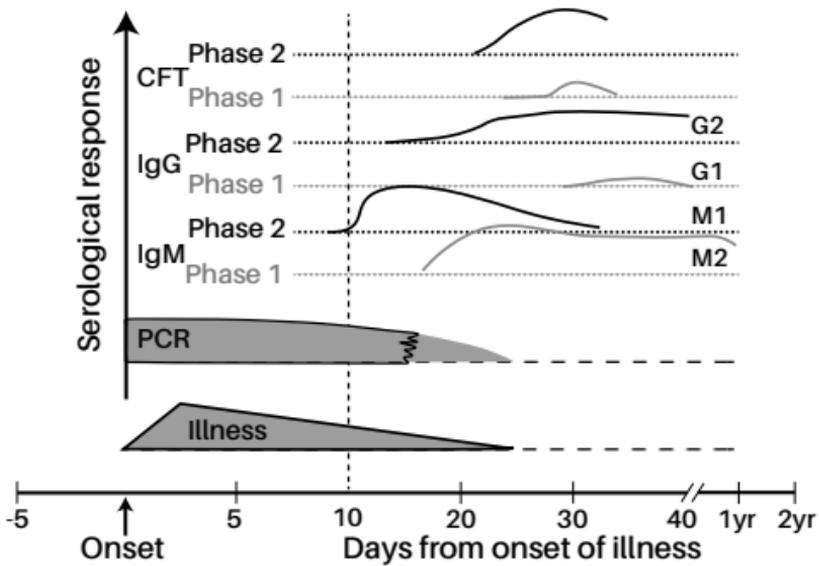


The serological response to *Coxiella burnetii* (Q fever)



No antibodies may be detected for up to 10 days following acute onset which is usually abrupt and well defined. This is followed by development of a phase 2 IgM (EIA). Seroconversion with the development of phase 2 IgG (EIA) requires convalescent testing in 7 to 14 days. Phase 2 Complement Fixing antibodies (CF) which are a combination of both IgG and IgM develop soon after the appearance of phase 2 IgM (EIA). An isolated phase 2 IgM (EIA) may occasionally occur as a false positive response to another infection. Convalescent serology to document phase 2 IgG seroconversion is important to confirm true infection.

To cover the seronegative window, Q fever PCR is included in the diagnostic panel. The duration of PCR positivity is usually fairly short lived, 7–10 days. More than 75% of the PCR positive collections are completely seronegative; 10% may have developed phase 2 IgM and 15% have detectable both IgG and IgM. PCR closes that gap with a sensitivity of 80%. If the clinical suspicion is high and the PCR is negative, then convalescent serology should also be performed in 2-3 weeks.

The key serological indicator for chronic infection is an elevated phase 1 IgG with or without phase 1 IgA. Persisting levels of phase 1 that are greater than phase 2, either IgG or CFT antibodies are markers for chronic disease. Cut-off values for phase 1 IgG to indicate the presence of chronic disease do vary across the world (ranging from phase 1 IFA IgG > 800, >1600, > 1280) or high levels of CFT phase 1 antibodies that in excess of corresponding phase 2 CFT antibodies. Importantly, the diagnosis of chronic infection cannot be made without supporting clinical and radiological features.

In chronic infection, rates of blood and serum PCR positivity, even with endocarditis for example, ranges from 33 to 64 percent. So PCR in blood has a poor sensitivity. It is of greatest value when performed on focally affected tissue such as excised heart valves, joint and joint biopsies and fluid, and skin and soft tissue biopsies.