

## Brucellosis

**Brucellosis** Brucellosis is a bacterial infection caused in human beings by exposure to infected animals or infected animal products or air particles released by infected animals. The animals in question have bacteria that come from the Brucella genus. Sometimes, the bacteria is carried by the animal without the animal itself being made sick but most often the bacteria live in the reproductive organs of the animal and cause sterility in males and abortions in females. The name for a disease that human beings can "catch" from animals is zoonosis, and Brucellosis is a zoonosis. Although seven known strands exist, there are currently four strands of the Brucella species that human beings are known to become sick with - one carried by pigs (*Brucella suis*), one carried by Yaks, camels, buffalo and cows (*Brucella abortus*), one carried by goats, sheep and camels (*Brucella melitensis*), and one carried by canines (*Brucella canis*). The United States thought of bacteria from the Brucella genus as potential biological weapons because the bacteria were spread through the air so easily. Attempts by the U.S. were made as early as 1942 to research the bacteria for the purpose of biological warfare. In the 1950's Brucellosis bacteria were used to make the first biological weapon of the United States, and bombs with air particles from the bacteria were created by the U.S. Brucella bacteria were not used in biological weapons after 1967, and all biological warfare weapons were banned by the United States in 1969. Brucellosis has been brought under control in the United States by enforcing pasteurization processes for milk, vaccinations of animals, and the inspection of livestock by federal authorities with usually no more than one hundred cases per year being reported in the U.S. currently. However, a renewed interest in the disease has occurred because of international tourism and the migration of large numbers of people from Mexico, and also because of the possibility of the bacteria being used as a biological weapon by terrorists. World wide, brucellosis has approximately five hundred thousand cases per year. It is more of a problem in peoples who rely on farming and in countries with less stringent standards of hygiene for the handling of animals and animal products being prepared for consumption by human beings.

Because of the risk of biological warfare, physicians should familiarize themselves with the symptoms of Brucellosis. Brucellae gain access to the body through breaks in the skin, the eyes, and the gastro intestinal tract. Sexual intercourse has not been proven to transmit the disease. Symptoms of Brucellosis include fever, chills, weight loss, bone and joint problems, neurological symptoms, coughing, gastrointestinal symptoms, and neuropsychiatric symptoms such as headache. Diagnosis is usually done through medical history and blood tests. In the United States, cases tend to occur individually, and hence a number of cases close together should raise a flag for the possibility of a biological weapon's having caused the outbreak. Sources Al-Nassir, Wafa, MD, Lisgaris, Michael, MD and Salata, Michael A., MD, "Brucellosis," eMedicine Article last updated July 18th, 2006 URL: <http://www.emedicine.com/med/topic248.htm> Maloney, Gerald E., DO, "CBRNE-Brucellosis," eMedicine Article last updated May 10th, 2006 URL: <http://www.emedicine.com/emerg/topic883.htm>