



PATHOLOGY TESTS EXPLAINED

Information about pathology tests to help everyone take control of their health and make the right decisions about their care.

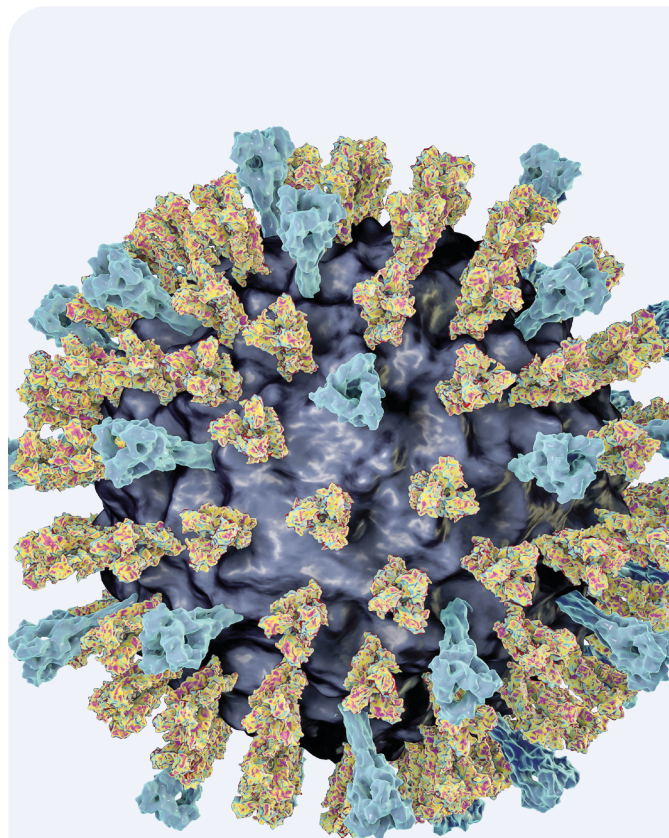
WHAT YOU SHOULD KNOW ABOUT **MEASLES AND MUMPS TESTING**

Measles and mumps infections are caused by RNA viruses that come from the same virus family. Doctors usually diagnose measles or mumps based on someone's symptoms. However, because other infections can cause rashes that are similar to measles, and some people who have lowered immunity can present with different symptoms, testing can sometimes be used to confirm a diagnosis. Testing is also done to track an outbreak to prevent the spread of infection to others.

The symptoms of measles generally occur within seven to 14 days after infection. The virus is transmitted by respiratory droplets from an infected person coughing or sneezing. First signs of measles are high fever, cough, runny nose, watery eyes, white spots inside the mouth and a red rash that starts on the face and spreads down the body.

The symptoms of mumps generally appear after a 16 to 18-day incubation period. The long incubation period enables the virus to spread quickly through the community. The first signs of mumps include a fever, headache, muscle aches, tiredness, and tender salivary glands under both ears.

Most people who get mumps recover within a few weeks. Some will have no or very mild symptoms, but in some cases, mumps can have serious complications that include deafness, meningitis, or encephalitis or very rarely death.



Structure of measles virus with surface glycoprotein spikes

Antibody testing

If you are infected by measles or mumps or have been vaccinated with the measles-mumps-rubella (MMR) vaccine, your immune system will make antibodies as a way of defending your body.

There are two types of antibodies, IgM and IgG. The first antibodies to appear in the blood after exposure or vaccination is IgM. Levels of this IgM antibody increase for several days to a maximum concentration and then begin to taper off over the following weeks.

IgG antibodies take a bit longer to appear, but once they do they stay in the bloodstream for life, providing protection against re-infection. If antibody testing is used, it is important to collect two blood samples, one when you are acutely unwell and one later when you are recovering.

Genetic testing

Genetic testing can show if the measles or mumps virus are in your body when you have the test. It also detects and identifies the genetic strain of the virus. Genetic testing is most often ordered to confirm suspected active cases of measles and is usually performed by public health laboratories to monitor infection outbreaks.

If measles or mumps viruses are not identified by a genetic test, it does not necessarily mean that you do not have an active infection. There may not be enough virus to detect, or the virus may not have been present in the sample tested.



What your results can tell you

Antibody testing

IgM antibodies – if these are detected in your blood sample and you have not been recently vaccinated, it is likely that you have a current or recent infection.

IgM and IgG antibodies – if both antibodies are present or there is a large (fourfold) increase in IgG antibody concentrations between when you are in the acute infection phase and when you are recovering, it is likely that you have a current or a recent infection.

IgG antibodies – if these are detected in your sample and you have been previously vaccinated and you are not currently ill, then you have immunity and are protected against any new infection.

No antibodies – If you do not have measles or mumps IgG antibodies, you are not considered immune to the viruses. This may be because either you have not been exposed to the viruses, or because there has not been enough time for the IgG antibody to be produced, or because you do not have a normal antibody response.

Antibody testing results and possible interpretations

IgM	IgG	Possible interpretations
Positive	Negative	Early infection
Positive	Positive – with an increase in levels between acute and convalescent samples. This would only be done if the IgM test is not available.	Current or recent infection
Negative	Positive	Immunity from prior infection or vaccination
Negative	Negative	No current or prior infection, not immune, no or low immune response due to compromised immune system.



Having a medical test

The choice of tests your doctor makes is based on your medical history and symptoms. Make sure you tell them everything you think might help. You play a central role in making sure your test results are accurate. Do everything you can to make sure the information you provide is correct.

For more detailed information on these and many other tests go to pathologytestsexplained.org.au



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www.pathologytestsexplained.org.au

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Pathology Tests Explained is managed by a consortium of medical and scientific organisations representing pathology practice in Australia. More details at:
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