

Heat rash

Also known as Miliaria, prickly heat or sweat rash

What is miliaria?

Miliaria is a group of skin conditions that arise from blockage of sweat ducts. There are three types of miliaria classified by the level of blockage of the sweat duct. These include miliaria crystalline, miliaria rubra and miliaria profunda.

Who develops miliaria?

Miliaria appears in about 15% of newborns. Babies are more commonly affected than children or adults as their sweat ducts are not yet fully developed.

Adults may also be affected, particularly those who work in humid and hot conditions.

What causes miliaria?

Miliaria is caused by obstruction of sweat ducts, often from heat and excess sweating.

Common situations in which blockage of the sweat ducts occurs include:

- excessive sweating under synthetic clothing
- swaddling newborns in multiple garments
- lying in bed for long periods (e.g. because of medical illness or immobility), particularly with a fever.

No known diseases are associated with miliaria.

What does miliaria look like?

Miliaria commonly appears in areas of skin that have been blocked particularly around the neck and upper trunk in both children and adults. Other areas that can be affected include the groin, waistline, under the breasts, skin folds and armpits.

Unlike acne, miliaria does not arise around hair follicles.

Miliaria crystallina appears as small, superficial and clear blisters. These break easily from mild friction or bathing.

Miliaria rubra appears as small, red flat or bumpy spots that are usually itchy. In chronic and recurrent cases, the lesions can turn into pus-filled spots.

Miliaria profunda appears as deep red or white lumps that are prickly. These lesions are generally not itchy as they appear below the itch receptors.

How is miliaria diagnosed?

Miliaria is most often diagnosed based on the typical appearance of the lesions. The doctor may perform a simple diagnostic test where a fine needle is used to rupture the blister so that the clear fluid/sweat can be assessed.

A biopsy of the skin may be needed to confirm the diagnosis and distinguish it from other conditions that look similar (e.g. erythema toxicum neonatorum, neonatal cephalic pustulosis, candidiasis, Grover's disease).

The doctor may also request a skin swab to rule out secondary infection.

Individuals who develop heat stress syndrome may need to have blood tests.

What other problems can occur with miliaria?

Miliaria spots can become infected and form abscesses (pus-filled lumps). In addition, when a large surface area of the body is affected, affected individuals can develop a high temperature and suffer from heat stress syndrome.

How is miliaria treated?

Miliaria usually disappears after the body is cooled down. It is best prevented by avoiding overheating and over swaddling.

More severe cases (e.g. miliaria profunda) can take several weeks to resolve as time is required for the plugs that block the opening of sweat ducts to be pushed outward by new sweat duct cells.

General measures recommended to improve symptoms:

- Avoid further sweating and irritation/friction of the skin.
- Good ventilation is important.
- Wear loose cotton clothing.
- Avoid plastic covered mattresses.

Soothing lotions (e.g. calamine lotion) or topical steroids may help to relieve symptoms.

Antiseptics and antibiotics may be recommended if a secondary infection is suspected.

What is the likely outcome of miliaria?

Miliaria usually disappears without any significant complications once the affected person is placed in a cool and ventilated environment.

In rare cases where a person suffers from chronic and recurrent miliaria rubra or profunda, a large number of sweat glands may end up not functioning properly. This can lead to compensatory facial sweating.

Individuals who develop secondary infection or heat stress syndrome need appropriate follow-up by the doctor.