# Q fever

### What is Q fever?
Q fever is a zoonotic disease caused by *Coxiella burnetii*. It is found worldwide. Cattle, sheep and goats are the main reservoirs for human infection, but it is also transmitted in the wild by kangaroos and bandicoots, and occasionally through contact with domestic pets (especially parturient cats and dogs).

### Who gets Q fever?
While Q fever occurs sporadically without identifiable risk factors, the majority of cases occur via inhalation or splashes to mucosal surfaces in occupational groups with exposure to the above animals or the environment contaminated with the spores of this bacterium e.g. livestock transport workers, abattoir workers, farmers, vets. Humans do not usually acquire Q fever from tick bites.

### Is it contagious?
Human to human infection is extremely rare. However, individuals have acquired Q fever from contact with contaminated clothing from a family member working in a high-risk occupation.

### What are the symptoms?
The incubation period is usually around three weeks (range 14-60 days). Sixty percent of cases have subclinical infection with an unremarkable illness or no symptoms at all. The remainder manifest symptoms of a 'flu-like' illness, with intermittent high fevers, sweats, headache, myalgias and fatigue.
Symptoms may take up to six months to resolve following treatment. This is distinct from a small proportion who develop a post Q fever fatigue syndrome (QFS), in which similar symptoms persist for many years.

### What is chronic Q fever?
Less than 4% of patients with Q fever develop chronic disease. Chronic manifestations are most commonly endocarditis, aneurysmal infection but also recurrent multifocal osteomyelitis. Risk factors for the development of chronic Q fever include those with underlying immunocompromise and/or pre-existing cardiac valvulopathy.

### How is Q fever diagnosed?
Laboratory testing reveals, in most cases, elevated liver function tests and full blood count leucopenia, occasionally atypical lymphocytes and thrombocytopenia; changes similar to those seen with acute CMV or EBV infection.
Acute diagnosis of Q fever is made by detection of Q fever PCR positivity in serum in the first 7-10 days of symptoms. This window period is then followed by the development of elevated phase 2 IgM followed by phase 2 IgG. Complement fixing antibodes (CFT) to phase 2 antigens also develop in this time frame. Phase 1 antibodies usually become positive and at lower levels later in the acute illness. There is no role for blood cultures.
Elevated phase 1 antibodies (IgG and sometimes IgA and CFT) are a marker of chronic infection and can be used to detect, rule out and monitor patients with chronic Q fever. It is important to correlate these suggestive serological findings with evidence of clinical disease. Positive PCR of affected tissues, such as bone and heart valves, is diagnostic. All tests in post Q fever fatigue syndrome (QFS) are normal.

### What is the treatment?
For those who develop a clinical illness, two weeks of doxycycline is the treatment of choice. Treatment is recommended even if symptoms are resolving by the time the diagnosis is made, as there is a possibility that treatment may decrease the likelihood of chronic symptoms. Immunity is life-long following acute infection.

Ref: Graves S, Gidding H. Could it be Q fever? MJA 2013 198(1)p9-10.

 IP609 APRIL 2017