

Rubella

Rubella is a viral exanthem that occurs in both children and adults. It is caused by the rubella virus, which is an enveloped, single-stranded icosahedral RNA virus, and is a member of the togavirus family. It is also known as the German measles, or the three-day measles. Rubella can present with fever and tender postauricular lymphadenopathy. Following this is a diffuse, light pink maculopapular rash that first appears on the face and then spreads to the trunk and extremities within 24 hours. The rash usually lasts about three days, hence the name three-day measles. Adults can also have arthritis. In pregnancy, rubella is a TORCH infection and can cause serious complications, including hearing loss, ocular and cardiovascular defects and mental retardation.



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Characteristics

RNA Virus

RNA-rhino

Rubella is an RNA virus, meaning its genetic code consists of ribonucleic acid as opposed to deoxyribonucleic acid.

Togavirus

Toga

The rubella virus is a member of the Togavirus family, which are all small enveloped RNA viruses.

Enveloped

Envelope

Rubella is an enveloped virus. Viral envelopes are outer membranes that cover their protein capsids that help to enter host cells.

Icosahedral

Ice-cathedral

Rubella has an icosahedral virion, or a capsid with 20 triangular faces, and the tightly coiled RNA strand in the middle.

SS Positive Linear

Plus-sign on Ice-cathedral

Rubella has RNA in a linear arrangement as opposed to a circular formation. Single-stranded positive sense linear viruses have their genome directly utilized as mRNA. Host ribosomes translate the RNA genome directly into a single protein that is modified by host and viral proteins to form the various proteins necessary for replication.

Signs and Symptoms

German Measles or Three-Day Measles

German-shepherd (3) Tree and Mustache-weasel

Rubella is also known as the German measles, which is named after the two German physicians who first described rubella in the 1750s. Rubella can be mistaken for rubeola (measles) which has a rash that presents similarly, except rubella spreads faster and remains light pink in color. The rash usually lasts about three days, hence the name three-day measles.

Fever

Fever-beaver

Rubella is associated with a low grade fever and often appears several days before a rash develops. A fever may present at the same time as lymphadenopathy and arthritis in adults.

Postauricular Tenderness

Post-in-ear-aura

Rubella is known to cause tender postauricular lymphadenopathy, which are enlarged lymph nodes behind the ears. This specific region of lymphadenopathy is common in rubella and can help with differential diagnosis.

Lymphadenopathy

Lymph-lime-add (+)

Rubella is known to cause lymphadenopathy in the postauricular, cervical and suboccipital regions.

Truncal Rash

Tree-trunk Rash

The rash associated with rubella has pinpoint, pink maculopapules that first appear on the face and then spread to the trunk and extremities within 24 hours, unlike rubeola (measles) which spreads slower and darkens with time. The rash usually lasts about three days, hence the name three-day measles.

Arthritis

King-Arthur

Arthritis in rubella is more common in adolescents and adult females, and may persist after other symptoms disappear.

Congenital TORCH Infection

Torch

TORCH infections are infections that are acquired in utero or during the birthing process. Congenital rubella can have hearing loss, ocular and cardiovascular defects and mental retardation. Due to its serious complications, all pregnant women get rubella titers as part of their routine prenatal care.