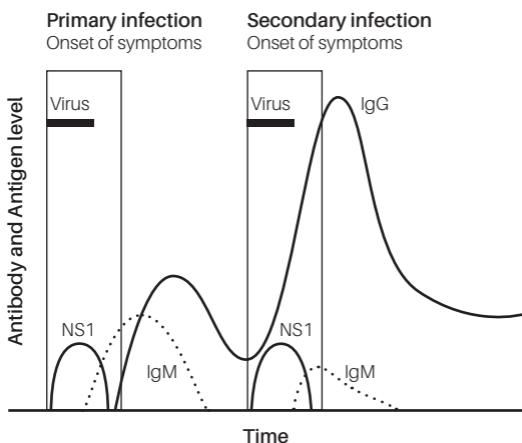


Laboratory diagnosis of dengue infection

The immune response to dengue virus infection can be considered in the context of **primary** versus **secondary** dengue infections.

Immune response to dengue infection



A **primary** infection describes the first dengue virus infection experienced by an individual.

- NS1 antigen is produced from Day 1 after onset of fever and up to Day 9.
- Detectable levels of IgM antibody will be produced approximately 5 days after symptoms occur (sometimes as early as 3 days). IgM levels peak in 2 weeks, followed by a 2 week rapid decay, but may remain detectable for up to 6 months.
- IgG antibodies appear approximately 14 days after onset of symptoms.

A **secondary** immune response is generated following a sequential infection with a dengue serotype to which that person has not previously been exposed. Such a response may also be triggered if a person has previously been exposed to a flavivirus (either through infection or vaccination) that is not dengue.

- NS1 antigen is produced from Day 1 after onset of fever and up to Day 9.
- IgM response is more varied:
 - usually preceded by IgG response
 - often be produced at low levels
 - minority of patients will show no detectable levels of IgM.
- High levels of IgG are detectable during the acute phase:
 - reach levels above those found in primary or past infection
 - IgG may be detectable by Day 3 of symptoms, but generally detectable Day 5-6
 - persist for 30-40 days then decline to levels found in primary or past infection.

For secondary dengue infection a four fold rise in IgG is usually the diagnostic gold standard.