresh milk from healthy animal are either harmless or beneficial. But, rapid changes in the health of animal, or the milk handler, or contaminants from polluted water, dirt, manure, vermin, air, cuts, and wounds can make raw milk potentially dangerous.

How do microorganisms enter the milk supply?

Our environment contains an abundance of microorganisms that find their way to the hair, udder, and teats of dairy cows and can move up the teat canal. Some of these germs cause an inflammatory disease of the udder known as mastitis while others enter the milk without causing any disease symptoms in the animal.



In addition, organisms can enter the milk supply during the milking process when equipment used in milking, transporting, and storing the raw milk is not properly cleaned and sanitized. All milk and milk products have the potential to transmit pathogenic (disease-causing) organisms to humans. The nutritional components that make milk and milk products an important part of the human diet also support the growth of the organisms. Drinking raw milk causes foodborne illness, and dairy producers selling or giving raw milk to friends and relatives are putting them at risk.

Special points of interest:

- * Milk compositions.
- * Common pathogen in milk.
- * What is pasteurization .

Inside this issue:

- How to pasteurize milk at home.
- How Pregnancy Affects Your Oral Health .



What are common pathogens in milk?

Salmonella. Salmonellosis is the most common disease transmitted in raw milk all strains exhibit the same symptoms such as gastroenteritis (vomiting and diarrhea).

Escherichia coli 0157: H7. It can cause hemorrhagic colitis and hemolytic uremic syndrome in humans. Milk should be stored at temperatures below 5 Celsius to inhibit the growth of *Escherichia coli 0157: H7*.

Listeria monocytogenes Listeriosis may cause serious illness, and is especially dangerous to pregnant women, causing stillbirths or infant death soon after birth.

Yersinia enterocolitica. The most common symptom of yersinosis is gastroenteritis and mimics the symptoms of appendicitis.

Staphylococcus aureus produces an enterotoxin (toxins causing vomiting and diarrhea) in raw milk when it is held at temperatures above 10 Celsius .

Campylobacter jejuni. Symptoms include vomiting, cramps, bloody diarrhea, mild enteritis, or severe enterocolitis. Individuals who have recovered from the disease may suffer a relapse.

What is pasteurization?

Pasteurization, named for Louis Pasteur who developed the process for other foods, is a moderate but exact heat treatment of milk. Pasteurization kills bacteria that produce disease and retards spoilage in milk.

While pasteurization destroys many microorganisms in milk supplies, improper handling after pasteurization can recontaminate milk.

How can I pasteurize milk at home?

good compromise for home pasteurization is to heat the milk to 165°F (74°C) in a double boiler and to hold it at this temperature for 15 seconds while stirring constantly. Then, cool it immediately while stirring to 145°F (63°C) by setting the top of the double boiler in cold water. Add ice to the cooling water to cool the milk further, stirring occasionally until the temperature of the milk falls below 40°F (4°C). Store the cooled milk in clean, covered containers and keep it at a temperature below 40°F (4°C) until used. This is the preferred method over the 30-minute/150°F (63°C) method because if at any time during the 30-minute period the temperature drops below 150°F (63°C), the milk must be reheated for 30 consecutive minutes. **Another method** is using jars for 30 minutes in a waterbath canner, again, provided care is taken to maintain the temperature at 150°F (63°C), and the milk is promptly cooled to 40°F (4°C) or less. All stirring devices, thermometers, or any other utensil that comes in contact with the milk must remain in the milk for the entire process—do not remove them at any time during the process—to prevent contamination.

Reference:

1. U.S. Department of Agriculture, (1981), USDA Fact Sheet Number 57.
2. Smith, P. W., (August 1981), "Milk Pasteurization" Fact Sheet Number 57, U.S. Department of Agriculture Research Service, Washington, D.C.



Double Boiler

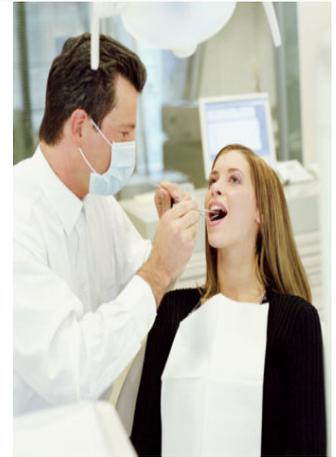
How Pregnancy Affects Your Oral Health

Pregnancy affects nearly every aspect of a woman's life, including her oral health. You may think of your oral health as just one more thing to worry about, but taking care of your mouth and teeth is important during pregnancy.

What are the special oral health concerns of pregnant women?

Pregnancy Gingivitis

Most women notice changes in their gums during pregnancy. Some women notice that their gums look redder and bleed when they brush their teeth. And some women have severe swelling and bleeding. All of these changes are referred to as "pregnancy gingivitis." They can start as early as the second month and tend to peak around the eighth month and then taper off after the baby is born. Increased hormone levels may be partly responsible for pregnancy gingivitis. During pregnancy, the level of progesterone in your body can be 10 times higher than normal. This may enhance growth of certain bacteria that cause gingivitis. Also, your immune system may work differently during pregnancy. This could change the way your body reacts to the bacteria that cause gingivitis. To minimize the effects of pregnancy gingivitis: Brush twice a day, for at least two minutes each time. Floss every day. Using an antimicrobial mouth rinse also may help you control your gum infection. Some dentists suggest using rinses that don't contain alcohol, but it is not clear whether alcohol-based rinses have a negative effect on pregnancy.



Tooth Erosion

In women with severe morning sickness, frequent vomiting can erode the enamel on the back of the front teeth.

Dry Mouth

Many pregnant women complain of [dry mouth](#). You can combat dry mouth by drinking plenty of water and by using sugarless hard candies or gum to stimulate saliva secretion and keep your mouth moist.

Excessive Saliva

Less commonly, pregnant women feel they have too much saliva in their mouths. This condition occurs very early in a pregnancy. It disappears by the end of the first trimester. It may be associated with nausea.

How should you take care of your teeth and mouth during pregnancy?

Eat a well-balanced, nutritious diet with plenty of protein, calcium and vitamins A, C and D. Brush your teeth twice a day for at least two minutes each time. Use fluoride toothpaste. Floss at least once a day.

Is it safe to visit the dentist while you are pregnant?

The second trimester is the best time to receive routine dental care. Try to avoid dental visits during the first trimester and the last half of the third trimester.

What are the safe dental medications while pregnancy?

use drugs in 2nd trimester to, Eliminate source of infection or pain, Usually short-term drug therapy.

Penicillins, Amoxicillin and **cephalosporins** considered safe to use during pregnancy ,No increased risk of malformations with **amoxicillin/clavulanic acid (Clavulin)** in 2 studies . **Erythromycin** ;No association between drug and congenital malformations in 6,972 newborns exposed during 1st trimester. **Metronidazole**, Small number of reports raised suspicion of teratogenic effect.

Lidocaine, Considered relatively safe for use during pregnancy as local anesthetic. **Acetaminophen** is Analgesic of choice in pregnancy. NSAIDs including **Asprin** increase risk of miscarriage and avoid use during last trimesters increase rate of bleeding , and inhibition of PG prolong the labour.

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1. Columbia university college of dental medicine.
2. Br J Clin Pharmacol 2004;58:298- 302 and Eur J Obstet Gynecol Reprod Biol 2001;97:188-92 .
3. Surveillance study of Michigan Medicaid recipients (1985-1992).
4. Am J Obstet Gynecol (1995;172:525-9) .
5. BMJ 2001;322:266-70 .

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