

What It Is:

Q Fever is a disease caused by the bacterium *Coxiella burnetii*, a pathogen belonging to the family Coxiellaceae. This pathogen **has the ability to infect mammals**, including **humans, as well as birds, reptiles, and arthropods**. **Ruminants, particularly cattle, sheep, and goats**, are the most susceptible species and **serve as the primary reservoirs**. In these animals, *Coxiella burnetii* infection may be subclinical or may lead to reproductive disorders such as abortion, stillbirth, and weak offspring.

Q Fever typically exerts a **limited impact on animal and public health**. However, it represents a notable occupational hazard for **high-risk groups**, particularly individuals involved in the handling of cattle, sheep, goats, or their derived products.

Categories



SHEEP
OVINE



GOATS
CAPRINE



CATTLE
BOVINE



DOMESTIC
CANIDS

The disease is most commonly observed in **ovine, bovine caprine species** and carnivores such as domestic dogs. It is reported less frequently in equids, water buffalo, camels, dromedaries, cats, geese, and other bird species.

Ticks, particularly those belonging to the family Ixodidae, play a key role in the transmission of *Coxiella burnetii*.

Origin and transmission

Animals and humans can acquire Q Fever through ingestion or inhalation of *Coxiella burnetii*.

In infected animals, **the bacterium is excreted via milk, urine, and feces, as well as through amniotic fluids and placental tissues**.

Once outside the host, *C. burnetii* is capable of **transforming into highly resilient extracellular forms** that are resistant to heat and desiccation. These forms enable the bacterium to **survive for several days in humid environments at room temperature and for months under dry conditions**.

Due to its environmental persistence (or Extracellular resistance), *C. burnetii* **can remain viable in dust particles**, which may be aerosolized and dispersed over long distances by wind.

Coxiella burnetii is considered a **highly infectious pathogen**, as inhalation of a single organism may be sufficient to cause clinical disease in both animals and humans. However, **the bacterium is inactivated by high temperatures**, such as those employed during pasteurization process.

Ticks also play a fundamental role in the transmission of *Coxiella burnetii*, as they are capable of transferring the bacterium from infected to susceptible animals.

Human infections are primarily acquired **through the inhalation of aerosolized particles** contaminated with the extracellular forms of *Coxiella burnetii*.

Symptoms and Impacts

ANIMALS	HUMANS
<p>The impact of Q Fever on animal health is generally limited, as clinical disease is infrequently observed. When it does occur, particularly in cattle, sheep, and goats, it primarily affects the reproductive system, leading to disorders such as abortion, especially in the late stages of gestation, neonatal mortality, retained placenta, endometritis, and, in some cases, infertility.</p>	<p>In humans, Q Fever often presents with flu-like symptoms, including fever, headache, diarrhea, and vomiting, and may be associated with high hospitalization rates (up to 60%) during outbreaks. In more severe cases, the infection can progress to pneumonia or hepatitis.</p> <p>Chronic Q Fever, defined as an infection lasting longer than six months, is relatively uncommon but significantly more serious. The risk of chronic progression is estimated at 1–2% of cases, most frequently manifesting as endocarditis.</p> <p>Furthermore, up to 20% of patients may experience a post-infectious chronic fatigue syndrome, persisting for over a year. This can have a significant impact on quality of life and contribute to increased healthcare burden.</p>

Geographical Distribution

Q Fever was **first identified in Australia in 1935**, following its detection in sheep , and has since been reported worldwide, with the exception of New Zealand.

In Italy, the first confirmed human outbreak occurred in 1944, presenting in an epidemic form.

In domestic ruminants, *Coxiella burnetii* is widespread throughout the Italian peninsula, including the islands. However, the infection rarely presents with clinical signs and typically results in sporadic outbreaks.

Preventive Measures

Animal vaccination against Q Fever has been implemented in regions where the infection is prevalent and **has proven effective** in controlling the disease in ruminant populations.

In order to prevent or reduce the transmission of the disease, **several management practices are essential**. **These include: the proper handling of abortion materials**, to prevent any contact with other animals in the herd as well as ingestion by domestic or wild carnivores.

Additional recommended measures involve **confining parturitions to a designated, well-disinfected area**, **treating manure with lime**, and **avoiding its application to fields during windy conditions**, particularly following confirmed Q Fever outbreaks.

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