A-STAR skin examination protocol

Professor Carsten Flohr
Chair in Dermatology and Population Science &
Consultant Dermatologist
Unit for Population-Based Dermatology Research
St John‘s Institute of Dermatology

Guy‘s & St Thomas‘ NHS Foundation Trust and King‘s College London

The basic principles

- It is possible that different clinical phenotypes of atopic eczema respond differently to systemic therapies and may even represent different diseases.
- It is therefore important to capture them as accurately as possible across the A*STAR sites.
- Every local PI and all staff involved in the clinical assessments need to complete training in the recognition of flexural and non-flexural eczema (dermatitis) as well as the disease severity scores to reduce inter-observer variability.
- These training slides are complemented by online training videos on the EASI and vIGA scores and are found on the A*STAR website under ‘Training resources’.
- Successful completion of this training has to be logged in the local site file.
- This slide deck explains the UK diagnostic criteria for atopic eczema and what we mean by ‘flexural’ and ‘non-flexural dermatitis’ as well as the other distinct phenotypes we want to study, such as discoid and follicular eczema.

UK refinement of Hanifin & Rajka diagnostic criteria

All patients recruited into A*STAR need to have a diagnosis of atopic eczema based on the UK diagnostic criteria.

- **Itchy skin condition in the last year**

- Plus three or more of the following:

  - **Visible flexural dermatitis**
  - **History of flexural involvement**
  - **History of generally dry skin**
  - **Personal history of atopic disease†**
  - **Onset below the age of 2***

***not in children under 4 years**

†children under 4 years family history of atopic disease

Flexural dermatitis

- **The task is to record as consistently as possible the presence/absence of the physical signs of "visible flexural eczema (dermatitis)".**

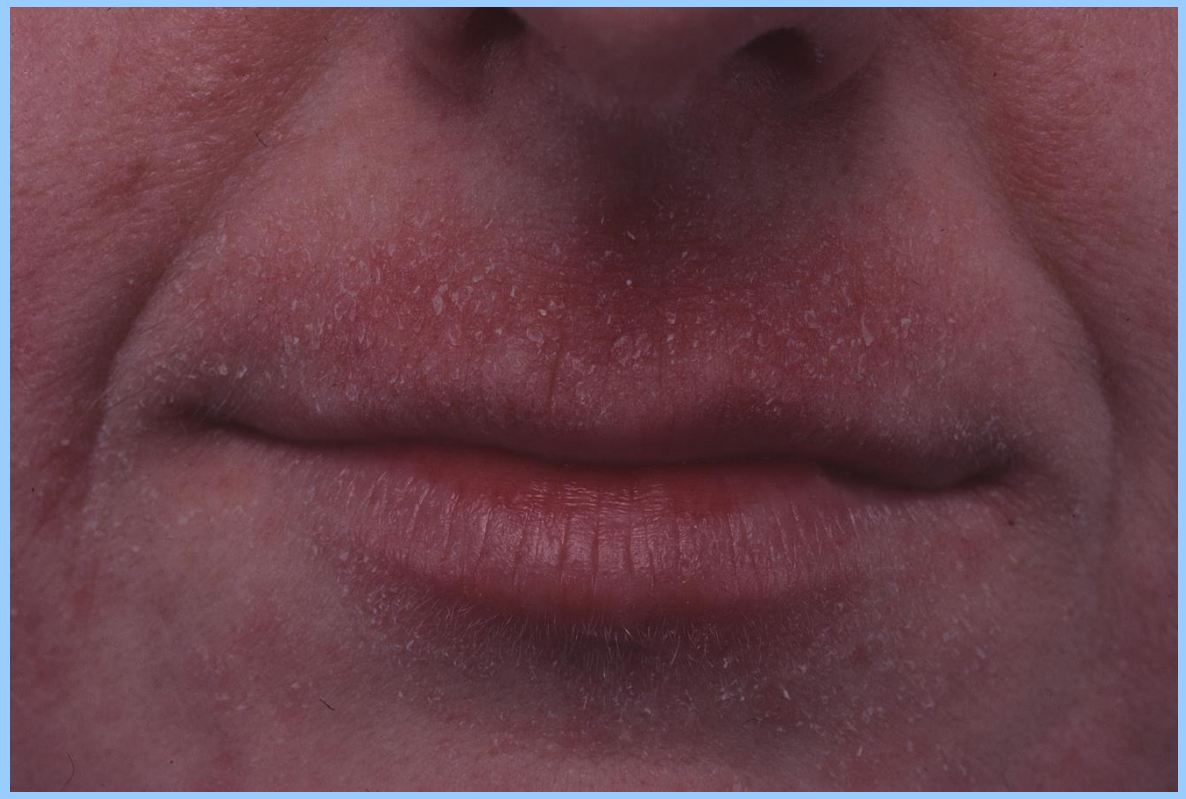
- To decide whether this sign is present or not, there are two components to consider:

Step 1: What dermatitis looks like

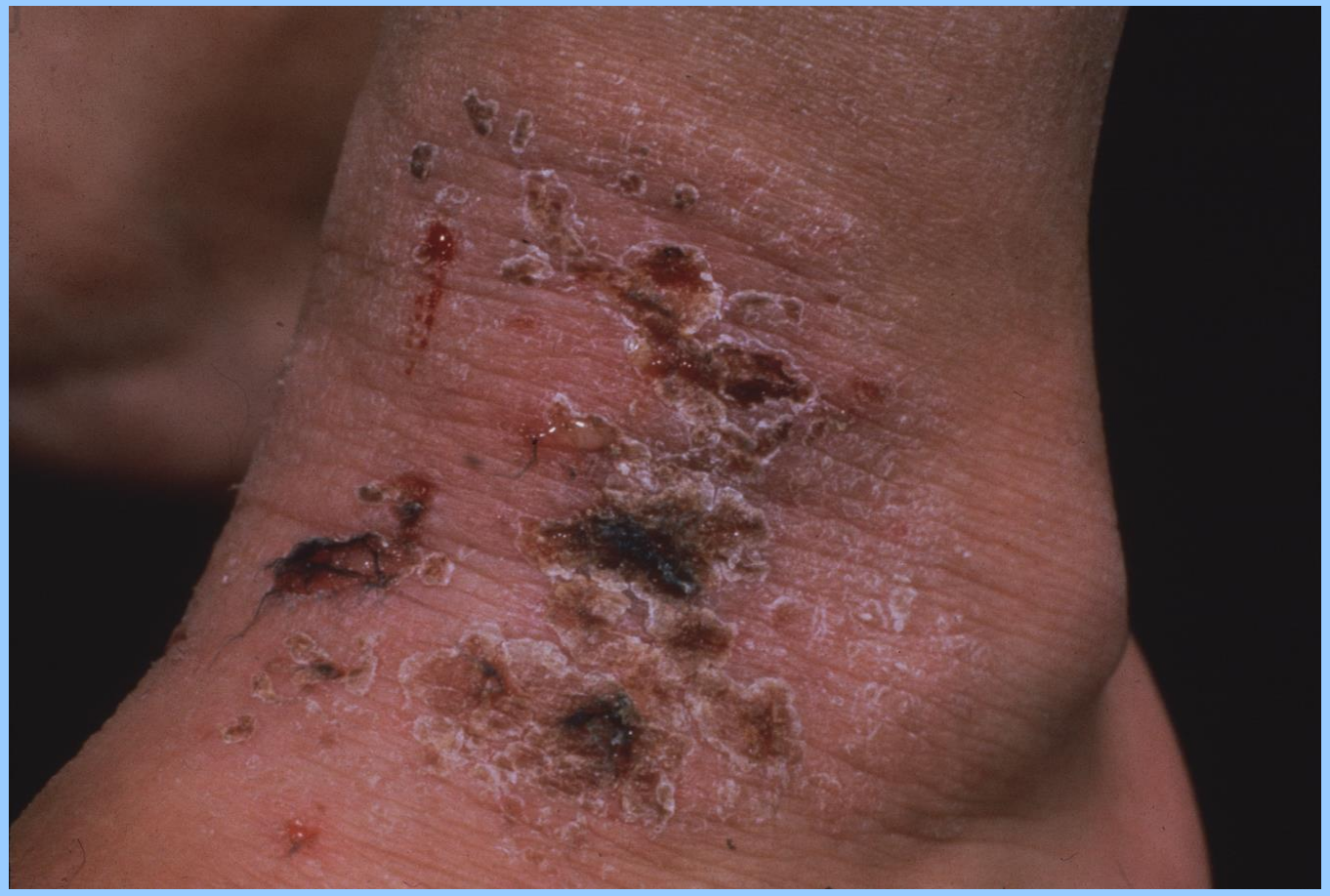
Definition of dermatitis:
Poorly demarcated erythema (redness) with surface change.

"Surface change" can mean fine scaling, vesicles, oozing, crusting or lichenification.

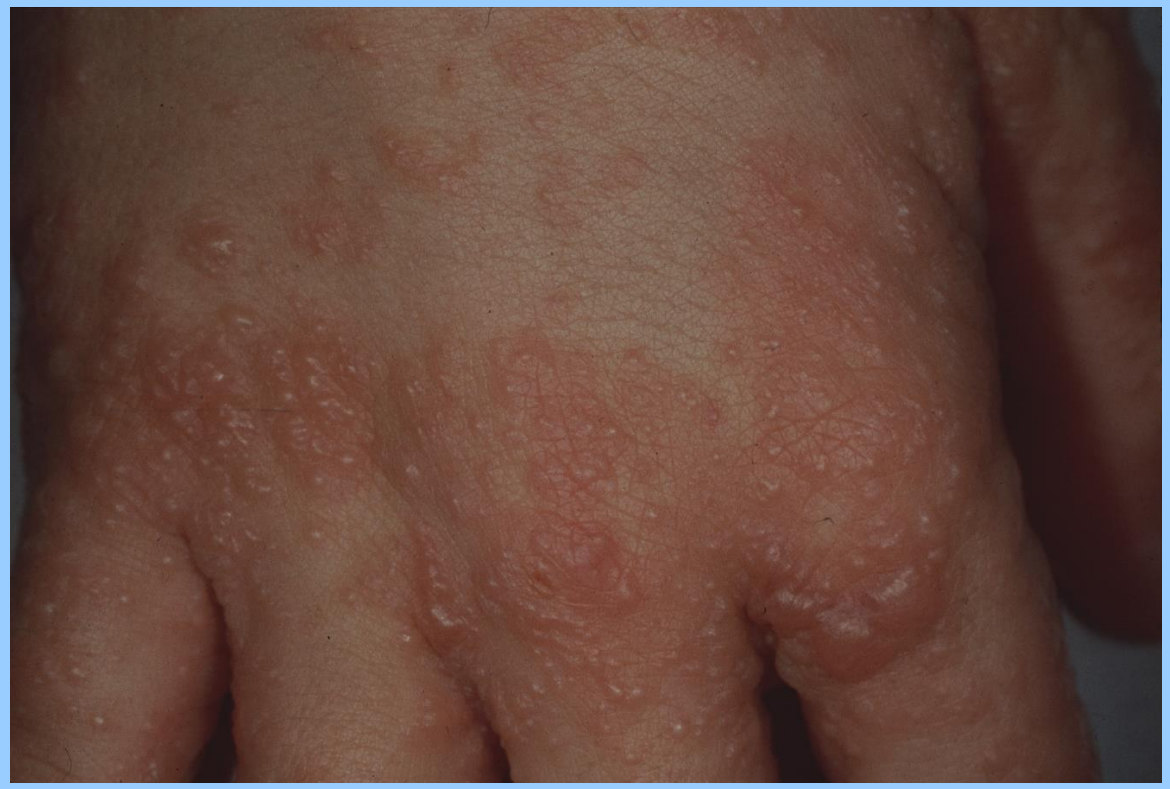
Here are some photographs to help you...



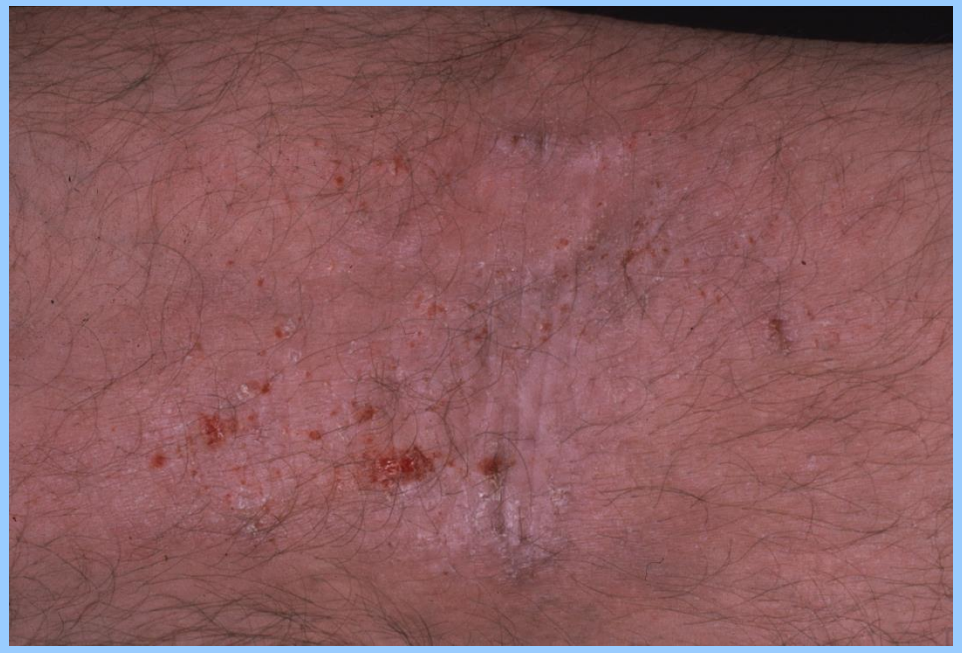
1. This is dermatitis. Note it is red, has an indistinct margin and there is a surface change (in this case fine *scaling*).



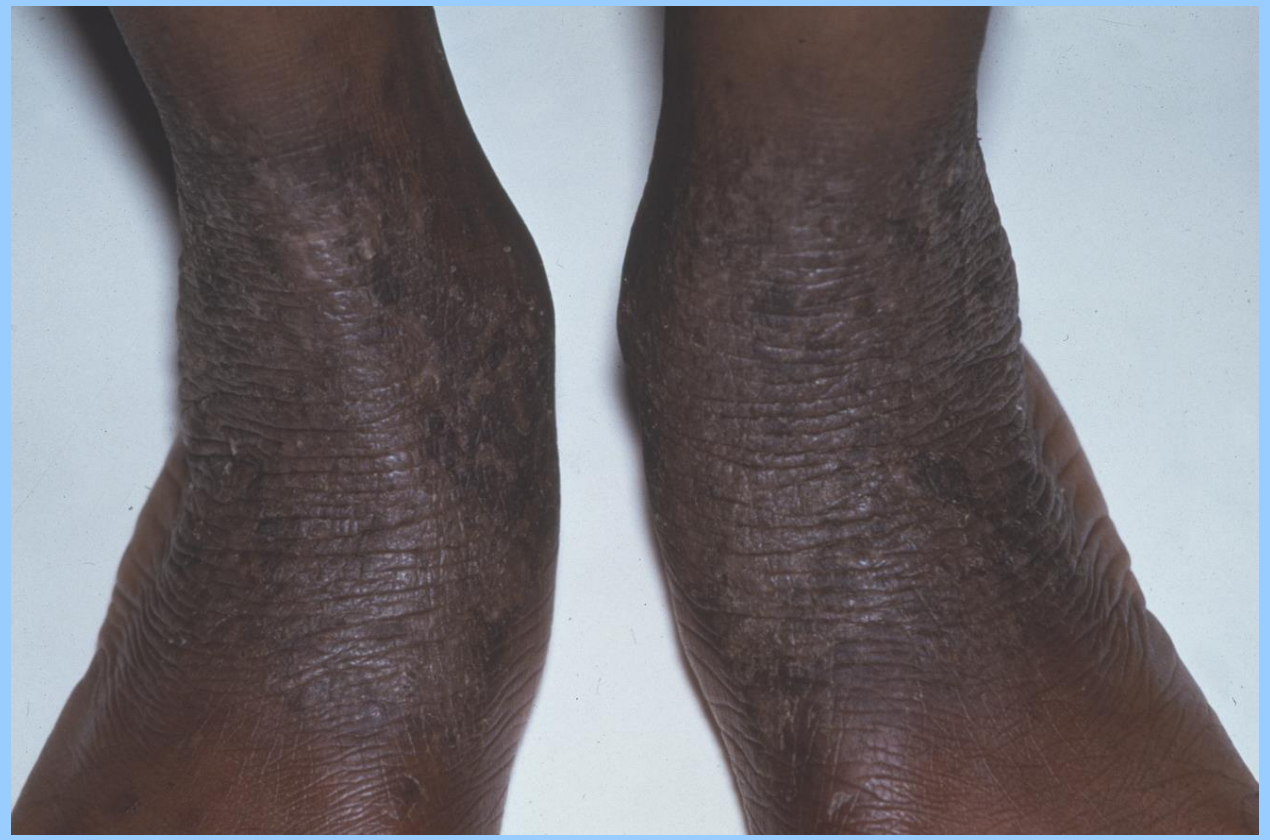
2. This is dermatitis showing another type of surface change, in this case *oozing* (clear fluid leaking from the skin) and *crusting* (scabs).



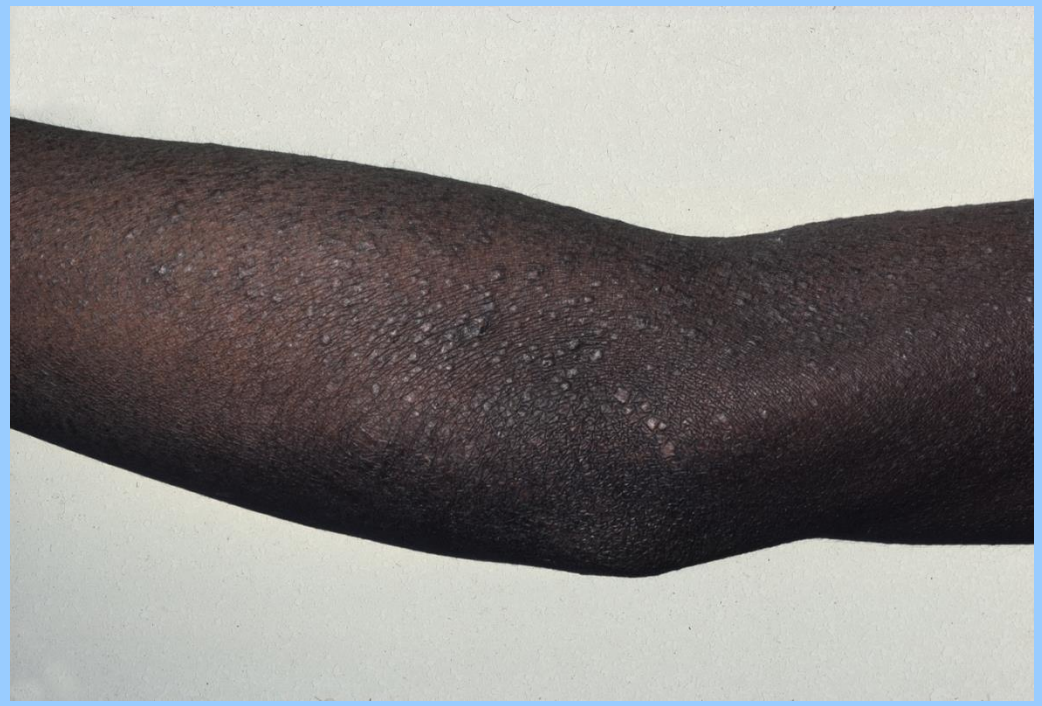
3. These are *vesicles* (tiny clear "water" blisters), also called ‘pompholyx’.



4. This is *lichenification* in white skin. Lichenification means thickening of the skin in response to scratching. The skin markings are exaggerated and the skin feels thickened.



5. This is *lichenification* in black skin. Note the exaggerated skin creases and post-inflammatory pigmentation.

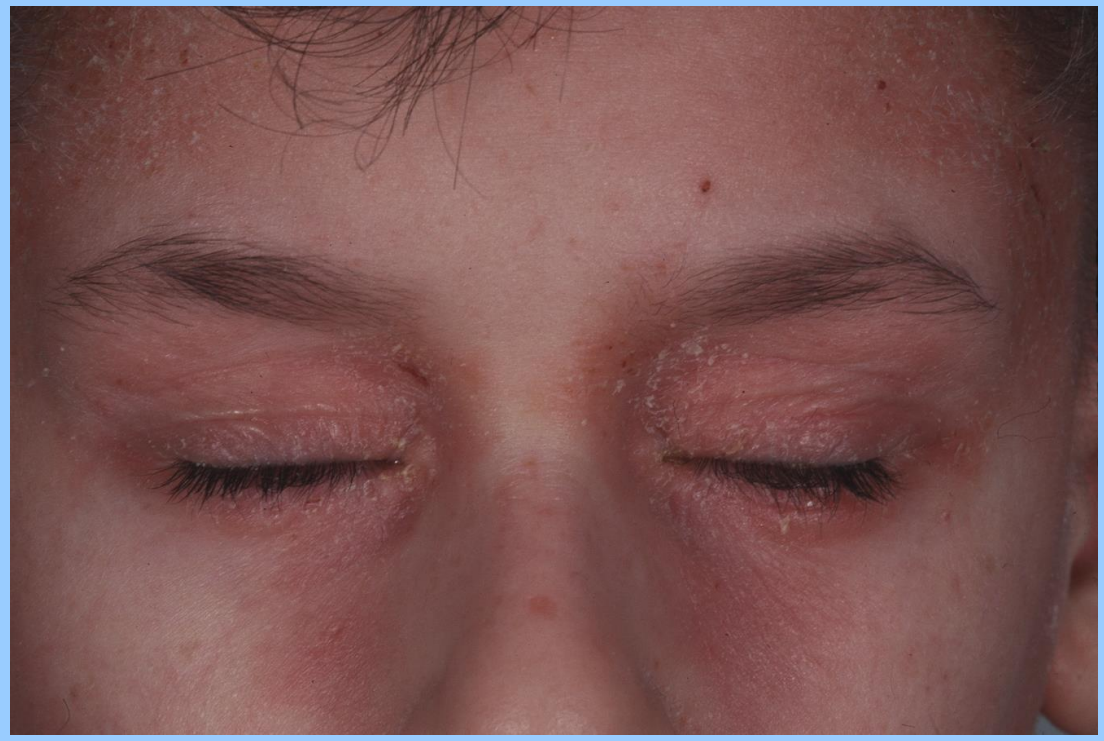


6. This is also *lichenification* in black skin. In this case, the thickening is comprised of smaller flat topped bumps corresponding to hair follicles - so called "follicular lichenification". Follicular eczema is treated as a distinct phenotype in A*STAR.

Step 2: Where to look?

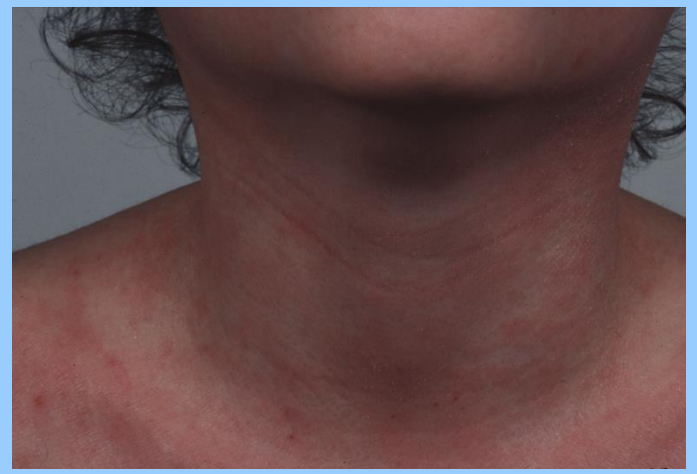
"Flexural" in this context means just the following five areas: around the eyes, the neck, the elbow flexures, the popliteal fossae and around the ankles

Get into the habit of working from top to bottom when examining patients.

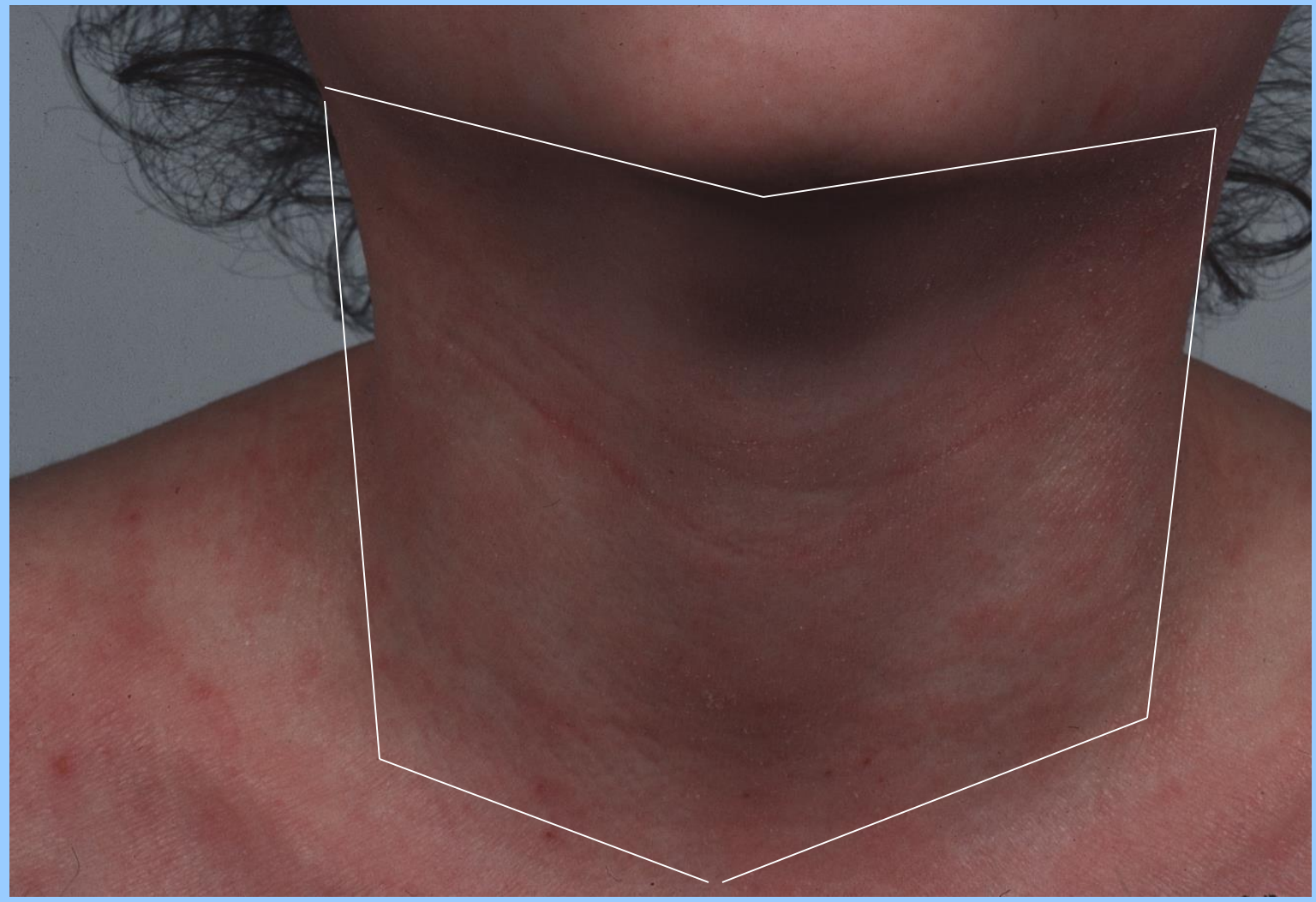


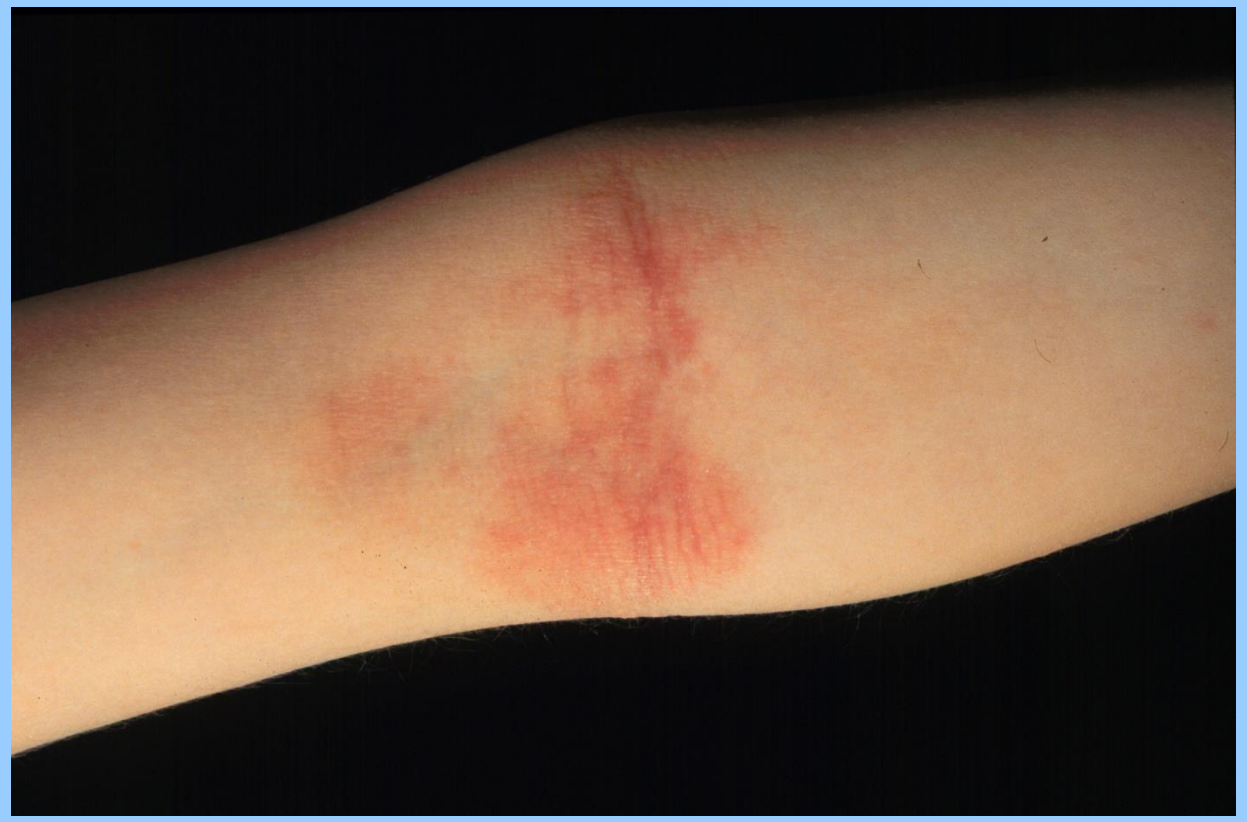
1. Around the eyes

Any area of dermatitis within the confines of the orbital cavity affecting one or both eyes. Notice the redness, scaling and prominent skin creases on this child's eyelids.

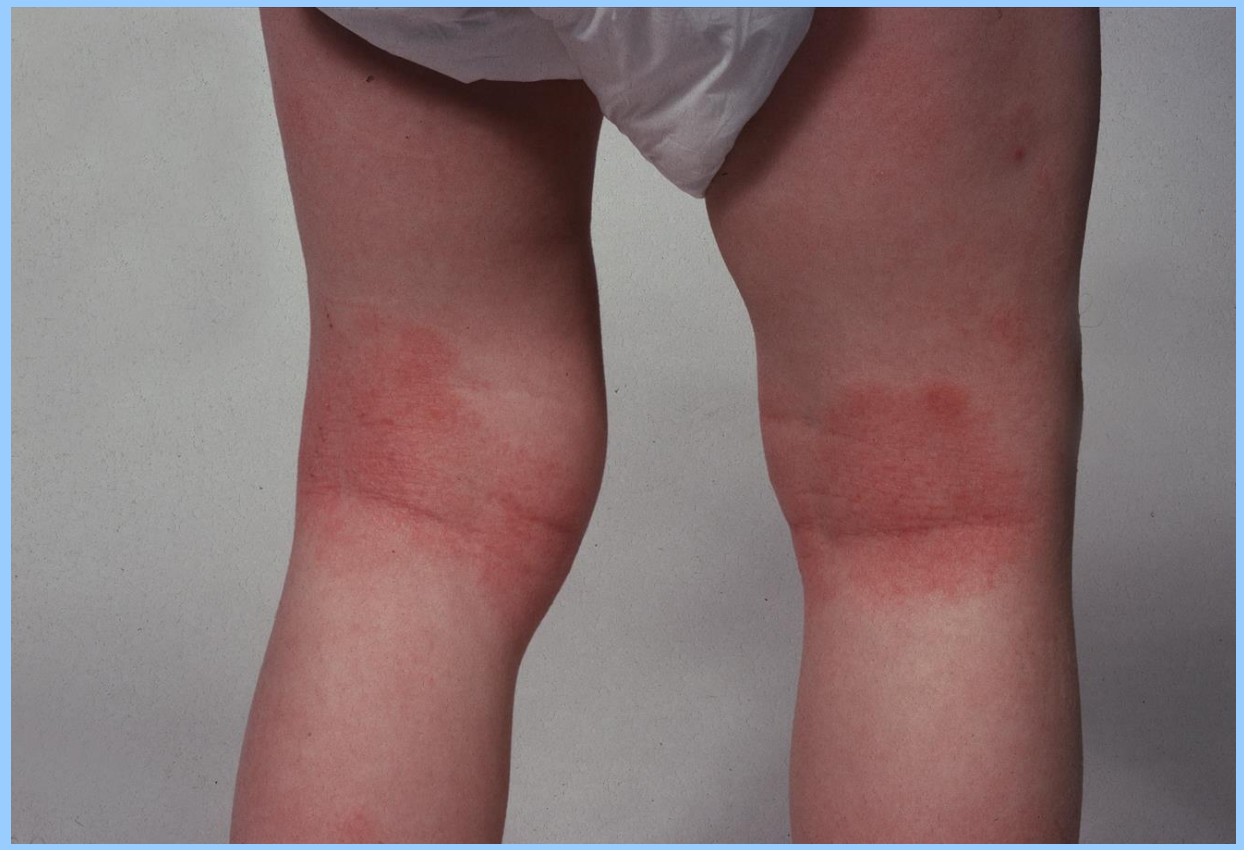


2. Around the sides or front of the neck. Any patch of dermatitis larger than 1 cm in diameter in an area defined by the jaw bone above and clavicles below, and a line drawn vertically downwards from the ears with the head in an upright position looking directly forward.
It may affect all the neck as in is photograph (notice the redness, fine scaling, indistinct margins and prominent skin creases) or it may be patchy as in the second photograph.

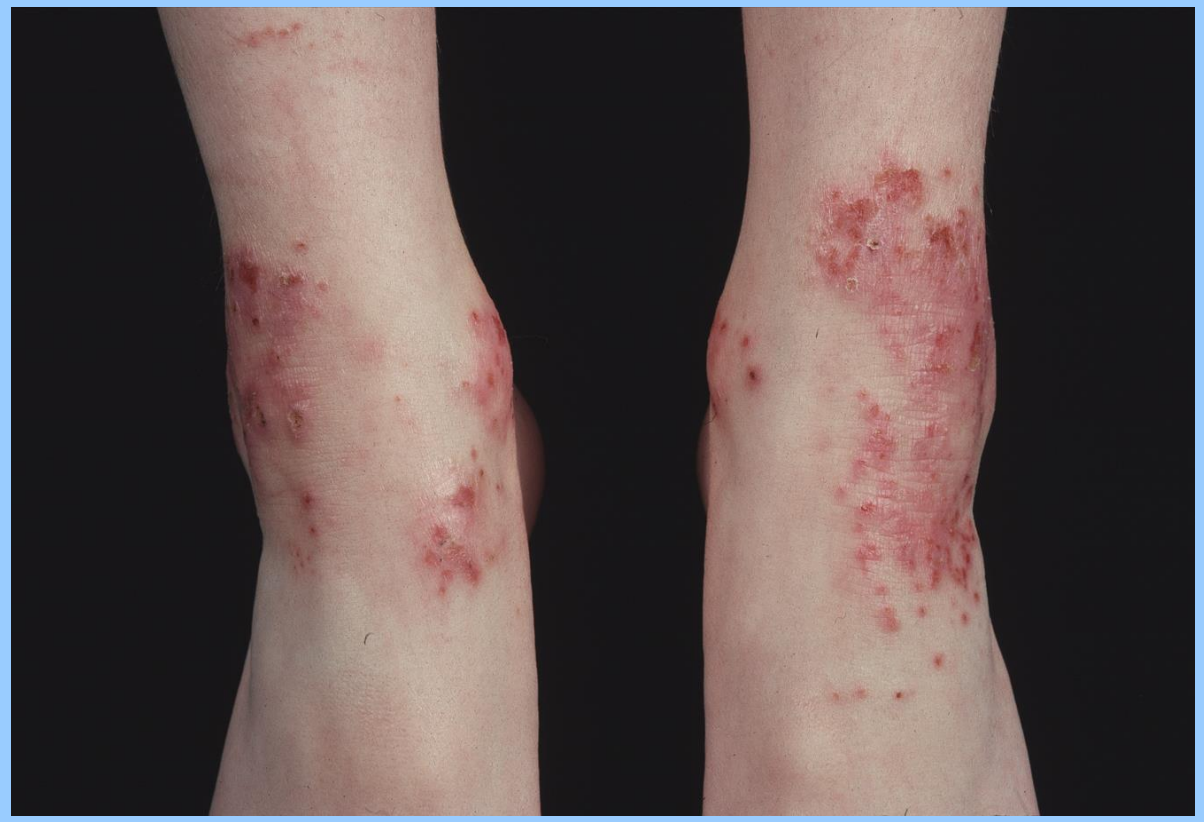




3. Front of elbows. Any patch of dermatitis larger than 1 cm in diameter affecting one or both elbow creases within an area marked out by the subject's palm.
Note the subtle redness, prominent skin markings and scratch marks in this child's elbow crease.



4. Behind the knees. Any patch of dermatitis larger than 1 cm in diameter affecting one or both areas behind the knee within an area marked out by the patient's palm.

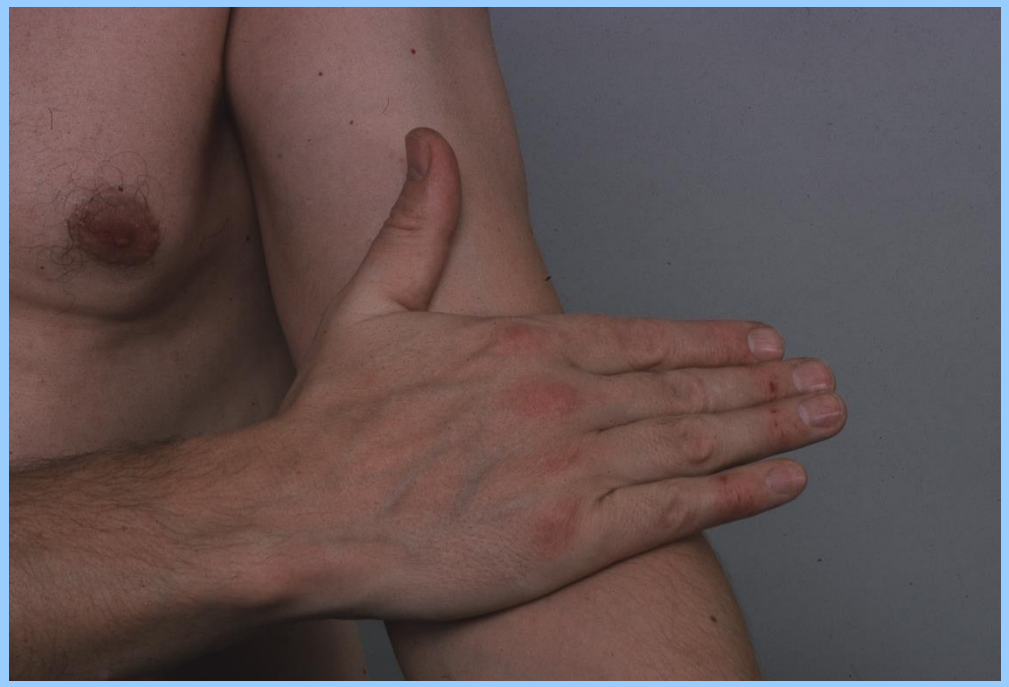


5. Front of ankles.

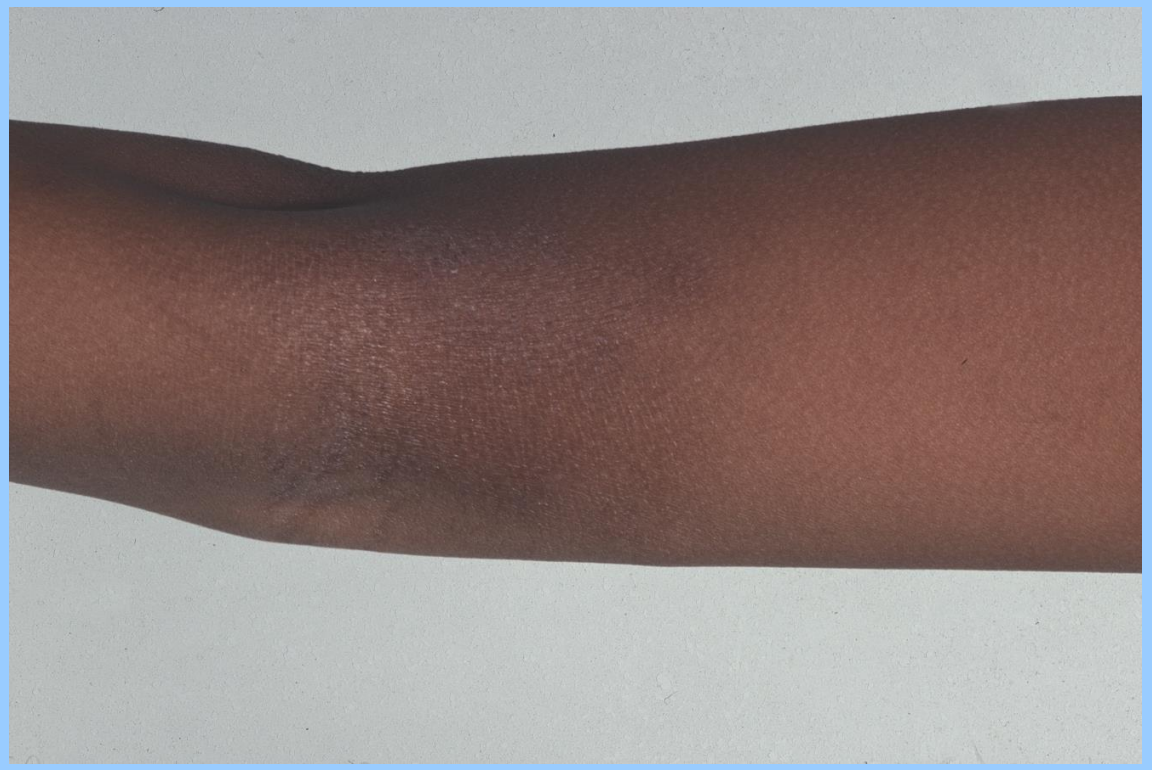
Any patch of dermatitis larger than 1 cm in diameter affecting one or both fronts of the ankles within an area marked out by the patient's palm.

An additional point:

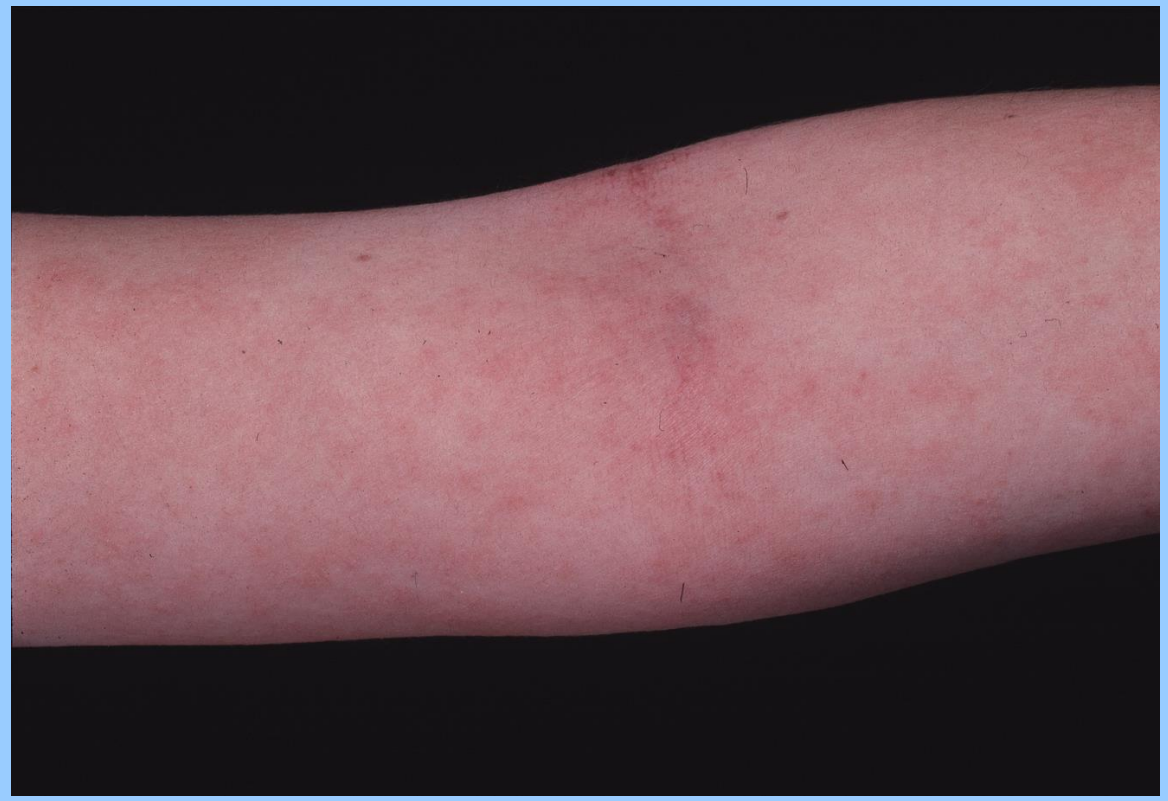
Most of the time it will be straightforward where the skin creases are, but if you need to check where a skin crease begins and ends by using the patient's palm, then the middle of the palm (held horizontally) should correspond to the axis of where the joint bends.



Ah! But what if ...

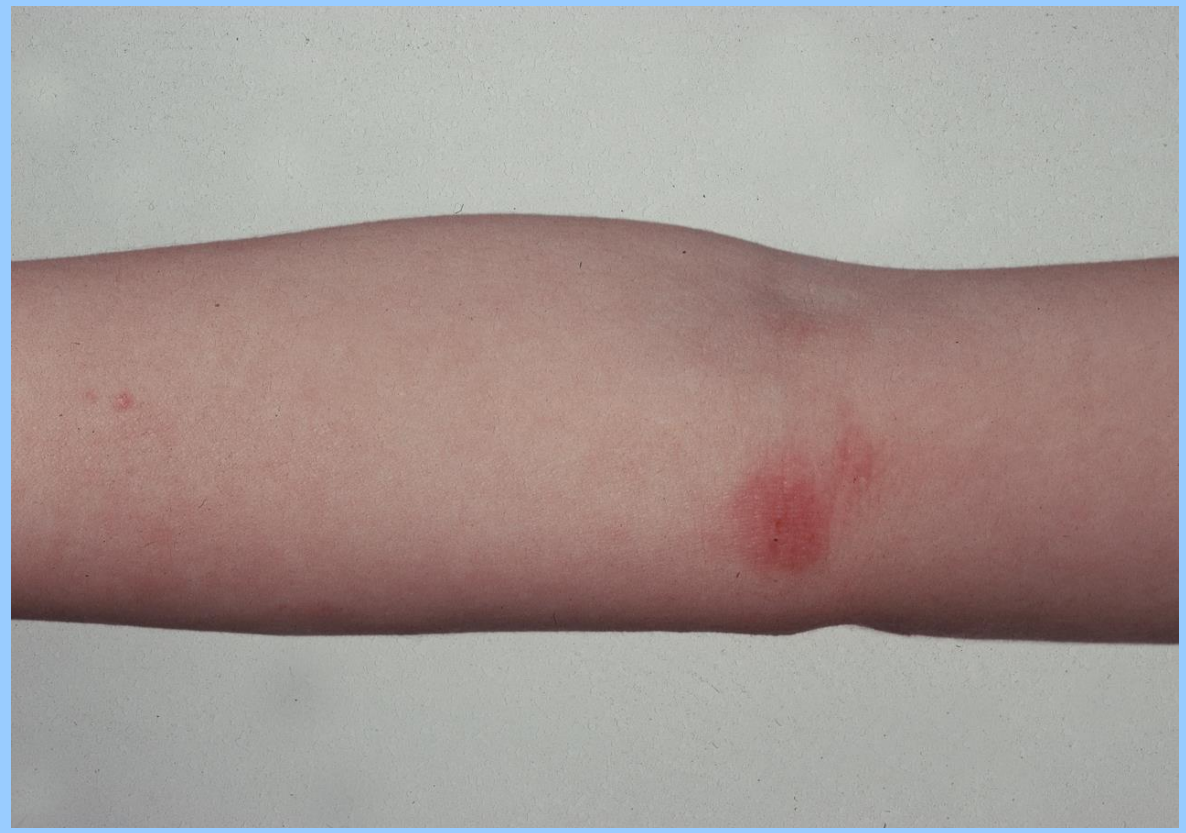


... the dermatitis is only on the side of the limb?
Since limbs are round, deciding where the front and back begins can be difficult. As a general rule, if you can see the dermatitis with an arm facing directly forward or leg facing backwards, then you may consider it as "visible flexural eczema (dermatitis) present".



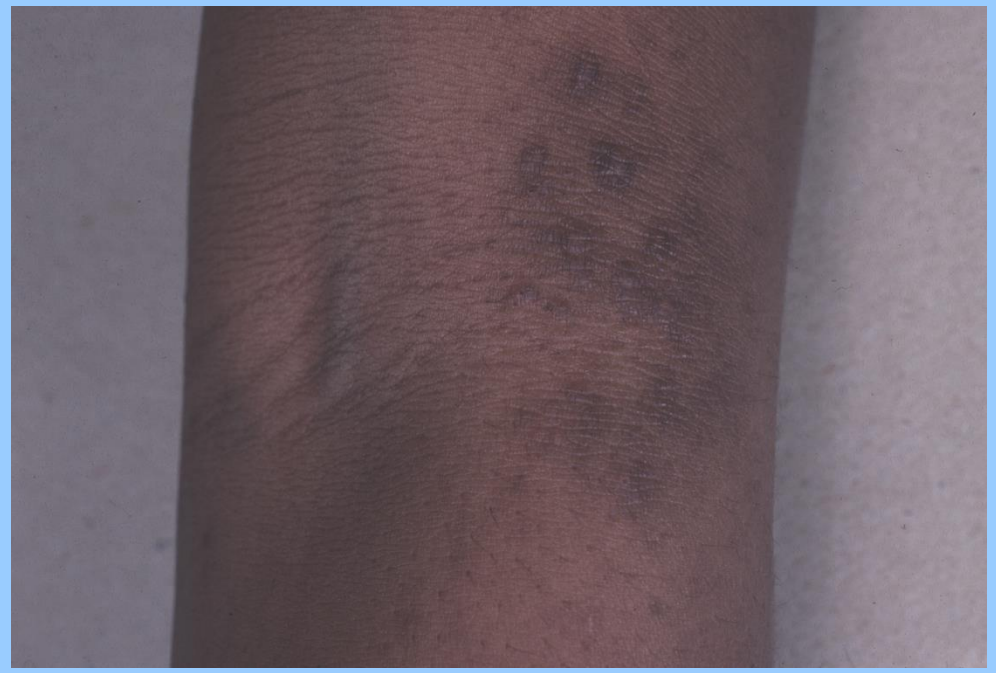
... all of the limb is affected?

This does not matter - as long as the skin crease is involved as we have defined, you must then record "visible flexural eczema (dermatitis) present".



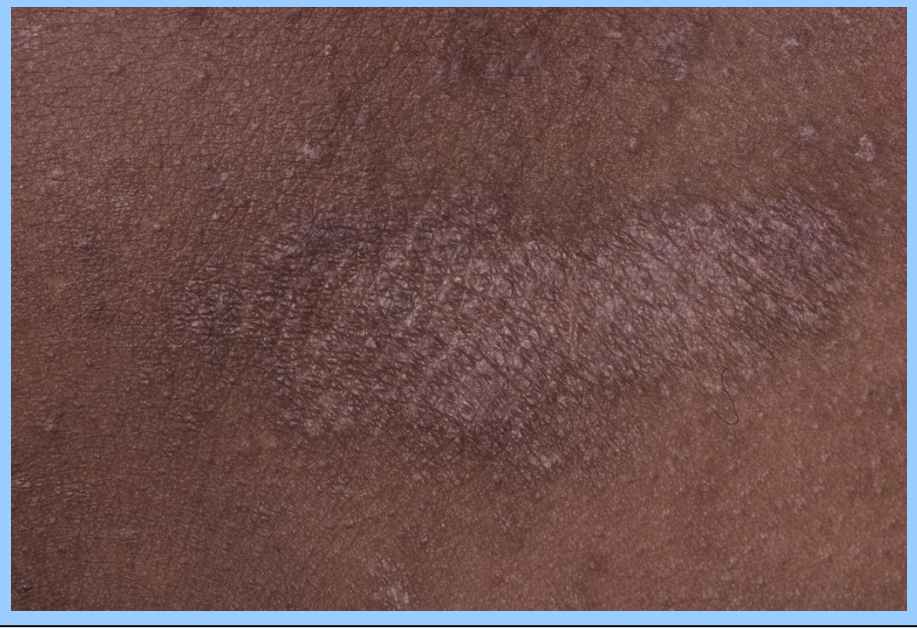
... there is only one spot?

If it is a tiny pimple, then ignore it. Any patch of dermatitis larger than 1 cm at its minimum diameter counts, however, so this patient's arm should be recorded as "visible flexural eczema (dermatitis) present".



... there is a small group of spots in a skin crease?

When there is a small group of spots behind the knees or in front of the elbow as shown above, you may count it as "visible flexural eczema (dermatitis)" only if i) the spots are confined to the skin crease as opposed to all over the limb, ii) they cover an area greater than 1 cm in diameter

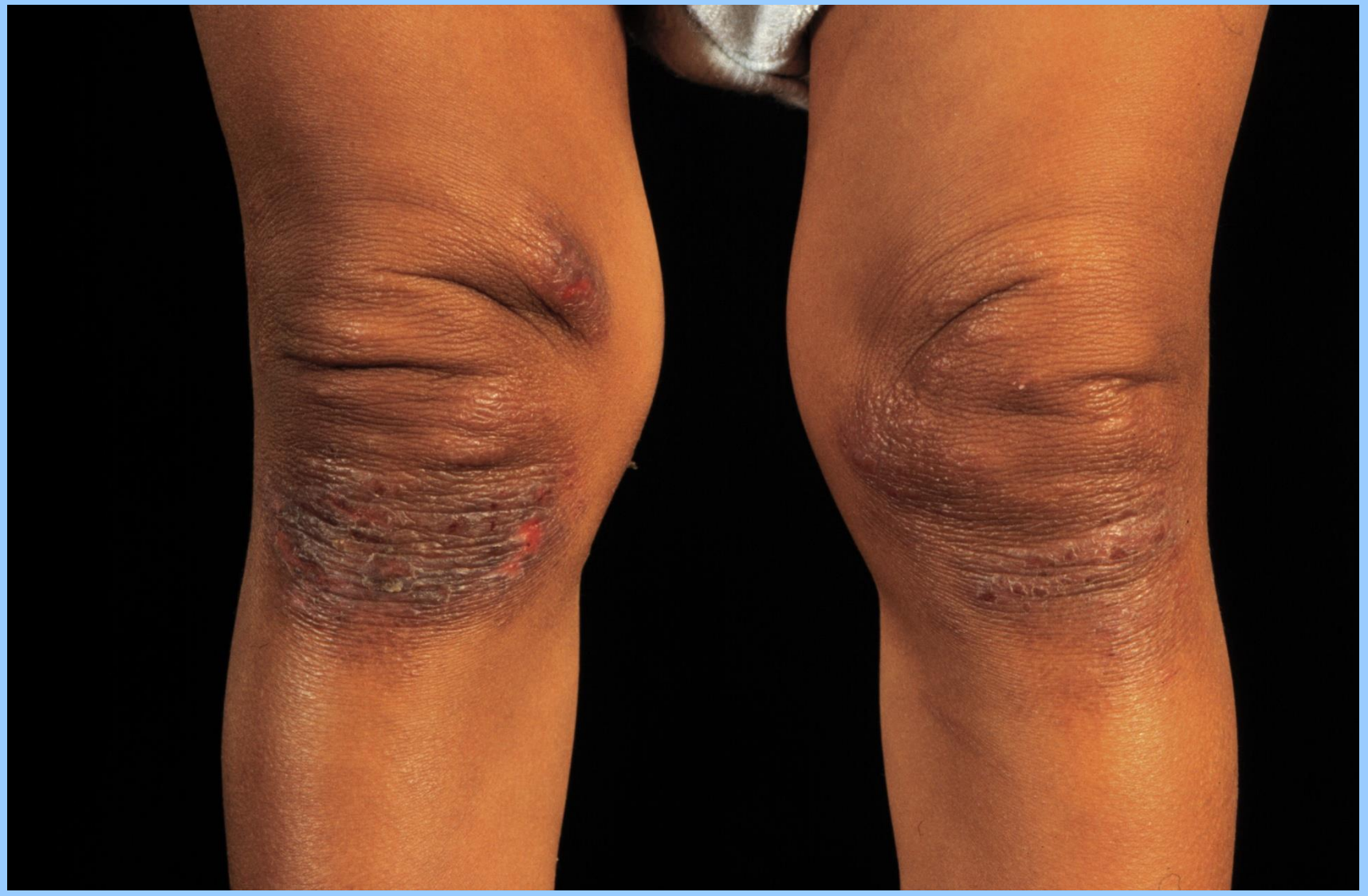


... I cannot see any redness?

In a black skin in particular, redness may be difficult to see. Dermatitis in such individuals can look lighter as shown in the first photograph, or very much darker as shown in the second. In a dark skin, redness is not an essential feature, but you must see surface change. Pigmentary change from friction at the fronts of the ankles is quite a common finding in patients with black skin. Do not mark this as “flexural eczema (dermatitis)” unless you are convinced there is accompanying surface change.

Non-flexural eczema (dermatitis)

- The same principles apply to non-flexural eczema (dermatitis), except that the skin surface change has to be non-flexural.
- To be scored as ‘present’ the non-flexural dermatitis needs to be at least 2cm in diameter (as opposed to 1cm in the flexures)



Example of non-flexural eczema (dermatitis)

Here is what you need to record…

Non-flexural dermatitis present - yes/no

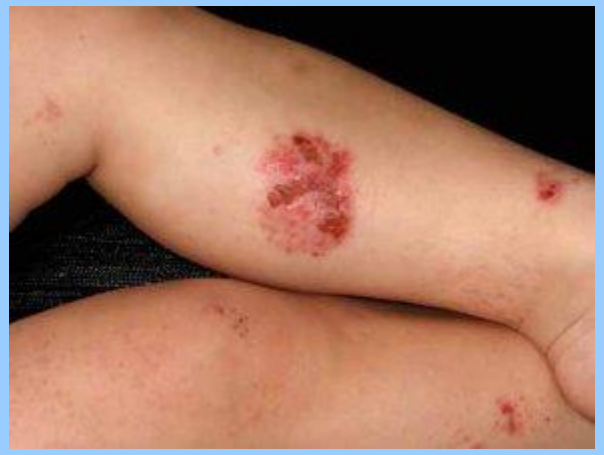
If yes, which areas are involved?

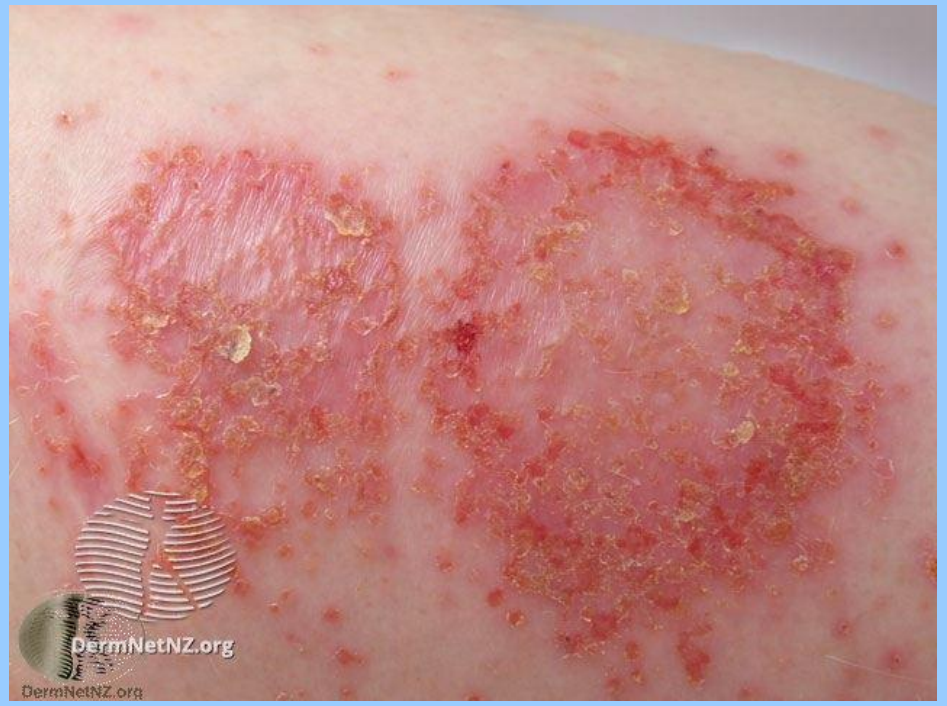
- **Face** (at least one non-flexural patch ≥2cm diameter)
- **Elbows** (patch ≥2cm diameter)
- **Arms** (at least one patch ≥2cm diameter BOTH sides)
- **Knees** (patch ≥2cm diameter)
- **Legs** (at least one patch ≥2cm diameter BOTH sides)
- **Hands** (patch ≥2cm diameter BOTH sides)

If yes, is there evidence of pompholyx (vesicular eczema) or a history of pompholyx?

In addition, we record the presence of…

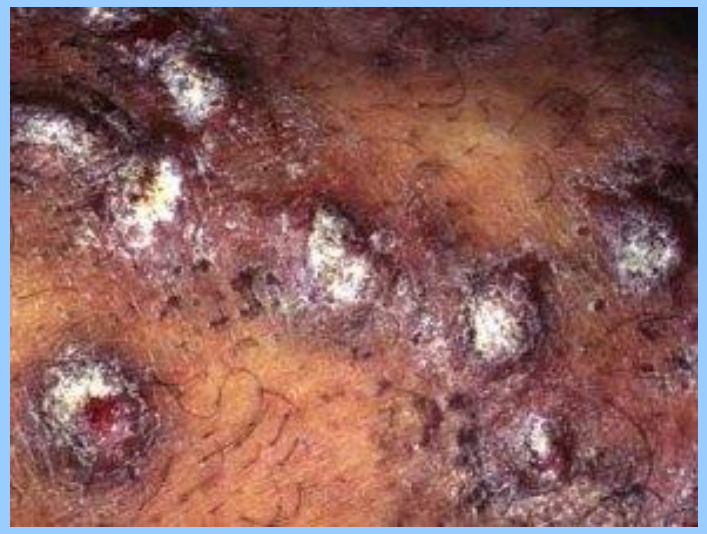
Discoid eczema (at least 5 circular eczema patches in total, each patch ≥2cm diameter) - yes/no

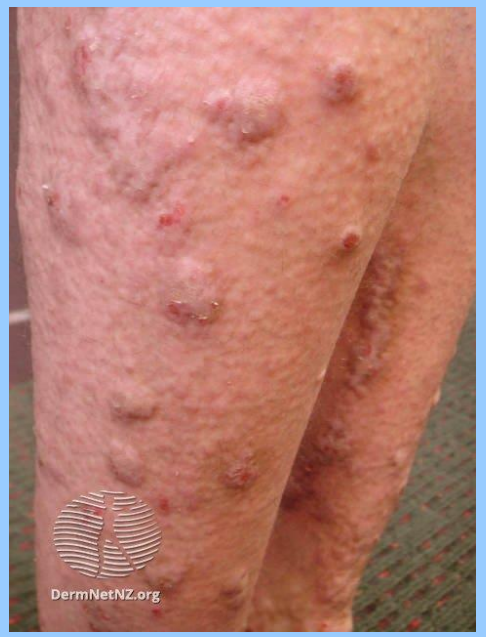




In addition, we record the presence of…

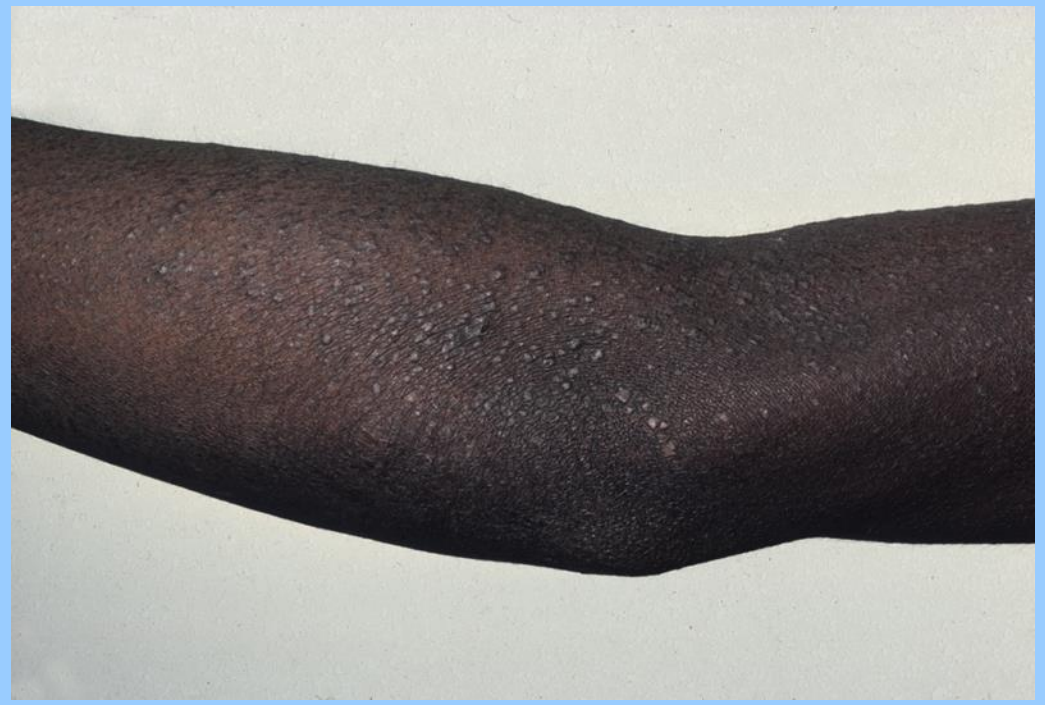
Nodular prurigo (≥5 palpable nodules of the skin from long-term scratching (usually on the legs), ≥1cm diameter each) yes/no





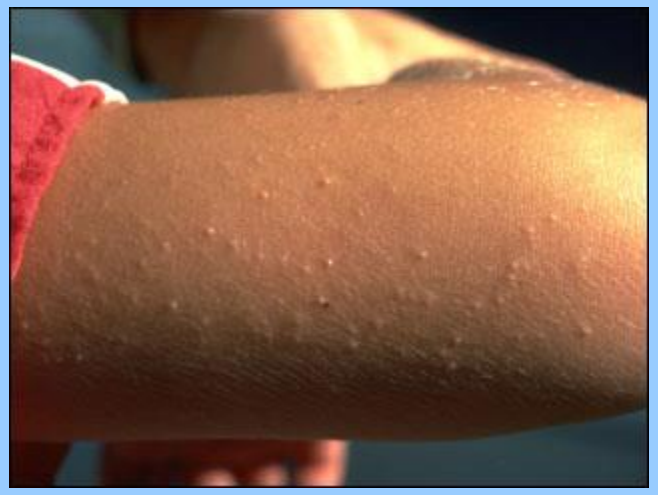
In addition, we record the presence of…

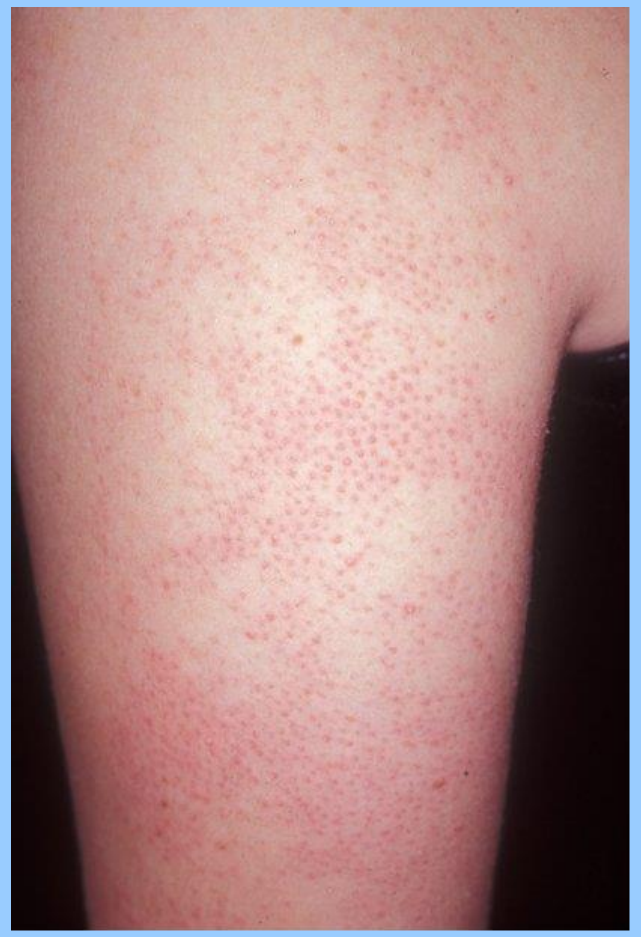
Follicular eczema (widespread eczematous hair follicle involvement, more commonly seen in darker skin types) - yes/no



In addition, we record the presence of…

- **Keratosis pilaris** (thickening around the base of hair follicles over upper arms, thighs or cheeks)





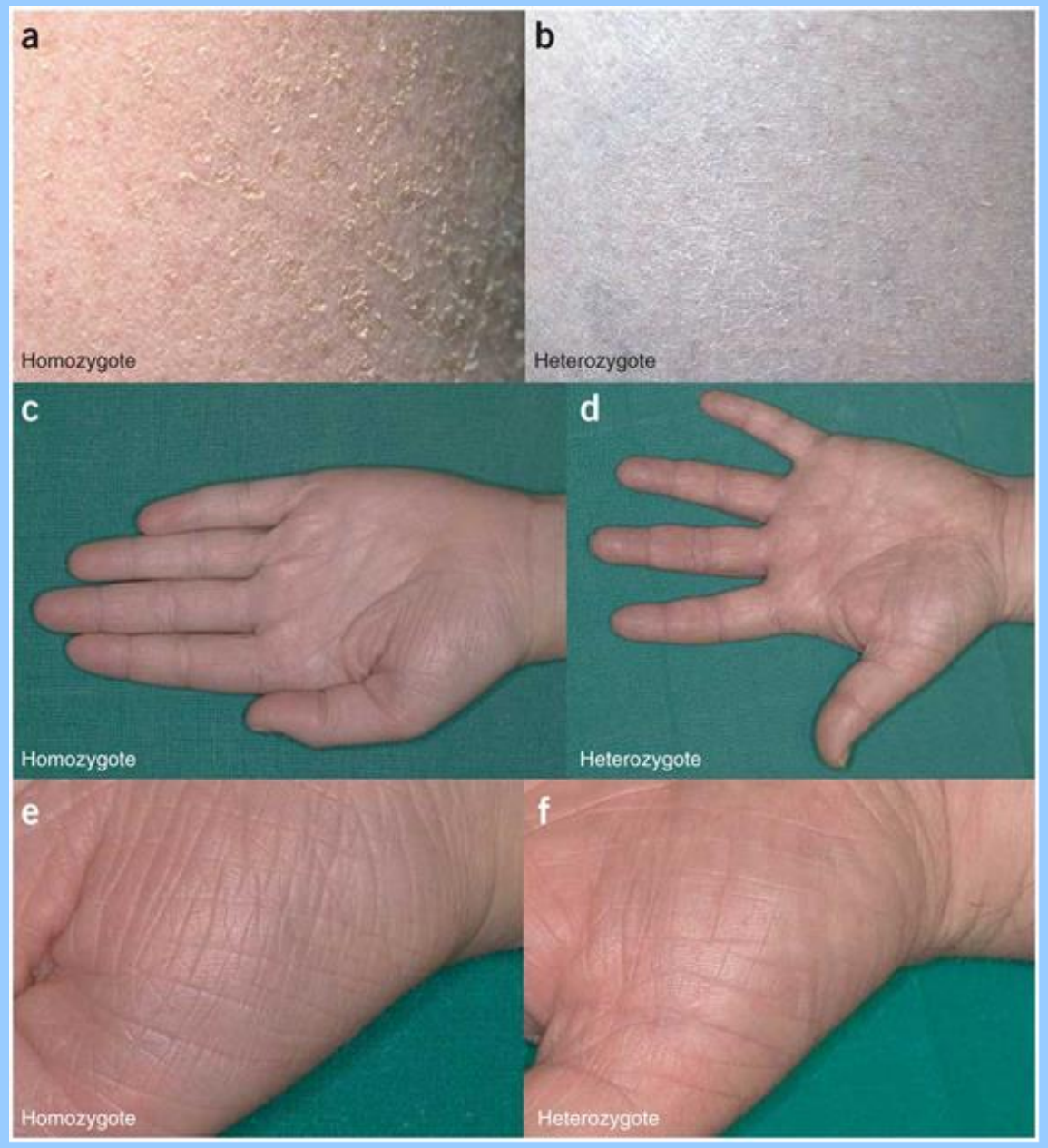
In addition,
we record the presence of…

- **Ichthyosis (fine scale) – Yes/No**

(Widespread fine scale predominantly affecting the non-flexural areas of the limbs and the trunk)

- **Palmar hyperlinearity – Yes/No**

(note: the degree or pattern of palmar hyperlinearity is not scored)



Training to be completed by all involved in the clinical assessments for A*STAR:

- Eczema diagnosis manual, including fieldworker test (read the sections on the UK diagnostic criteria, look at the 48 training photographs (Section 1.3 The UK diagnostic criteria for atopic eczema; Section 3.2. The sign of flexural dermatitis) and then take the fieldworker test: ‘test photographs’, Appendix 5):

https://www.nottingham.ac.uk/~mzzfaq/dermatology/eczema/

- EASI instructions:

http://www.homeforeczema.org/research/easi-for-clinical-signs.aspx

- vIGA instructions:

http://www.eczemacouncil.org/research/investigator-global-assessment-scale/

- POEM instructions:

https://www.nottingham.ac.uk/research/groups/cebd/resources/poem.aspx