Exogen Dermatitis

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- **allergic contact dermatitis**

- Allergic contact dermatitis is a form of dermatitis/eczem

- allergic reaction to a material, called an allergen, in contact with the skin. The allergen is harmless to people that are not allergic to it

- Allergic contact dermatitis is also called contact allergy.

- common in the general population and in specific employment groups.

- more in women than men

- mainly due to nickel allergy and, recently, to acrylate allergy associated with nail cosmetics

- Many young children are also allergic to nickel

- Contact allergy to topical antibiotics is common in patients over the age of 70 years old

- Allergic contact dermatitis is especially common in metal workers, hairdressers, beauticians, health care workers, cleaners, painters, and florists

What causes allergic contact dermatitis?

- type 4 or delayed hypersensitivity reaction and occurs 48–72 hours after exposure to the allergen

- The mechanism involves CD4+ T-lymphocytes, which recognise an antigen on the skin surface, releasing cytokines that activate the immune system and cause the dermatitis

- Contact allergy occurs predominantly from an allergen on the skin rather than from internal sources or food

- Only a small number of people react to the specific allergen, which is harmless to those who are not allergic to it

- They may have been in contact with the allergen for years without it causing dermatitis

- Contact with tiny quantities of an allergen can induce dermatitis

- Patients with impaired barrier function of the skin are more prone to allergic contact dermatitis, eg patients with leg ulcers, perianal dermatitis, or chronic irritant contact dermatitis

- Patients with atopic dermatitis associated with defective filaggrin

(a structural protein in the stratum corneum) have a high risk of also developing allergic contact dermatitis

clinical features of allergic contact dermatitis

- Allergic contact dermatitis arises some hours after contact with the responsible material. It settles down over some days providing the skin is no longer in contact with the allergen

- confined to the site of contact with the allergen, but it may extend outside the contact area or become generalised
- Transmission from the fingers can lead to dermatitis on the eyelids and genitals
-
- unlikely to be due to a specific allergen if the area of skin most in contact with that allergen is unaffected

The affected skin may be red and itchy, swollen and blistered, or dry and bumpy

typical examples of allergic contact dermatitis

- Eczema in the skin in contact with jewellery items due to nickel

- Reactions to fragrances in perfumes and household items
- Eczema under adhesive plaster ; rosin
- Swelling and blistering of face and neck in reaction to permanent hair dye: paraphenylenediamine
- chemicals used in the manufacture of rubber gloves
- Itchy red face due to contact with methylisothiazolinone, a preservative in wash-off hair products and baby wipes
- Fingertip dermatitis due to acrylates used in hair extensions and nail cosmetics
- Reactions after dental implants containing acrylates
- Localised blistering at the site of topical medications such as antibiotics
- Swelling and blistering on exposed sites (eg face and hands) due to contact with plants such as poison ivy or, in New Zealand, the Japanese wax tree Toxicodendron succedaneum.

differential diagnosis of allergic contact dermatitis

- Irritant contact dermatitis
- Other forms of dermatitis, which may mimic allergic contact dermatitis
- Contact urticaria, in which a rash appears within minutes of exposure and fades away within minutes to hours. The allergic reaction to latex is the best-known example of allergic contact urticaria
- Fungal infections; tinea corporis may present as a unilateral rash.

complications of allergic contact dermatitis

- severe reactions may generalise due to autoeczematisation and can lead to erythroderma.
- Ingestion of a contact allergen may rarely lead to baboon syndrome or generalised systemic contact dermatitis.
- Photoallergy: only after the skin has been exposed to ultraviolet light. The rash is confined to sun-exposed areas even though the allergen may have been in contact with covered areas. This is called photocontact dermatitis
- Examples of photoallergy include:
- Dermatitis due to a sunscreen chemical, affecting the top but not the under the surface of the arm
- Dermatitis of face, neck, arms and hands due to antibacterial soap.

diagnosis

- History: work environment, hobbies, products in use at home and work and sun exposure
- The rash usually (but not always) completely clears up if the allergen is no longer in contact with the skin, but recurs even with slight contact with it again.
- open application test: contact allergy to a cosmetic, such as a moisturiser. The product under suspicion is applied several times daily for several days to a small area of sensitive skin. The inner aspect of the upper arm is suitable. Contact allergy is likely if dermatitis arises in the treated area.
- patch tests: severe, recurrent or chronic case. specific allergen causing the rash.
- Fungal scrapings of skin for microscopy and culture
- Dimethylgloxime test: 'spot test' if a product contains nickel.

treatment

- Find out precisely what you are allergic to by having comprehensive patch tests

- read labels of all products before use.

- Carefully study your environment to locate the allergen. Note: many chemicals have several names, and cross-reactions to similar chemicals with different names are common

- Wear appropriate gloves to protect hands from touching materials to which you react and remove gloves in the appropriate way. Some chemicals will penetrate certain gloves; seek a safety expert's advice.

- Active dermatitis is usually treated with the following:

- Emollient creams
- Topical steroids
- Topical or oral antibiotics for secondary infection
- Oral steroids, usually short courses, for severe cases
- Phototherapy or photochemotherapy
- Azathioprine, ciclosporin or another immunosuppressive agent
- Tacrolimus ointment and pimecrolimus cream are immune-modulating calcineurin inhibitors and may prove helpful for allergic contact dermatitis

outcome for allergic contact dermatitis

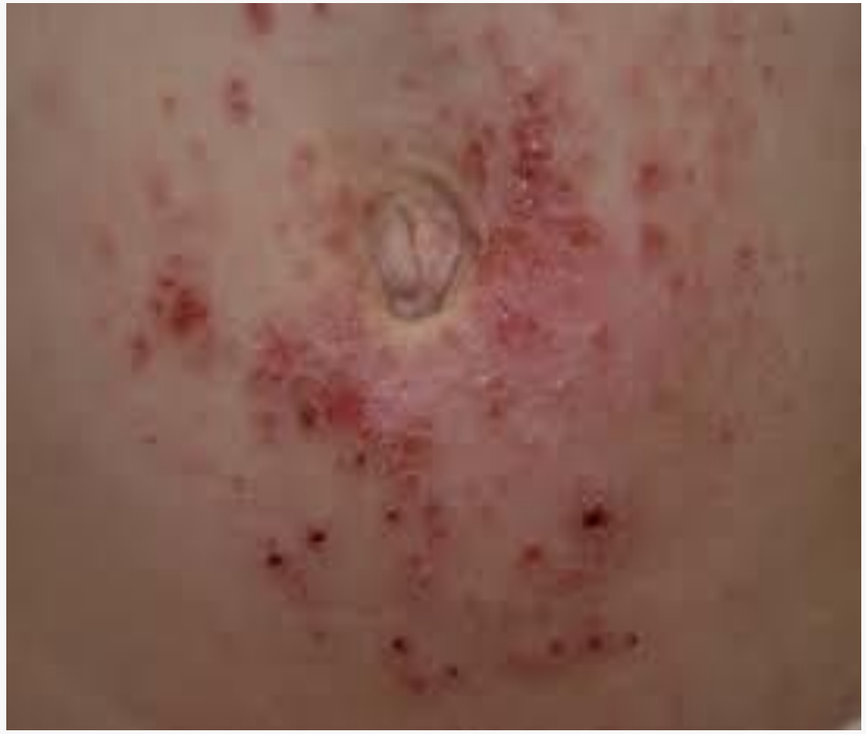
- Contact allergy often persists lifelong so it is essential to identify the allergen and avoid touching it. Dermatitis may recur on re-exposure to the allergen.

- Some allergens are more difficult to avoid than others, with airborne allergens being a particular problem (eg epoxy resin, compositae pollen)

- The longer a person suffers from severe allergic contact dermatitis, the longer it will take to clear after the diagnosis is made and the cause detected

- Dermatitis may clear up on avoidance of contact with the allergen, but sometimes it persists indefinitely, for example, chromate allergy

- Prognosis depends on patient education and compliance in avoiding allergens and appropriate skin care.



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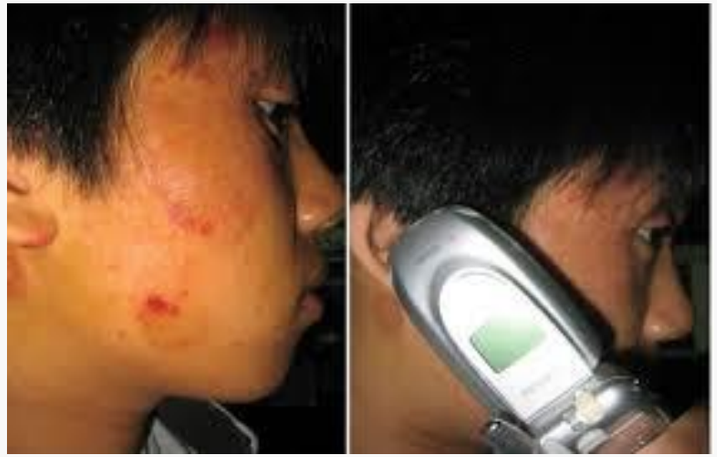
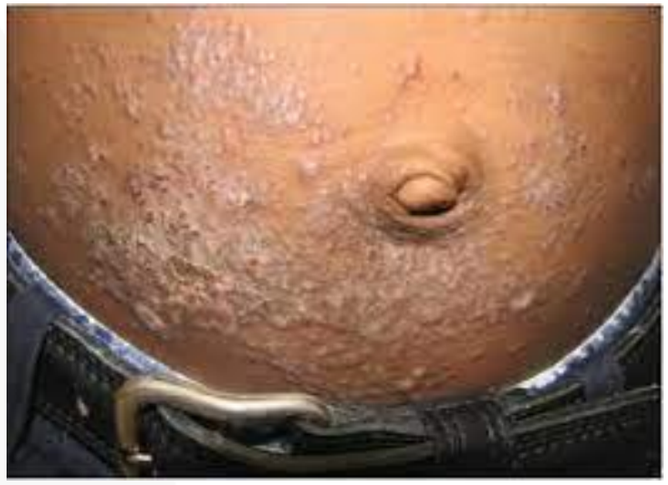
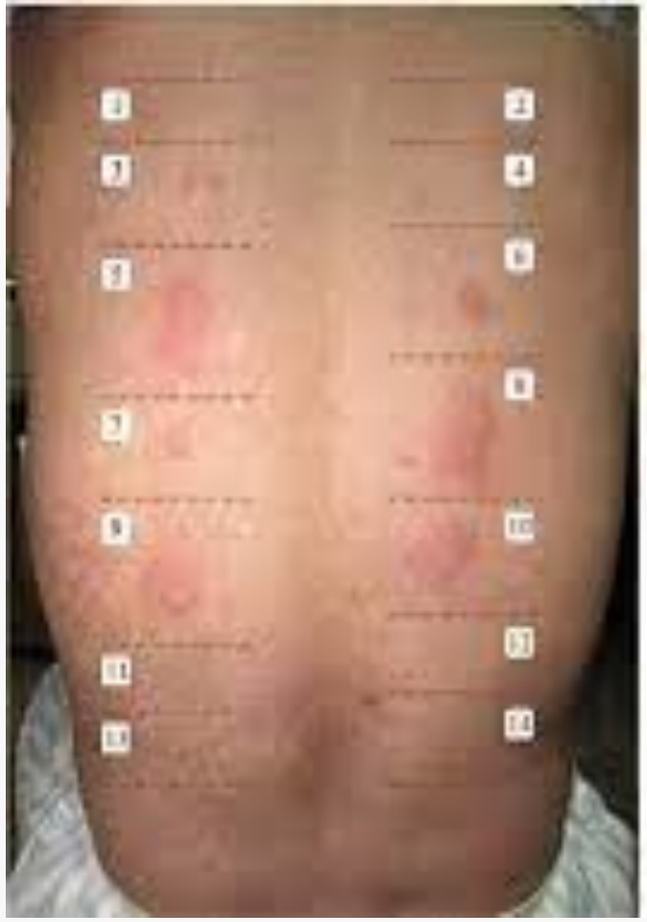






+ Weak Positive Reaction: non-vesicular with erythema, infiltration, possibly papules

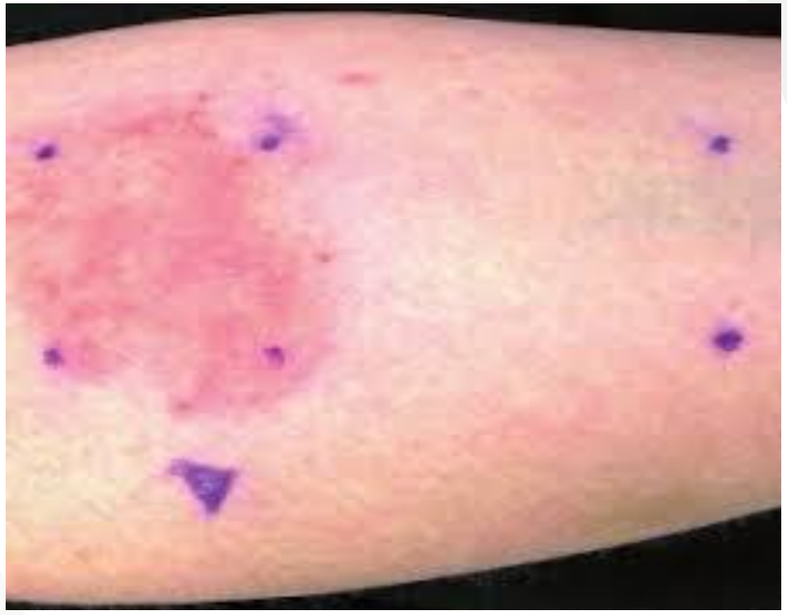
++ Strong Positive Reaction: vesicular, erythema, infiltration, papules

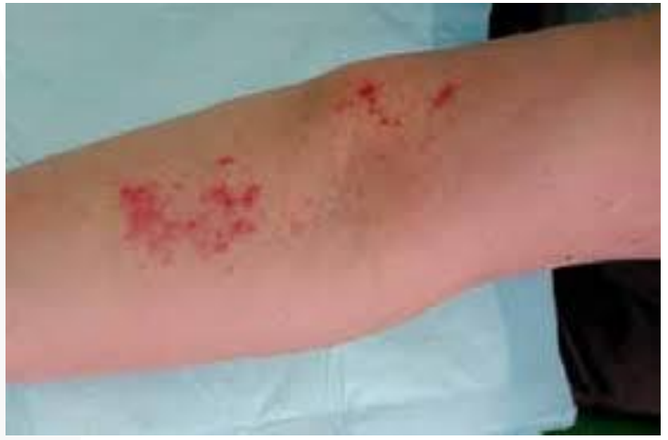
+++ Extreme Positive Reaction: bullous or ulcerative reaction

? Doubtful Reaction: faint macular erythema only

IR Irritant Reaction: Pustules as well as patchy follicular or homogeneous erythema without infiltrations are usually signs of irritation and do not indicate allergy. Itching is a subjective symptom that is expected to accompany a positive reaction.

Open application test





irritant contact dermatitis

- Irritant contact dermatitis is a form of skin inflammation caused by contact with substances and/or environmental factors that injure the skin, damaging the skin barrier

- rritant contact dermatitis develops when chemical or physical agents damage the skin surface faster than the skin can repair. Irritants remove oils and natural moisturising factor from the outer layer of the skin, allowing chemical irritants to penetrate the skin barrier and trigger inflammation.

- Irritant contact dermatitis will affect anyone with sufficient exposure to irritants

- those with atopic dermatitis are particularly susceptible

- Occupational hand dermatitis is due to irritants in 80% of cases, most often affecting wet work such as cleaners, hairdressers, food handlers, and healthcare personnel

- all age groups, both sexes, and any race

- Concentration, amount, and properties of the irritant
- Duration and frequency of exposure, for example short concentrated or repeated prolonged low exposure
- Skin susceptibility such as pre-existing skin damage or atopic tendency
- Mechanical trauma including hand scrubbing
- Environmental factors such as temperature extremes or humidity

clinical features of irritant contact dermatitis

- Resembles dermatitis of any cause
- Usually is confined to the site of contact with the irritant
- Is the commonest cause of hand dermatitis in occupational and non-occupational settings
- Burning and pain more common symptoms than itch

- Acute due to a single severe exposure;
- Localised well-defined, redness, papules, swelling, blistering (vesicles/bullae)
- Example: kneeling in wet cement, which is very alkaline, causing severe dermatitis of the knees

- Chronic due to mild irritants or repetitive cumulative exposure:
- Initial dryness and cracking of the skin
- Evolves to include inflammatory changes with redness and itch
- May develop tolerance or hardening with time
- Examples include dribble rash, napkin dermatitis, housewife’s eczema, ring dermatitis

- Interdigital dermatitis, also called the ‘sentinel sign’, is regarded as an early stage of irritant contact dermatitis affecting the hands. It is commonly seen in occupations involving wet work

complications of irritant contact dermatitis

- Disseminated secondary eczema
- Lichenification
- Secondary bacterial infection

Diagnosis

- history: occupational exposures
- clinical examination
- There is no test for irritant contact dermatitis. Patch testing may be necessary to distinguish it from allergic contact dermatitis. Irritant and allergic contact dermatitis can co-exist

differential diagnosis

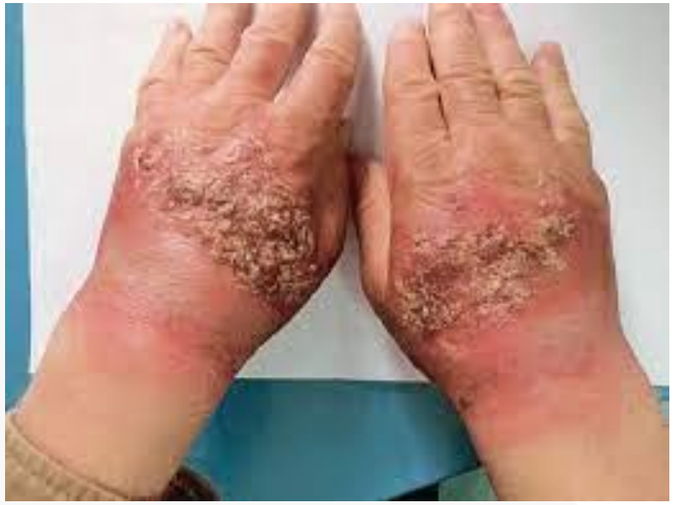
- Allergic contact dermatitis — which may co-exist
- Other causes of hand dermatitis such as atopic hand dermatitis
- Psoriasis

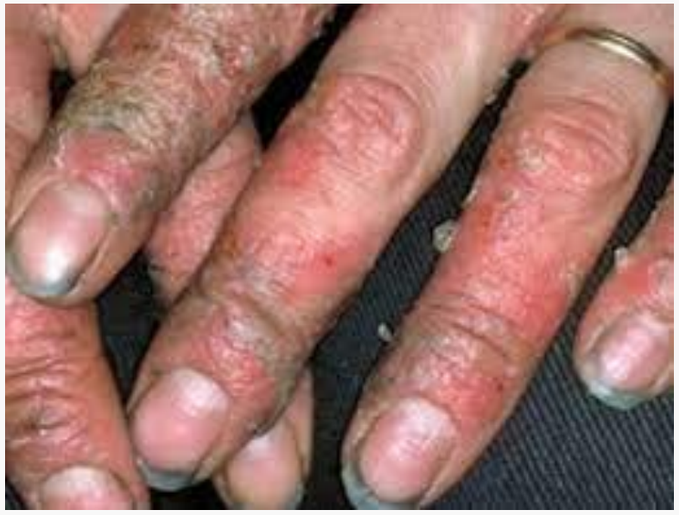
treatment for irritant contact dermatitis

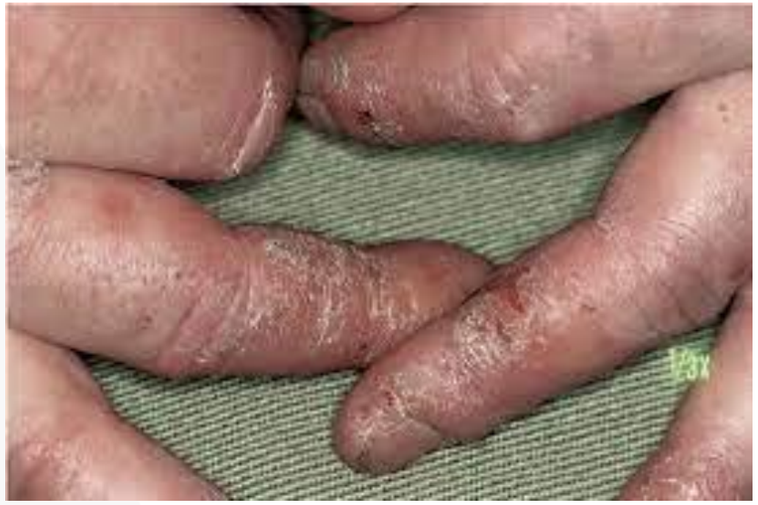
- General measures:
- Avoidance of all potential irritants
- Emollients
- Barrier creams
- Specific measures:
- Specific treatments for some chemical irritants eg, calcium gluconate gel for hydrogen fluoride burn
- Topical medications — topical steroids, calcineurin inhibitors, crisaborole
- Phototherapy

What is the outcome for irritant contact dermatitis?

Chronic irritant contact dermatitis can be slow to improve or resolve, especially of the hands, without obsessive care.







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