HEALTH BASICS

# Millipede toxin

Millipede toxin is a defensive secretion that can irritate or burn skin and eyes.

**WHAT IT IS**
Defensive chemicals released by some millipedes

**WHERE IT COMES UP**
Skin or eye contact after handling or crushing a millipede

**WHY IT MATTERS**
Can irritate or chemically burn skin and eyes

**WHAT IT IS NOT**
Not a disease or a venomous bite

**WHO TO ASK**
Poison control, urgent care, or an eye clinician

**HOW IT IS CHECKED**
Exposure history and examination; no routine toxin test

## Overview

"Millipede toxin" means the defensive chemicals that millipedes release when they are threatened, handled, or crushed. It is not one specific substance. The chemical mixture differs among millipede species.

A toxin is a harmful substance made by a living organism. In this case, it is more accurate to think of the material as a defensive secretion. Millipedes release it through small openings along the sides of their bodies.

Millipedes do not inject this secretion. They do not have venomous fangs or stingers, and they generally do not bite people. Exposure usually happens when the secretion gets onto the skin or into an eye. It can also transfer from contaminated fingers, clothing, bedding, or another surface.

Millipedes and centipedes are different animals. Millipedes usually have rounded bodies with two pairs of legs on most body segments. Centipedes have flatter bodies and one pair of legs per segment. Centipedes can bite and inject venom; millipedes mainly rely on defensive chemicals.

## How it works

Many millipede secretions contain chemicals called quinones, including benzoquinones. Quinones can irritate tissue and produce brown, red, or dark staining on the skin. Some species release phenols or other irritating compounds. Certain millipedes can produce cyanogenic compounds, which can release small amounts of hydrogen cyanide.

The exact mixture depends on the species. The name "millipede toxin" therefore does not identify one chemical, concentration, or level of risk.

Contact with the secretion can damage the outer layers of skin. This may cause burning, irritation, or blistering. The dark colour sometimes left on the skin comes from a chemical reaction and may look similar to a bruise. It is not necessarily bleeding under the skin.

Eye tissue is more sensitive. Secretion in an eye can inflame the clear surface at the front of the eye, called the cornea, and the membrane covering the white of the eye, called the conjunctiva. The degree of injury depends on the substance, the amount, and how quickly the eye is rinsed.

Ordinary skin contact does not usually cause cyanide poisoning. Serious whole-body poisoning would be unusual and should not be assumed from a skin stain or a millipede smell.

## Why it matters for your health

Most concerns involve direct contact with skin or eyes. Skin effects may include local burning, redness, tenderness, or a blister. A brown or black stain can remain after the immediate irritation has improved.

Eye exposure matters more because even a small amount of an irritating chemical may injure the eye's surface. Pain, persistent redness, tearing, light sensitivity, blurred vision, or difficulty keeping the eye open should be assessed promptly.

A millipede may release secretion while being removed from a shoe, bed, floor, swimming pool, or outdoor area. Crushing one with a bare hand can spread the material. A child may touch a millipede and then rub their eyes.

There is no routine blood test for millipede toxin. Clinicians usually assess the circumstances of the contact and examine the affected skin or eye. Testing may be needed if there is a significant eye injury or if another chemical exposure is possible, but the millipede secretion itself is not usually measured.

## What can go wrong

Millipede secretion may be related to several specific injuries or situations:

A small skin exposure that improves after washing can usually be followed routinely. Contact poison control or a healthcare service if burning continues, a blister forms, a large area was exposed, or the substance was swallowed.

Eye contact needs more urgent attention. Start rinsing immediately, then contact poison control or an urgent eye-care service. Do not wait for visible damage before rinsing.

Call emergency services if someone collapses, has a seizure, develops severe breathing difficulty, or cannot be awakened. These effects are not expected from ordinary skin contact, but they require emergency care after any suspected poisoning.

- Irritant contact dermatitis: inflammation caused by direct chemical contact rather than an allergy
- Chemical skin burn: deeper irritation that can produce pain, swelling, or blisters
- Temporary skin pigmentation: brown, red, or black staining where the secretion touched
- Conjunctivitis: inflammation of the membrane over the white of the eye
- Keratitis: irritation or injury involving the clear cornea
- Accidental swallowing: uncommon exposure requiring advice from poison control
- Mistaken identity: a centipede bite or another chemical exposure may need different care

## What you can do

If secretion is on your skin, avoid spreading it to your face or eyes. Wash the area thoroughly with soap and running water. Remove contaminated clothing or jewellery. Do not scrub hard, because friction may increase irritation.

Do not apply bleach, solvents, acids, alkalis, or other chemicals to "neutralize" the secretion. These products may cause an additional chemical burn. Dark staining does not need to be scraped off.

If the secretion enters an eye, begin rinsing at once with plenty of clean, lukewarm water. Hold the eyelids open and let the water flow gently across the eye. Remove contact lenses if they come out easily during rinsing. Do not rub the eye or put unprescribed drops into it.

After rinsing, contact poison control for advice. Seek urgent eye assessment for pain, blurred vision, light sensitivity, ongoing redness, or difficulty opening the eye.

If someone swallowed millipede material or secretion, rinse their mouth. Do not make them

vomit. Contact poison control promptly for instructions based on the person's age, the amount involved, and any effects.

Useful information to record includes:

There is no useful home toxin test. You do not need to capture or bring the millipede to a clinic.

- When and how the contact happened
- Whether skin, eyes, or mouth were exposed
- What washing or rinsing has already been done
- Changes in pain, redness, vision, blistering, or staining
- A photograph of the millipede, taken without handling it

## Common questions

Is a millipede poisonous?

Some millipedes release chemicals that can harm tissue on contact. They are not venomous because they do not inject the material through a bite or sting.

Does the dark skin mark mean tissue is dying?

Not necessarily. Quinone-containing secretions can stain the outer skin brown or black. However, marked pain, swelling, an open wound, or blistering deserves medical advice because these can indicate a chemical burn.

Can millipede secretion cause cyanide poisoning?

Some species produce cyanogenic chemicals, but serious cyanide poisoning is not expected from ordinary brief skin contact. Do not use the possible presence of cyanide to judge an individual exposure. Contact poison control if secretion was swallowed, inhaled in a confined space, or associated with effects beyond the contact area.

Should I use an antidote?

There is no routine antidote for millipede secretion on the skin. Prompt washing or eye irrigation is the main immediate action. Specific treatment, when needed, is based on the injury found during examination.

Is an allergy test available?

There is no standard allergy or screening test for millipede secretion. Most reported skin effects are caused by direct chemical irritation rather than an allergic reaction.

How is this different from a centipede bite?

A centipede can pierce the skin and inject venom, usually causing immediate local pain and swelling. A millipede generally releases a surface secretion that causes irritation, burning, or staining where it touches.

## Sources

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