

## ***BRUCELLOSIS (Undulant fever, Bang's disease)***

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### **What is brucellosis?**

Brucellosis is an illness characterized by fever, night sweats, extreme tiredness, anorexia (loss of appetite), weight loss, headache, and arthralgia (pain in the joints). It is caused by an infection with a bacteria of one of the *Brucella* species. The infection occurs worldwide. Areas currently listed as high risk are the Mediterranean Basin (Portugal, Spain, Southern France, Italy, Greece, Turkey, North Africa), South and Central America, Eastern Europe, Asia, Africa, the Caribbean, and the Middle East..

### **Who gets brucellosis?**

Anyone can get brucellosis if they are infected with a bacteria of one of the *Brucella* species. Persons at highest risk for brucellosis are those who work with animals that are infected, such as veterinarians and ranchers, and persons who consume raw milk or cheeses or ice cream made with raw milk. Brucellosis may also be transmitted to humans if they are inadvertently exposed to live brucellosis vaccine by a needlestick or other accident.

### **How is brucellosis spread?**

Brucellosis is spread to humans through contact with tissues or bodily fluids of animals who are infected with *Brucella* bacteria. Animals that may be infected with *Brucella* bacteria include cattle, swine, goats and sheep. Infections may also be found in bison, elk, caribou and some species of deer. There is a special kind of brucellosis, *Brucella canis*, that may be found in dogs (more commonly in stray dogs than pet dogs) and coyotes.

Direct person-to-person spread of brucellosis is extremely rare. Mothers who are breast-feeding may transmit the infection to their infants. Sexual transmission has also been reported. For both sexual and breast-feeding transmission, if the infant or person at risk is treated for brucellosis, their risk of becoming infected will probably be eliminated within 3 days. Although uncommon, transmission may also occur via contaminated tissue transplantation.

### **What are the symptoms of brucellosis?**

Brucellosis is characterized by a fever which may be continuous, intermittent or irregular. Some other possible symptoms include headache, weakness, sweating, chills, arthralgia (pain in the joints), depression, weight loss and generalized aching. This disease may last for days, months, or as long as a year if untreated.

### **How soon after exposure do symptoms appear?**

This is very variable, but 1-2 months after exposure is the most common.

## How is brucellosis diagnosed?

The laboratory criteria for diagnosis include:

- The isolation of bacteria from the *Brucella* family from a bacterial culture, or
- An increase over time in antibodies in the blood that are specific for *Brucella*, or
- The demonstration by immunofluorescence of bacteria from the *Brucella* family

A case of brucellosis is *probable* when there is a case of disease that is clinically compatible (similar to that described above), and that is linked epidemiologically to a confirmed case. A case may also be *probable* when there is evidence in the blood of exposure to *Brucella*.

A case of brucellosis is *confirmed* when a clinically compatible case is also laboratory confirmed.

## What is the treatment for brucellosis?

Doctors can prescribe effective antibiotics. Usually, doxycycline and rifampin are used in combination for 6 weeks to prevent reoccurring infection. Depending on the timing of treatment and severity of illness, recovery may take a few weeks to several months. Mortality is low (<2%), and is usually associated with endocarditis.

## How can brucellosis be prevented?

The most important steps to prevent brucellosis in humans are those necessary to control brucellosis in animals. The Brucellosis Eradication Program was established to eradicate the disease from cattle in the United States. From 1956 to 1998, the number of known brucellosis-affected herds decreased from 124,000 to 15. While brucellosis is rare in the United States, one step everyone can take to prevent possible exposure is to avoid consuming raw milk or cheeses or ice cream made with raw milk, especially while traveling. If you are not sure that the dairy product is pasteurized, don't eat it. Hunters and animal herdsman should use rubber gloves when handling viscera of animals. There is no vaccine available for humans.

## Where can I get more information?

- Your personal doctor.
- Your local health department listed in your telephone directory.
- The Utah Department of Health, Office of Epidemiology (801) 538-6191.

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Centers for Disease Control and Prevention. Case definitions for infectious conditions under public health surveillance. MMWR 1997; 46 (No. RR-10):6-7.