



[Authoritative facts](#) about the skin from the [New Zealand Dermatological Society Incorporated](#).

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## Irritant contact dermatitis

Irritant contact dermatitis occurs when chemicals or physical agents damage the surface of the skin faster than the skin is able to repair the damage. The dermatitis or eczema is often well demarcated with a glazed surface but there may be redness, itching, swelling, blistering and scaling of the damaged area. This may be indistinguishable from other types of [dermatitis](#). The severity of the dermatitis is highly variable and depends on many factors including:

- Amount and strength of the irritant
- Length and frequency of exposure (eg. short heavy exposure or repeated/prolonged low exposure)
- Skin susceptibility (eg. thick, thin, oily, dry, very fair, previously damaged skin or pre-existing atopic tendency)
- Environmental factors (eg. high or low temperature or humidity)

Irritants include such everyday things as water, detergents, solvents, acids, alkalis, adhesives, metalworking fluids and friction. Often several of these act together to injure the skin. Irritants damage the skin by removing oils and moisture from its outer layer, allowing the irritants to penetrate more deeply and cause further damage by triggering inflammation.

Irritant contact dermatitis may affect anyone, given sufficient exposure to irritants, but those with [atopic dermatitis](#) are particularly susceptible. 80% of cases of occupational [hand dermatitis](#) are due to irritants, most often affecting cleaners, hairdressers and food handlers.

[Allergic contact dermatitis](#) may look similar to irritant contact dermatitis, but it is caused by an immune response following skin contact with an allergenic substance. Tiny quantities may be sufficient to cause allergy, whereas a certain minimum exposure is necessary for irritant contact dermatitis. Irritant and allergic contact dermatitis may coexist.

[Pompholyx eczema](#) (dyshidrotic eczema) may also be difficult to distinguish. In this condition, there are itchy clusters of blisters along the sides of the fingers and on the palms, often triggered by sweating.

### Clinical features

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The dermatitis is usually confined to the site of contact with the irritant, at least at first. If the dermatitis is prolonged or severe it may spread later to previously unaffected areas but it is less likely to do this than allergic contact dermatitis.

Irritant contact dermatitis can appear differently according to the conditions of exposure.

- Accidental exposure to a strong irritant such as a strong acid or alkali substance may cause an immediate skin reaction resulting in pain, swelling and blistering.
- Contact with mild irritants such as water and [soap](#) or detergent may over a period of weeks cause dryness, itching and cracking of the skin. Eventually sores may appear which form crusts and scales.

#### Contact irritant dermatitis due to saliva

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Some typical examples of irritant contact dermatitis include:

- Dribble rash around the mouth or on the chin in a baby, or in older children due to licking; the cause is saliva, which is alkaline. Skin bacteria may contribute to the clinical appearance.
- [Napkin dermatitis](#) due to urine and faeces.
- Chemical burns from strong acids (eg. hydrochloric acid) and particularly alkalis (eg. sodium or calcium hydroxide).
- "Housewife's eczema" is hand dermatitis caused by excessive exposure to water, soaps, detergents, bleaches and polishes.
- Dermatitis on a finger underneath a ring. Soaps, [shampoos](#), detergents and hand creams may accumulate under the ring and cause irritant contact dermatitis.
- Rubber gloves or the powder or sweat or tiny quantities of chemicals that have been occluded inside them may have a direct irritant action on hands (rubber may also result in [latex](#) or [rubber antioxidant allergy](#)).
- Fibreglass may cause direct mechanical/frictional damage.
- Dry cold air may cause dry irritable skin ([winter itch](#))
- Cosmetics may irritate sensitive facial skin (especially in [rosacea](#)) resulting in immediate stinging, burning and redness followed by itching and dryness. Gels and solutions tend to be more irritating than creams and ointments.

In time, the skin may develop some tolerance to mild irritants.

#### Irritant hand dermatitis



#### Testing for irritant contact dermatitis

Sometimes it is easy to recognise irritant contact dermatitis and no specific tests are necessary. The rash usually heals once the irritant is removed and, if necessary, special treatment is applied. Whilst there are some tests that can provide an indication of the irritant potential of substances, there are no specific tests that can reliably show what the effect of an irritant will be in each individual case. Irritant dermatitis in any case is usually the result of the cumulative effect of multiple irritants.

#### Patch tests

[Patch tests](#) are used to confirm allergic contact dermatitis and identify the allergen(s). They do not exclude irritant contact dermatitis as the two may coexist.

## Treatment

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It is important to recognise how you are in contact with the responsible substance(s) so that, where possible, you can avoid it (them) or at least reduce exposure.

Irritant contact dermatitis is usually treated with the following:

- Chemical burns are usually flushed with water followed by use of antidote or specific remedy against the particular toxic chemical.
- Compresses, creams and ointments may assist healing
  - [Emollient creams](#)
  - [Topical steroids](#)
  - Antibiotics for secondary infection (usually [flucloxacillin](#) or [erythromycin](#))

### Related information

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#### References:

Book: Fisher's Contact Dermatitis. Ed Rietschel RL, Fowler JF. Lippincott Williams & Wilkins 2001

#### On DermNet NZ:

- [Dermatitis](#)
- [Hand dermatitis](#)
- [Allergic contact dermatitis](#)
- [Pompholyx eczema](#)
- [Photocontact dermatitis](#)

#### Other websites:

- [What is occupational irritant contact dermatitis?](#): The Canadian Centre for Occupational Health and Safety (CCOHS)
- [A guide to occupational skin diseases](#): Occupational Safety and Health Service of the Department of Labour, New Zealand
- [Contact dermatitis](#): Occupational Dermatology Research and Education Centre, Australia
- [Contact Dermatitis-Irritant](#) - emedicine dermatology, the online textbook

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#### Books:

See the [DermNet NZ bookstore](#)

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DermNet does not provide an on-line consultation service.

If you have any concerns with your skin or its treatment, see a [dermatologist](#) for advice.

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