

Measles – Recommendations for Testing for Clinicians

Measles is a mandatory, immediately notifiable disease. Please report confirmed and probable cases of measles to your local health department.

	Preference	Test	Specimen	Indication	Timing	Notes
ACUTE DISEASE	Preferred Test	RT-PCR	Nasopharyngeal (NP) or throat (OP) swab (preferred) Urine can be collected in addition to an NP/OP swab	Acute Disease	- A specimen for detection of virus should be collected as soon as possible upon suspicion of measles. - Specimen should be ideally collected within 3 days after rash onset but can be collected up to 10 days. - If >10 days since rash onset, PCR testing is generally not recommended.	- NP/OP swab collected <3 days after rash onset is the preferred specimen. Ideally, RT-PCR should be performed for all suspect measles cases identified within 10 days of rash onset. - Collecting a urine specimen along with an NP/OP swab may improve test sensitivity, especially if at the end of the RT-PCR detection window. - Contact your health department regarding where to send specimens for testing and genotyping, if appropriate.
	Preferred Test	IgM (with IgG)	Serum	Acute Disease	- Ideally, serology will be obtained for suspect measles cases, in addition to RT-PCR. - IgM is most sensitive 3+ days after rash onset and may be negative days 0–3 after rash onset. IgM can be detected for 6–8 weeks after acute measles.	- Detection of measles IgM can aid in the diagnosis of measles and can increase the detection window for acute cases. - Testing IgG for acute cases can provide evidence of pre-existing immunity, which can be helpful to differentiate rare instances of vaccine failure. - People with a history of measles vaccination may not have detectable IgM during an acute measles illness.
IMMUNITY	Only test for immunity	IgG only	Serum	Evidence of Immunity	IgG can be detected approximately 2 weeks after measles vaccination.	- The presence of measles-specific IgG indicates a recent or prior exposure to measles virus or measles vaccine. IgM is <u>not</u> an appropriate test for immunity.

* Viral culture is a valid way to confirm cases of acute measles disease; however, is not generally recommended as it takes longer to receive results than RT-PCR, which is widely available. Specimen collection and timing is similar to that for RT-PCR.

** Acute and convalescent phase serum specimen collection (separated by at least 2 weeks) to demonstrate a 4-fold increase in IgG titer can confirm measles infection but is generally not required to confirm measles infection.

Measles Tests

When to Collect?

Acute Disease

PCR

Nasopharyngeal (NP) or Throat (OP) Swab



As soon as possible upon suspicion of measles: ideally **0-3 days** after rash onset, up to **10 days** after rash onset.

PCR

Urine



Within 10 days of rash onset

**Collecting a urine specimen along with an NP/OP swab may improve test sensitivity, especially if at the end of the PCR detection window.*

IgM

Serum



Collect with specimen for PCR. Can be negative up to 3 days after rash onset. IgM **can be detected for 6-8 weeks** after acute measles.

Immunity

IgG

Serum



When assessing evidence of immunity, can be detected **~2 weeks** after MMR vaccination