

Q Fever

Q fever is an illness caused by the bacteria *Coxiella burnetii*, carried by animals (that are usually not unwell) such as cattle, sheep, goats, and kangaroos. People usually catch the infection by breathing in droplets or dust contaminated by birth fluids, faeces, or urine from infected animals. The bacteria can also exist in a variety of domestic and wild animal species, as well as in the general environment (e.g. dust and soil), which can also lead to infection and disease. Spread of infection from person-to-person is rare. Q fever can be treated with antibiotics.

Q fever is usually an acute (immediate) infection, but sometimes it can lead to a chronic (long-term) illness.

Signs and Symptoms:

Many infected people have no symptoms. People who do become sick often have a severe flu-like illness. Symptoms begin about 2–3 weeks after exposure to the bacteria. However, this period can be as short as 4 days and as long as 6 weeks.

Typical symptoms of acute Q fever include:

- Fever and chills
- Severe sweats
- Severe headache (especially behind the eyes)
- Muscle pain
- Weakness and tiredness
- Weight loss.

Some patients may develop pneumonia (chest infection) and hepatitis (inflammation of the liver) during the course of acute illness. Most people make a full recovery and become immune to future Q fever infections.

Your doctor can diagnose Q fever based on symptoms, clinical examination, and laboratory tests on blood samples. Two or more blood samples on separate occasions are often required to confirm a Q fever diagnosis.

Treatment:

If given early, appropriate antibiotics can reduce the time for which people have Q Fever. Some people require admission to hospital. Chronic disease may require more than a year of antibiotics.

Transmission:

The bacteria are found in many animals including cattle, sheep, goats, dogs, cats, horses, pigs, rodents, camels, and kangaroos. The bacteria are also found in ticks. Infected animals usually have no symptoms; however, infection in animals may result in abortion, stillbirth, and infertility.

Infected animals have high numbers of bacteria in birth by-products such as the placenta and birth fluids. The bacteria can also be passed to the environment from faeces, urine, and milk of infected animals. The bacteria are highly infective and can survive in dust and soil for months and years.

- People most commonly catch the infection by breathing in droplets or dust containing the bacteria from birth fluids, faeces, urine, or blood of infected animals, such as during:
 - Animal birthing
 - Animal slaughtering/skinning/meat processing
 - Herding
 - Shearing/wool processing
 - Working with animal manure
 - Transporting infected animals
 - Veterinary/diagnostic procedures
- Infection can also occur through direct contact with infected animal tissue or fluids on broken skin - for example, through cuts with contaminated knives or needle-stick injuries when working with animals

- Consuming unpasteurised (raw) milk or milk products from infected animals may carry a risk of contracting the infection
- Ticks may very occasionally transfer the infection to people through tick bites, from breathing in tick excreta or through direct contact (e.g. removal of ticks from domestic animals, aerosol-generating activities such as shearing, or crushing ticks with bare hands)
- Person-to-person spread of infection is rare, but can occur through blood transfusion and mother-to-baby transmission.

Who is at risk?

People whose work exposes them to high risk animals, animal products, and animal excreta may develop Q fever. These high-risk occupations include:

- Abattoir and meat workers
- Agriculture, livestock and dairy farmers and workers
- Stockyard/feedlot workers and transporters of animals, animal products and waste
- Shearers, wool classers/sorters, pelt and hide processors
- Knackery workers
- Tannery workers
- Laundry workers handling clothing from at-risk workplaces
- Pet food manufacturing workers
- Veterinarians, veterinary nurses/students/researchers, and others working with veterinary specimens
- Agriculture college staff and students working with high risk animals
- Animal shooters/hunters
- Laboratory personnel working with materials containing the bacterium *Coxiella burnetii*
- Wildlife/zoo workers, animal trainers
- Dog/cat breeders, and anyone regularly exposed to pregnant or birthing animals.

Other people at risk of Q fever through environmental exposures include:

- Family members of the high risk occupational groups described above, through exposures to contaminated clothes, boots or equipment
- People living on or in close proximity to a high-risk industry (e.g. neighbouring livestock farms, stockyards housing cattle/sheep/goats, meatworks, land being fertilised by untreated animal manure)
- Visitors to at contaminated environments (e.g. farms, abattoirs, animal saleyards)
- People living near livestock transport routes who may be exposed to contaminated dust from the passing animals
- People involved in mowing which stirs up dust contaminated by animal excreta, in areas where there are livestock or native animals, commonly kangaroos
- People who observe or assist animal births.

Prevention:

A Q fever vaccine is available to protect people against the disease. Vaccination is recommended for all people who are working in, or intend to work in, a high-risk occupation (see Who is at risk?). High risk workplaces should have a vaccination program to protect their workforce.

People at risk of Q fever through non-occupational, environmental exposures (see Who is at risk?) are also recommended for vaccination.

People must be screened and tested before they are vaccinated against Q fever. Check the Australian Q fever Register (www.qfever.org) to find a doctor specifically trained for Q fever vaccination services.

Apart from vaccination, people can take steps to reduce the risk of Q fever to themselves or the community, including:

- Washing their (or their children's) hands and arms thoroughly in soapy water after any contact with animals

- Wearing a P2 mask (particulate respirator, available from pharmacies and hardware stores) and gloves when handling and disposing of animal products, waste, placentas, and aborted fetuses
- Preventing animals from eating placenta and immediate removal of animal abortive and birth materials, with safe disposal by deep burial – do not use them in compost
- Personal protective equipment and contaminated clothing should be removed at the site, and appropriately bagged and washed on site, to reduce the risk of exposing non-vaccinated individuals and family members outside of the workplace to Q fever
- Appropriate treatment of animal manure: do not remove manure from deep litter sheds or yards for at least one month after birthing season; compost manure or alternatively store manure for three months prior to spreading on farm land for fertiliser
- Manure should be covered during storage and transport and must be under-ploughed immediately when spreading on farming land
- Minimising dust and aerosols in slaughter and animal housing areas.

Health outcome:

Most people make a full recovery from Q Fever. However, in about 10 to 20% of people, chronic fatigue (post Q fever fatigue syndrome) is still present after 12 months, affecting an individual's ability to work at full capacity. Occasionally people may develop chronic infections that affect the heart, bones, or joints. Persons at increased risk for chronic Q fever after acute infection include: immunosuppressed persons (e.g. cancer patients with chemotherapy, patients with organ transplantation), pregnant women, and persons with heart valvular abnormalities.

Other resources:

- [Australian Q Fever Register \(https://www.qfever.org/\)](https://www.qfever.org/) - general information about the disease, vaccination service providers and a register of Q Fever immune status of individuals
- 13 HEALTH (call 13 43 25 84)
- Immunise Australia (call 1800 671 811)
- [Having a vaccination what to expect fact sheet \(http://conditions.health.qld.gov.au/HealthCondition/condition/14/119/70/Having-a-vaccination-what-to-expect\)](http://conditions.health.qld.gov.au/HealthCondition/condition/14/119/70/Having-a-vaccination-what-to-expect)

Help and assistance:

If you work with potentially infectious animals or materials, check with your employer to see if they have a Q Fever vaccination program. People requiring Q Fever immunisation will need to purchase the vaccine unless it is provided by their employer. To find out where you can be immunised against Q Fever, check providers listed on the [Australian Q Fever register \(http://www.qfever.org/\)](http://www.qfever.org/). For further assistance, please contact your doctor or nearest [public health unit \(https://www.health.qld.gov.au/system-governance/contact-us/contact/public-health-units\)](https://www.health.qld.gov.au/system-governance/contact-us/contact/public-health-units).

Vaccine-preventable diseases and immunisation programs

This fact sheet provides information about vaccine-preventable diseases, your legal duties and occupational immunisation programs.

There are many serious and life-threatening diseases which can be prevented through vaccination. Diseases such as hepatitis B and Q fever can cause chronic (long lasting) infection with ongoing health problems. Others, such as rubella and chickenpox, can infect infants during their mother's pregnancy.

Many vaccine-preventable diseases are highly contagious and are readily spread. Workers who are infected with vaccine-preventable diseases may in turn transmit infection to other people at the workplace, their families and the wider community.

While vaccination is one of the most effective ways to prevent disease, infection control practices in the workplace, such as hand hygiene, is also important because:

- sometimes disease may not be detected, for example, some vaccine-preventable diseases can cause mild or no signs of illness, or can spread before the onset of illness
- individuals may be exposed to infections in the workplace that are not vaccine-preventable
- individuals may have different levels of immunity (e.g. impaired immune system or not able to respond to vaccination).

Occupations at risk

Certain occupations are associated with an increased risk of exposure to some vaccine-preventable diseases.

Information on vaccinations recommended for occupational groups can found in *The Australian Immunisation Handbook* (published by Australian

Government's Department of Health and Ageing) www.immunise.health.gov.au.

Vaccination and immunisation programs

Occupational immunisation programs

Persons conducting a business or undertaking (PCBUs) should implement an occupational immunisation program if a risk assessment shows that their workers are at risk of acquiring a vaccine-preventable disease.

An occupational immunisation program should:

- include an immunisation policy stating:
 - the workplace's vaccination requirements
 - how vaccine refusal, medical contraindication to vaccination (medical condition which makes vaccination inadvisable) and vaccine failure will be managed
 - how workers will be protected in the period between vaccination and the onset of immunity
 - how the risks to contract and labour hire workers, students, volunteers and others will be managed.
- require at-risk workers to complete an immunisation record on commencing employment, or seek medical advice if they're unsure of their immunity or vaccination history
- identify workers who have not been vaccinated and encourage them to be vaccinated in accordance with the workplace immunisation policy
- provide workers with information about all relevant vaccine-preventable diseases and the availability of vaccination
- ensure that workers have been vaccinated as requested and update each worker's immunisation record following vaccination



