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## Skin Rashes: Diseases 1-6\*

Number	Other names for the disease	Etiology(ies)	Descriptions ( <a href="#">see below</a> )/Image
First disease	Rubeola, Measles, Hard measles, 14-day measles, Morbilli	Measles virus	<a href="#">Description, Images</a>
Second disease	Scarlet Fever, Scarletina	<i>Streptococcus pyogenes</i>	<a href="#">Description, Images (case)</a>
Third disease	Rubella, German measles, 3-day measles	Rubella virus	<a href="#">Description, Images</a>
Fourth disease	Filatow-Dukes' Disease, Staphylococcal Scalded Skin Syndrome, Ritter's disease	Some say the disease does not exist <sup>1</sup> . Others believe it is due to <i>Staphylococcus aureus</i> strains that make epidermolytic (exfoliative) toxin <sup>2,3</sup>	<a href="#">Description</a>
Fifth disease	Erythema infectiosum	Erythrovirus (Parvovirus) B19	<a href="#">Description, rash</a>
Sixth disease	Exanthem subitum, Roseola infantum, "Sudden Rash", rose rash of infants, 3-day fever	Human Herpes Virus 6B or Human Herpes Virus 7	<a href="#">Description, Images</a>

\*I understand that the terminology for all but the fifth disease is not used anymore. However, if ever caught in a medical trivia battle this page could come in handy.

### Descriptions:

**Measles:** Severe, brassy cough; coryza; conjunctivitis; photophobia; and fever appear 3 to 4 days before the exanthem (rash). The nose and eyes run continuously: the classic sign of measles. **Koplik's** spots (blue-white spots with a red halo) appear on the buccal mucous membrane opposite the premolar teeth 24 to 48 hours before the exanthem and remain for 2 to 4 days. The rash begins on the fourth or fifth day on the face and behind the ears. In 24 to 36 hours, it spreads to the trunk and extremities. The rash contains slightly elevated maculopapules that vary in size from 0.1 to 1.0 cm and vary in color from dark red to a purplish hue. They are frequently confluent on both the face and body. The early rash blanches on pressure.

**Scarlet fever:** A rash, which consists of very small red bumps that begin on the neck and groin and then spreads to the rest of the body. The rash has the characteristic feel of sandpaper and typically lasts five to six days. The rash is sometimes worse on the neck, elbow creases, arm pits (axilla) and groin and once the rash

fades, the skin may peel. This peeling may last up to six weeks. Although the sandpapery rash does not usually occur on the face, the patient's forehead and cheeks may appear red and flushed. In addition to this flushed appearance, there is usually a pale area around his mouth (**circumoral pallor**). Another finding is dark, hyperpigmented areas on the skin, especially in skin creases. These areas are called **Pastia's** lines or Pastia's sign. The patient will also have a fever and sore throat. During the first days of infection, the tongue is coated heavily with a white membrane through which swollen, red papillae protrude (classic appearance of white **strawberry tongue**). By day 4 or 5, the white membrane sloughs off, revealing a shiny red tongue with swollen papillae (red strawberry tongue).

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**Rubella:** The rash begins as discrete macules (red spots) on the face that spread to the neck, trunk, and extremities. The macules may coalesce on the trunk. Appearance of the rash corresponds with the appearance of rubella-specific antibody. The exanthem lasts 1-3 days, first leaving the face and may be followed by desquamation. On occasion a nonspecific enanthem (**Forscheimer's** spots) of pinpoint red macules and petechiae can be seen over the soft palate and uvula just before or with the exanthem. The hallmark of rubella is the generalized tender lymphadenopathy which involves all nodes, but which is most striking in the suboccipital, postauricular, and anterior and posterior cervical nodes. Swelling of the lymph nodes most prevalent at the time of appearance of the exanthem but may precede it by a week. The tenderness that accompanies this lymphadenopathy subsides rapidly, however the enlargement may last days or weeks.

**Filatow-Dukes' Disease:** Controversy exists concerning the existence of this disease. Some believe the disease that was described by Clement Dukes in 1900 was what we now refer to as staphylococcal scalded skin syndrome (SSSS or Ritter's disease). This disease is caused by epidermolytic (exfoliative) toxin-producing strains of *Staphylococcus aureus*<sup>2,3</sup>. However, others believe it to be a misdiagnosis of either scarlet fever or rubella and therefore a nonexistent disease entity<sup>1</sup>. The term was dropped from medical textbooks in the 1960's and is only rarely used for medical trivia purposes today.

If one believes fourth disease is SSSS then the following symptoms are usually seen. SSSS is usually seen in infants and begins with an abrupt appearance of perioral erythema. This red well-demarcate and tender to the touch rash covers most of the body in around 2 days. Applying slight pressure with side to side movement of a finger to the skin lesions results in displacement of the epidermis from the dermis (positive Nikolsky's sign). In most cases the lesions become fluid filled bullae or cutaneous blisters. The fluid in the bullae and blisters is clear and does not contain bacteria or white blood cells. The bullae and blisters will break and will then desquamate. The lesions do not always fill with fluid and in this case some refer to the disease as staphylococcal scarlet fever. Desquamation of lesions also occurs with staphylococcal scarlet fever. Within 7-10 days of lesion appearance the skin heals without any scarring. Secondary bacterial infections of the lesions can result in scarring.

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**Fifth Disease:** Pruritus, low-grade fever, malaise, and sore throat precede the rash in approximately 10% of cases. Lymphadenopathy is absent. Older individuals may complain of joint pain. There are three distinct, overlapping rash stages. Facial erythema ("slapped cheek") that consist of red papules on the cheeks that rapidly coalesce in hours, forming red, slightly edematous, warm, plaques that are symmetric on both cheeks but do not cover the nasolabial fold and the circumoral region. The "slapped cheek" appearance fades in 4 days. Net pattern erythema is a unique characteristic eruption--erythema in a fishnetlike pattern--begins on

the extremities approximately 2 days after the onset of facial erythema and extends to the trunk and buttocks, fading in 6 to 14 days. At times, the rash (exanthem) begins with erythema and does not become characteristic until irregular clearing takes place. The eruptions may fade and then reappear in previously affected sites on the face and body during the next 2 to 3 weeks (recurrent phase). Temperature changes, emotional upsets, and sunlight may stimulate recurrences. The rash fades without scaling or pigmentation. There may be a slight lymphocytosis or eosinophilia.

**Exanthem subitum:** There is a sudden onset of high fever of 103° to 106° F with few or minor symptoms. Most children appear inappropriately well for the degree of temperature elevation, but they may experience slight anorexia or one or two episodes of vomiting, running nose, cough, and hepatomegaly. Seizures (but more frequently general cerebral irritability) may occur before the eruptive phase. The rash begins as the fever goes away. The term *exanthem subitum* describes the sudden "surprise" appearance of the rash after the fall of the fever. Numerous pale pink, almond-shaped macules appear on the trunk and neck. They become confluent, and then fade in a few hours to 2 days without scaling or pigmentation.

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### References:

1. Morens DM, Katz AR. The "fourth disease" of childhood: reevaluation of a nonexistent disease. *Am J Epidemiol.* 1991 Sep 15;134(6):628-40.
2. Powell KR. Filatow-Dukes' disease. Epidermolytic toxin-producing staphylococci as the etiologic agent of the fourth childhood exanthem. *Am J Dis Child.* 1979 Jan;133(1):88-91.
3. Weisse ME. The fourth disease, 1900-2000. *Lancet.* 2001 Jan 27;357(9252):299-301.

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