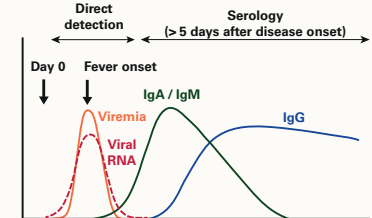


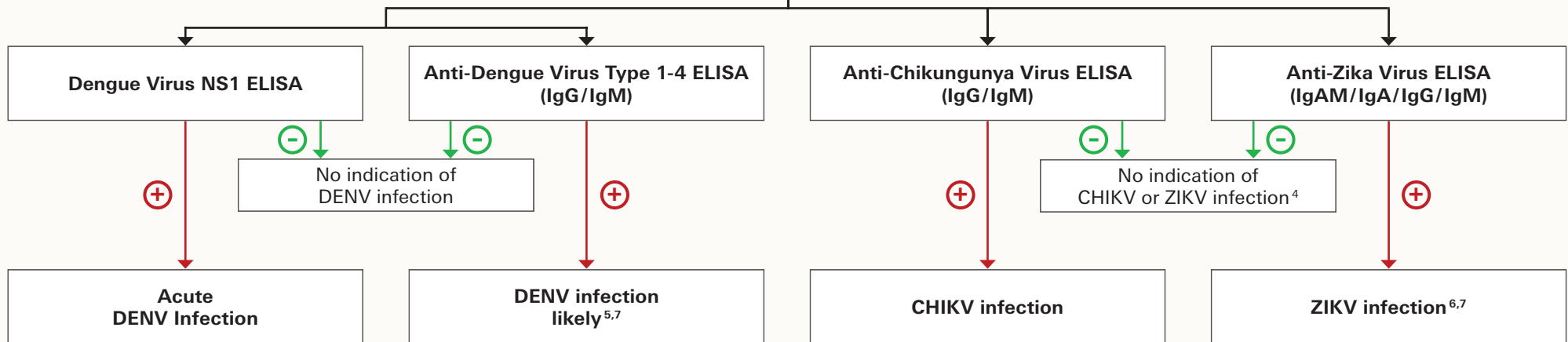
Serological differential diagnosis in suspected cases of dengue, chikungunya or Zika virus infections (DENV, CHIKV, ZIKV)



Indication: (1) Symptoms of a DENV, CHIKV, or ZIKV infection
 → Fever, rash, joint pains, neurological symptoms¹
 (2) Stay in an endemic region during or shortly prior to pregnancy²



Parallel determination of antibodies against DENV, CHIKV and ZIKV using ELISA (≥5 days after start of the disease)³



¹ e.g. loss of mobility, numbness in the limbs, ascending pareses, facial pareses or loss of muscular reflex as a sign of Guillain-Barré syndrome (GBS).
² Men who have been to endemic regions and whose partner is pregnant should also be examined, since sexual transmission of Zika virus is possible.
³ Samples taken <5 days after the start of the disease should first be analysed by methods of direct pathogen detection, e.g. RT-PCR
⁴ In clinically-supported suspected cases and in diagnosis during pregnancy, a follow-up sample should be taken within 1 to 2 weeks: If this is also negative, an acute infection is highly unlikely.
⁵ Cross reactivity with other flaviviruses cannot be excluded. In secondary infections with other flaviviruses, the DENV IgG titer can be above the titer of the virus which causes the acute infection.
⁶ False positive results can occur in sera from patients with acute plasmodium infections.
⁷ Possible serological constellations and their relevance in flavivirus infections (e.g. DENV, ZIKV, tick-borne encephalitis virus, yellow fever virus, West Nile virus, etc.):

IgA*	IgM	IgG	IgG titer increase in follow-up sample after 1–2 weeks	Indication of
- / +	+	- / +**	yes	Acute infection <u>without</u> prior contact with flavivirus (primary infection)
- / +	- / +***	+	yes	Acute infection after prior contact with flavivirus (secondary infection)
-	-	+	no	Past infection or previous virus contact

* IgA antibody detection can support the diagnosis of acute ZIKV infections; **IgG antibodies usually occur together with IgA and/or IgM antibodies or shortly after;
 *** In cases of previous contact with other flaviviruses, the IgM response can occur with a time delay or with reduced intensity.