

Contact dermatitis

Dermatitis in general

- Dermatitis or **eczema** is a pattern of cutaneous inflammation that presents with **erythema**, **vesiculation** and **pruritus** in its **acute phase**
- The **chronic phase** is characterized by **dryness**, **scaling**, **lichenification**, **fissuring**, and **pruritus**
- There are multiple types of dermatitis: **Contact**, **Atopic**, **dyshidrotic**, **nummular**, **seborrheic**
- We will focus on **contact dermatitis** and **atopic dermatitis**.

Acute dermatitis from turpentine →



sharply demarcated
لا تلتصق الى امر عليه للمادة
هو المصاب ويحدث بعد 10-15
دقيقة او كساعات بل اشهر



Cement ulceration

Weak - ICD

- Prolonged contact
- Multiple exposure
- In skin that too wet or too dry
- Bleaches, cleansers, detergents, plants, soaps, solvents, weak acids, weak alkalis

Endogenous eczema	Exogenous eczema
■ Atopic Dermatitis ■ Dyshidrotic Dermatitis ■ Nummular Dermatitis ■ Stasis Dermatitis ■ Pityriasis alba	■ Contact Dermatitis



W- napkin dermatitis
من الحفاضات

Napkin dermatitis under the plastic part of diaper



ICD in a mechanic caused by oil

irritant dermatitis due to licking (الحق)

Irritant contact dermatitis

Acute

chronic

- It is the most common injury of the skin 80%.
- Irritant Responses include:
 - Wheals
 - erythema
 - Blistering
 - Erosions
 - Hyperkeratosis or thickening of the skin
 - Pustules and skin dryness

factors that determine the response

- Individual factors
- Time of exposure
- Region of the skin exposed

common agent that produce contact dermatitis

- Water
- Cleansers
- Alkalis
- Acids
- Oils
- Organic solvents
- Oxidants
- Plants
- Animal substances

Most commonly located in the hands, forearm, face and legs.

Differential diagnosis:

- Atopic eczema
- Discoid eczema
- Allergic contact dermatitis
- Fungal infection → bilateral or unilateral



Treatment

- Removal of the offending contact
- Restore a protective lipid layer
- Topical steroid may be necessary

- Lesions begin as erythematous macules that become papules or plaques
- Blisters often form over one to two days
- Linear streaks aid in diagnosis (from the linear contact of the plant)
- Fomites can be contaminated by the plant oil and lead to recurrent eruptions

Allergic contact dermatitis

Treatment

- ACD occurs when contact with a particular substance elicits a delayed hypersensitivity reaction
- The sensitization process requires 10-14 days. Upon re-exposure, dermatitis appears within 12-48 hrs *من الحساسية*
- The most common cause is Rhus dermatitis, from poison ivy, poison oak, or poison sumac (all contain resin)
- Other common causes include: Fragrances, Formaldehyde, Preservatives, Topical antibiotics, Benzocaine, Vitamin E, Rubber compounds, Nickel

- Most patients need minor supportive care. Topical steroids for localized involvement
- Topical or oral antihistamines may improve pruritus
- Oatmeal soaks/calamine lotion may soothe weeping erosions
- Severe involvement may require oral steroids. In cases of failing potent topical steroids, or if eruptions are widespread
- If given for less than 2-3 weeks, patients may relapse
- Do not give short bursts of steroids for this reason

ACD - clinical finding

Prevention

- The main symptom of ACD is pruritus (itching)
- Presents as erythematous, scaly edematous plaques with vesiculation distributed in areas of exposure
- ACD is bilateral if the exposure is bilateral (e.g., shoes, gloves, ingredients in creams, etc.)

- Avoid the plants
- Wash clothing, shoes, and objects after exposure (within 10 minutes if possible)
- Apply a barrier: clothing, OTC products which bind resin more than skin

Rhus Allergy - allergic phyto dermatitis

Allergic eyelid contact dermatitis

- The initial episode occurs 7-10 days after exposure
- On subsequent outbreaks the rash may appear within hours of exposure and usually within 2 days
- Individual sensitivity is variable so the eruption may be mild to severe
- Rhus dermatitis lasts from 10-21 days depending on the severity. Initial episode is the longest (up to 6 weeks!)

- Intensely pruritic
- Scaling red plaques on upper > lower eyelids. Allergic contact dermatitis of the eyelid is often caused by transfer from the hands
- Common causes:
 - Nail adhesive/polish, Fragrances and preservatives in cosmetics, Nickel

Evaluation of dermatitis

- Important to take a comprehensive history
- Complete dermatologic assessment of the patient
- Shape, configuration, and location of the dermatitis are useful clues in identifying the culprit allergen
- Elimination of a suspected trigger may be both diagnostic and therapeutic
- In chronic cases, patch testing is necessary to identify specific allergens
- Children can get ACD by accidental exposure to parental use of fragrances, spray used to cleanse or freshen the house, cosmetics or other allergens

History taking

- In addition to the dermatitis-specific history (e.g., onset, location, temporal associations, treatment), be sure to ask about:
 - Daily skin care routine
 - All topical products
 - Occupation/hobbies
 - Regular and occasional exposures

Patch testing

- Patch testing is used to determine which allergens a patient with allergic contact dermatitis reacts against
- A series of allergens are applied to the back, and then removed after 2 days
- On day 4 the patient returns for results
- Positive reactions show erythema and papules or vesicles
- Identification of specific allergens helps the patient find products free of those allergens



ACD Treatment

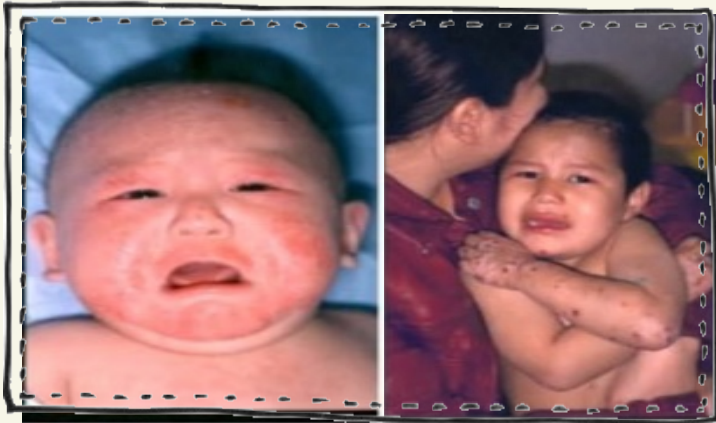
- Avoid exposure to the offending substance
- Treatment of the acute phase depends on the severity of the dermatitis. In mild to moderate cases, topical steroids of medium to strong potency for a limited course is successful
- A course of systemic steroids may be required for acute flares
- Oatmeal baths or soothing lotions can provide further relief in mild cases
- Wet dressings are helpful when there is extensive oozing and crusting

Can you guess what the following patients are allergic to?



Atopic dermatitis

It's common disease



- **Atopic dermatitis (AD)** is a chronic relapsing eczematous skin disease characterized by pruritus and inflammation
- It may start at any age but the onset is often in childhood. 10-15%
- 1 in every 5 children in the UK is affected by eczema at some stage.
- It may also start later in life in people who did not have AE as a child.

- The term 'atopic' is used to describe a group of conditions, which include asthma, eczema and hay-fever and food allergy.
- 'Eczema' is a term which comes from the Greek word 'to boil' and is used to describe red, dry, itchy skin which can become weeping, blistered, crusted, scaling and thickened.
- These conditions are all linked by an increased activity of the allergy side of the body's immune system.

What causes atopic eczema?

- It is a complex condition and a number of factors appear important for its development including patient susceptibility and environmental factors.
- Patients typically have alterations in their skin barrier, and overly reactive inflammatory and allergy responses.
- Environmental factors include contact with soaps, detergents and any other chemicals applied to the skin, exposure to allergens, and infection with certain bacteria and viruses. staph. or HSV.

- A tendency to atopic conditions often runs in families and is part of your genes.
- An alteration in a gene that is important in maintaining a healthy skin barrier has been closely linked to the development of eczema.

Is atopic eczema hereditary?

- Yes.
- Atopic eczema tends to run in families.
- One third of children with AE will also develop asthma and/or hay fever.
- AE affects both males and females equally.

Pathophysiology

- specific gene abnormality not yet identified
- may be more than one disease $\downarrow \text{TH1} \rightarrow \uparrow \text{IgE}$
- down regulation of TH1 lymphocytes (TH1 cells activate IFN- γ which inhibits IgE synthesis)
- upregulation of TH2 lymphocytes (TH2 cells activate IL-4 which inhibits IFN- γ)

What are the symptoms of atopic eczema?

- The main symptom is itch. Scratching in response to itch may cause many of the changes seen on the skin. Itch can be severe enough to interfere with sleep, causing tiredness and irritability.
- Typically AE goes through phases of being severe, then less severe, and then gets worse again.

What does atopic eczema look like?

- AE can affect any part of the skin, including the face, but most commonly affected are the creases in the joints at the elbows and knees, as well as the wrists and neck (called a flexural pattern). Other common appearances of AE include coin-sized areas of inflammation on the limbs (a discoïd pattern), and numerous small bumps that coincide with the hair follicles (a follicular pattern)
- Affected skin is usually red and dry, and scratch marks are common.
- When AE is very active, it may become moist and weep fluid with continuous itching
- In areas that are repeatedly scratched, the skin may thicken (lichenification), and this may cause the skin to itch more.

Clinical picture

Infantile phase

- Lesions mostly start on the face
- Itchy erythematous discrete or confluent edematous papules, it may become exudative and crusted

Childhood phase

- Mostly involved the elbows and knee flexures, side of the neck, wrists and ankles and hands.
- Itchy erythematous papules which tend to be lichenified, often in discoid patches

Adulthood phase

- Lichenification of flexures and hands



How is atopic eczema diagnosed?

- usually easily recognized by doctors, when they assess the skin.
- Blood tests and skin tests are usually not necessary.

What makes atopic eczema flare up?

- Heat, dust, woollen clothing, pets and irritants such as soaps, detergents and other chemicals.
- Infections with bacteria or viruses.
- Dryness of the skin.
- Teething in babies.
- In some, food allergens
- Stress

Can atopic eczema be cured?

- No, it cannot be cured, but there are many ways of controlling it.
- As they get older, 60% clear by their teens. However, many of these people continue to have dry skin and so need to continue to avoid irritants such as soaps,
- AE may be troublesome in certain jobs that involve contact with irritant materials, such as catering, hairdressing, cleaning or healthcare work

- In later life, AE can present as hand dermatitis and as result exposure to irritants and allergens must be avoided both in the home and at work.

Can atopic eczema be prevented?

لإعلاج الحساسية الجلدية
من البداية

- Regular use of medical moisturisers can help restore the skin's barrier in children who might otherwise develop AE.
- For some patients who flare-up frequently, intermittent use of a topical steroid or calcineurin inhibitors may reduce the number of flare-ups.

تاكوليموس

Can someone with atopic eczema lead a normal life?

- Yes. You can lead a full life including sports, swimming and travel.
- You may need to make minor changes such as keeping moisturiser with you at school, work or when away from home.

How can atopic eczema be treated?

- Most eczema treatments are topical, although for more severe eczema some people need to take 'oral' medication as well.
- 'Complete emollient therapy' is the mainstay of treatment for all patients with eczema
- And should be applied several times every
- Topical steroid creams or ointments: to improve the redness and itching of AE when it is active.
- Antibiotics and antiseptics: applied to the skin alone or as part of a moisturising preparation, can be helpful in stopping the infection.
- Topical calcineurin inhibitors: tacrolimus ointment and pimecrolimus cream, may be used in skin sites which are more susceptible to the side effects of steroids, such as the face, eyelids

- Antihistamines: They have no effect on the inflammation of AE and are helpful largely as a result of their sedating effects, reducing sleep disruption.
- Bandaging (dressings): Cotton bandages and cotton or silk vests on top of creams can help keep creams from rubbing off and stop scratching.

في المرحلة الحادة

Avoidance of allergens

- **Air borne allergens** from cats, dogs, pollen, grass or the house dust mite, can cause flares of AE in some patients.
- **Food allergies.** In infants and young children where the AE is severe, intensely itchy and difficult to control, food allergens may be aggravating the skin.
- **Latex (rubber)** allergy is more common in people who are atopic.



Other treatments

- **Ultraviolet light:** **لوتحرصنا الشمس**
- **systemic treatments**
 - Prednisolone
 - Azathioprine
 - Ciclosporin
 - Methotrexate
 - Mycophenolate mofetil

