Top 4 Skin Conditions

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Dermatology

- Dermatologists manage diseases of the skin, hair and nails in adults and children
- Centre of Evidence Based Dermatology (2009) estimates that the percentage of patients with skin problems like eczema, psoriasis and acne varies between 35-45%
- Dermatologists also organise and deliver skin cancer services
- Skin cancer is the most common cancer and the second most common cancer causing death in young adults

Schofield JK, Grindlay D,William HC. *Skin conditions in the UK: a health needs assessment* .

Dermatology Activity

- Each year 24% of the population see their GPs for skin disease
- 882,005 were referred to dermatologists in England in 2009–10
- This resulted in 2.74 million consultations
- A 250,000 population generates around 2,250 new and 4,500 follow-up patients per year in secondary care

Hospital Episode Statistics Online. www.hesonline.nhs.uk [last accessed 24 January 2011]

Content

1. Acne
2. Eczema
3. Skin Cancer
4. Psoriasis

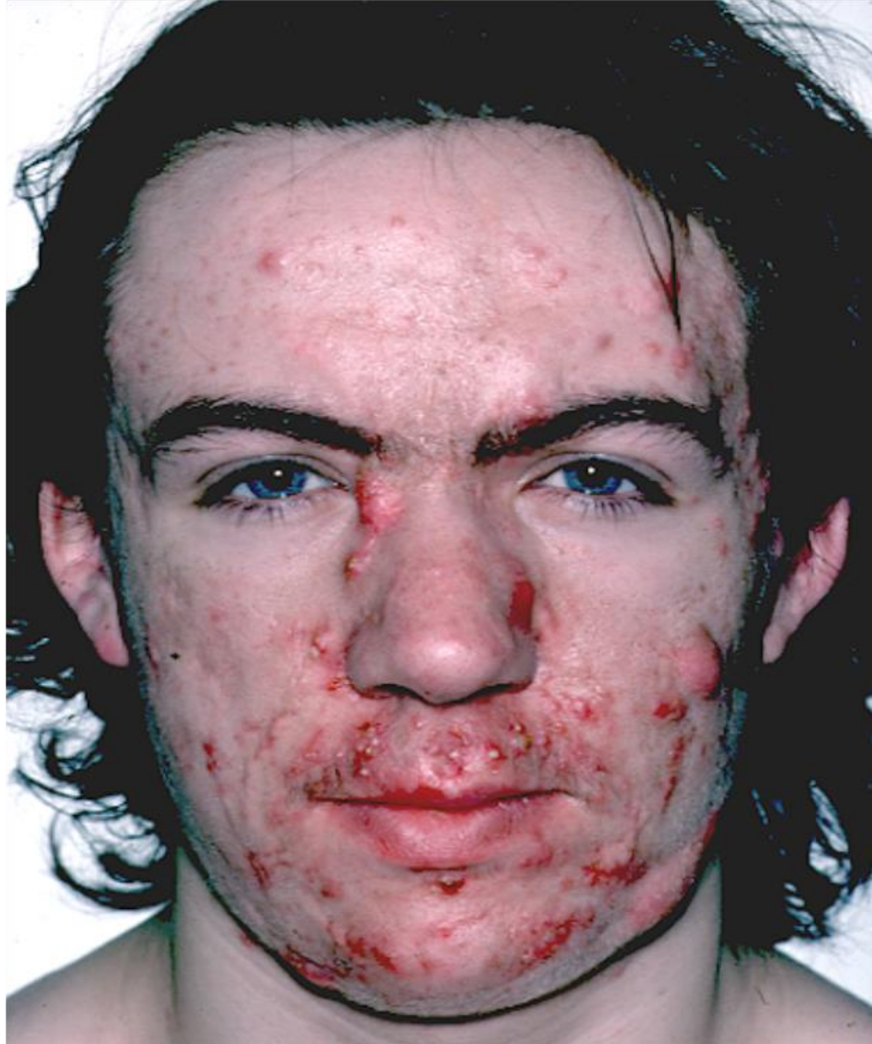
Acne Vulgaris

Common Scenario

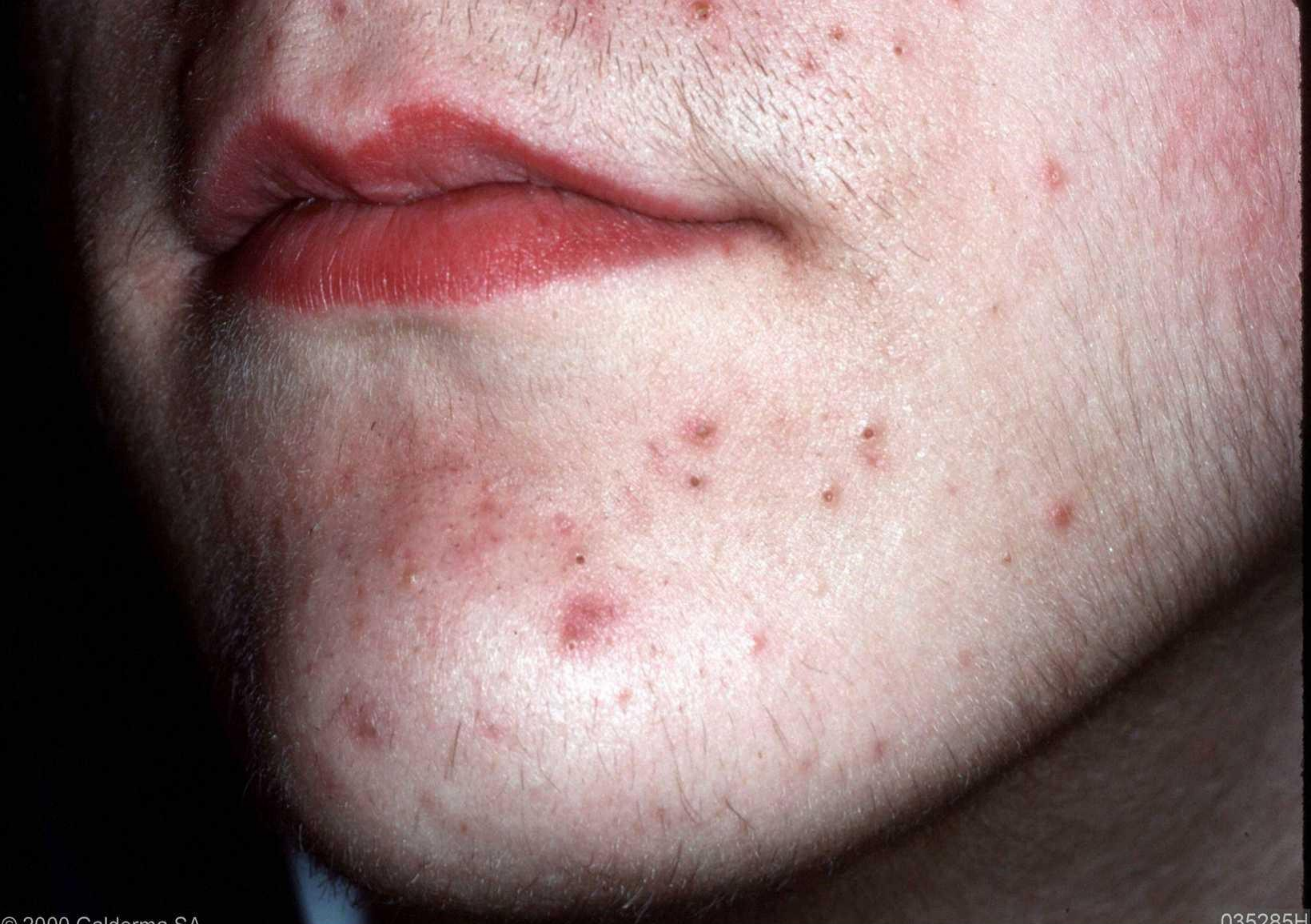
- A 17 year old boy who has recently moved to the area comes to see you in clinic saying he is fed up with the appearances of his face.

- He has multiple pustules, papules and nodules

- They are mostly symmetrical, relatively recent onset



What would you do?



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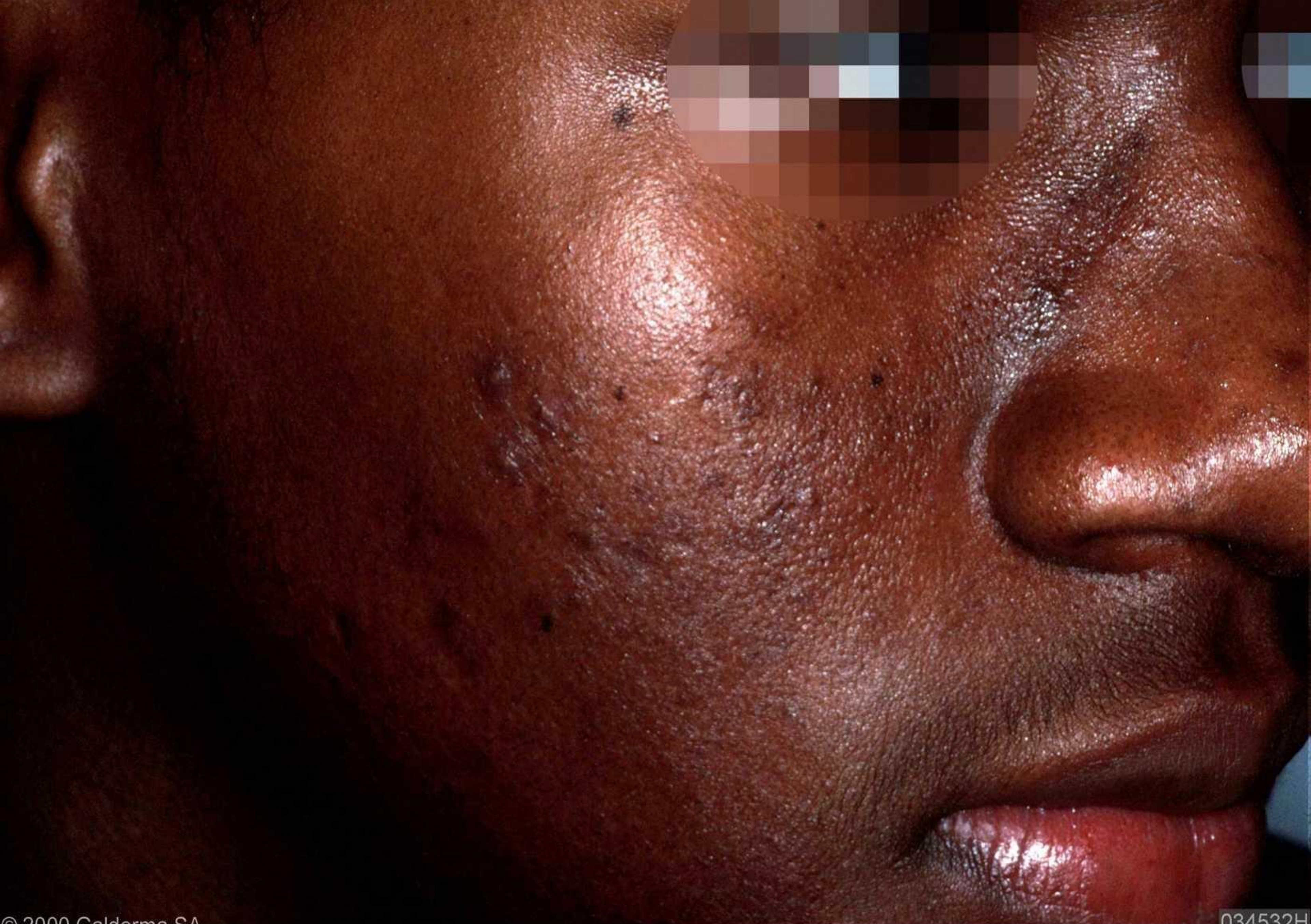

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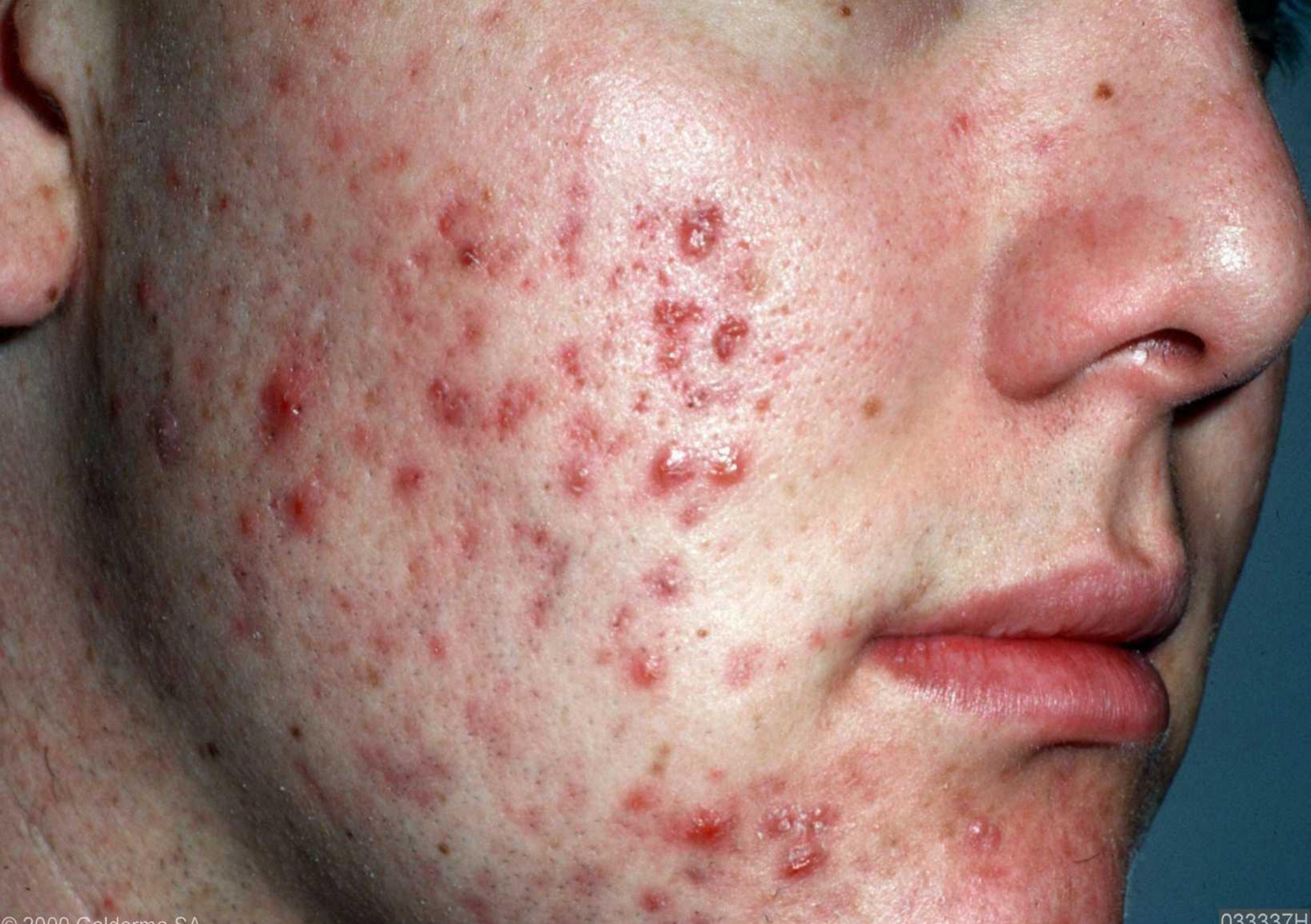

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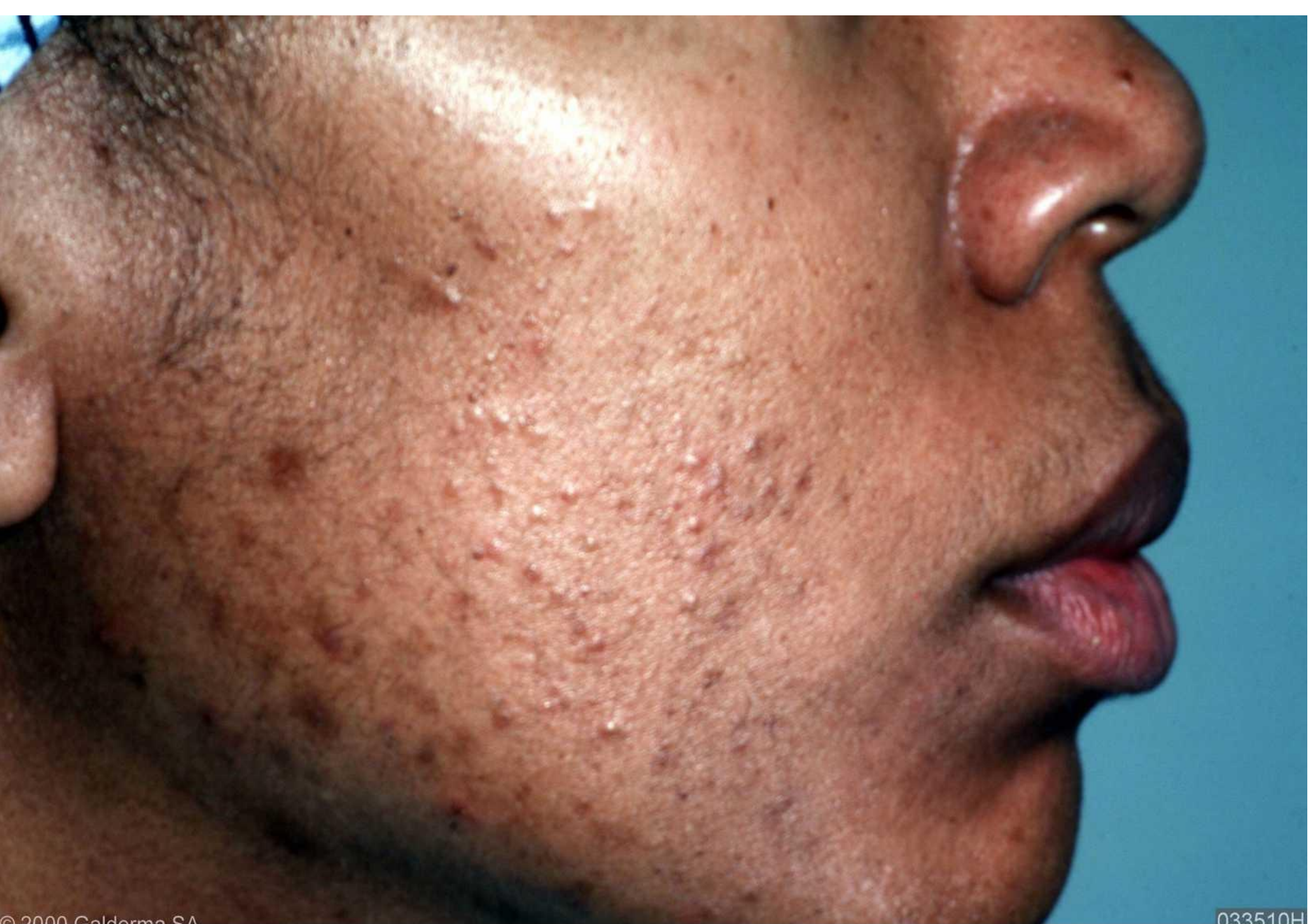

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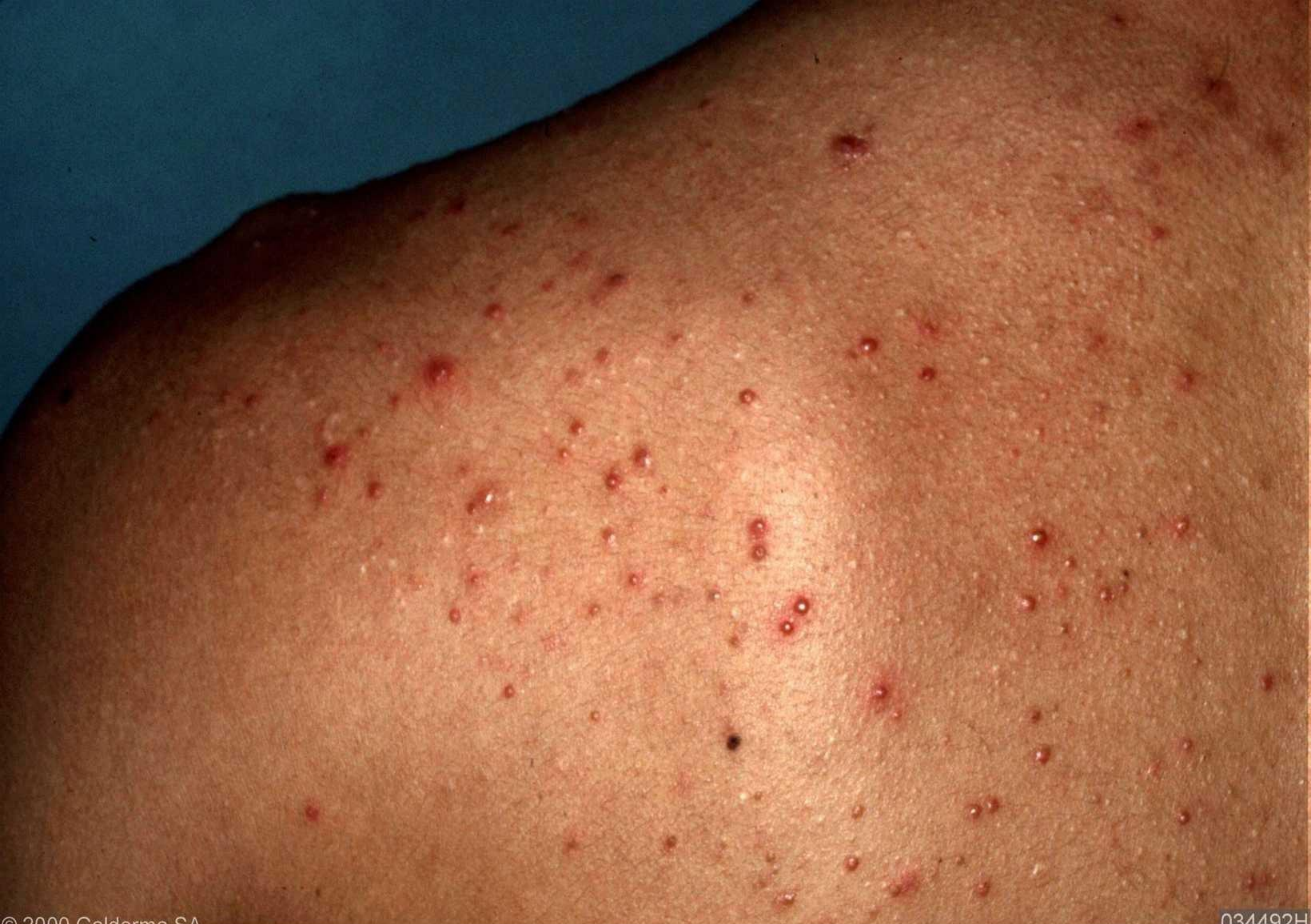

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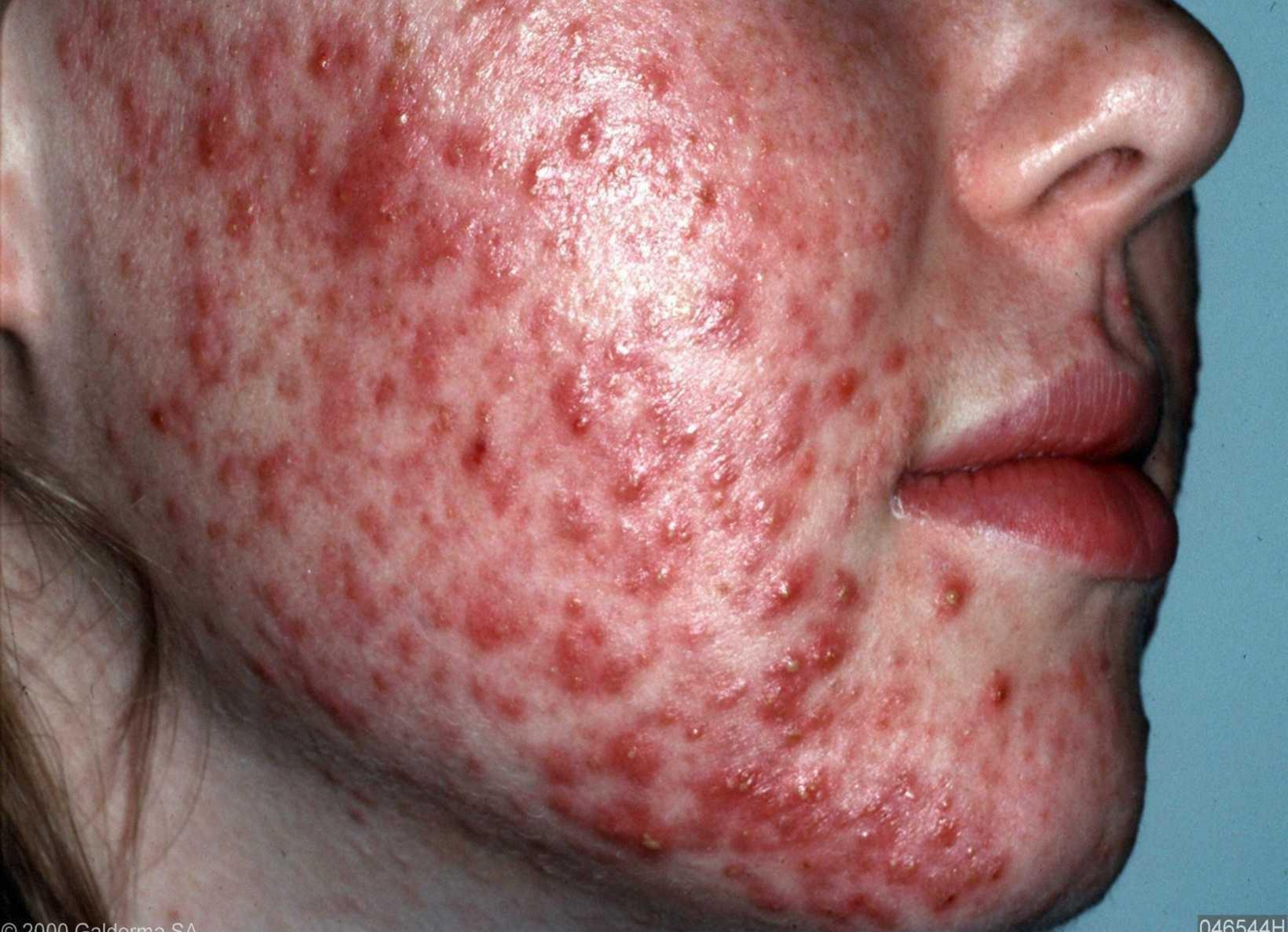

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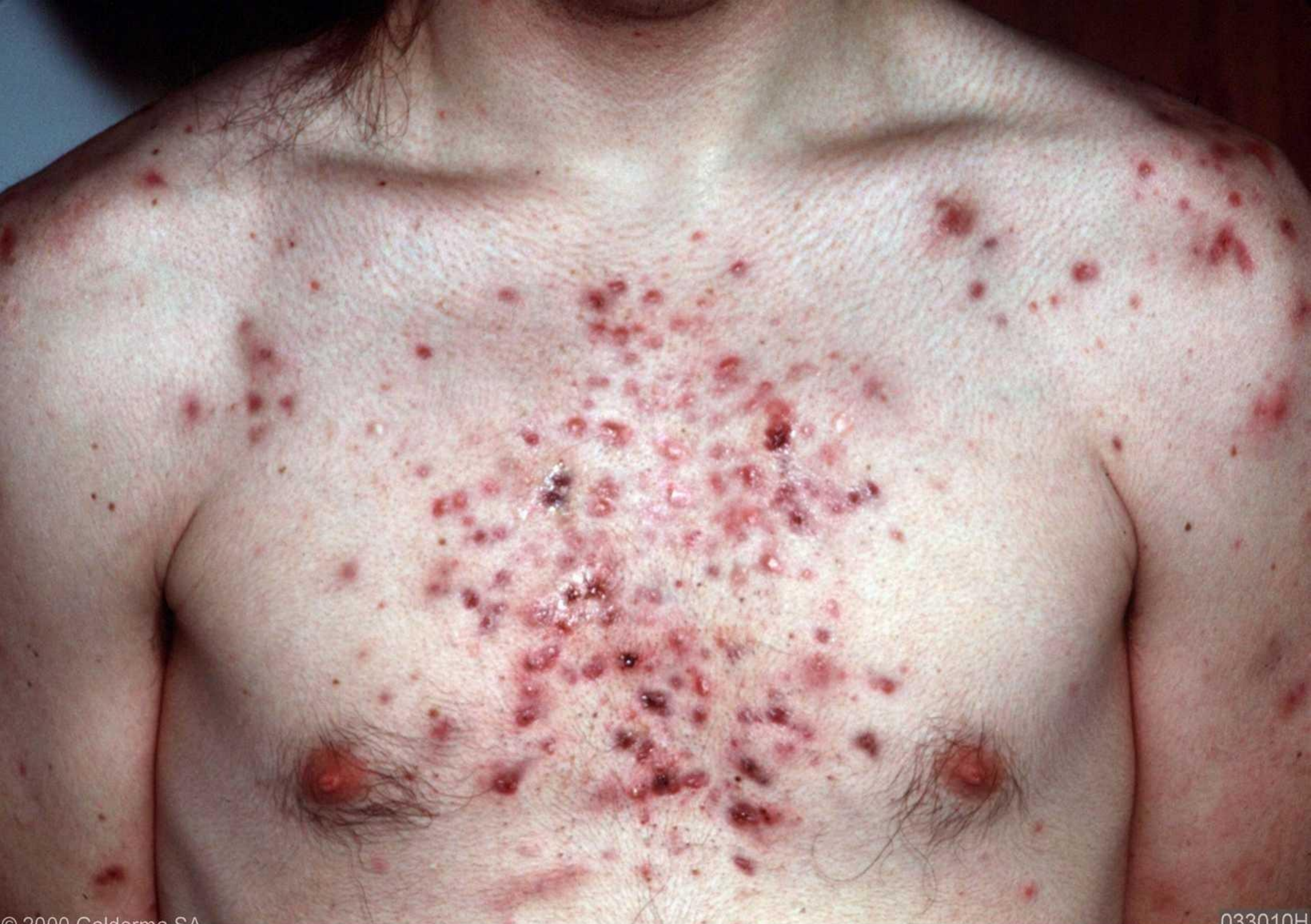

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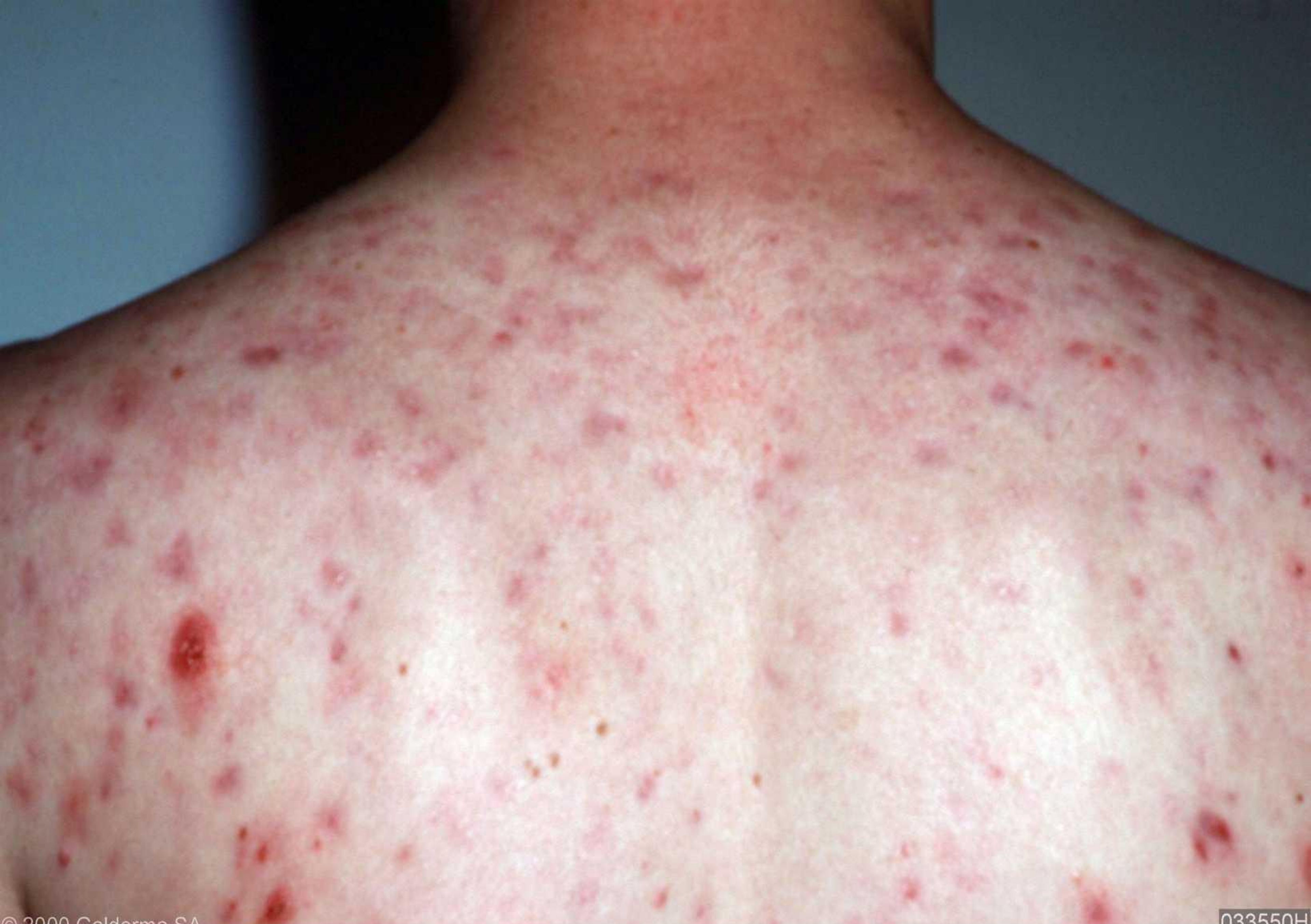
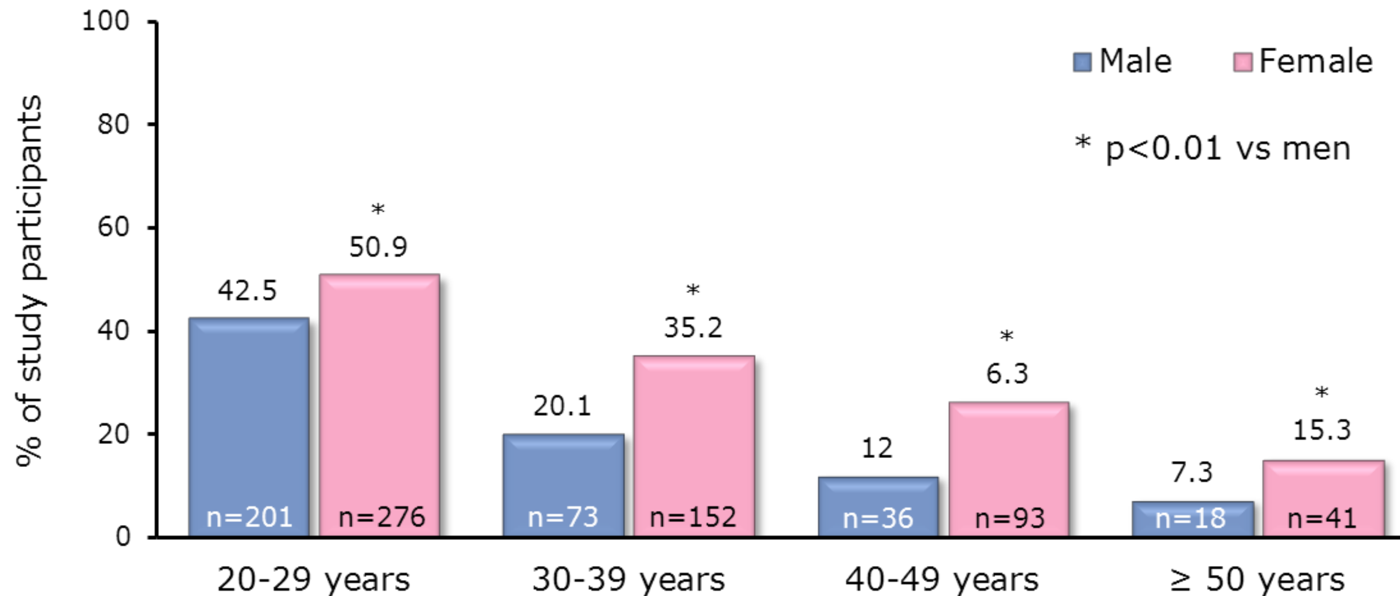


DermQuest.com
www.dermquest.com/image/033550H

Acne also occurs in adults 20 years and older[1]

Acne is often mistakenly thought to affect exclusively the teenage group. However it continues to be a common skin problem beyond teenage years, especially for women[1]

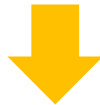


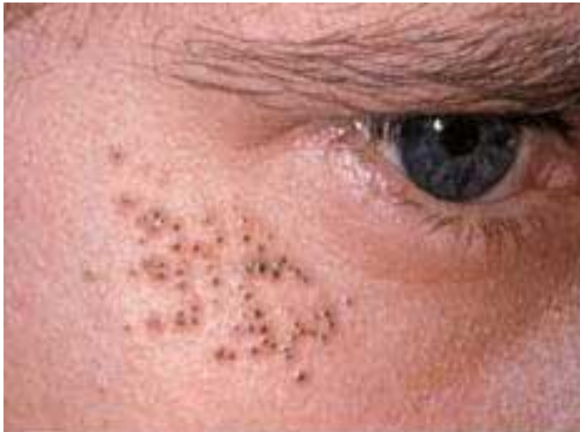
Survey of 1013 adults aged ≥20 years who were asked to report the occurrence of acne in previous years. Results were based on the participants' own perceptions of the presence or absence of acne.

1. Collier CN et al. J Am Acad Dermatol 2008;58:56-9

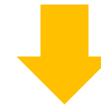
Clinical features: Non-inflamed phase

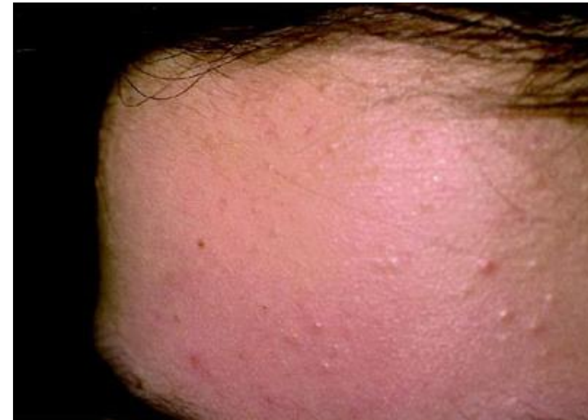
Initial comedo phase without evidence of inflammation





- Open comedones or blackheads, presenting as small bumps often on the forehead and chin



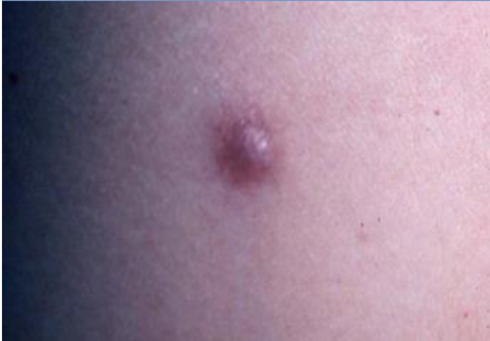


- Closed comedones or whiteheads

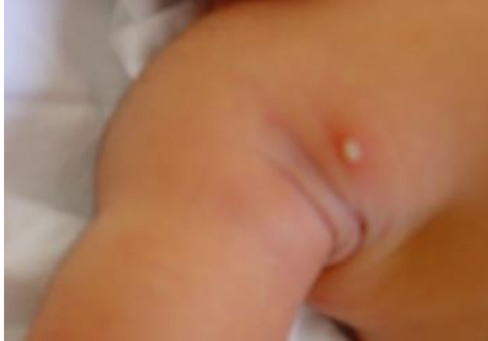
Clinical features: Inflammatory phases

CONTENTS

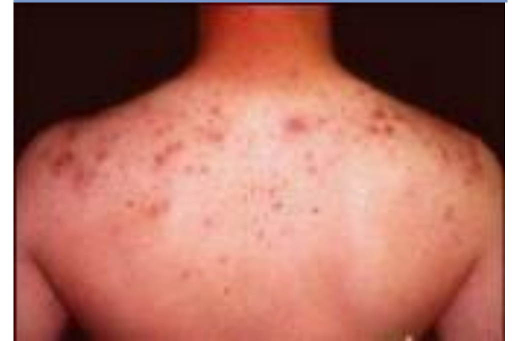
Papule



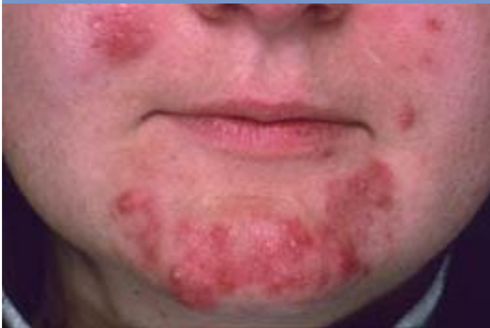
Pustule



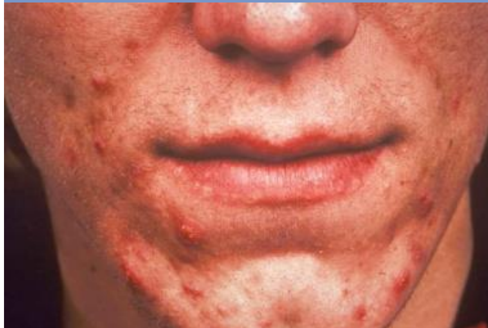
Nodule



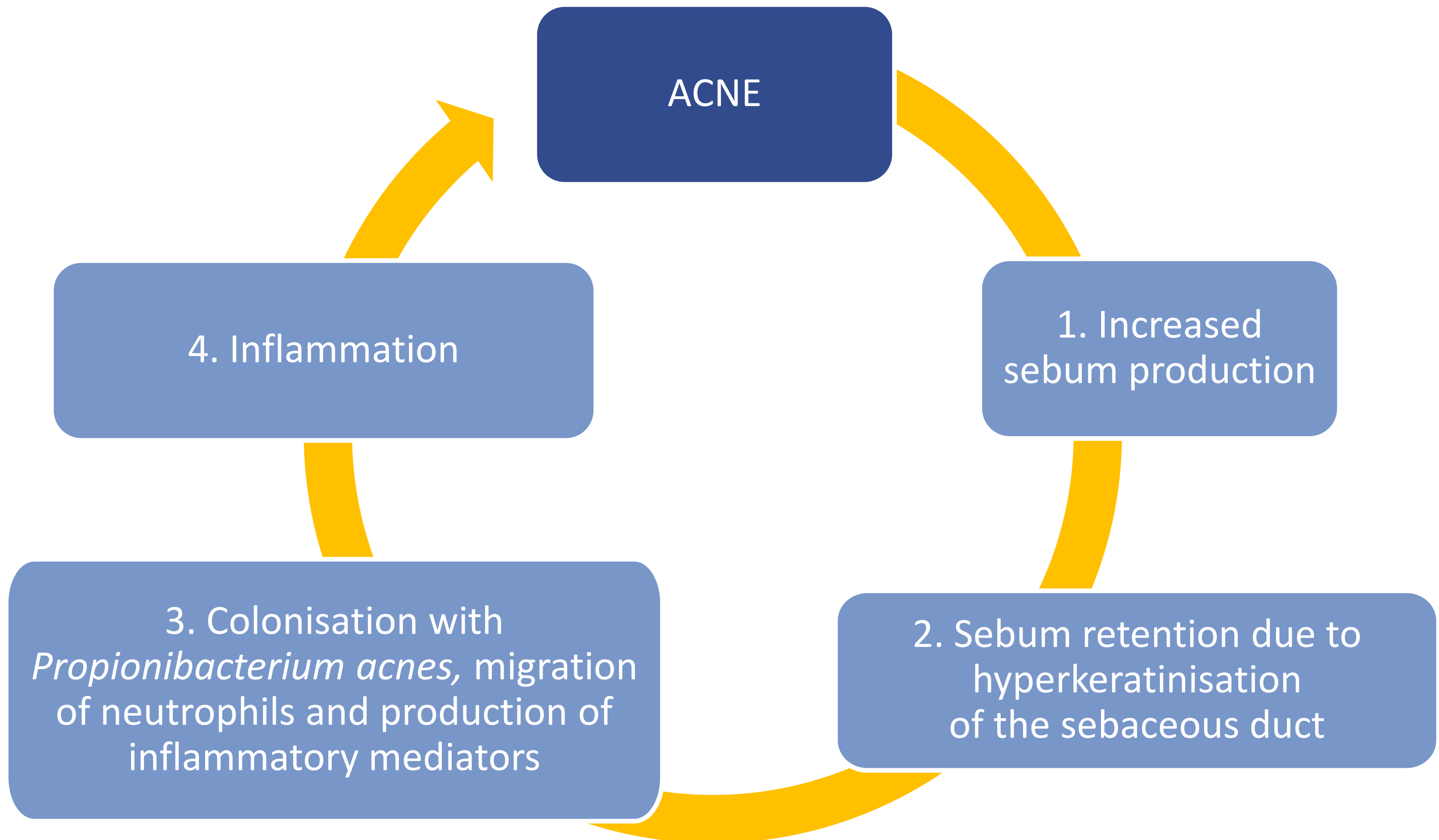
Cyst



Sinus (several cysts)



Overview: Multifactorial development[1]



1. Beylot C. Rev Prat 2002;52:828-30

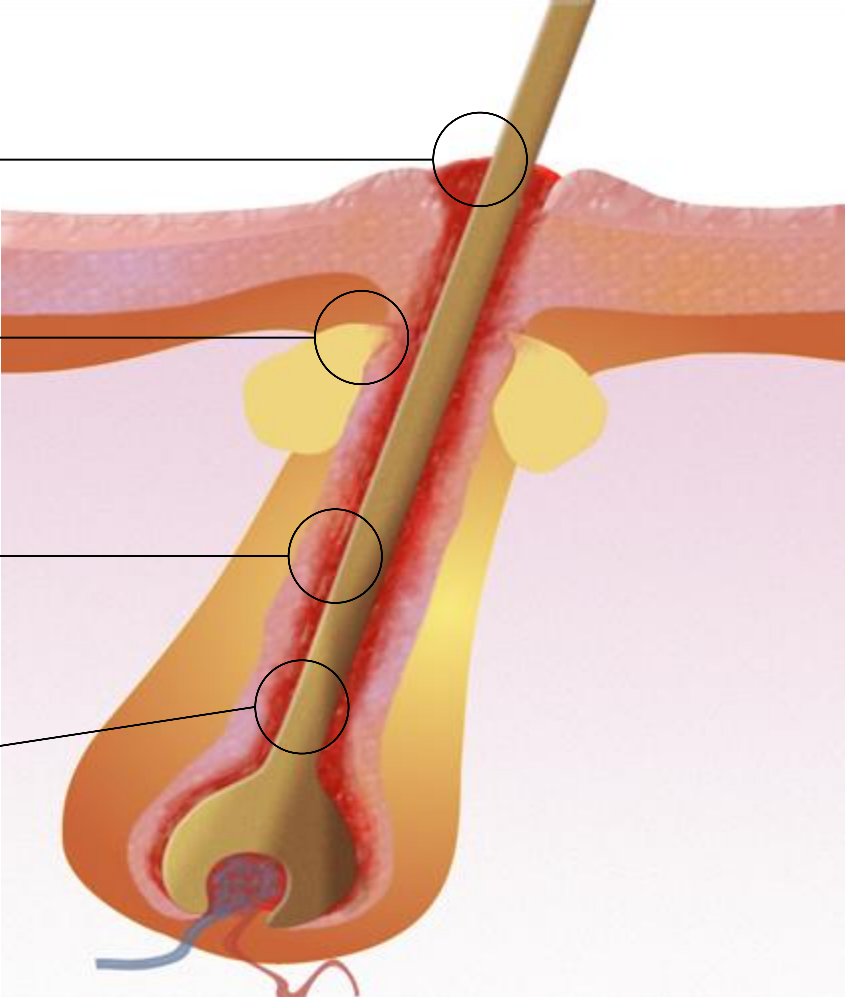
Treatment targets

Unblock ducts

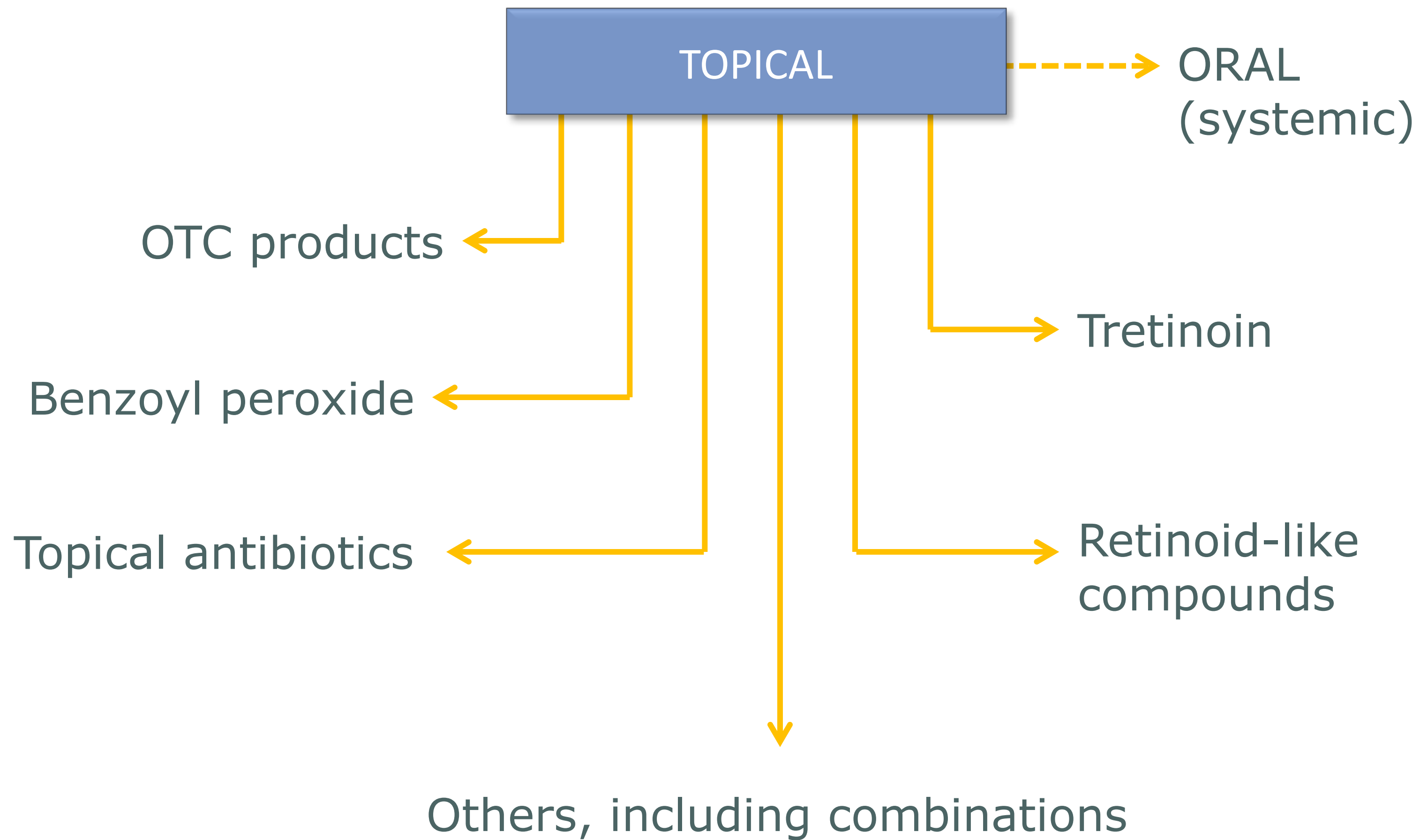
Reduce amount of sebum produced

Reduce bacterial colonisation

Reduce inflammation



Treatment options



Benzoyl peroxide

Actions

- Available OTC or by prescription
- For use where comedones and papules predominate[1]
- Antibacterial activity against *P. acnes*, with exfoliative and comedolytic activities[1]
- Not an antibiotic (therefore no resistance problems)

Considerations

- During the first weeks of treatment a sudden increase in peeling will occur in most patients, which will normally subside if treatment is temporarily discontinued[1]
- Can cause bleaching and staining of material containing hairs and dyed fabrics[1]

1. Acnecide Wash 5% Gel, Summary of Product Characteristics. Galderma (UK) Ltd, February 2010

Tretinoin

Actions

- Vitamin A derivative[1]
- Increases proliferative activity of epidermal cells[1]
- Cellular differentiation (keratinisation and cornification) is also altered[1]

Considerations

- Therapeutic effect not usually seen for 6-8 weeks[1]
- Local reactions frequently reported include dry or peeling skin, which may persist during therapy[1]

1. Retin-A Gel 0.025%, Summary of Product Characteristics, Janssen-Cilag Ltd, October 2011

Adapalene (retinoid-like compound[1])

Actions

- For use where where comedones, papules and pustules predominate[1]
- Anti-inflammatory properties[1]
- Comedolytic and also alters epidermal keratinisation and differentiation[1]
- May modify some of the cell-mediated inflammatory components of acne[1]

Considerations

- Common undesirable effects include dry skin, skin irritation, skin burning sensation, erythema[1]

1. Differin Cream 0.1%, Summary of Product Characteristics, Galderma (UK) Ltd , May 2009

Topical antibiotics (e.g. erythromycin and clindamycin)

Actions

- Treat infective aspects
- Erythromycin also has an anti-inflammatory action:

  - it reduces the capacity of *P. acnes* to produce neutrophil chemotactic factors[1]

  - it decreases the production of reactive oxygen species[1]

Considerations

- No comedolytic effects
- Antibiotic resistance may occur

1. Jain A et al. Dermatol Online J 2002; 8(2):2

Acne – Primary Care Treatment Pathway

PCDS PRIMARY CARE DERMATOLOGY SOCIETY

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What is Acne?

Acne, an inflammatory disorder of the sebaceous glands, is one of the most common dermatological disorders and is considered a chronic disease.
Treatment may be required to improve both the physical appearance and prevent physical and psychological scarring.
Whilst it is primarily a skin disorder of the young, often clearing up spontaneously, it can affect up to 12% of women and 3% of men over the age of 25.
Treatment options for all age groups and both sexes are largely the same, apart from Hormonal therapy

Important Information About Treatments

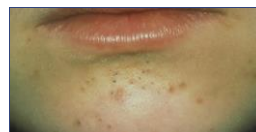
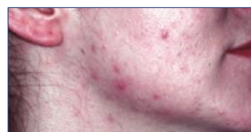
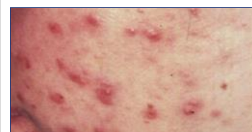
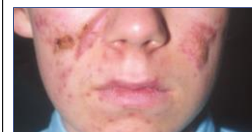
Treatments are effective but take time to work (typically up to eight weeks) and may irritate the skin, especially at the start of treatment
Topical and systemic antibiotics should not be prescribed together, or used as sole treatment as bacterial resistance is a growing concern
All treatments should be routinely reviewed at 12 weeks
In the event of pregnancy, topical retinoids and oral tetracyclines should be discontinued

At Review

If treatment goals are reached at the 12 week review:
Maintenance therapy should be considered
Discontinue topical/systemic antibiotics

If treatment goals are NOT reached at the 12 week review:
Review adherence to treatment(s)
Consider alternative treatments

Grading acne based on lesion type can help guide treatment

Treatment graded by the predominant present	 **Comedones**	 **Papules**	 **Pustules**	 **Nodules/Cysts***
Topical Retinoid *Tretinoin, Isotretinoin & Adapalene*	+++	++	+	+
Benzoyl Peroxide (BPO)		+++	+++	+
Azelaic Acid 20% – *Skinoren*	+	++	++	+
Topical Antibiotics		++	+++	
Topical Retinoid/BPO – *Epiduo*	+	++	+++	+
Topical Retinoid/Antibiotic Combination *Treclin*	+	++	+++	
Topical Antibiotic/BPO Combination *Duac*		++	+++	
Oral Antibiotics		++	+++	+++
Combined Oral Contraceptives (for females only)		++	++	++
Legend	+++ Strong recommendation	++ Moderate recommendation	+ Low recommendation	

Red Flag

Refer immediately if:

- Severe psychological distress
- Uncontrolled acne developing scarring
- Nodulo-cystic acne*
- Diagnostic uncertainty
- Patients failing to respond to multiple therapeutic interventions

***Nodules/Cysts**
Treatment can be initiated, but patients should be referred

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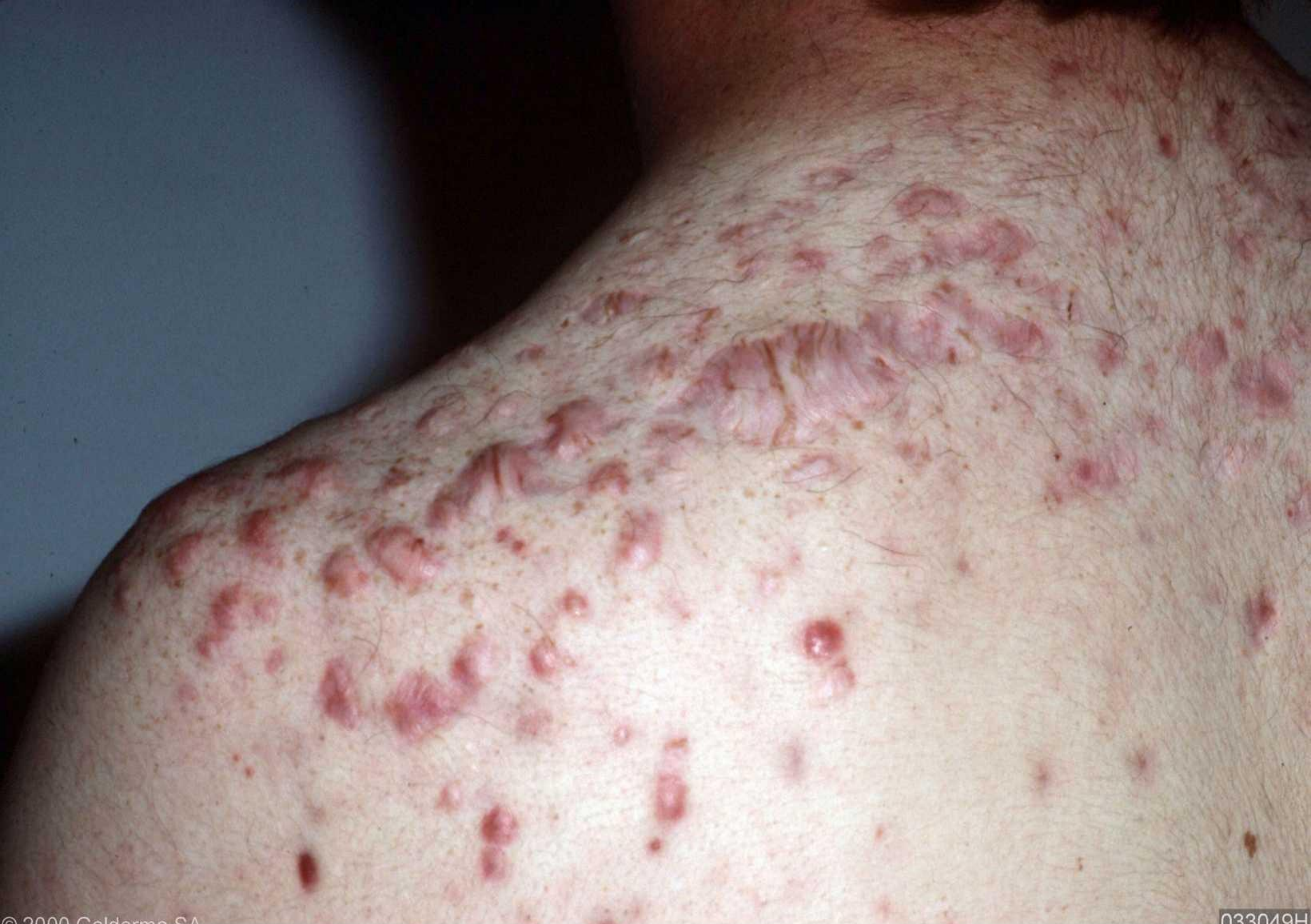
Complications of delayed referral

Scarring

- Keloid
- Hypertrophic
- Atrophic
- Ice pick

Treatment limited on the NHS – individual funding



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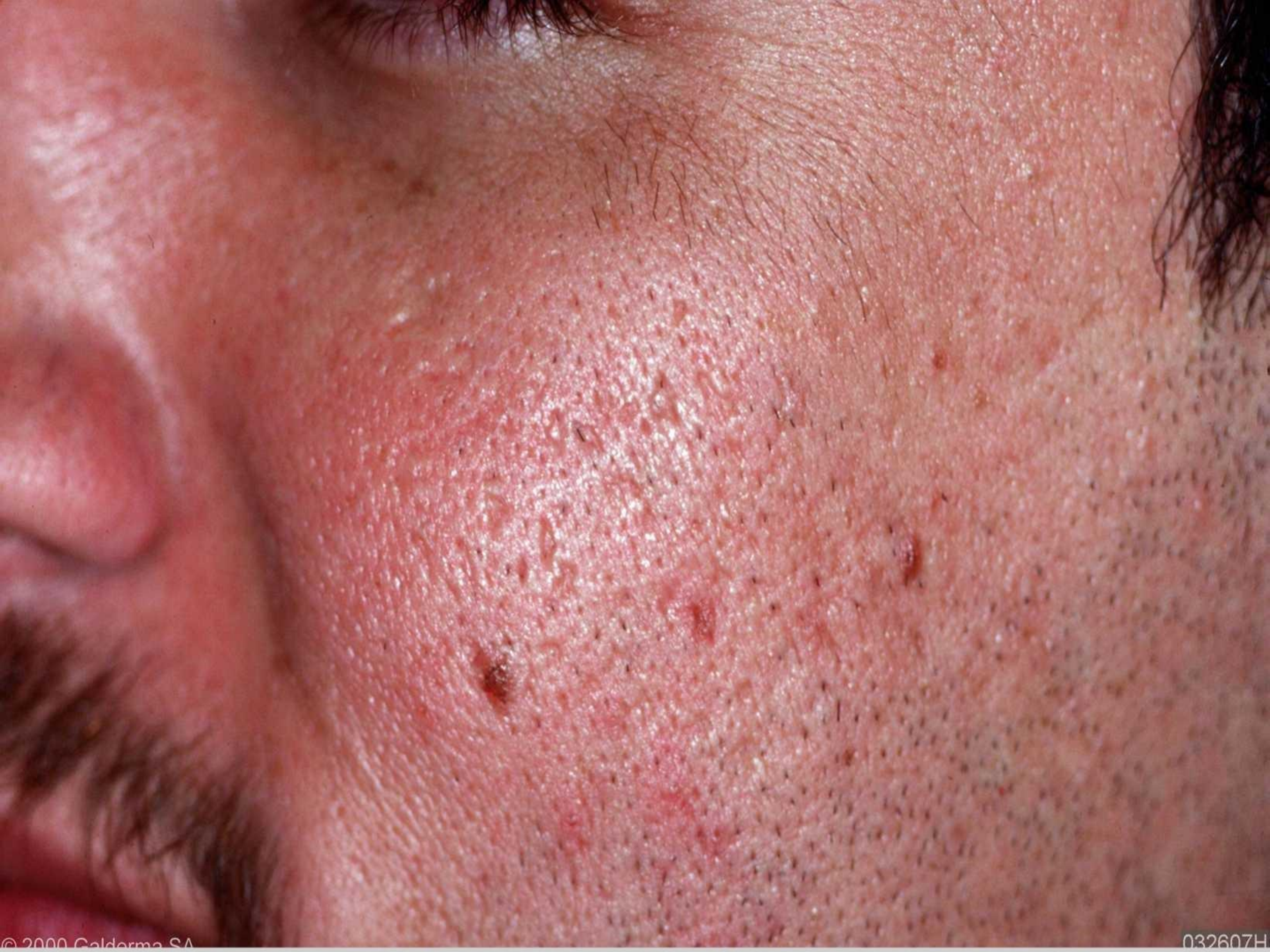

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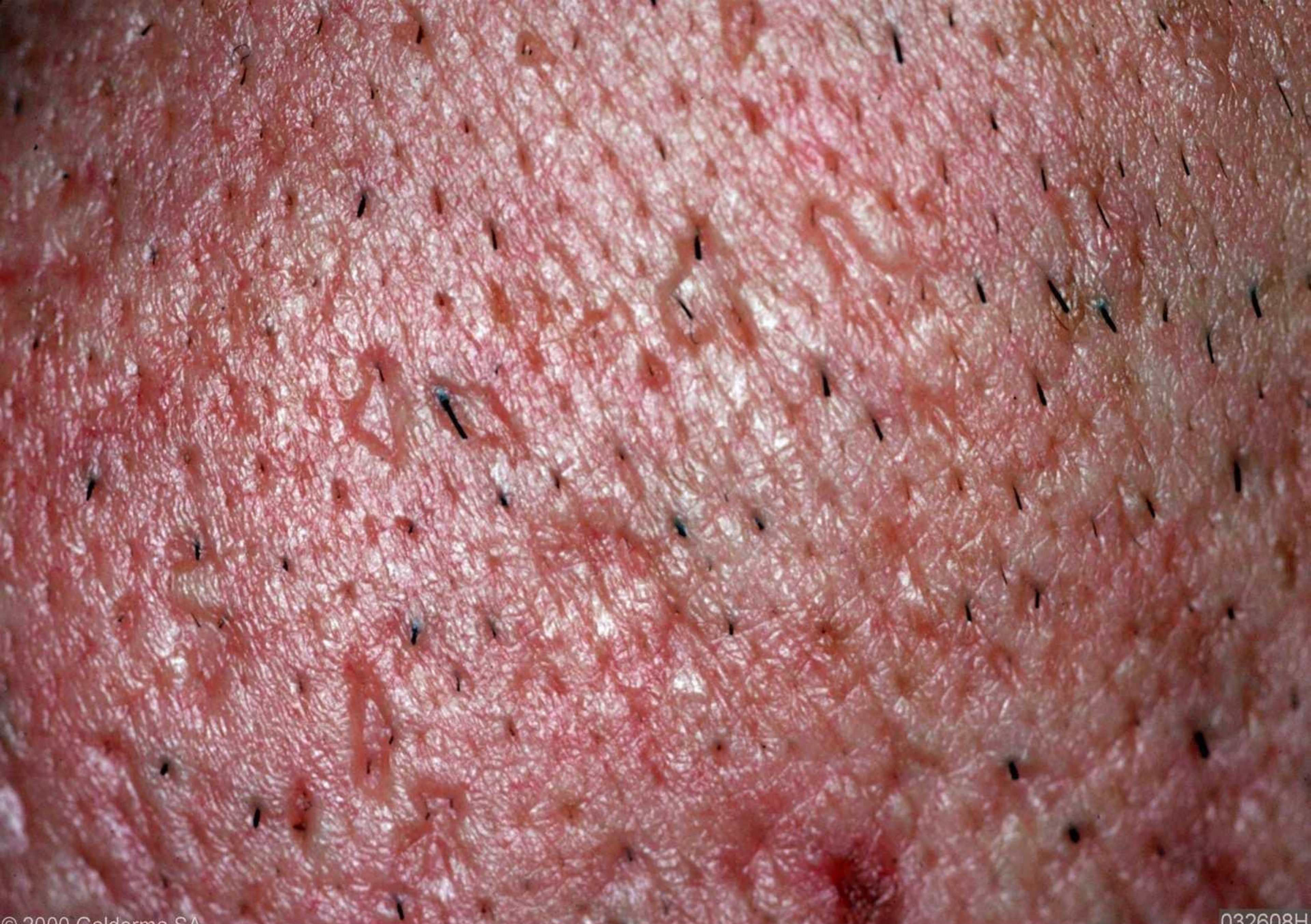

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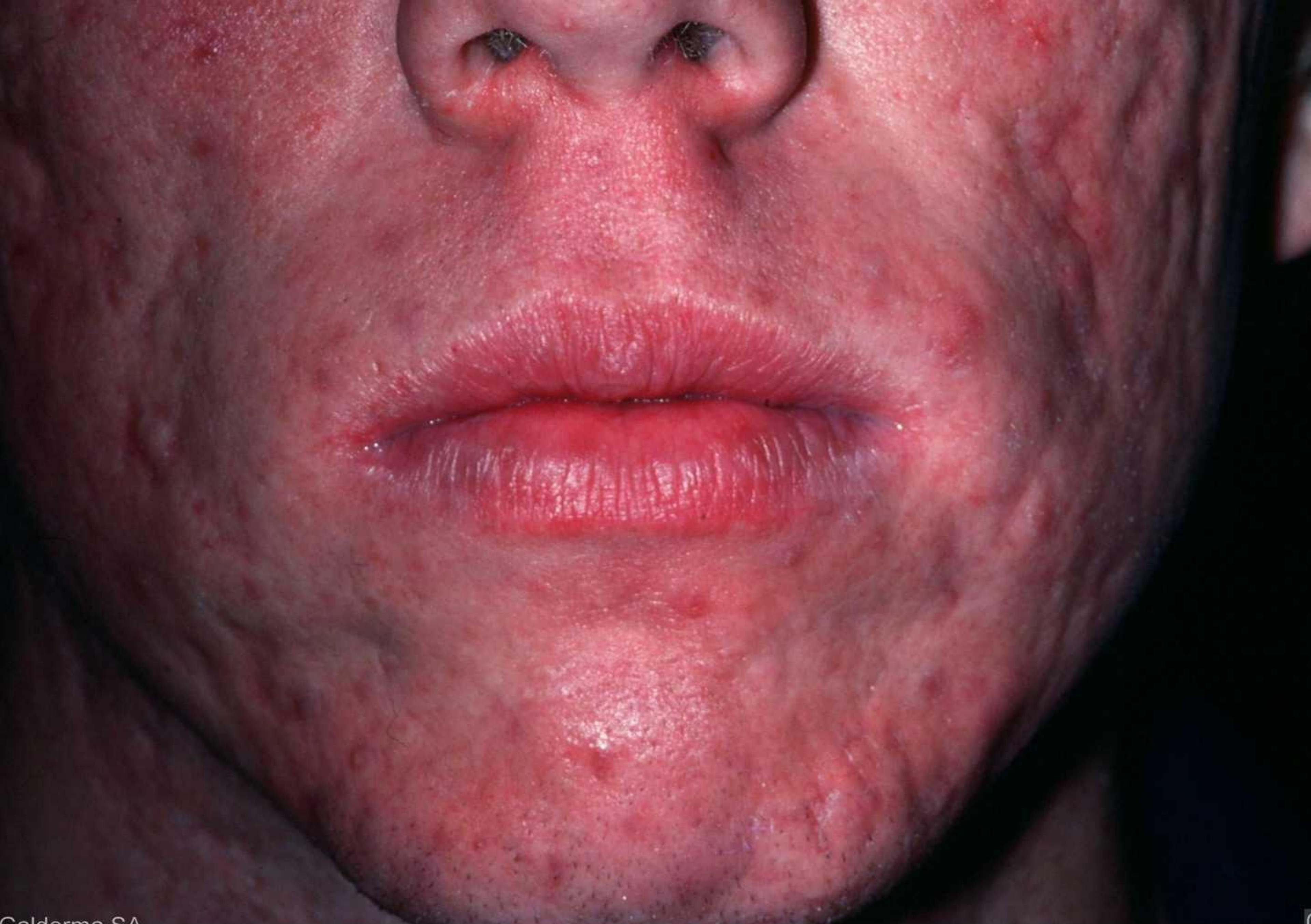
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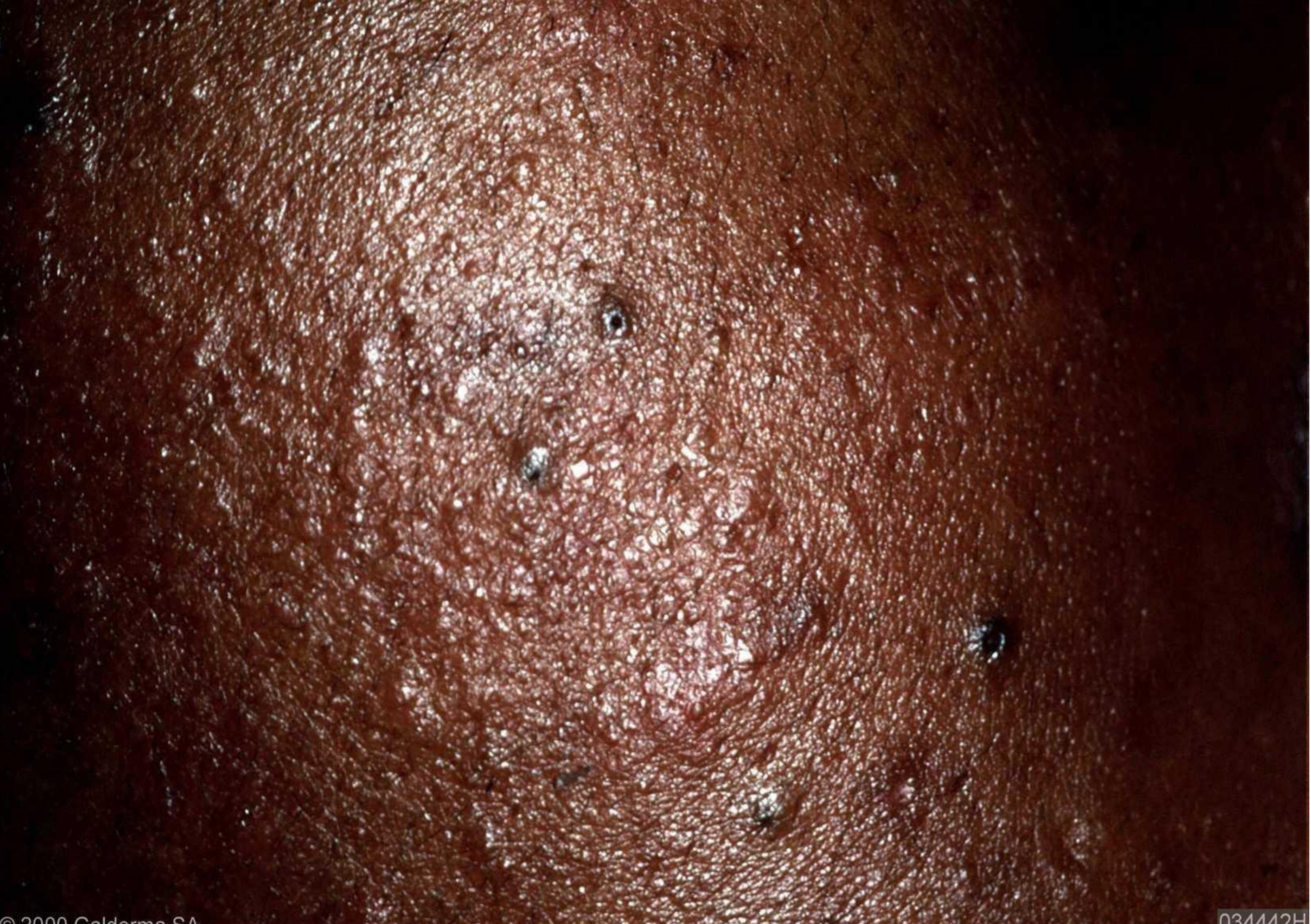

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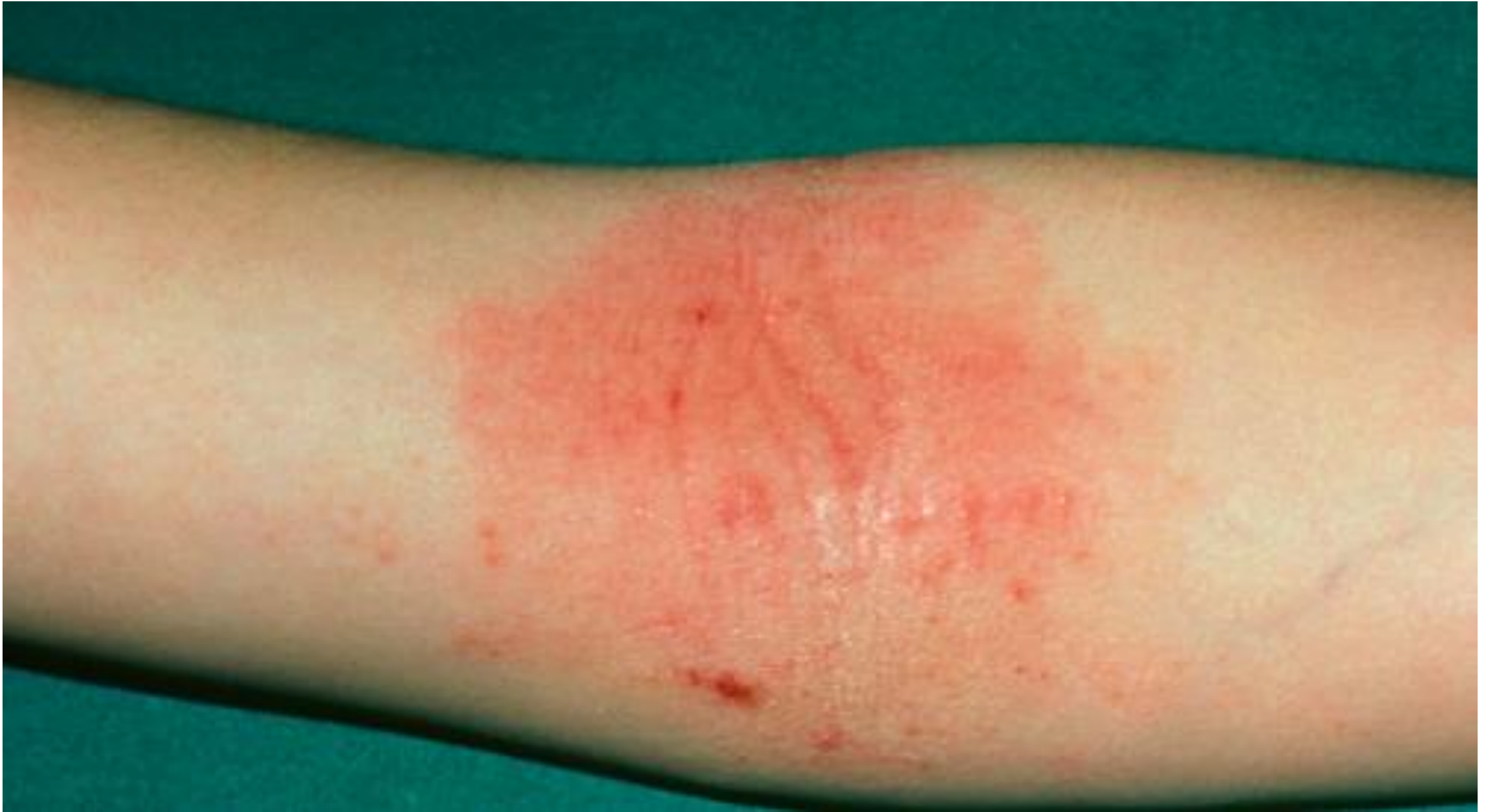
When to refer on

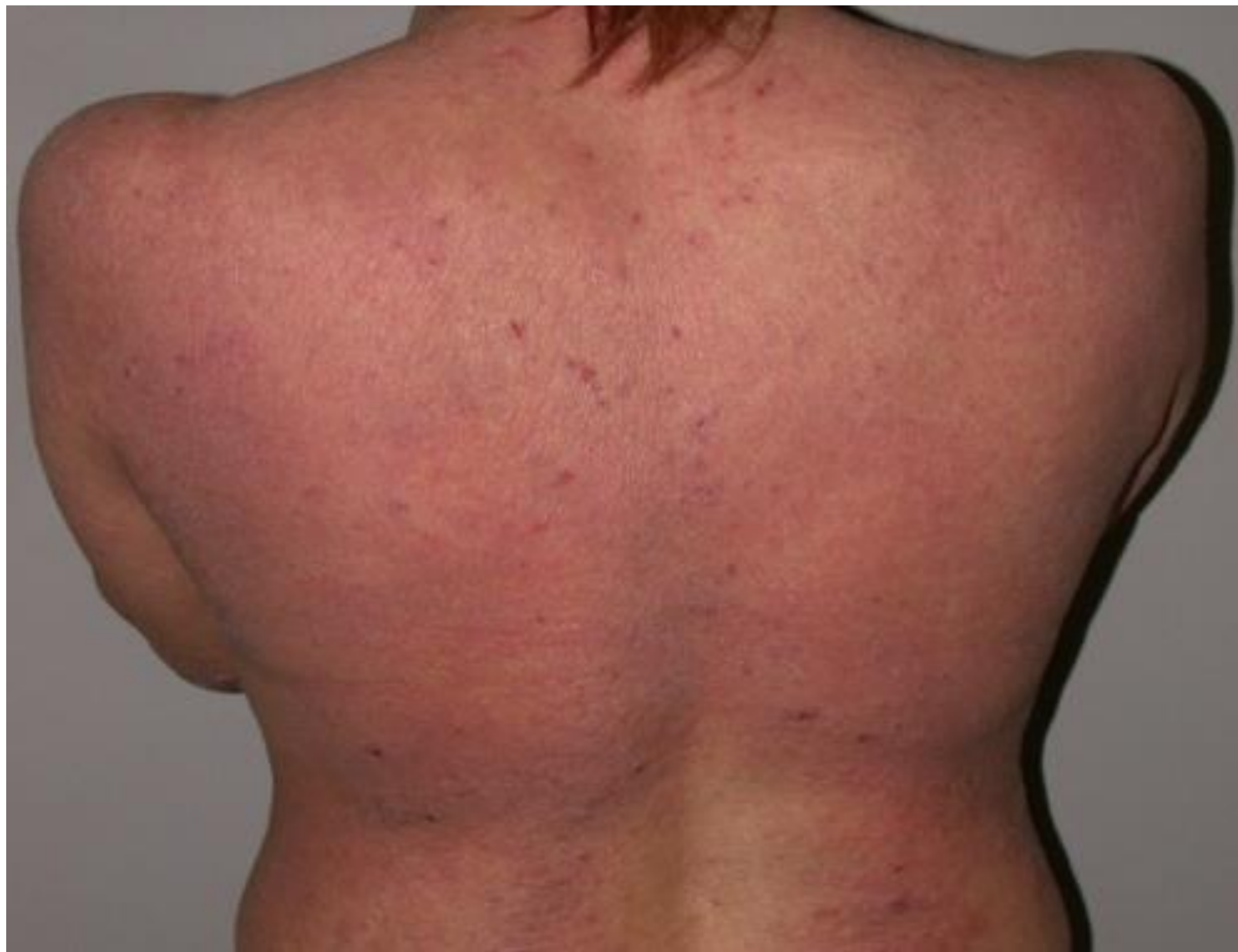
- Failure to improve when using combination topical and systemic treatment
- Evidence of scarring
- Severe psychological impact
- Moderate to severe disease
- Uncertain of diagnosis

Isotretinoin (Roaccutane)

- FBC/UE/LFTs/Fasting Lipids
- Contraception for female of child bearing age
- Relative contraindication in depression
- 4-6mth course 1mg/kg
- Side-effects
  - teratogenicity
  - lipid/LFT disruption
  - dry lips/nose/eyes/skin
  - muscle aches
  - irregular periods
  - depression

Eczema





Eczema

- Eczema and dermatitis are often used to describe the same condition
- Eczema is a lymphocyte-mediated driven inflammation
- Eczema can be subdivided into exogenous or endogenous causes

Exogenous Eczema

- Contact eczema – Allergic or Irritant
- Seborrhoeic eczema
- Sun aggravated eczema

Endogenous Eczema

- Varicose eczema
- Discoid eczema
- Hand eczema (pompholyx)
- **Atopic eczema**

Classification of Eczema

Exogenous

- **Contact eczema – Allergic or Irritant**
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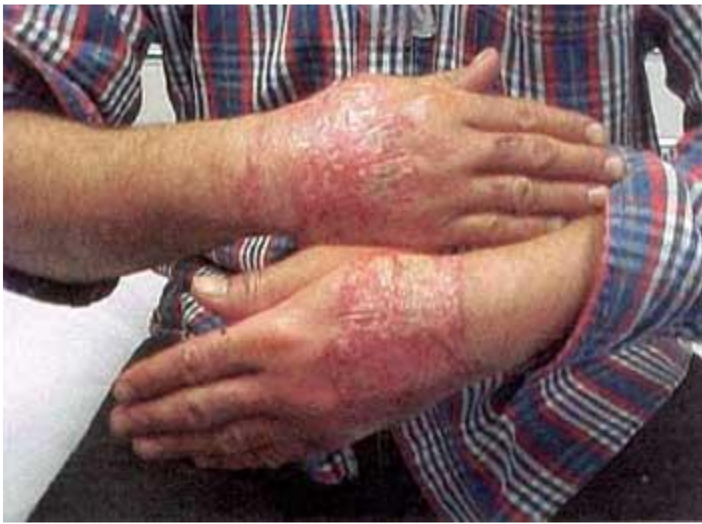
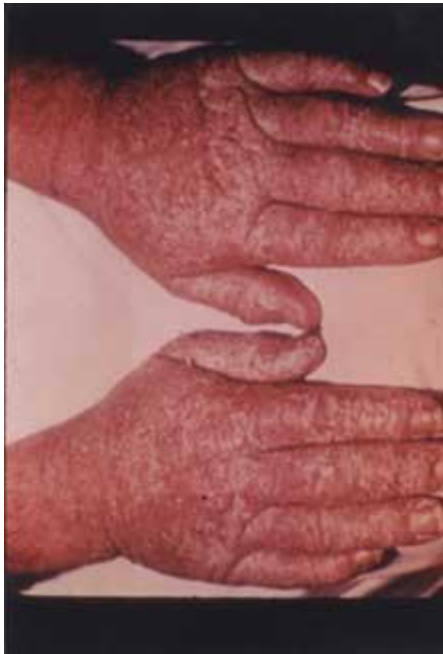
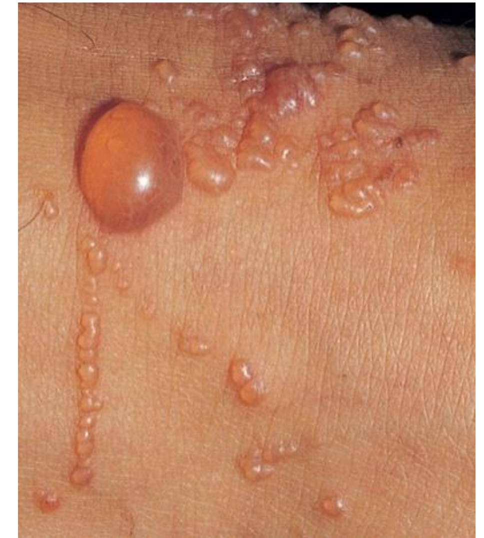
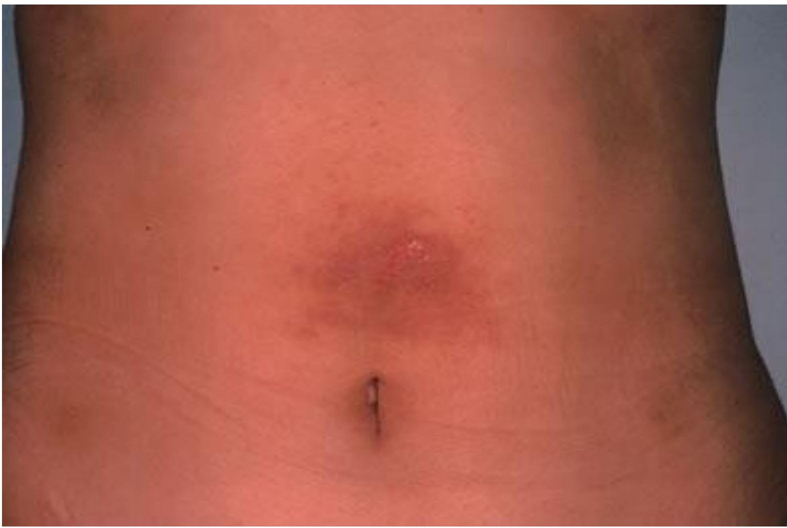


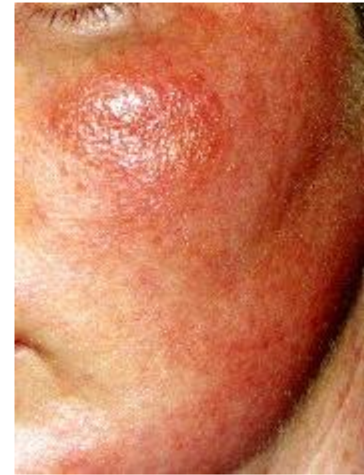


cement



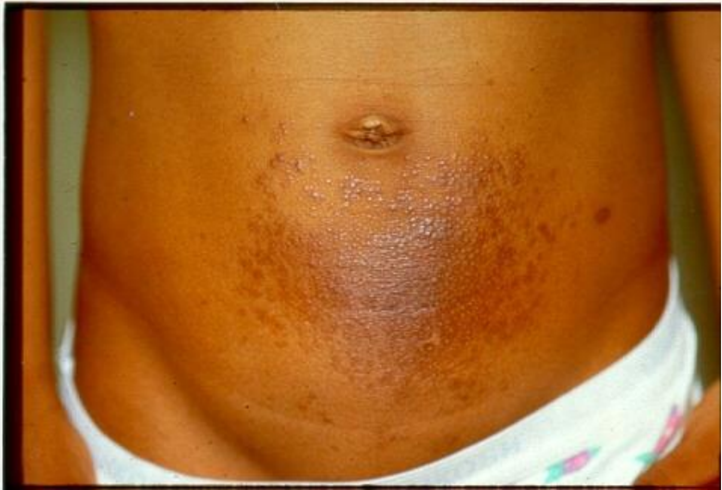
Poison ivy

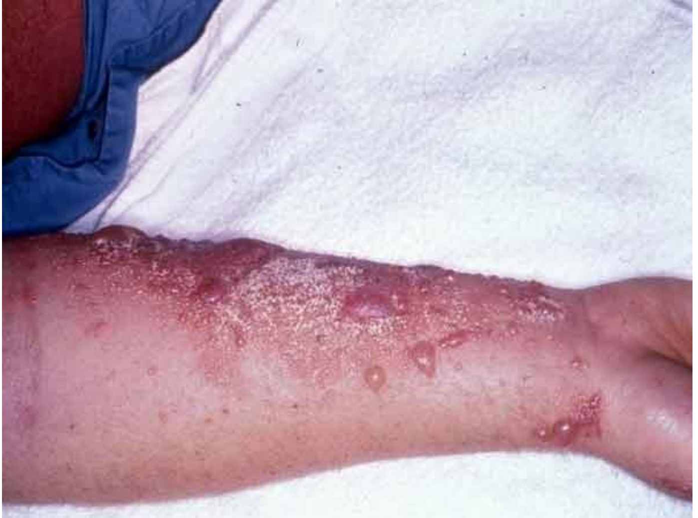


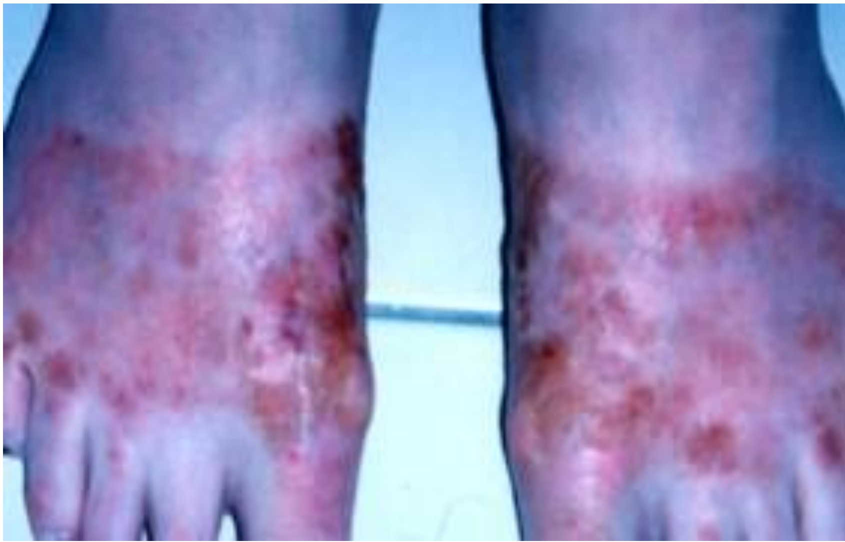


nickel

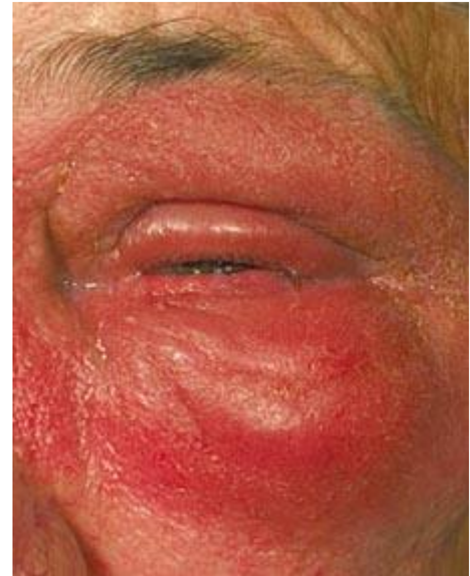
cosmetic



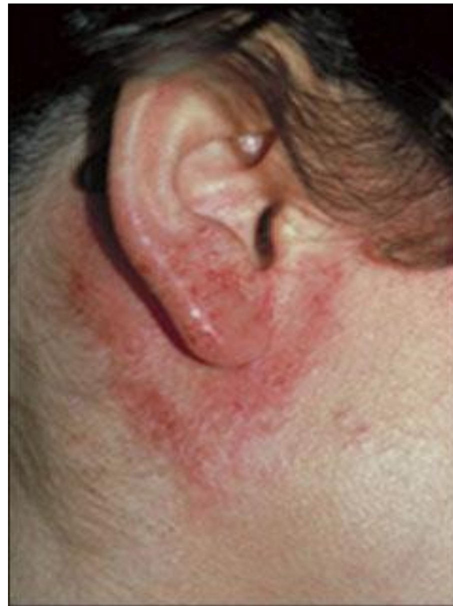




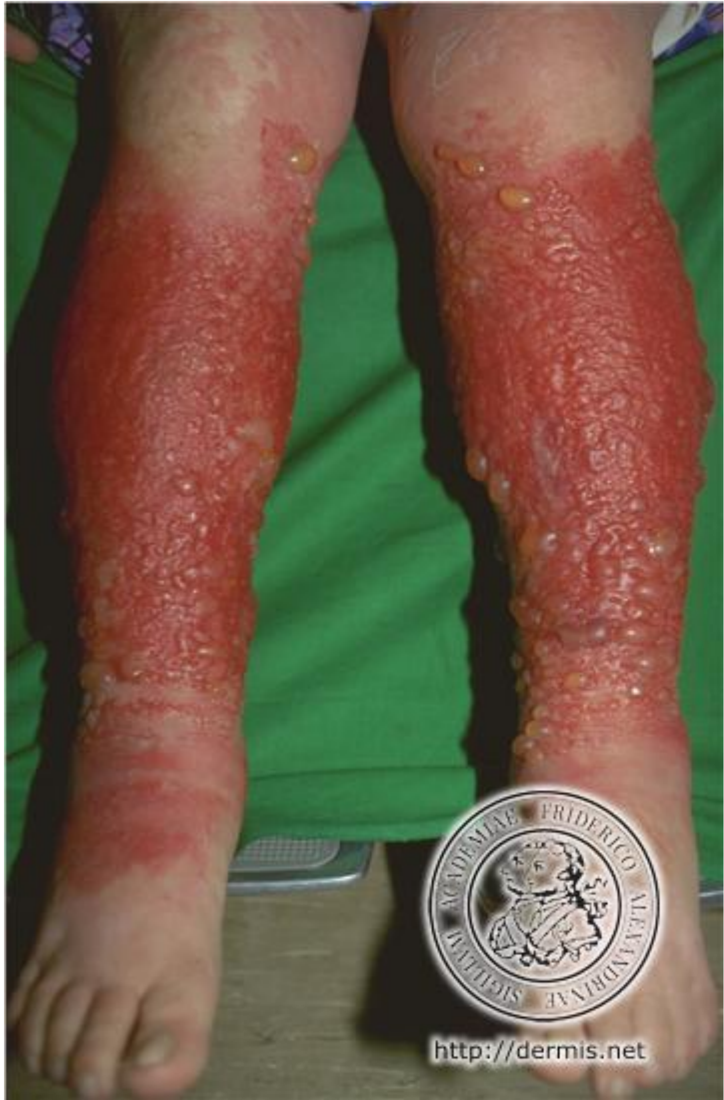
Shoes



Eye drop preservative



Earrings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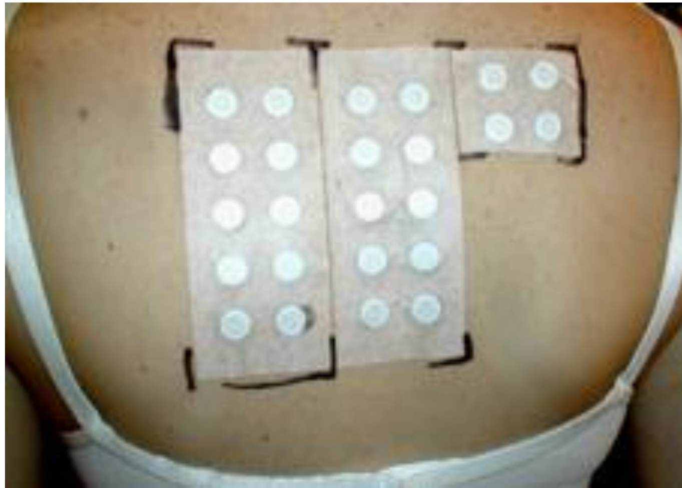
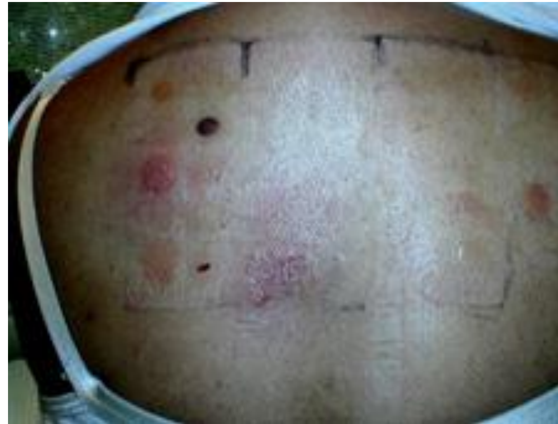
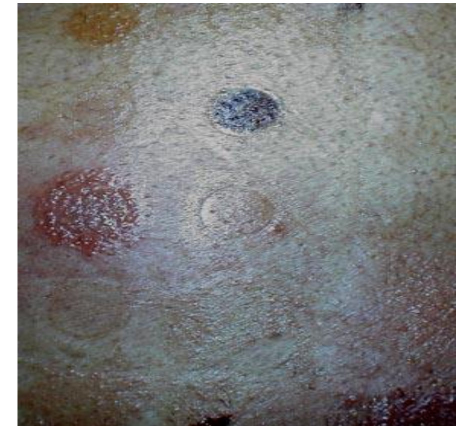
http://dermis.net

Patch Testing







Classification of Eczema

Exogenous

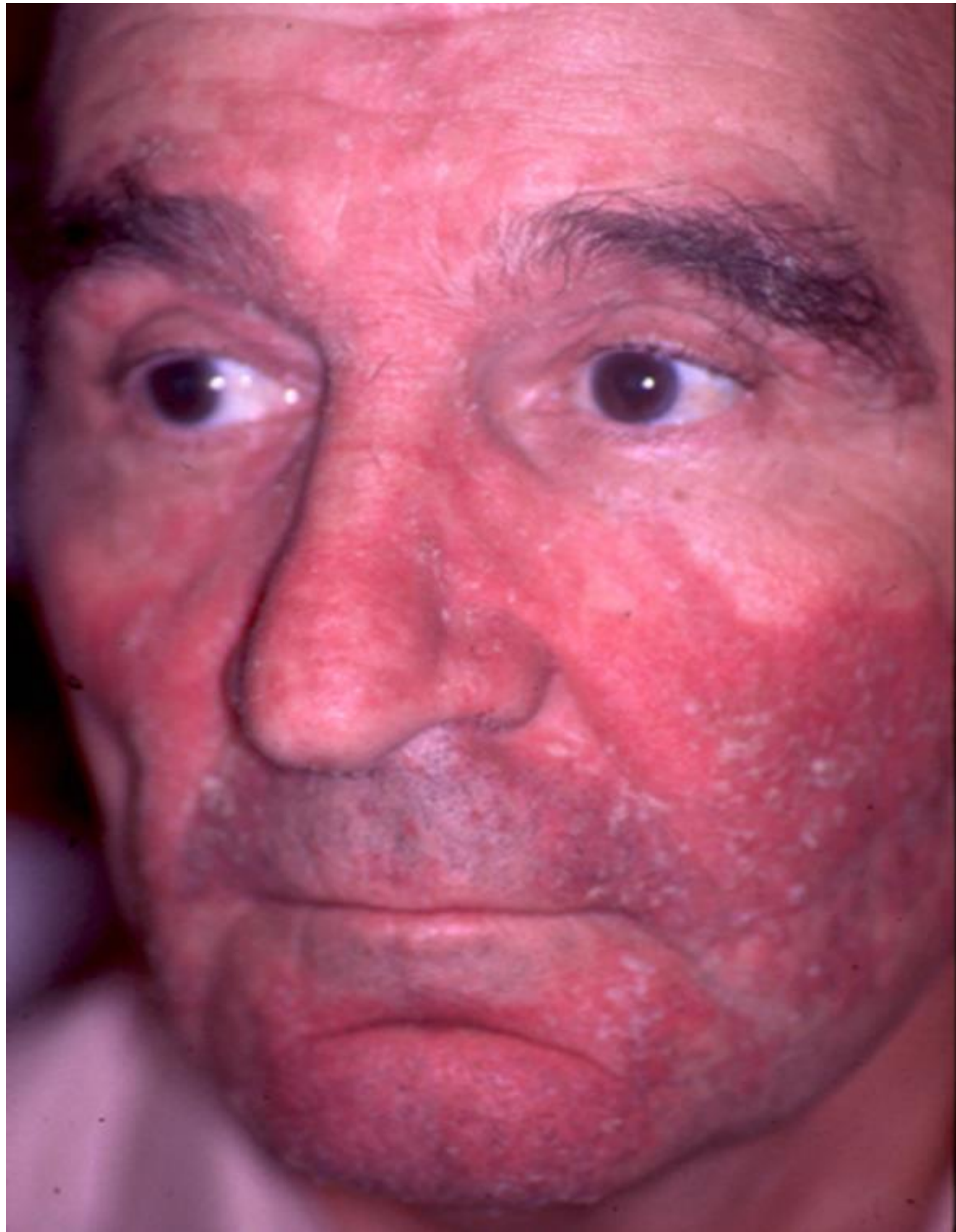
- Contact eczema – Allergic or Irritant
- **Seborrhoeic eczema**
- Sun aggravated eczema

Endogenous

- Varicose eczema
- Discoid eczema
- Hand eczema (pompholyx)
- Atopic eczema

Seborrhoeic Eczema

- Occurs in adults, children and babies
- Usually due to a yeast, *Malassezia furfur (Pityrosporum ovale)* [found on the skin of patients]
- In babies it is often associated with cradle cap
- In adults seborrhoeic eczema usually starts on the scalp as dandruff.



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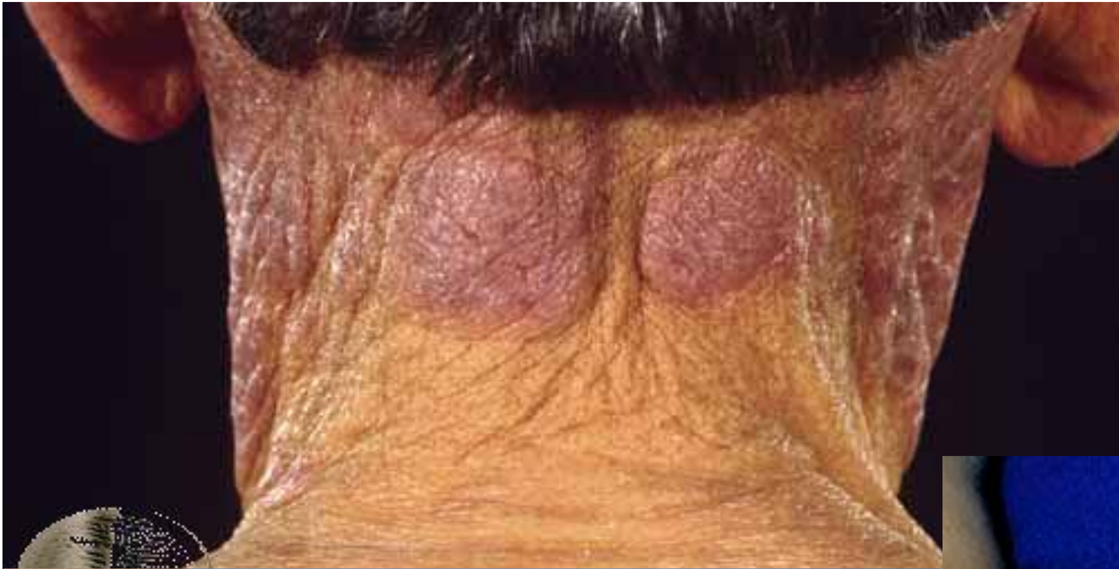
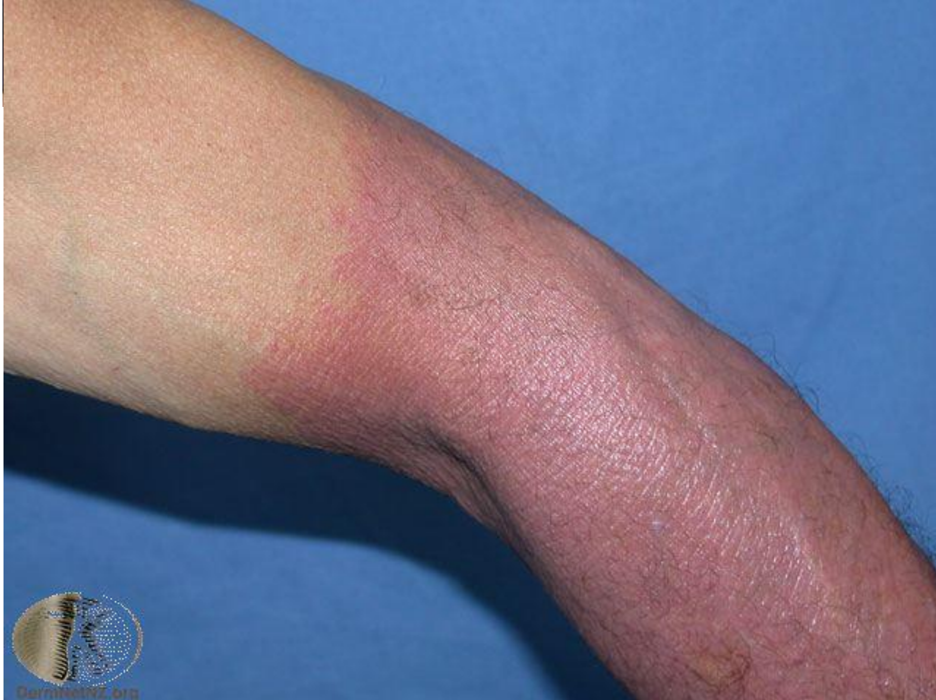
Sun aggravated eczema

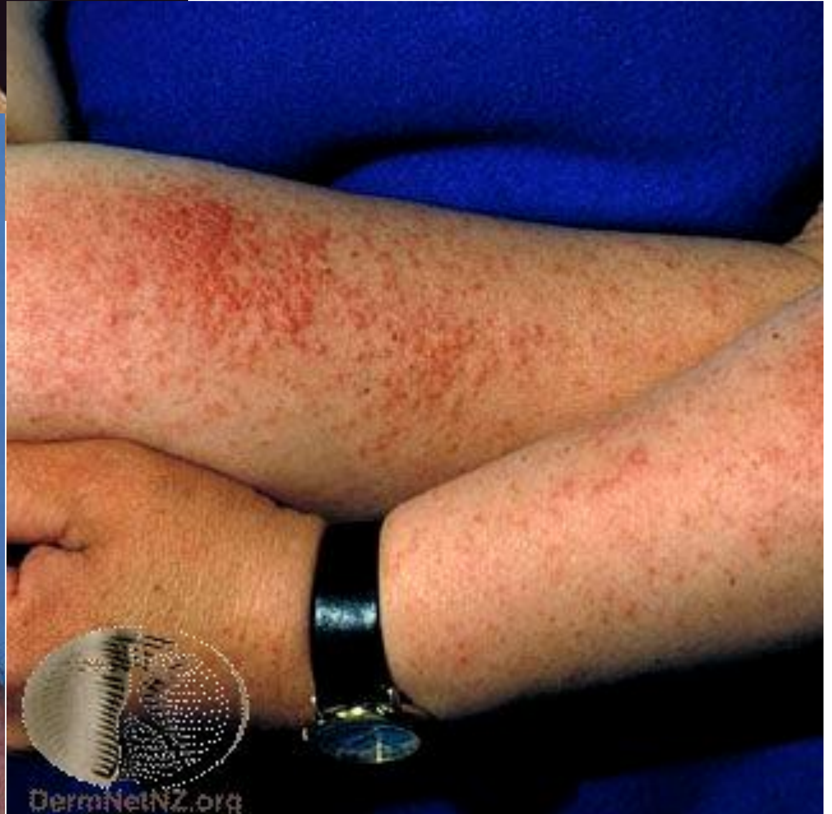
- Can be of two broad types
  1. eczema which develops in response to exposure to ultraviolet light
  2. pre-existing eczema which worsens on exposure

- Usually more common in men

- Treated with broad spectrum photo-protection and/or light avoidance is beneficial






DermNetNZ.org

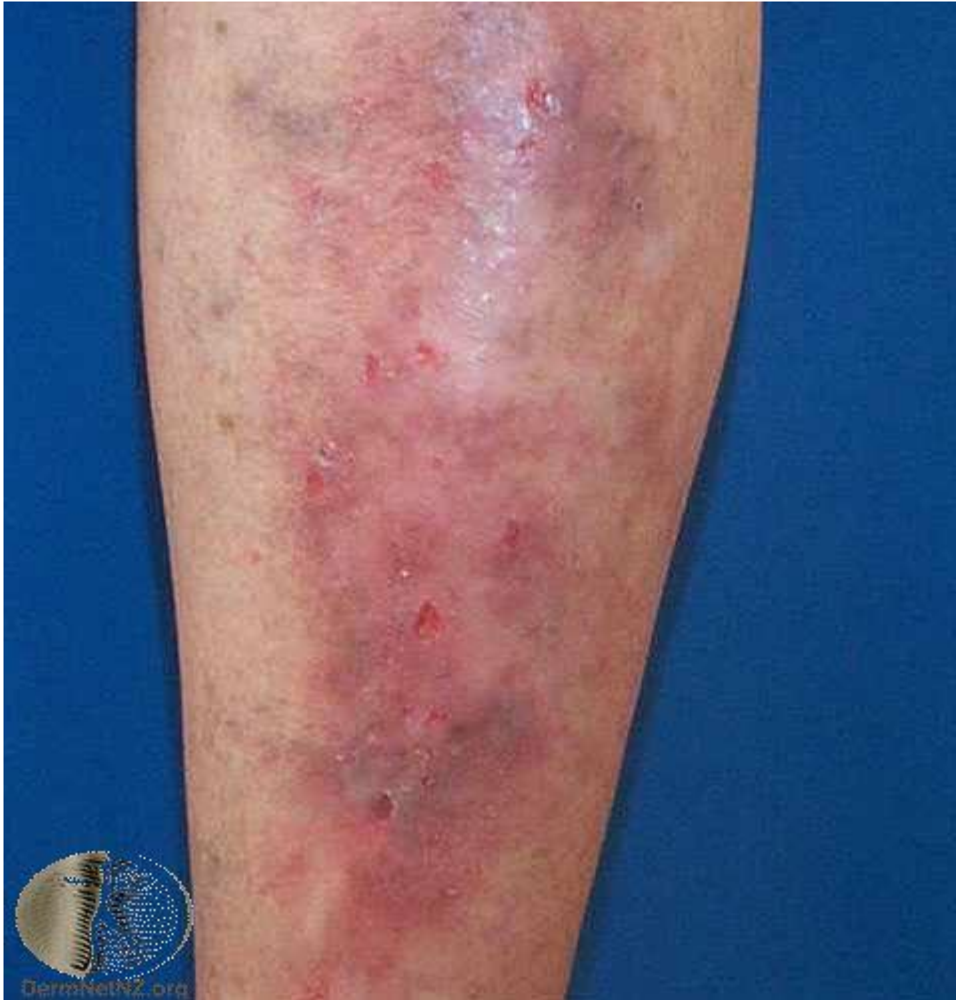
Classification of Eczema

Exogenous

- Contact eczema – Allergic or Irritant
- Seborrhoeic eczema
- Sun aggravated eczema

Endogenous

- **Varicose eczema**
- Discoid eczema
- Hand eczema (pompholyx)
- Atopic eczema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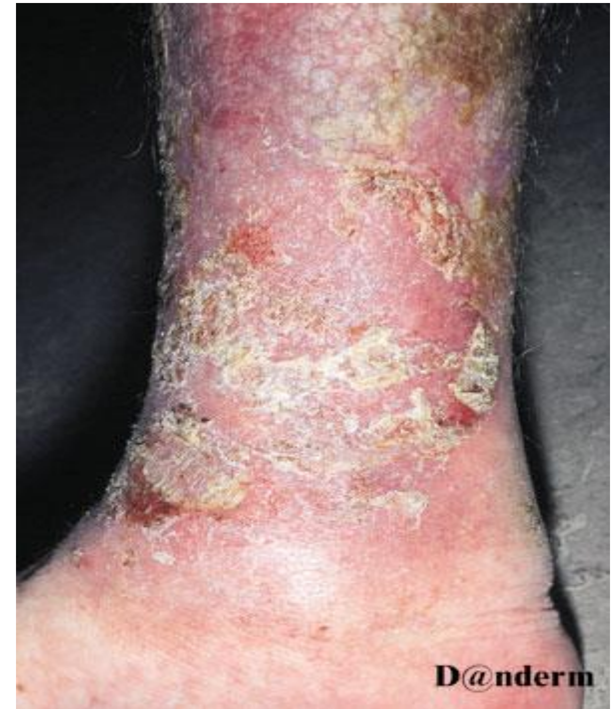
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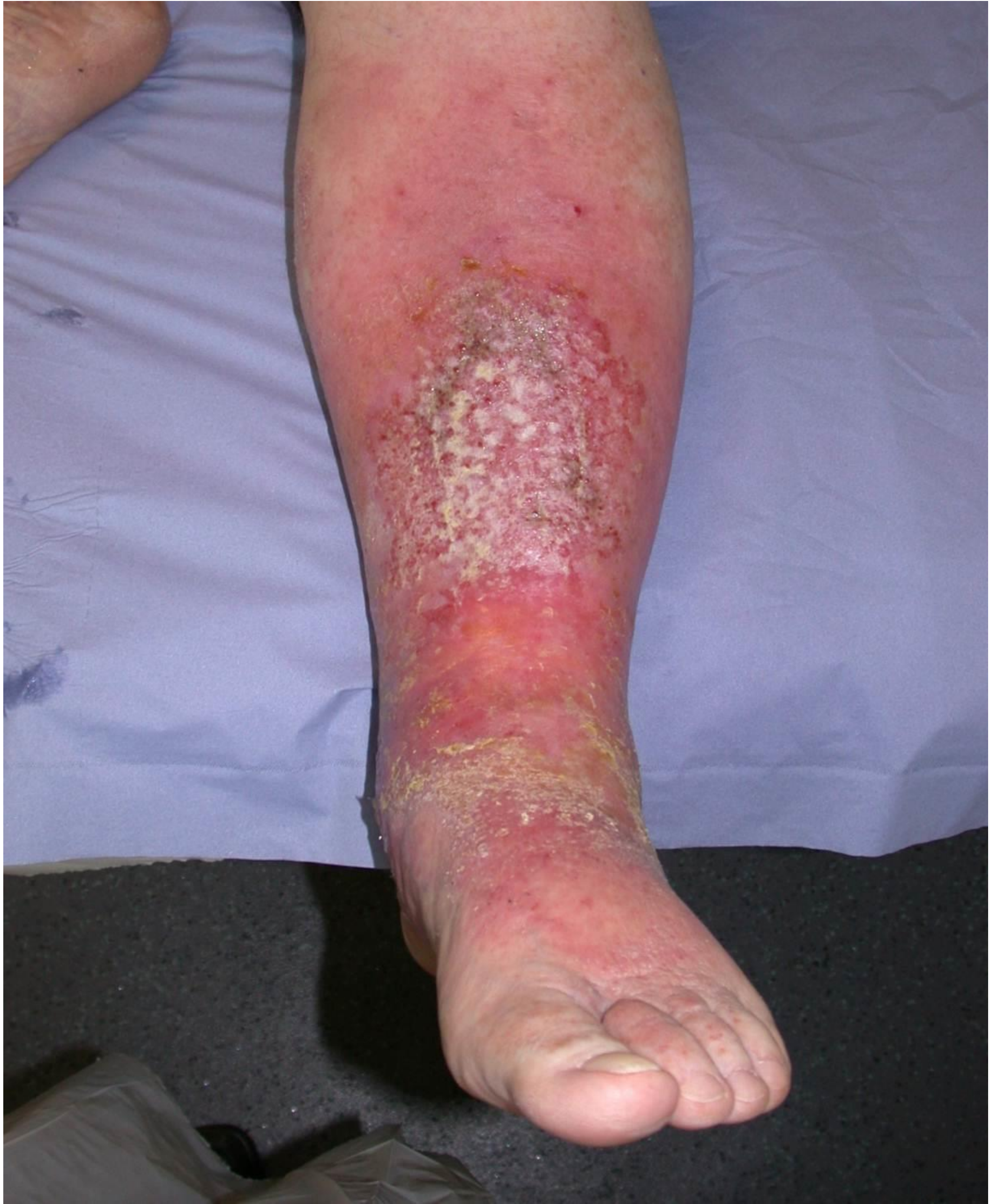

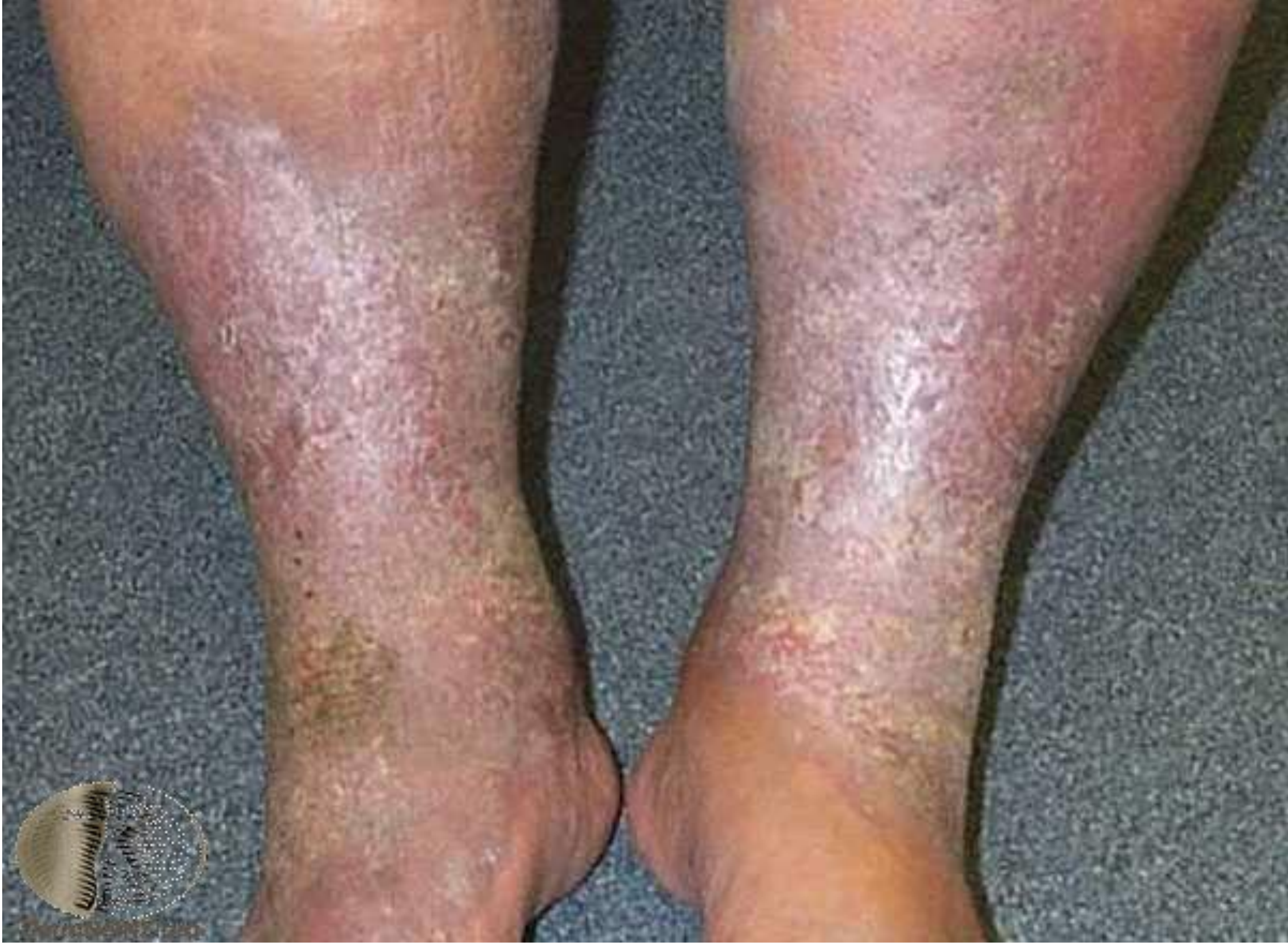

DermNetNZ.or

Varicose Eczema

- Also known as Gravitational/stasis eczema
- Associated with venous hypertension
- Due to blood leaking through the small vessels in the legs
- Legs become hot and itchy-tiny blisters may appear above the ankle area
- If not treated, skin becomes thin, fragile, shiny and flaky
- Prone to crack and break down

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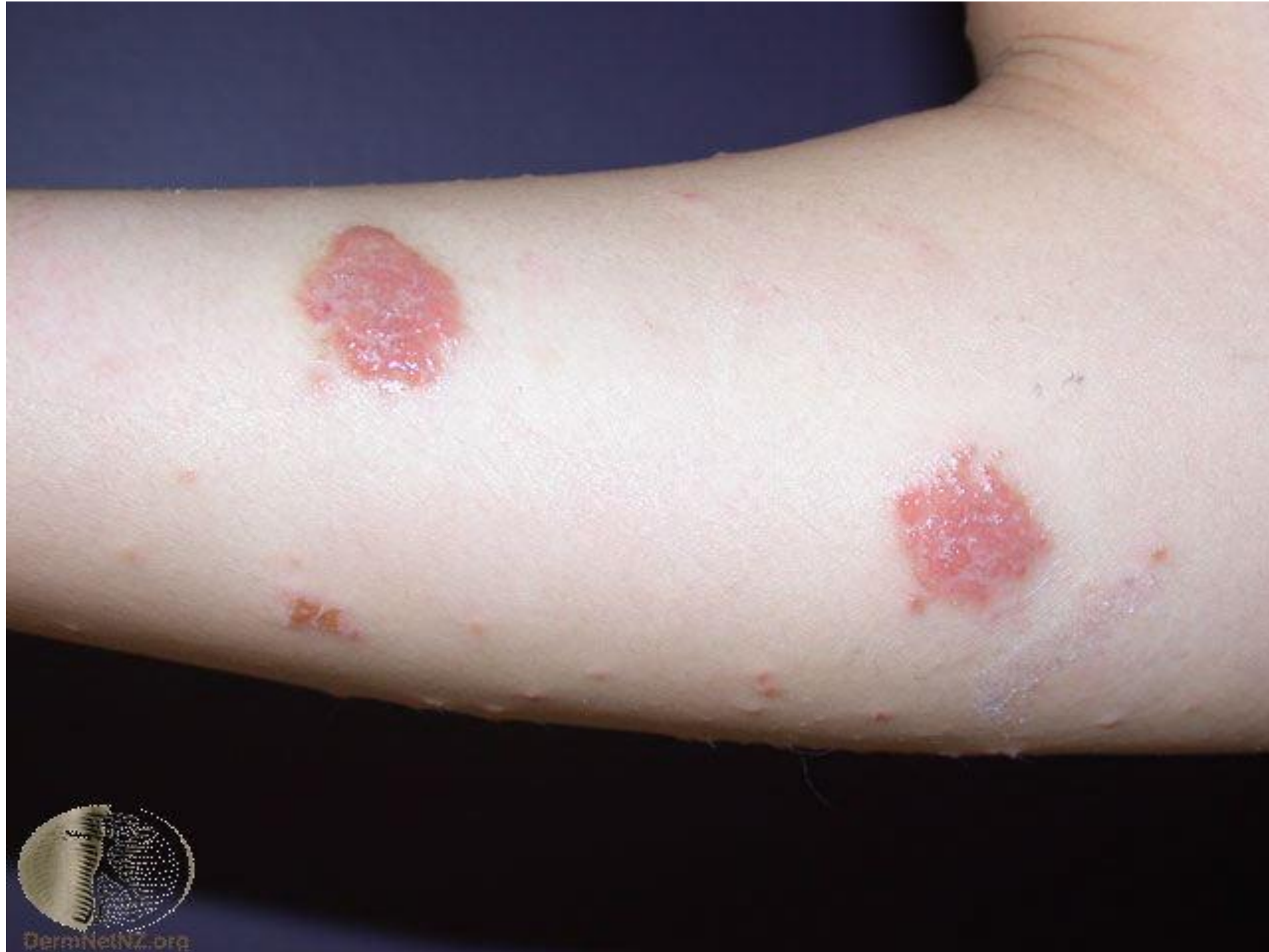
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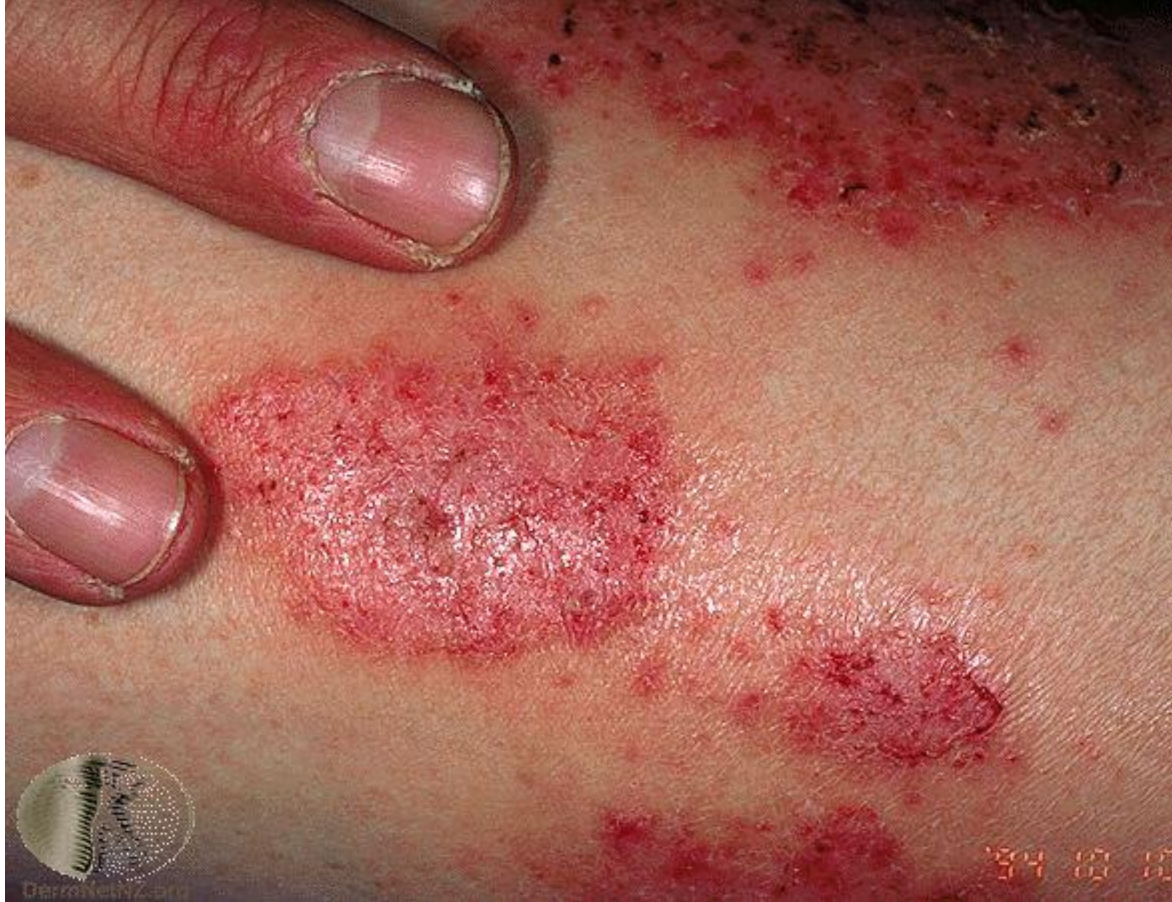

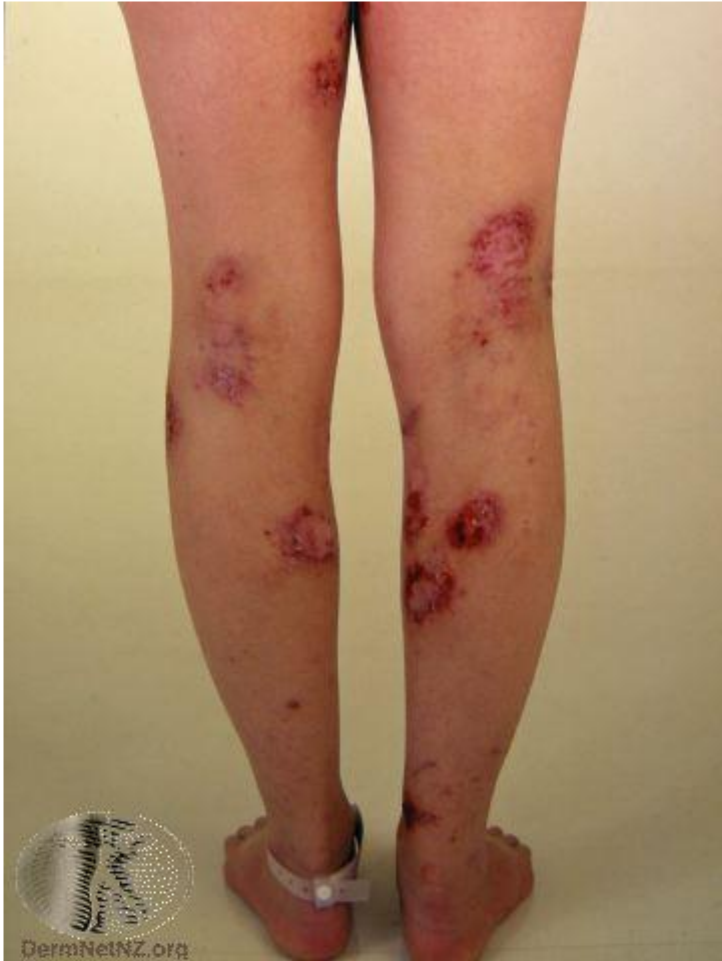
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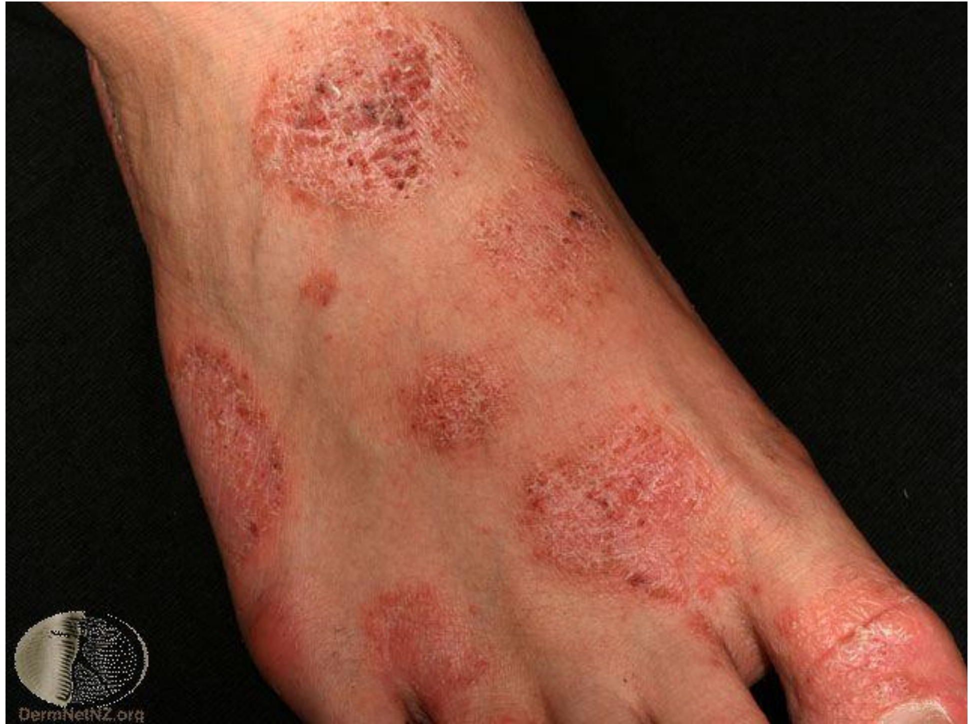
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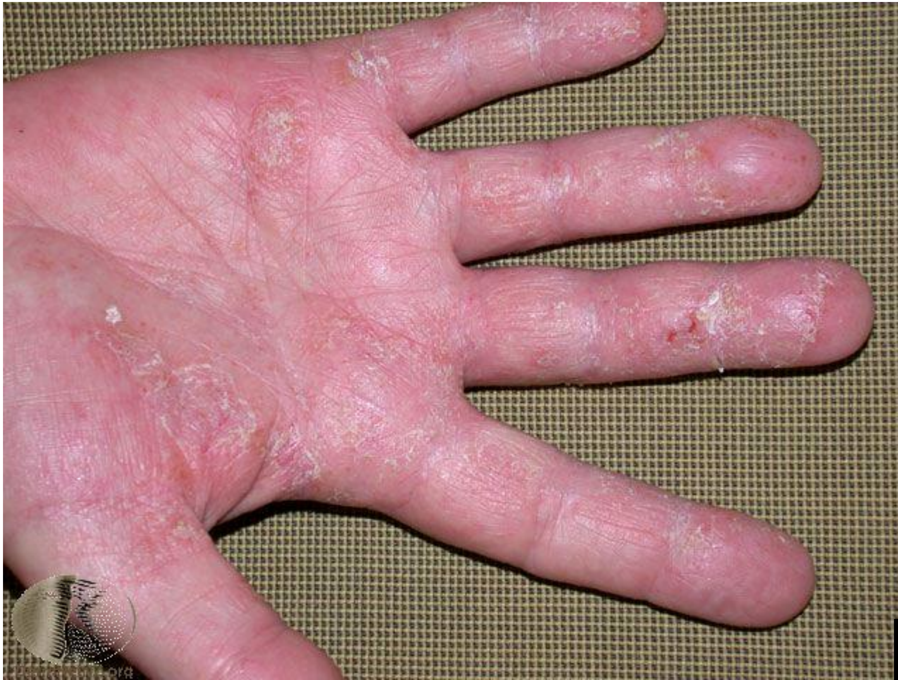

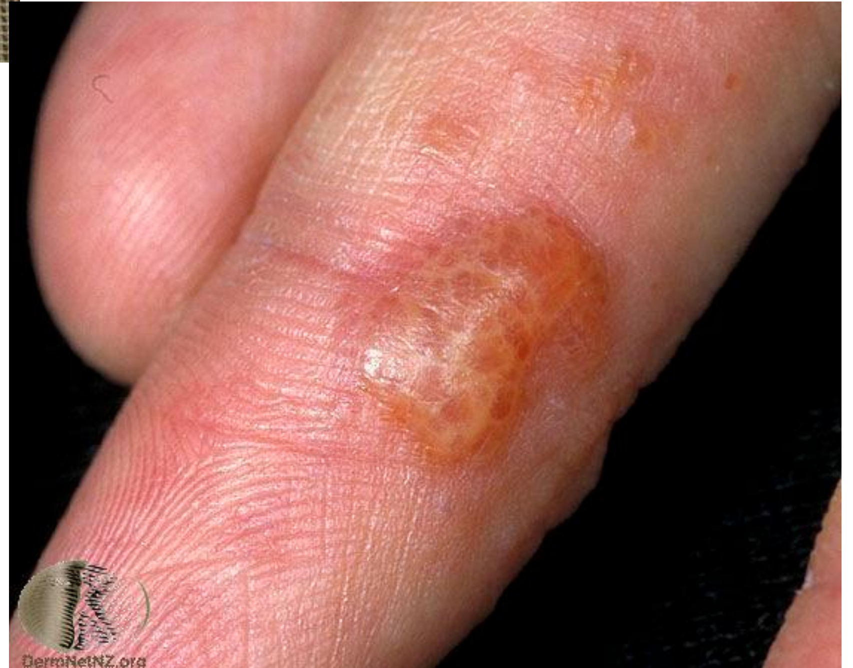
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Classification of Eczema

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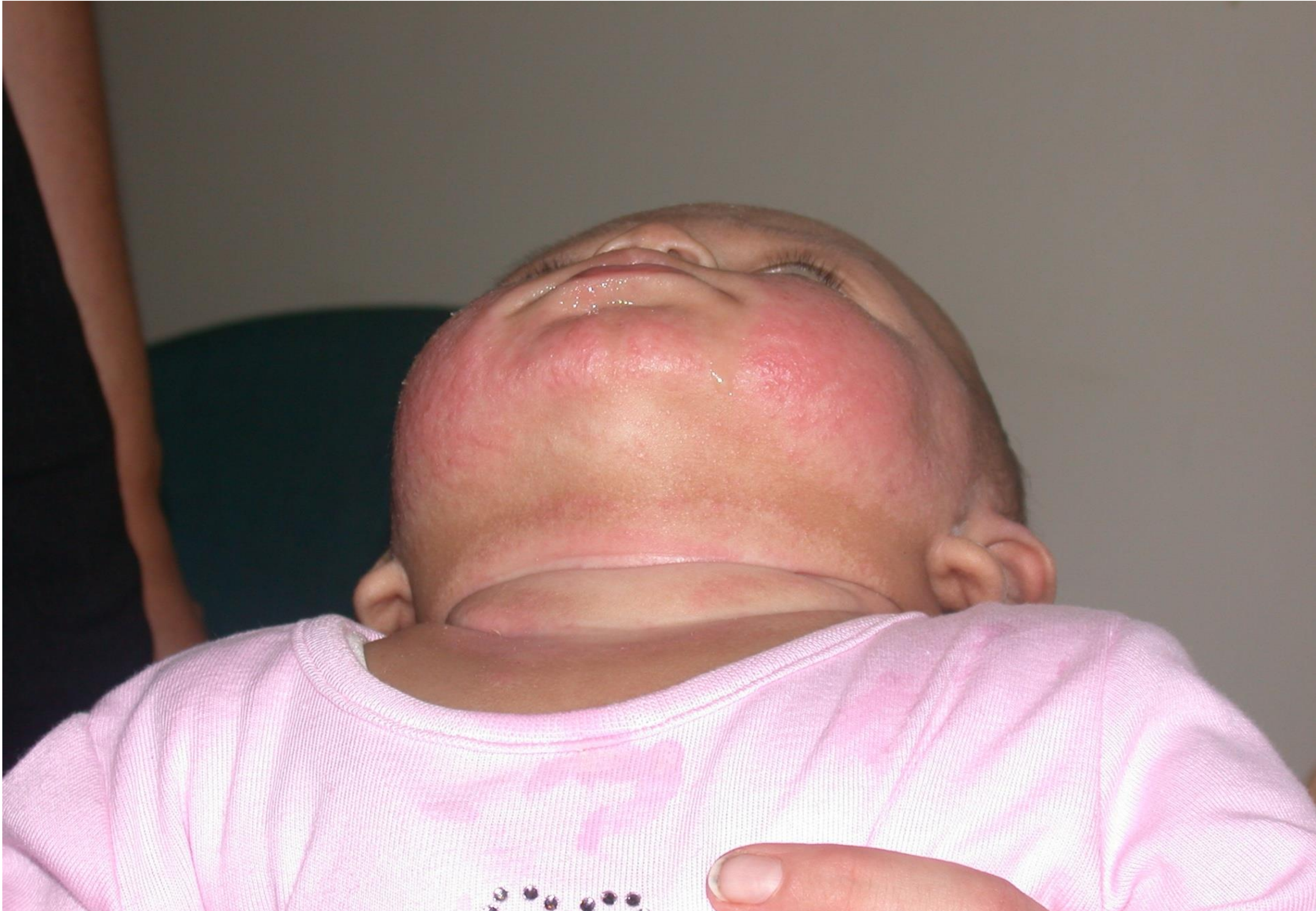
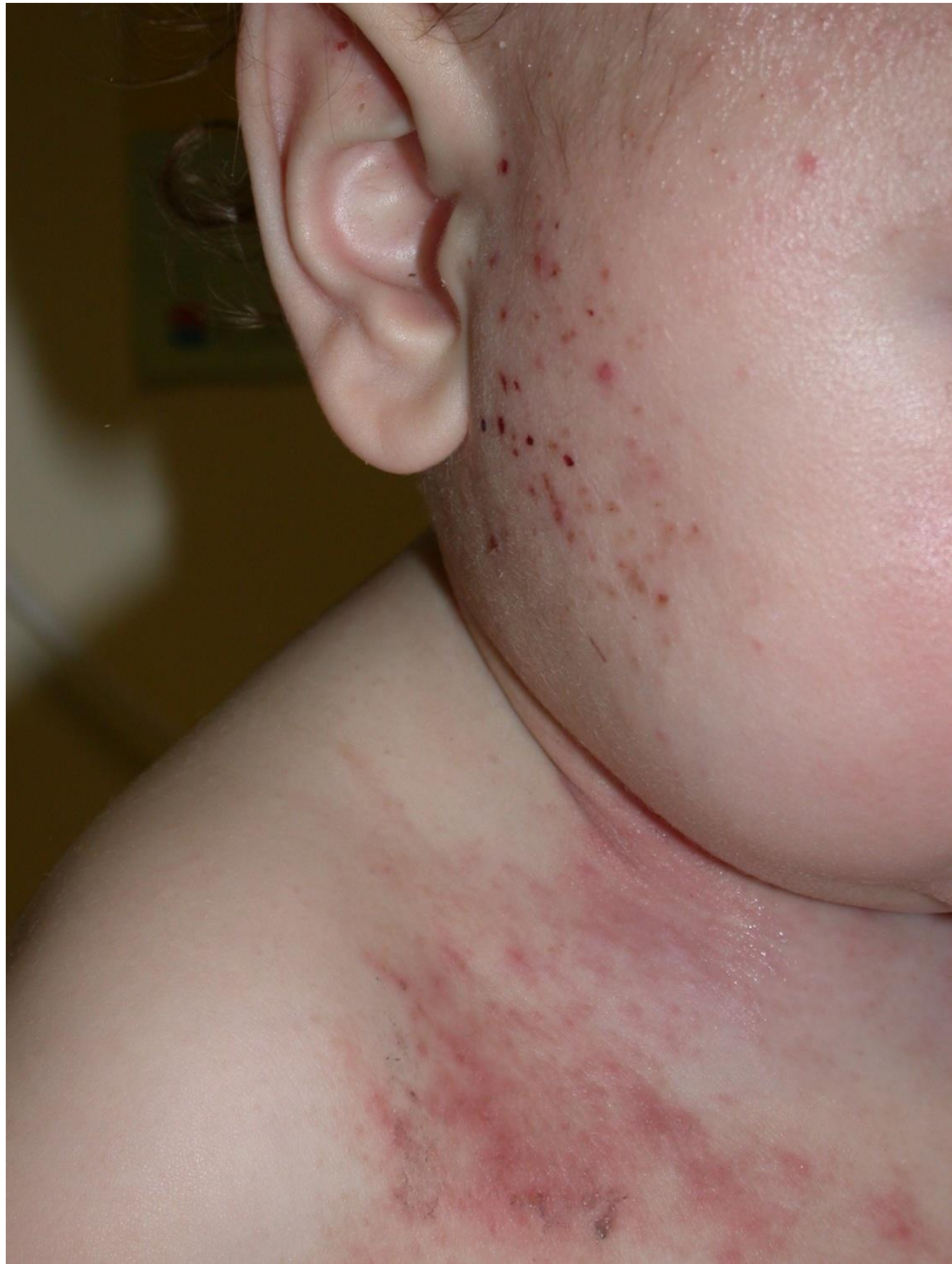
- Hand eczema (pompholyx)
- **Atopic eczema**

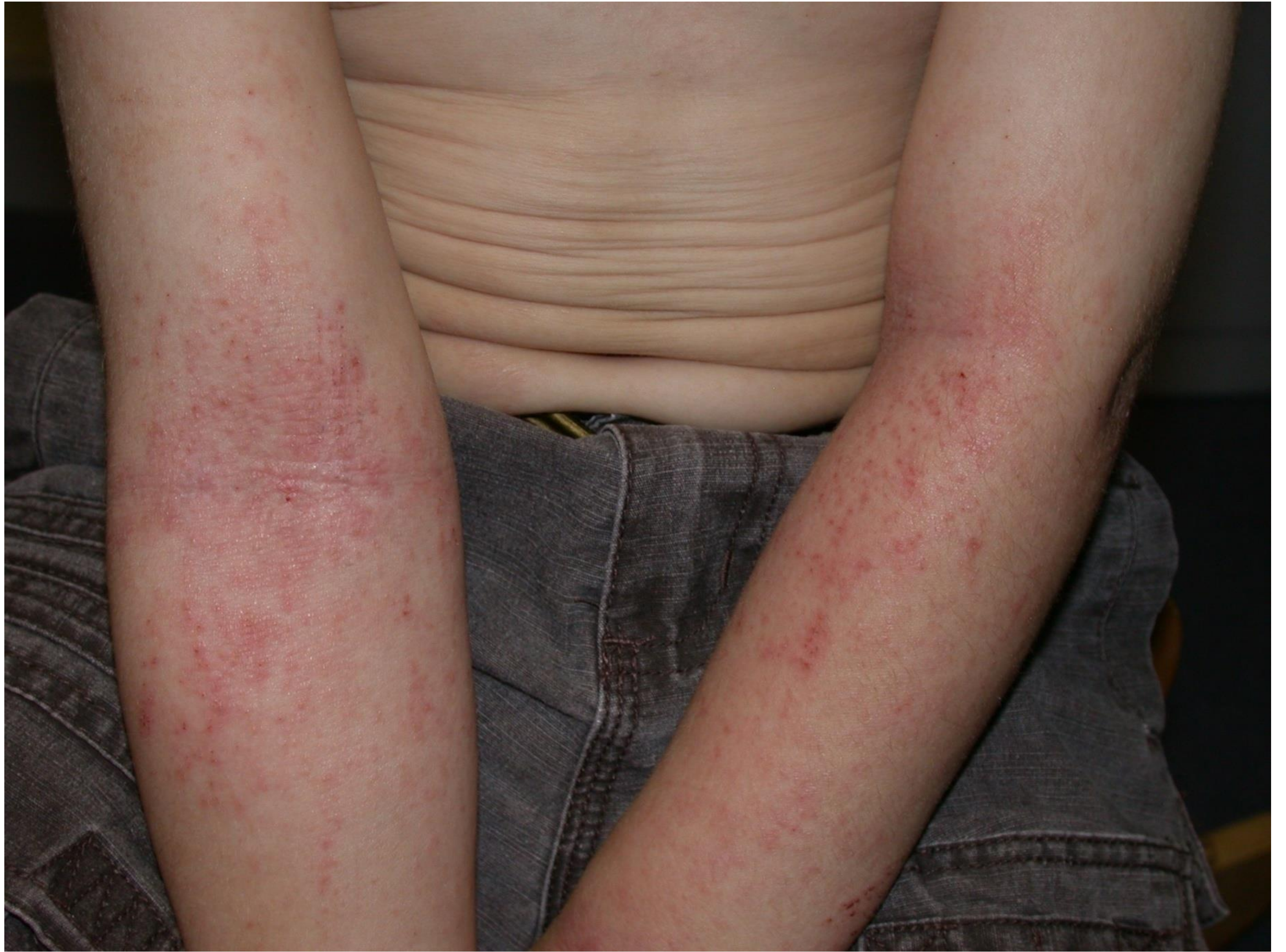
Atopic eczema

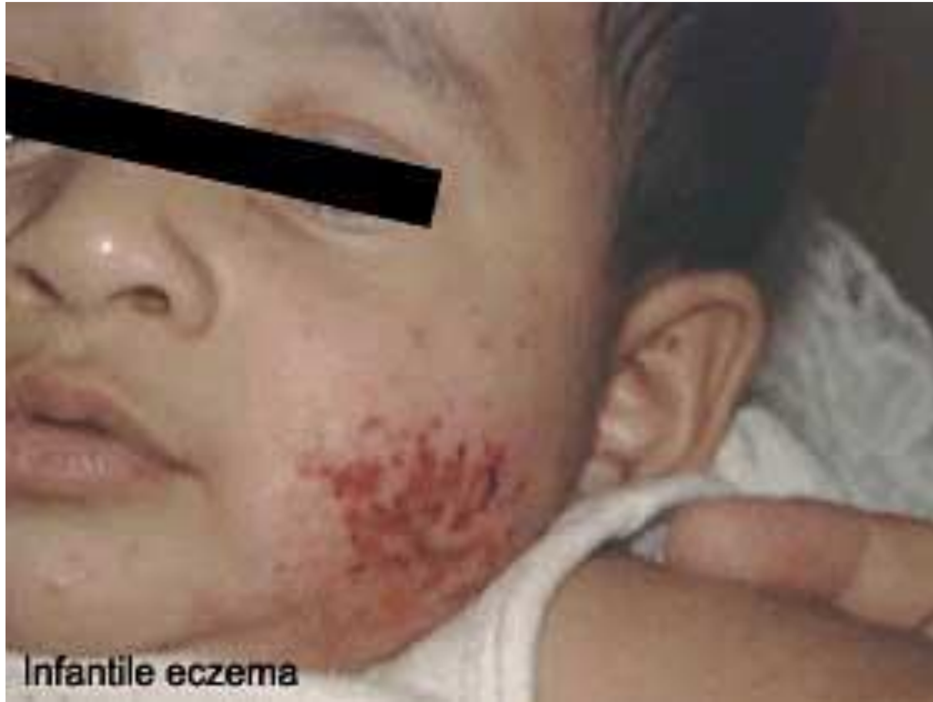
- Derived from the Greek ekzein - meaning to boil
- A chronic, relapsing, allergic skin condition[1]
- Characterised by intense itching, dry skin and inflammation[1], with increased transepidermal water loss[2]
- Influenced by genetic and environmental factors[3], and is strongly associated with asthma, allergic rhinitis and food allergy[3,4]
- The terms atopic dermatitis and atopic eczema are used interchangeably[3,4]

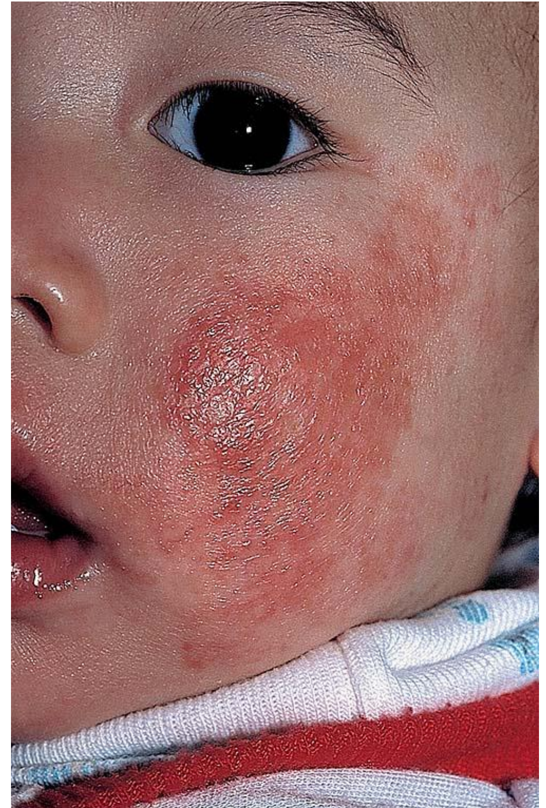
1. Zuberbier T et al. J Allergy Clin Immunol 2006;118:226-32
2. Danby SG, Cork MJ. J Clin Dermatol 2010;1:33-46
3. Zheng T et al. Allergy Asthma Immunol Res. 2011;3:67-73
4. Johansson SG et al. Allergy 2001;56:813-24





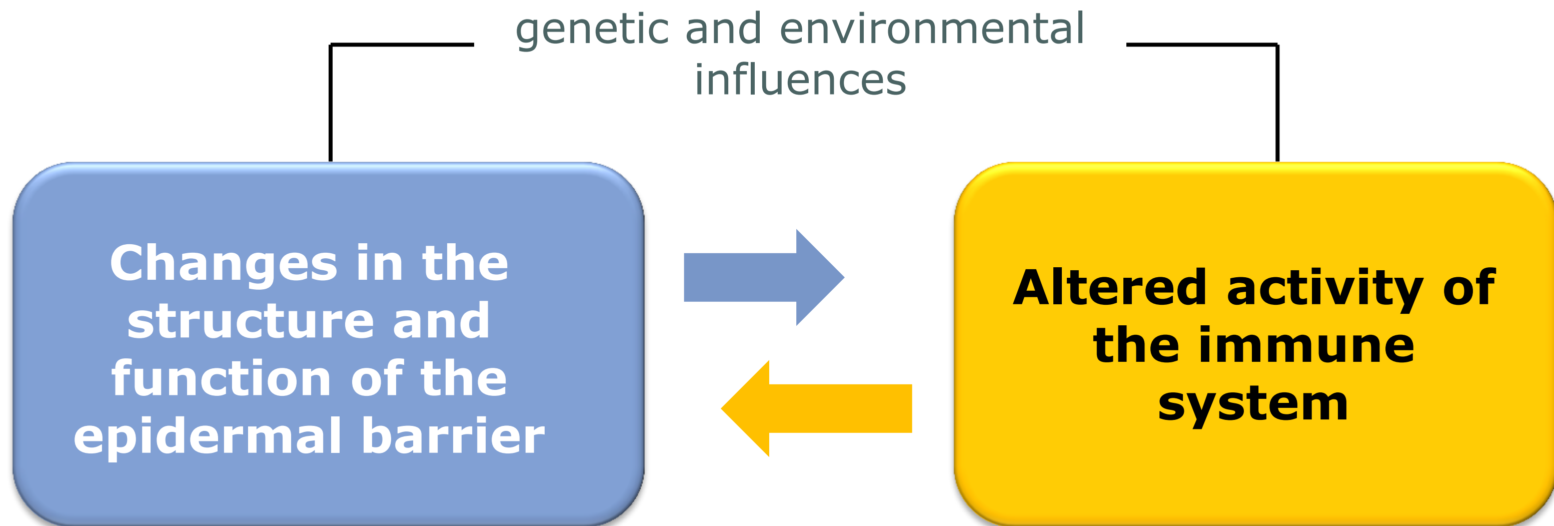



Infantile eczema



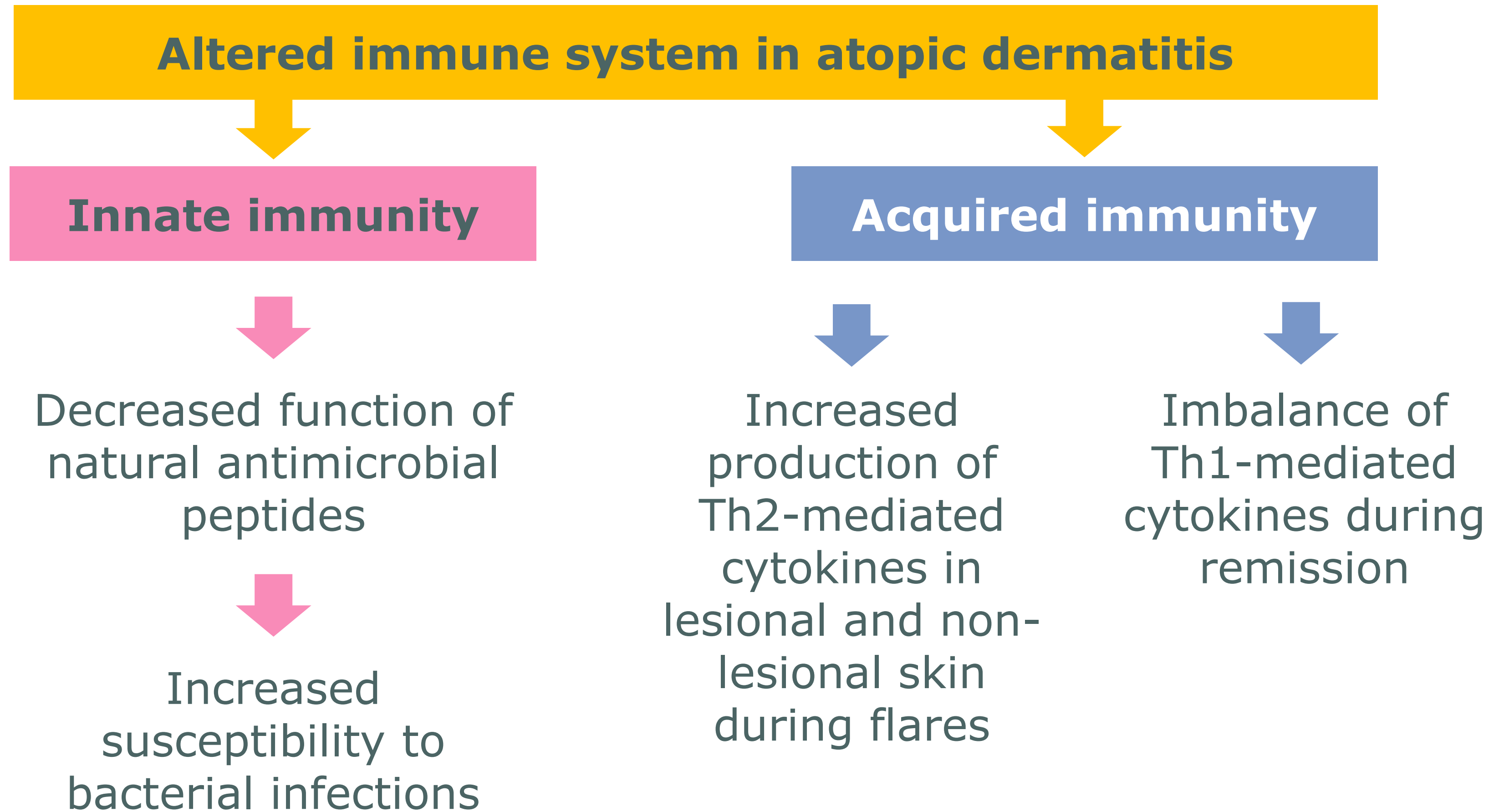
A multifactorial condition

- The causes of atopic dermatitis are not fully understood
- Current theories favour interactions primarily between:[1]



1. Danby SG, Cork MJ. J Clin Dermatol 2010;1:33-46

Altered activity of the immune system[1]



1. Bieber T. Ann Dermatol 2010;22:125-37

Skin Barrier impairment

- Skin barrier impairment precedes clinical eczema, rather than being purely secondary phenomenon associated with eczematous skin inflammation

Flohr et al. *BJDermatol* 2010. **163**:1333-1336

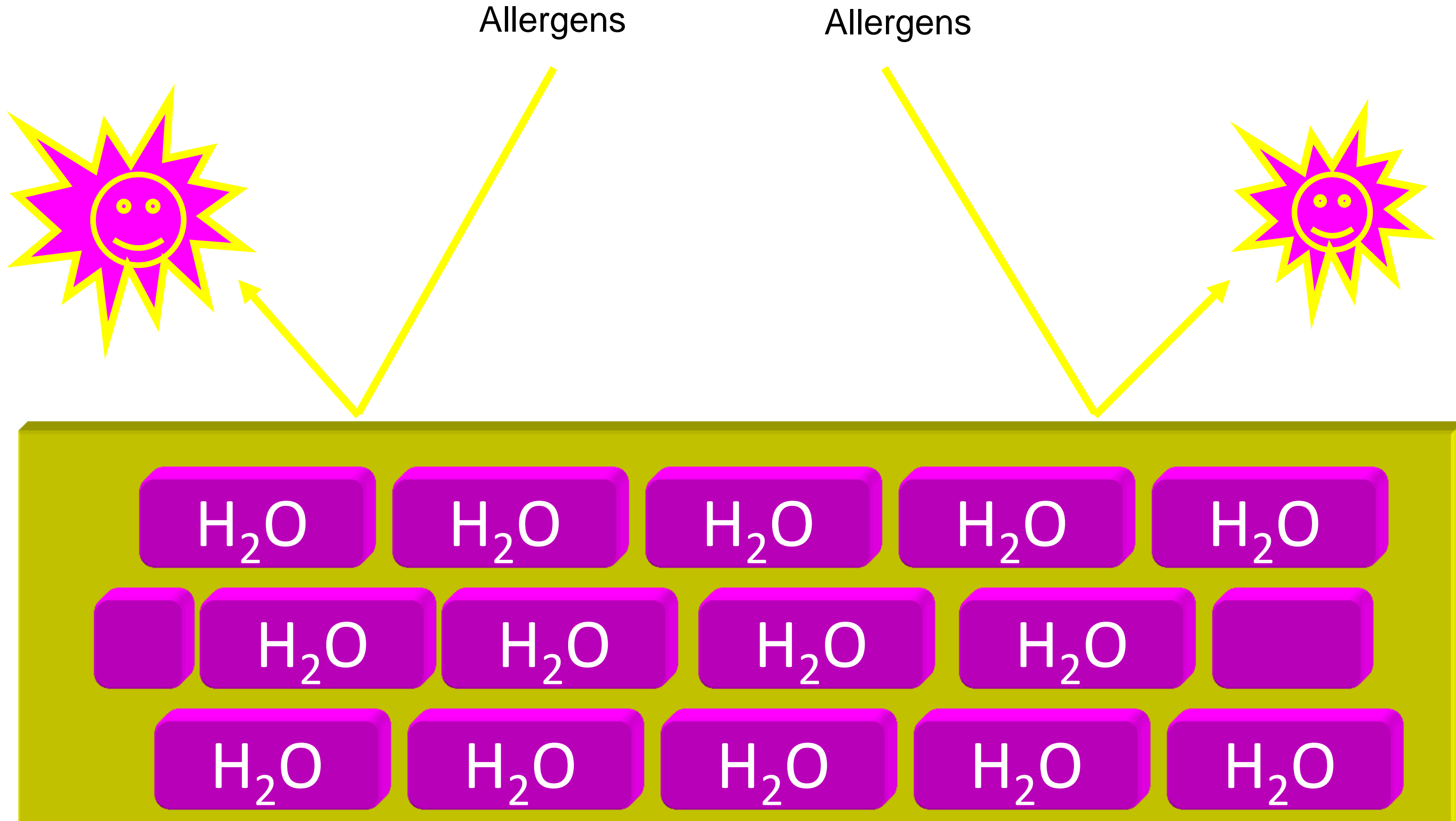
- This was first suggested in 1999 - breakdown of skin barrier may be an initial event in development of AD

Cork M J et al *JID* 2009; 129: 1892-1908

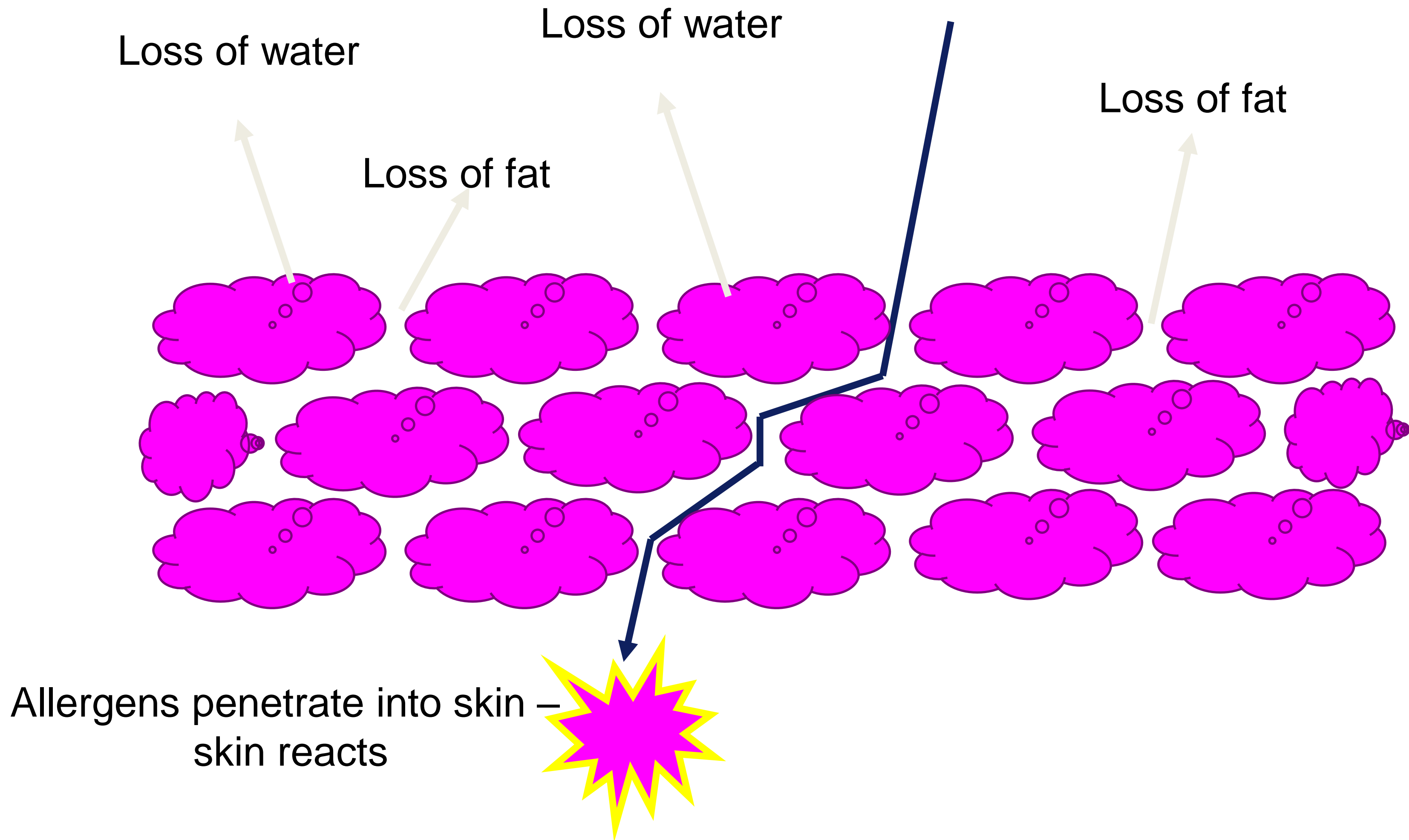
Filagrin Gene

- Key gene involved in skin barrier function
- Chromosome 1q21
- Important component of granular cell layer of epidermis
- Aggregates keratin filaments – leading to keratinocyte compaction & formation of stratum corneum

Healthy Skin



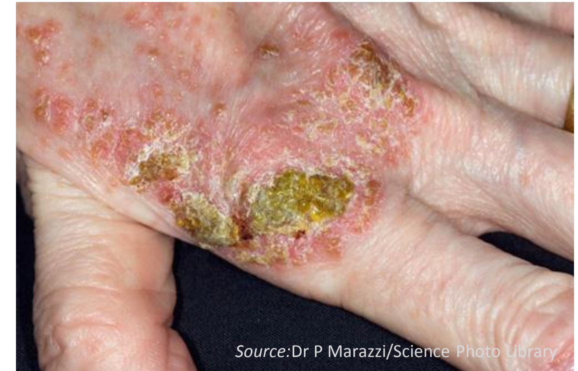
Eczematous Skin



Complications – secondary infections[1]

Bacterial

- usually *Staphylococcus aureus*
- yellow crusting of lesions[1]



Viral

- *Herpes simplex*
- vesicles, or infection that does not respond to antibiotics[2]
- fever (sometimes severe)[2]

'Sudden deterioration of atopic eczema is commonly due to infection. Where vesicles are seen the presence of herpes simplex should be sought'[2]

Reference 2, page 342

1. Bieber T. Ann Dermatol 2010;22:125-37
2. David TJ, Longson M. Arch Dis Child 1985;60:338-43

Atopic eczema: Current treatment options

- Emollients
- Topical steroids
- *Topical immunomodulators*
- Wet wraps
- Allergen avoidance
- *Phototherapy*
- Systemic steroids
- Immunosuppressants
- Biologics
- Others (sedating antihistamines, complementary therapies)

Topical immunomodulators

- Local anti-inflammatory effect
  - Inhibit action of a protein called 'calcineurin' which is involved in activation of T-cells.
- Steroid-free therapeutic option
- Tacrolimus reduces
  - Langerhans cell activation of T-cells
  - Cytokine production in eosinophils, mast cells and basophils

Topical Immunomodulators

Pimecrolimus

- Derived from fungus called *Streptomyces hygroscopicus*
- Moderate AD (NICE 2004)
- More lipophilic
- Face & neck - 2-16 years

Tacrolimus

- Derived from *Streptomyces tsukubaenesis*
- Moderate to severe AD (NICE 2004)
- Less lipophilic
- Adults and children > 2 years

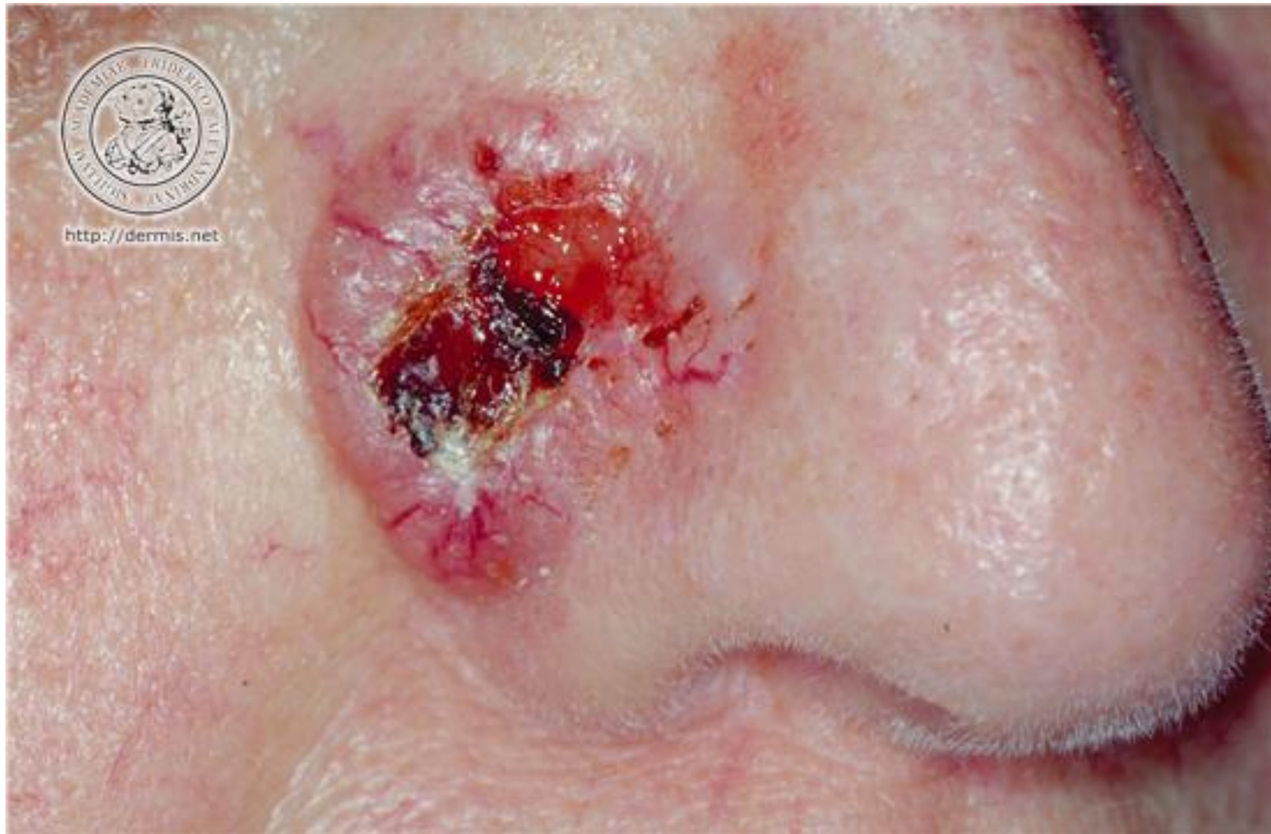
Phototherapy (UV light)

Only for <u>severe</u> atopic eczema

- Secondary care specialist clinics
  - UVB
    TLO1 safe in pregnancy and childhood
  - PUVA
    - Plant extract increases skin sensitivity to UVA
    - May be teratogenic
- May cause premature skin ageing
- Appear to accelerate development of skin cancers

Waldmann
PUVA 1000

Skin Cancer



The growing incidence of skin cancer

- 1 in 3 cancers diagnosed is skin cancer[1]
  - Globally, between 2 and 3 million non-melanoma skin cancers and 132,000 melanoma skin cancers occur each year[2]
  - Incidence rates of malignant melanoma in Britain have increased more rapidly than any of the top ten cancers in males and females over the last 30 years[3]

- Substantial public health problem
  - Over 80% of non-melanoma skin cancers occur in people aged 60+ years[3]

1. National Institute for Health and Clinical Excellence. Improving outcomes for people with skin tumours including melanoma; February 2006: Guidance on cancer services. http://guidance.nice.org.uk/CSGSTIM/Guidance/Standard2006/pdf/English
2. World Health Organization.: http://www.who.int/uv/faq/skincancer/en/index1.html
3. Cancer Research UK: http://info.cancerresearchuk.org/cancerstats/types/skin/incidence/

Major risk factors for skin cancer[1a,b,c]

- Exposure to UV light/radiation via sunlight or sun beds
- Skin damage (sunburn) at any age
- Outdoor occupation
- Personal or family history of skin cancer
- Lowered immunity (e.g. transplant patients)
- Fair skin (skin types I and II burn rapidly)
- Multiple naevi

1. National Institute for Health and Clinical Excellence. Skin cancer: prevention using public information, sun protection resources and changes to the environment; January 2011: NICE public health guidance 32. Available from http://www.nice.org.uk/nicemedia/live/13310/52562/52562.pdf

Malignant skin lesions

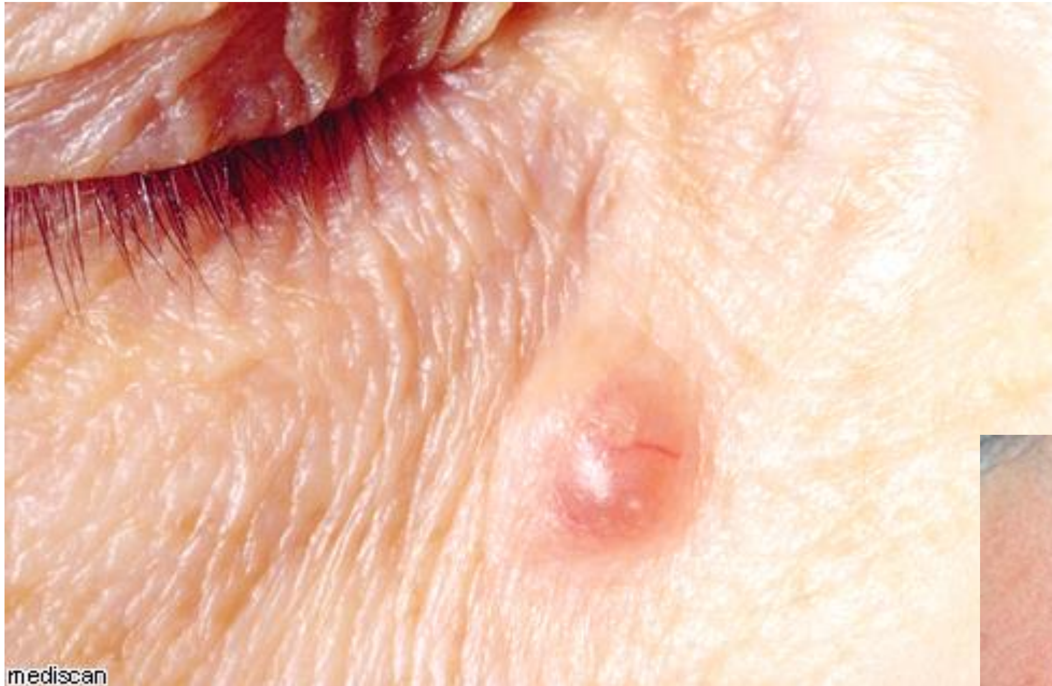
- Three types of lesion are responsible for >95% of all skin cancers:[1]
  - Basal cell carcinoma (BCC)
  - Squamous cell carcinoma (SCC)
  - Malignant melanoma (MM)

1. National Institute for Health and Clinical Excellence. Improving outcomes for people with skin tumours including melanoma; February 2006: Guidance on cancer services. Available from http://guidance.nice.org.uk/CSGSTIM/Guidance/Standard2006/pdf/English

BCC

- About 80% occur on the head and neck
- Early lesions often small, translucent or pearly and have raised edges with telangiectasia
- Classic rodent ulcer has an indurated edge and ulcerated centre. Slow growing but can spread deeply
- Other patterns of BCC include: Nodular or cystic, Superficial, Morphoeic and Pigmented

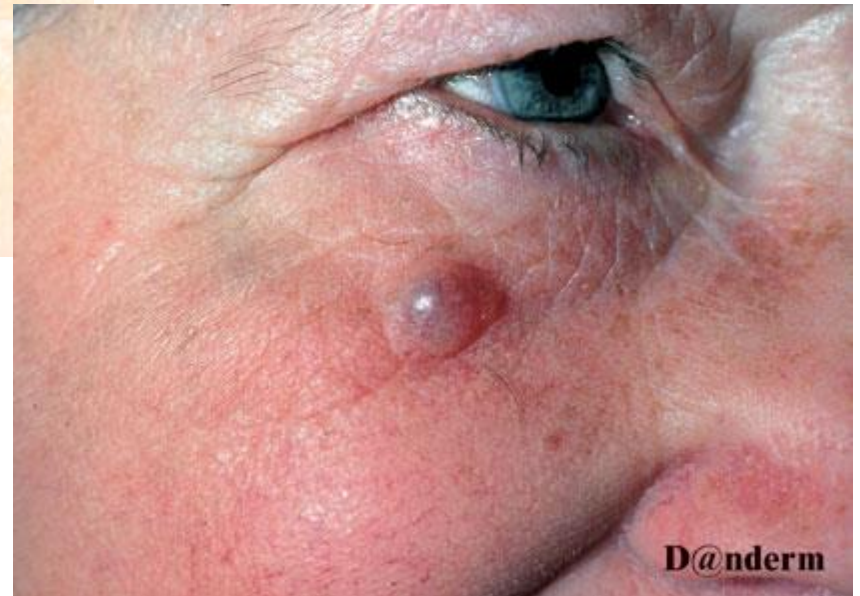
BCC - Nodular



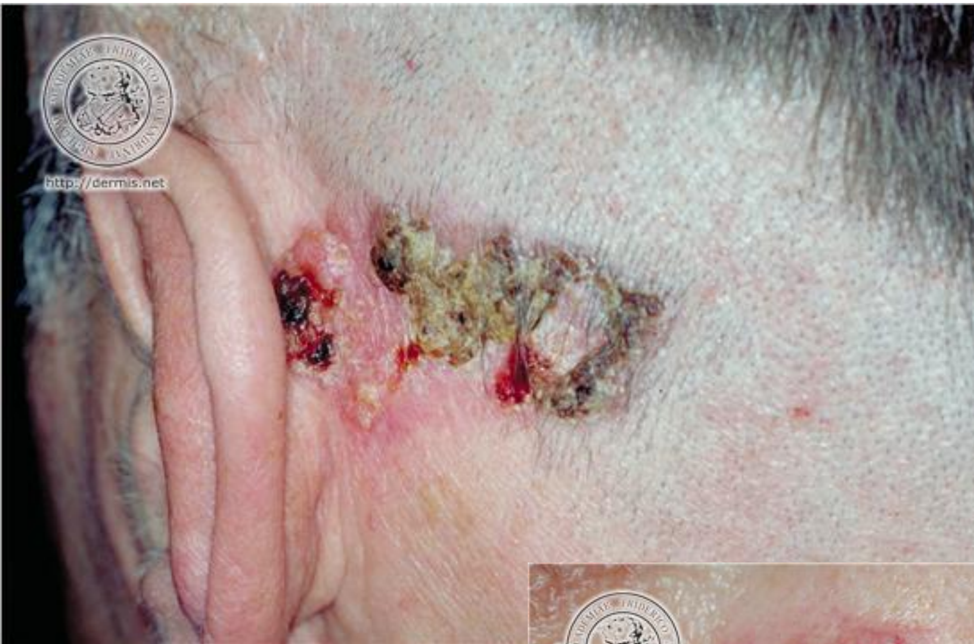
Key Features:

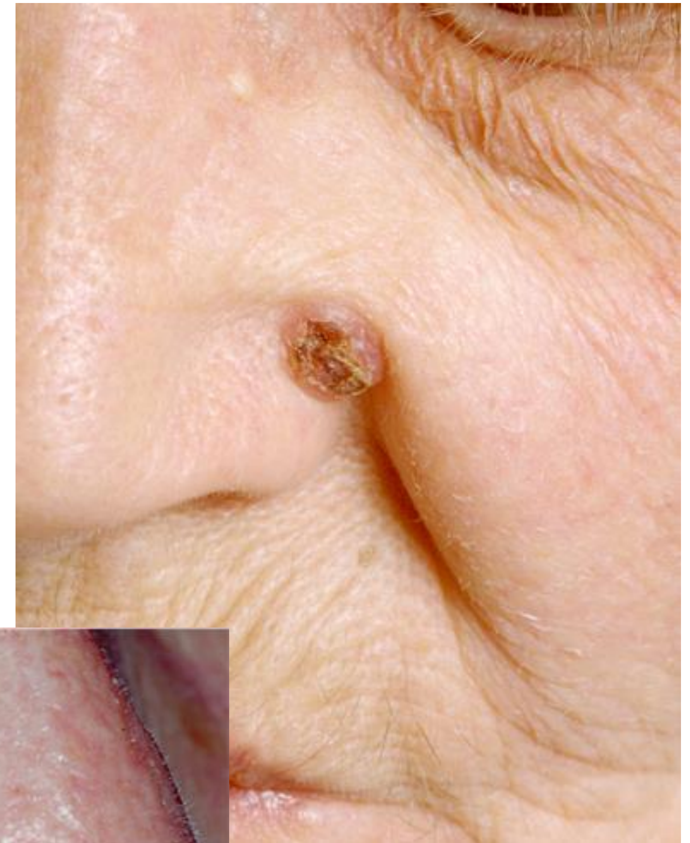
Pearly, Translucent

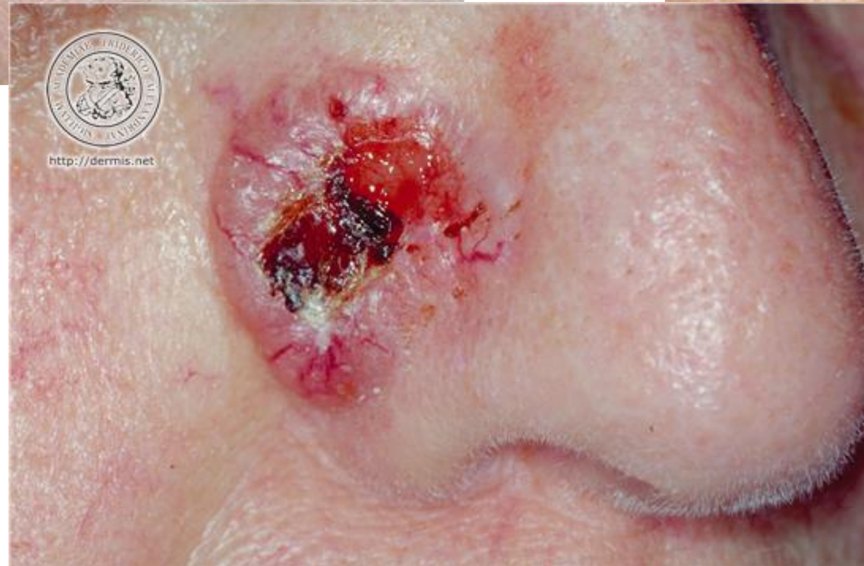
Telangiectasia



BCC - Ulcerated







Key Features:

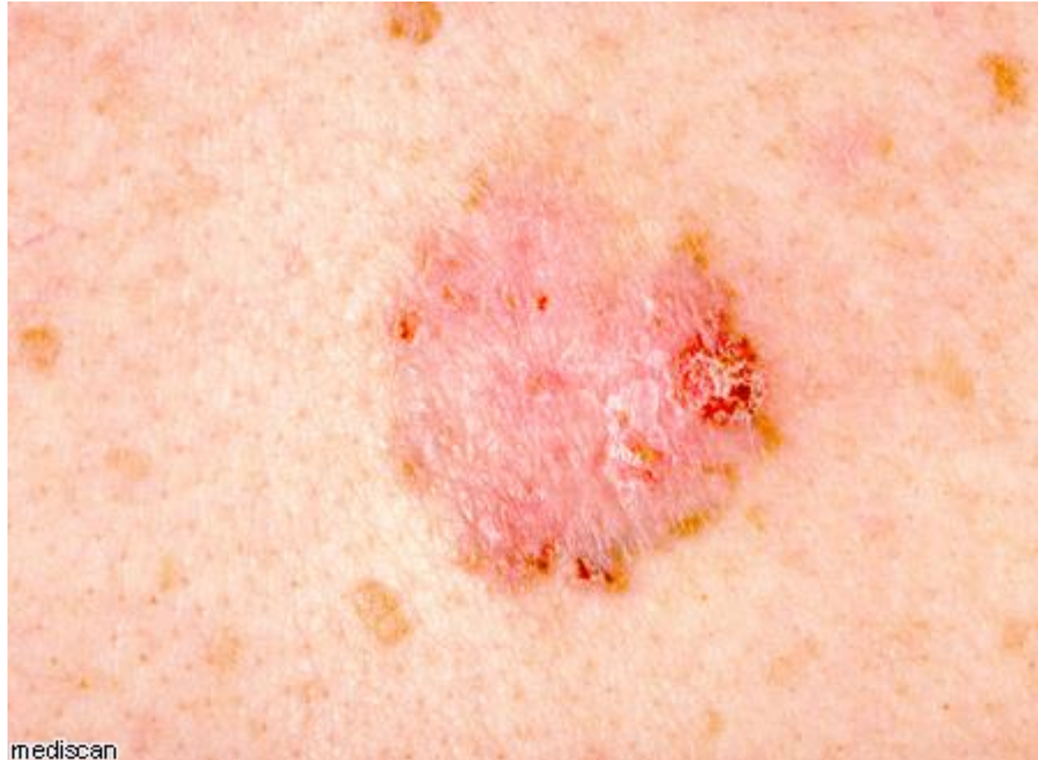
Ulcerated, bleed

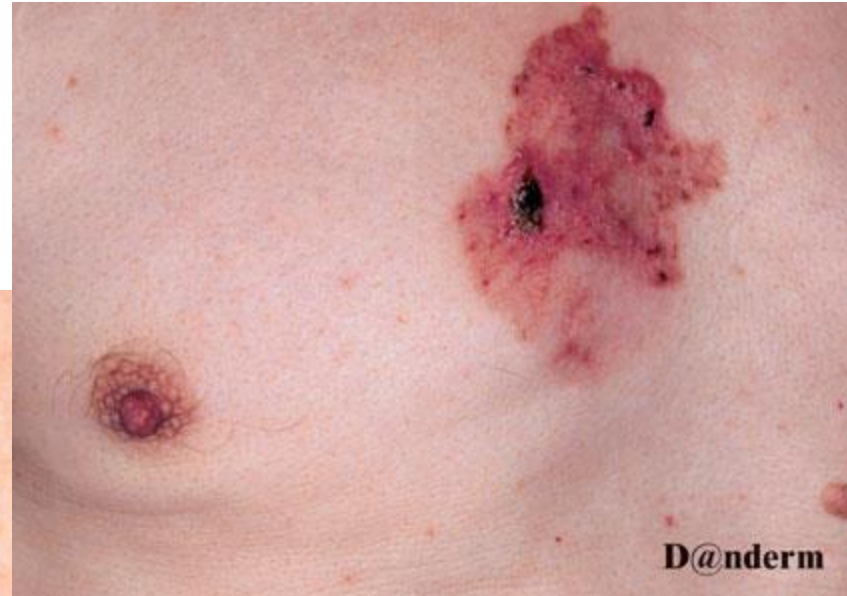
Rolled edge

Telangiectasia

Often Painfree

BCC - Superficial





Key Features:

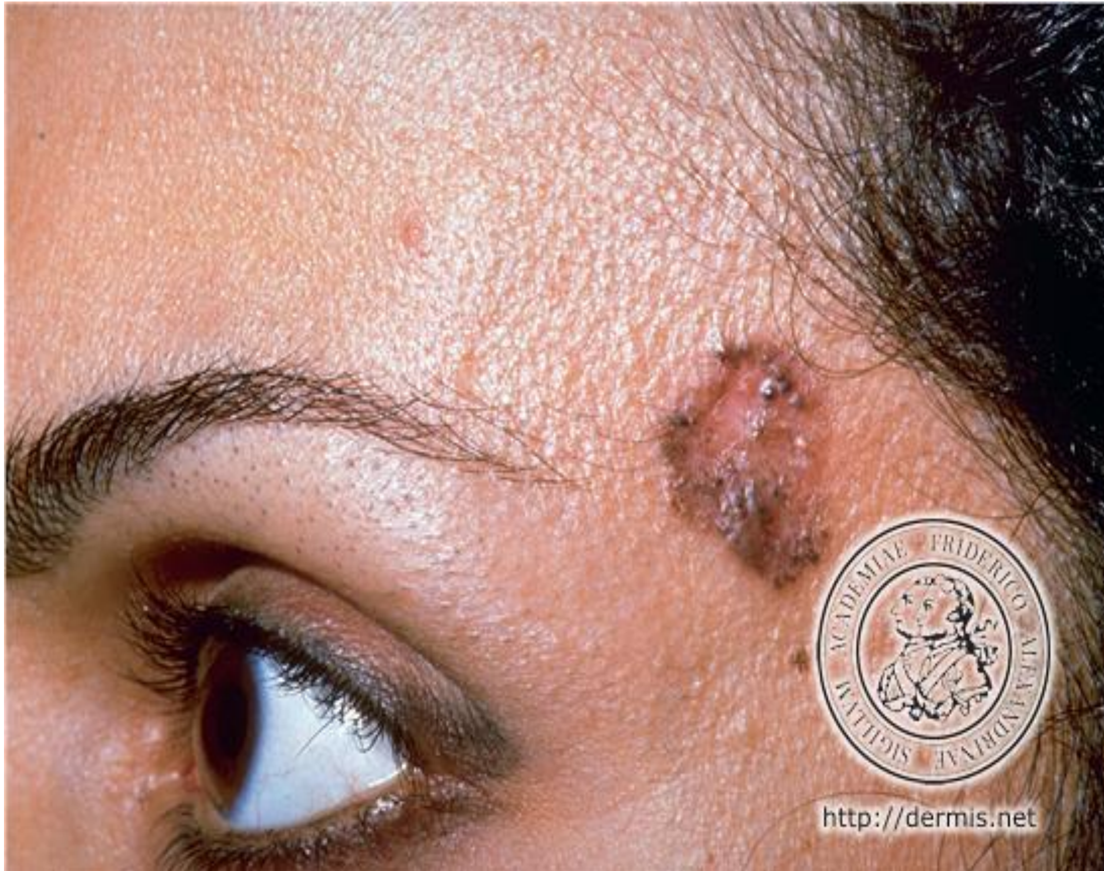
Long duration, slow growth

Often solitary plaques

Rolled edge

Unaffected by topical steroids

BCC - Pigmented



Key Features:

Scar like

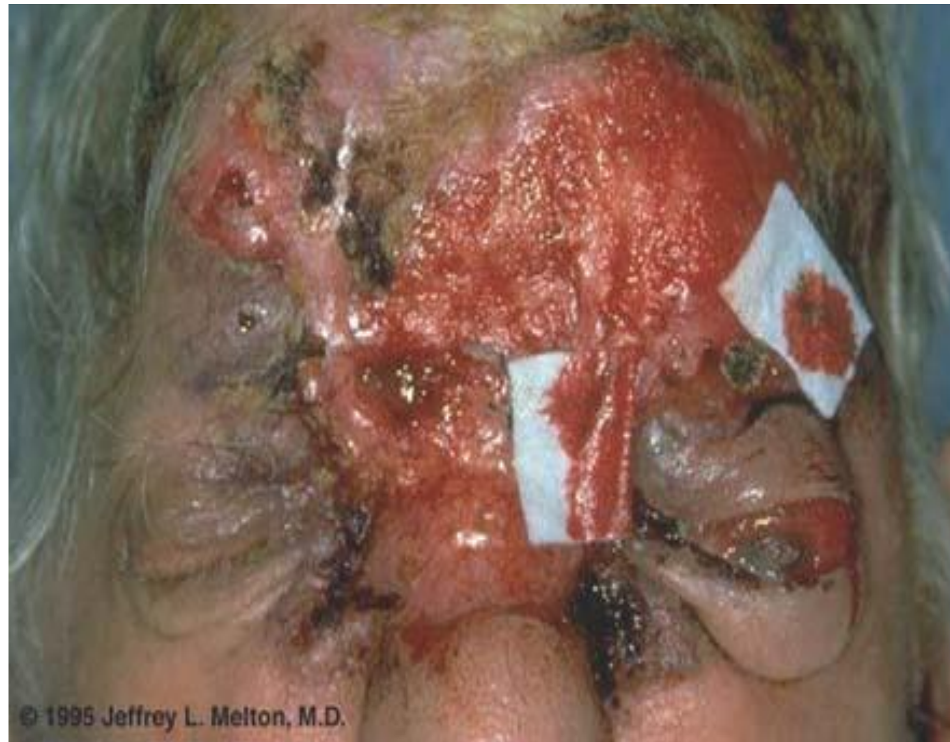
Multicentric

Rolled edge when stretched

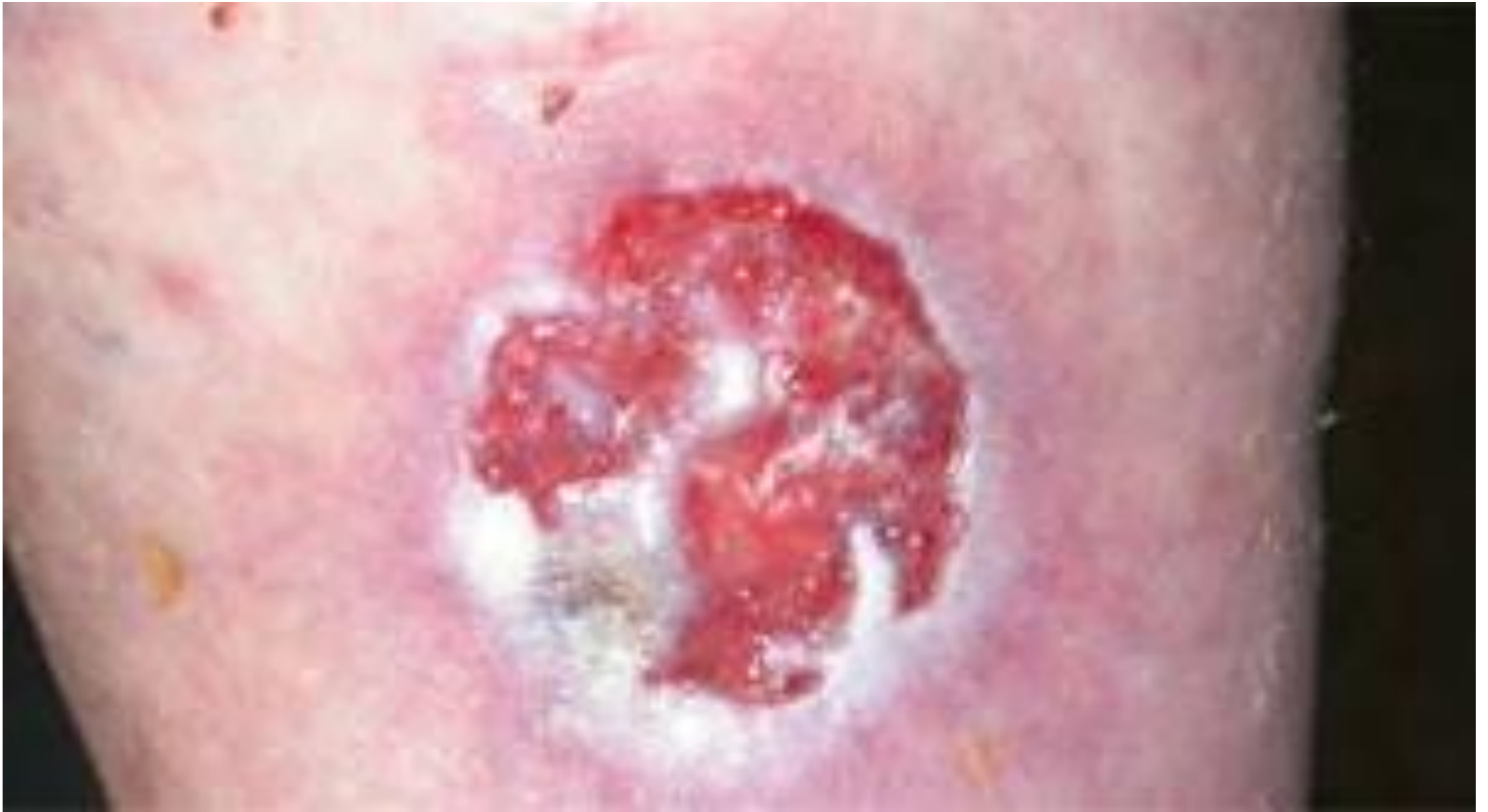
Margins pigmented

Sun exposed area

BCC - Large

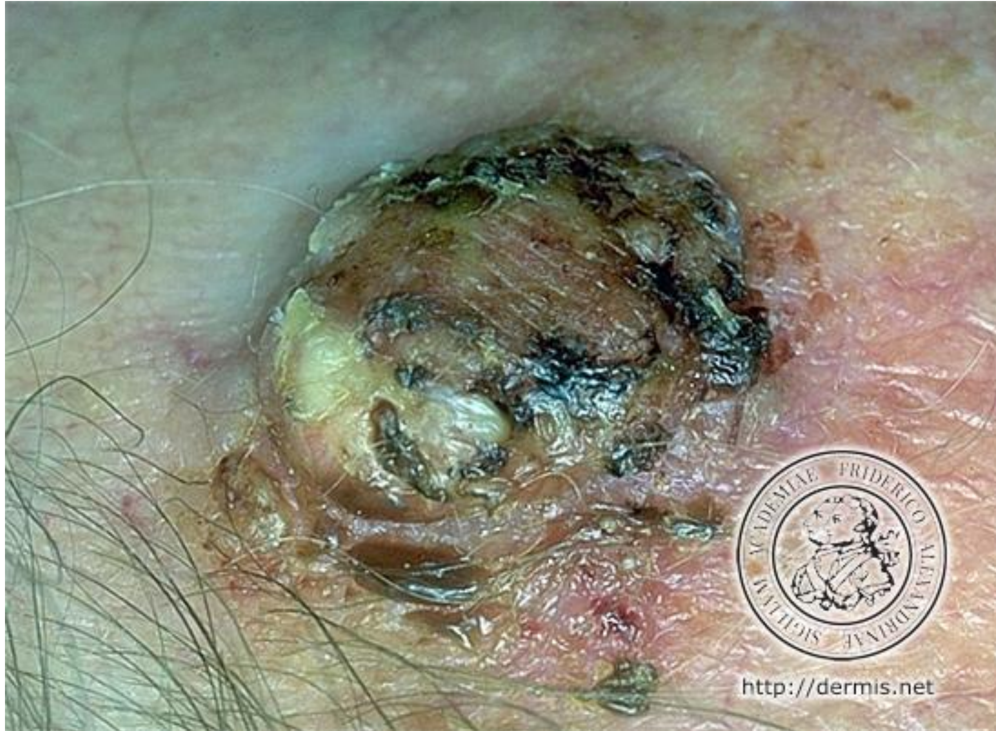


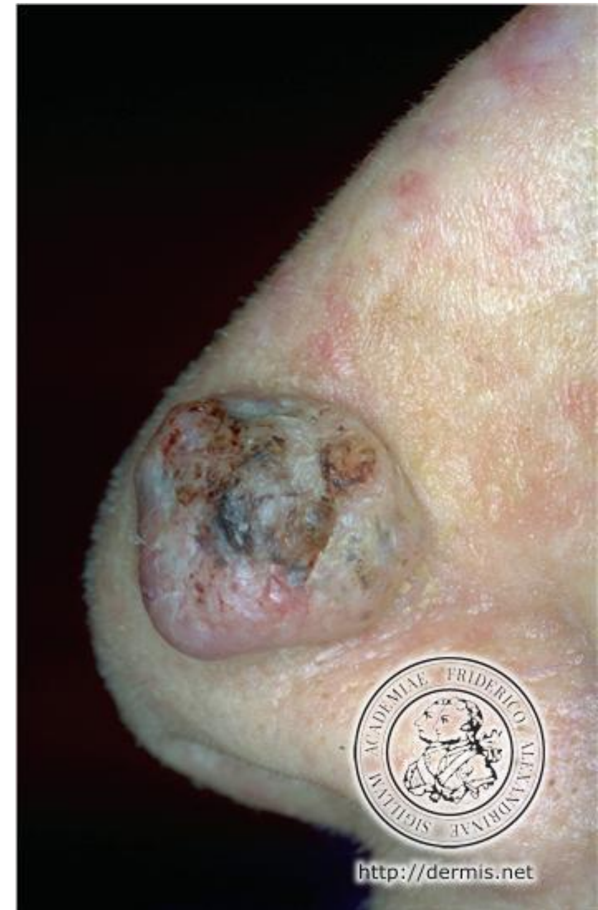
Non Healing Leg Ulcer - BCC



SCC

- Typically presents as a **non-healing ulcer or growth** in one of the higher risk sun-exposed areas
- Hard scaly, often pink lumps, bleed and ulcerate easily. Many have rolled edges
- Often the ulcer is covered with a plaque
- ~ 70% appear on the skin of the head and neck



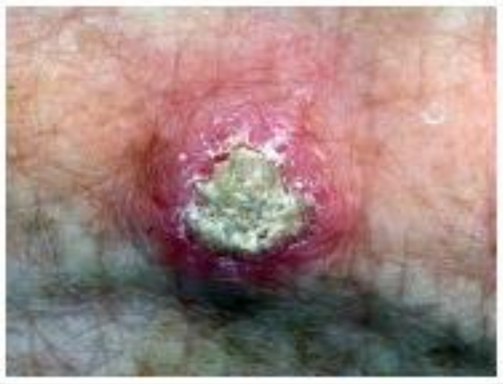


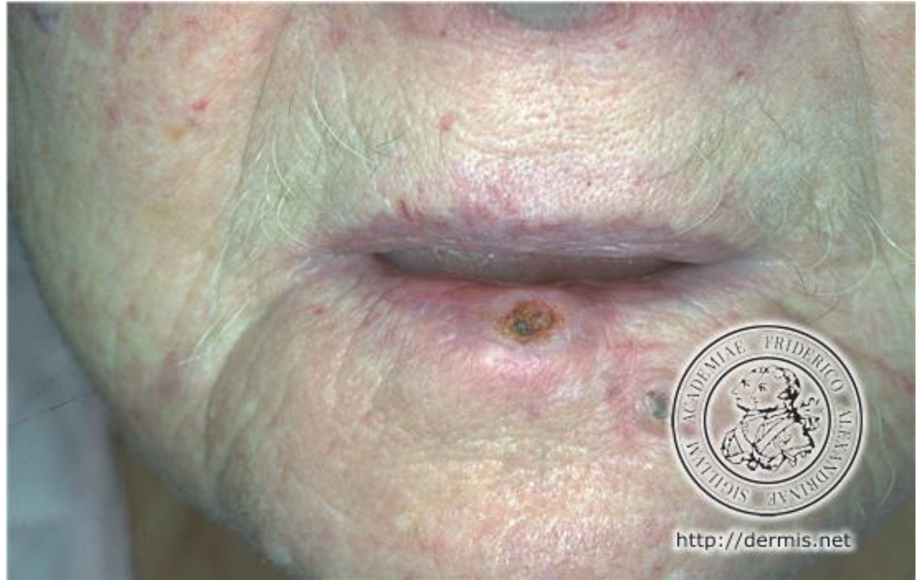
Key Features:

Hard crusty lumps,

Firm indurated nodule

Ulcerated, bleed easily

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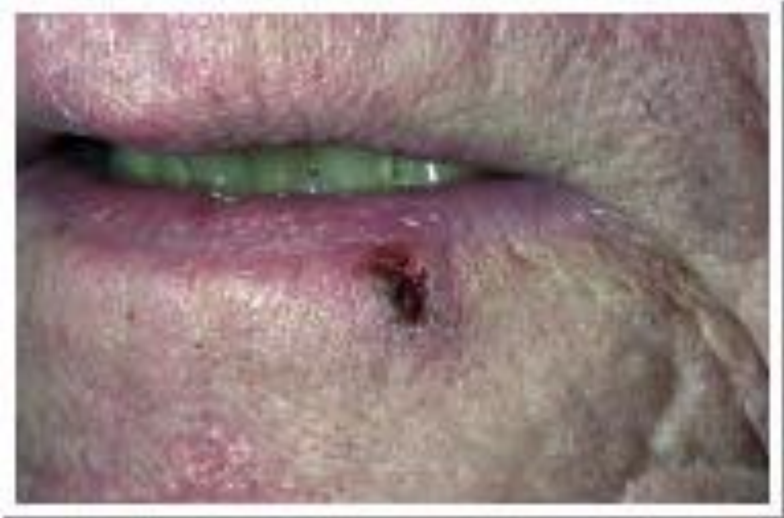
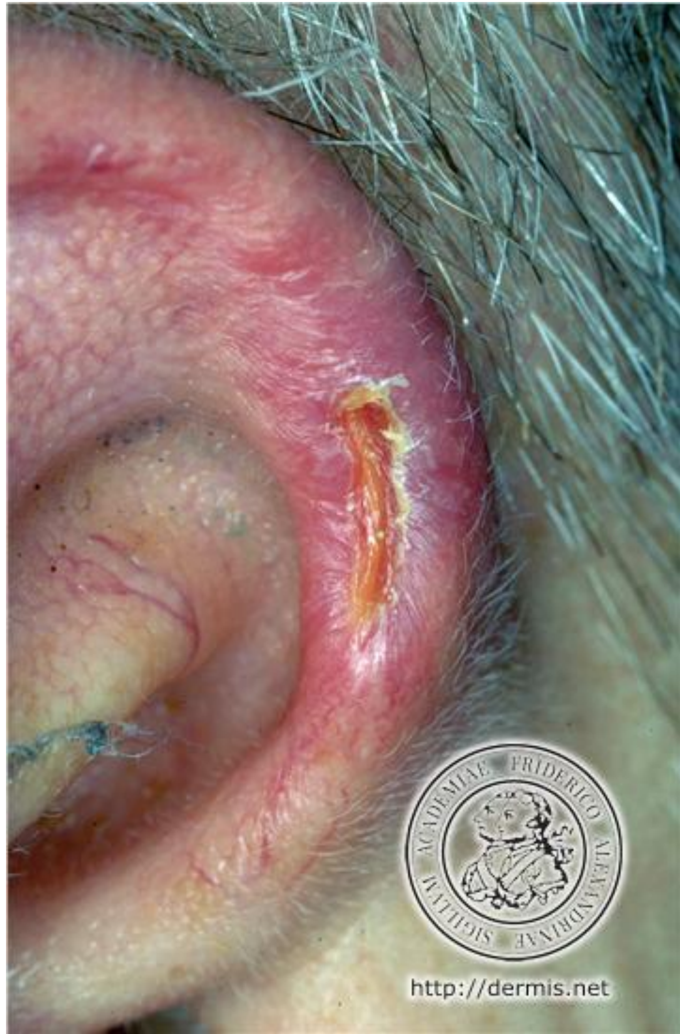
http://dermis.net

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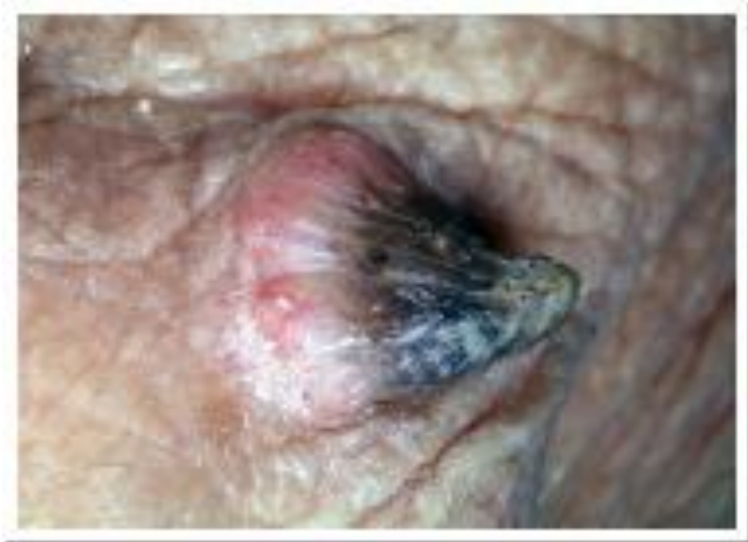
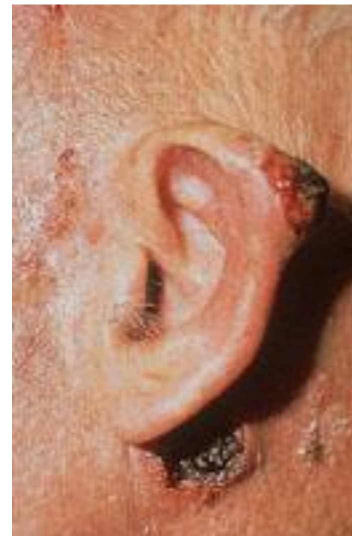
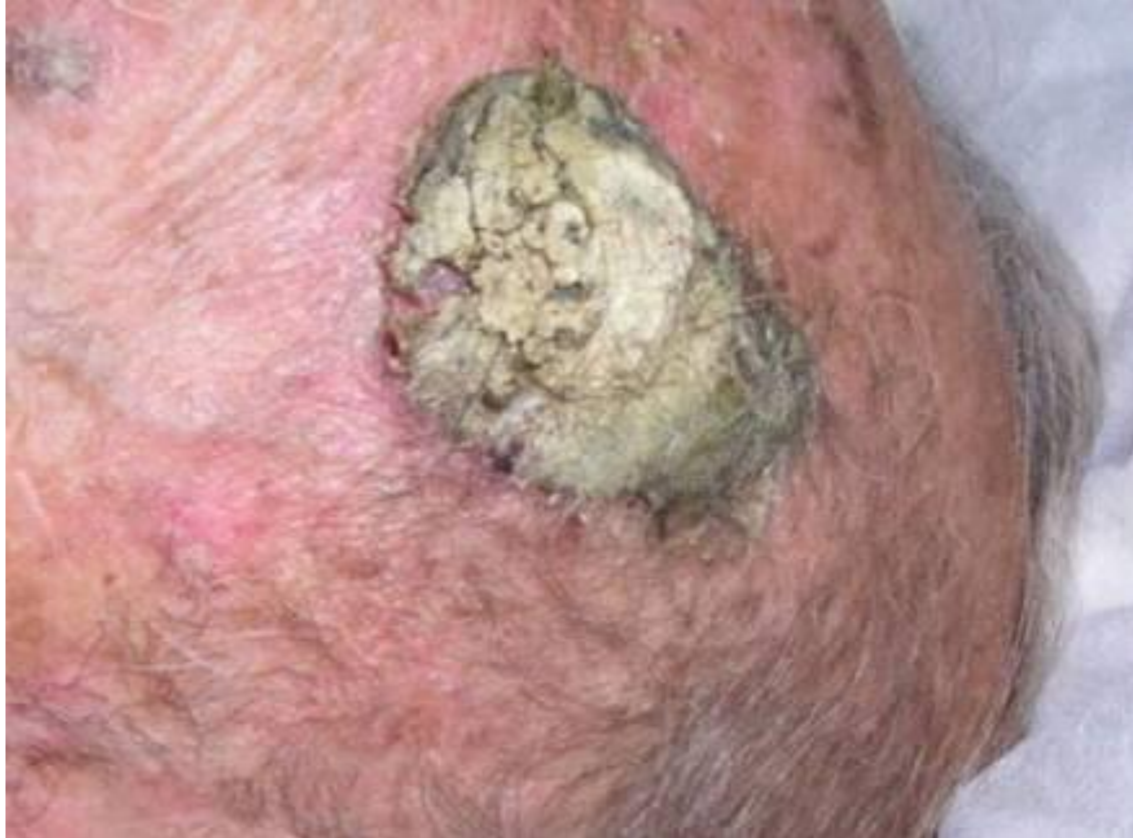
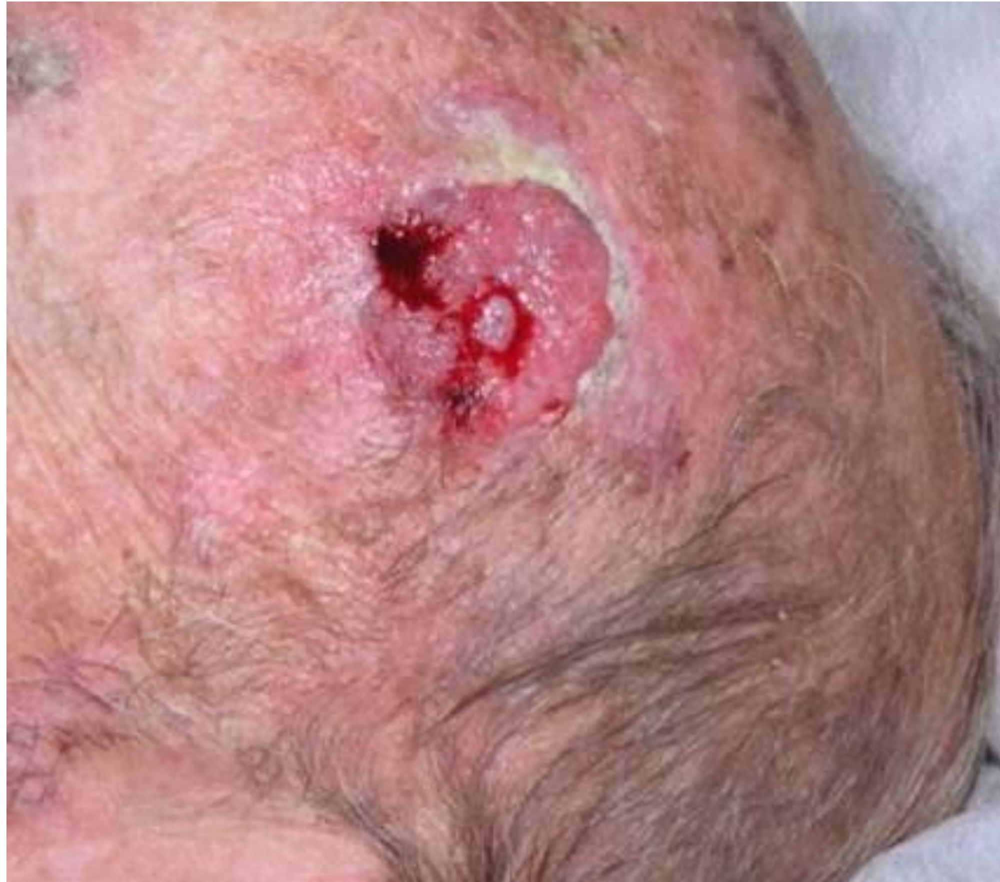




Always remove the scale!



Without the scale



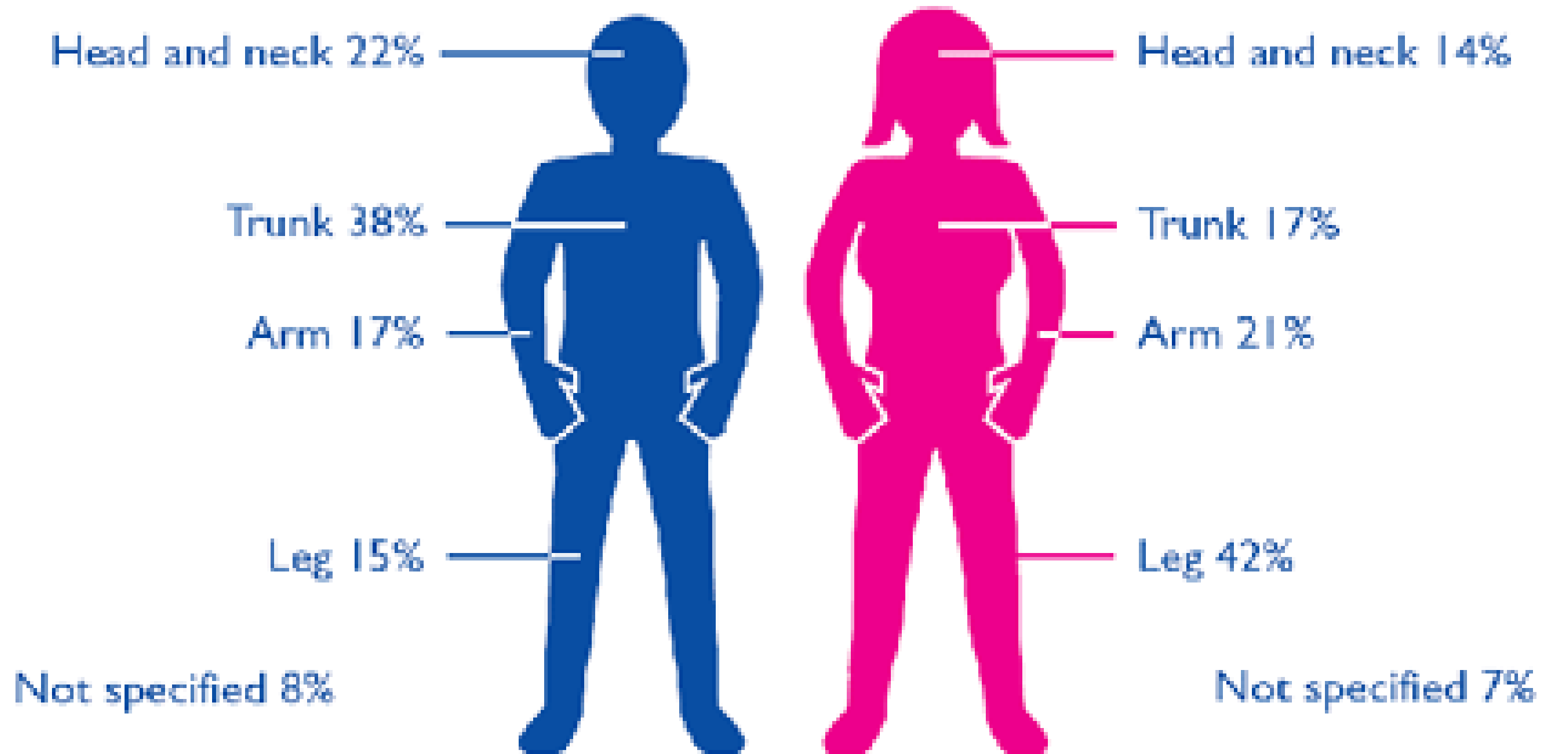
Malignant melanoma

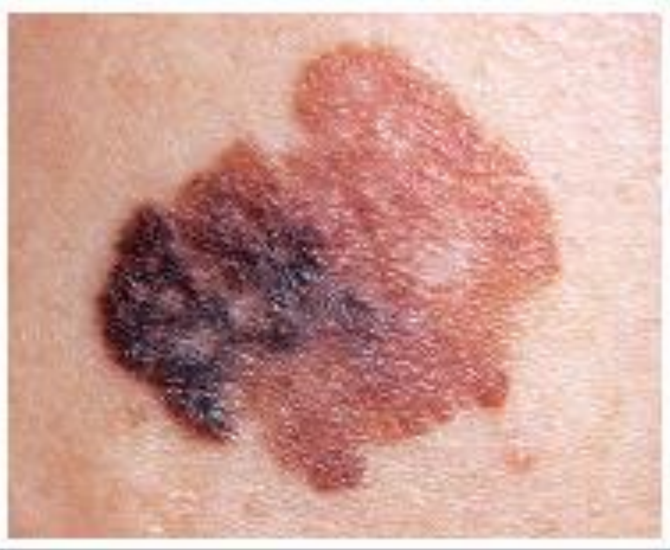
- Most arise in the skin but can arise from mucosal surfaces
- Changed or new freckle or mole
- Early signs to suggest malignant change include:
  - Darker/variable discolouration
  - Itching
  - Increase in size
  - Development of satellites
- Later signs are ulceration and bleeding

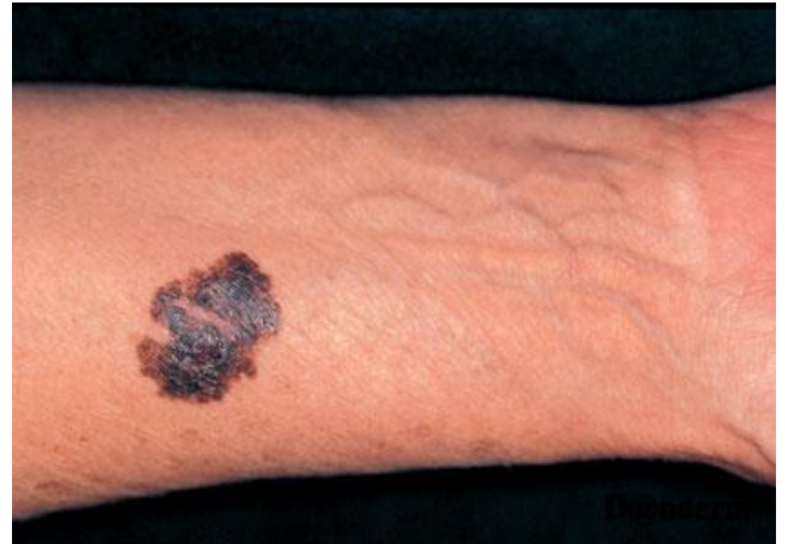
Risk factors for MM

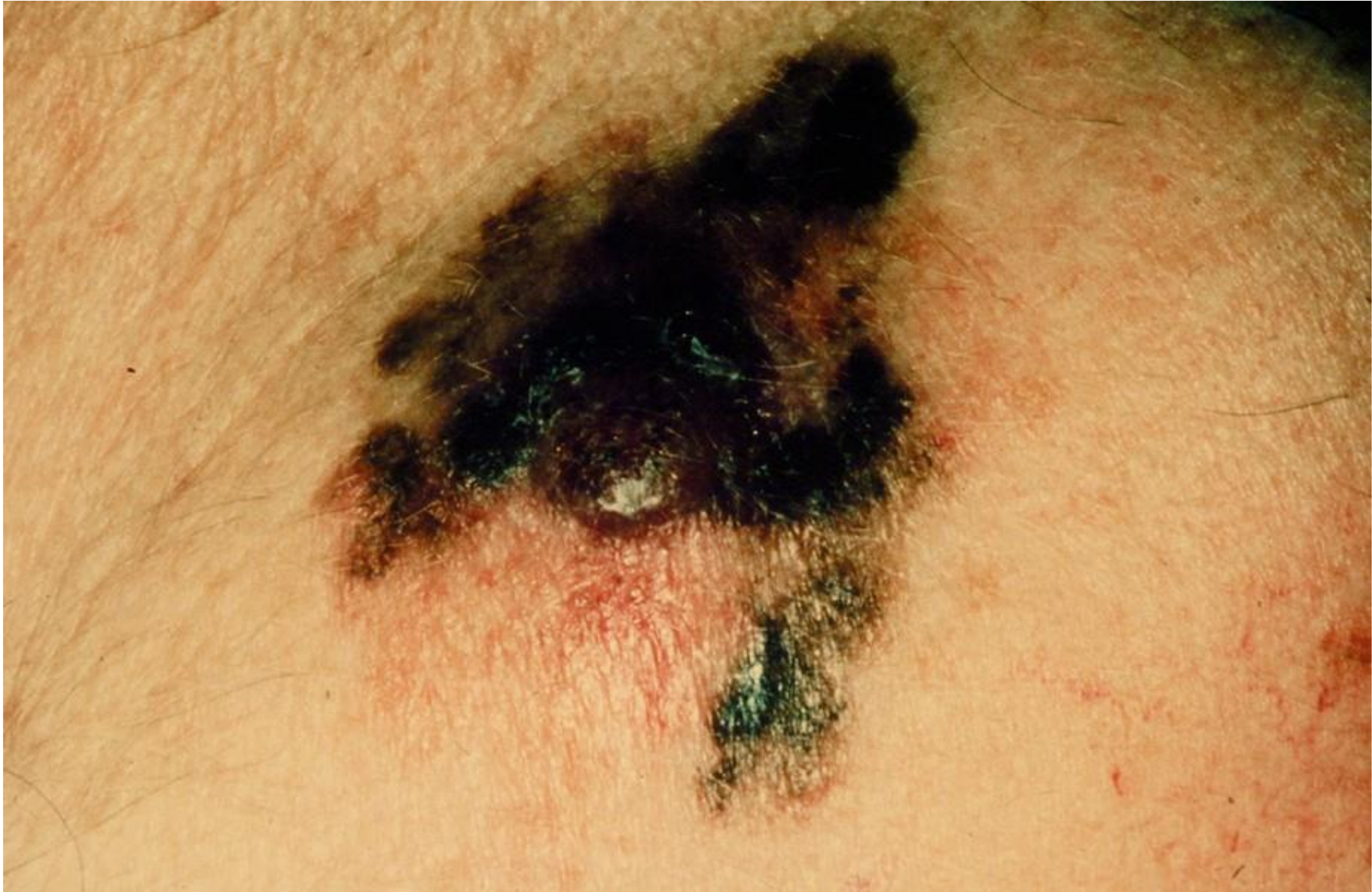
- Caucasians/Fair skin type
- History of intense intermittent sun exposure especially in children
- >100 moles
- Funny looking moles especially large ones
- 2 Close relatives with MM (actually only 10% of MM)
- Previous skin cancers

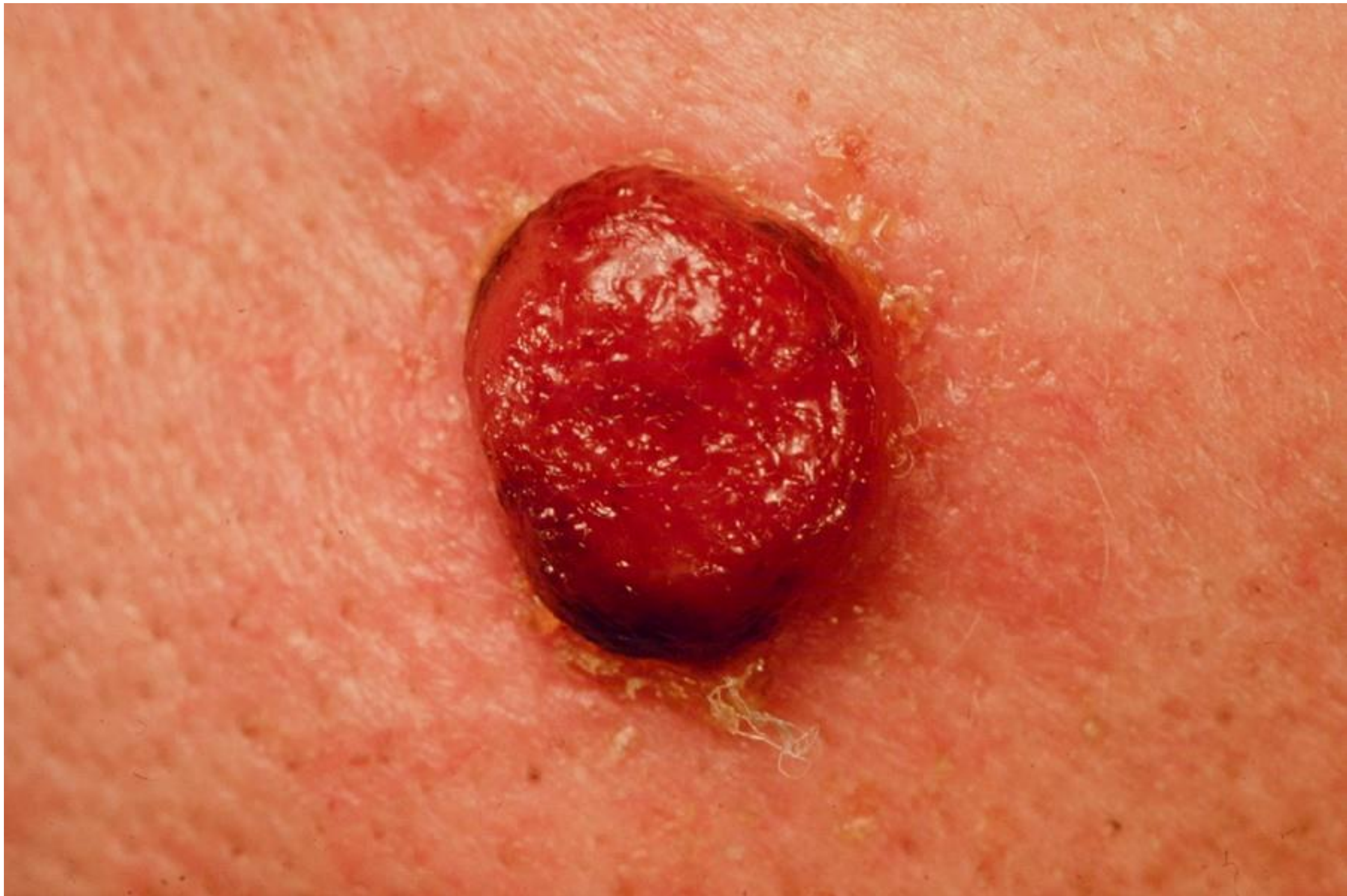
Distribution of Malignant melanoma

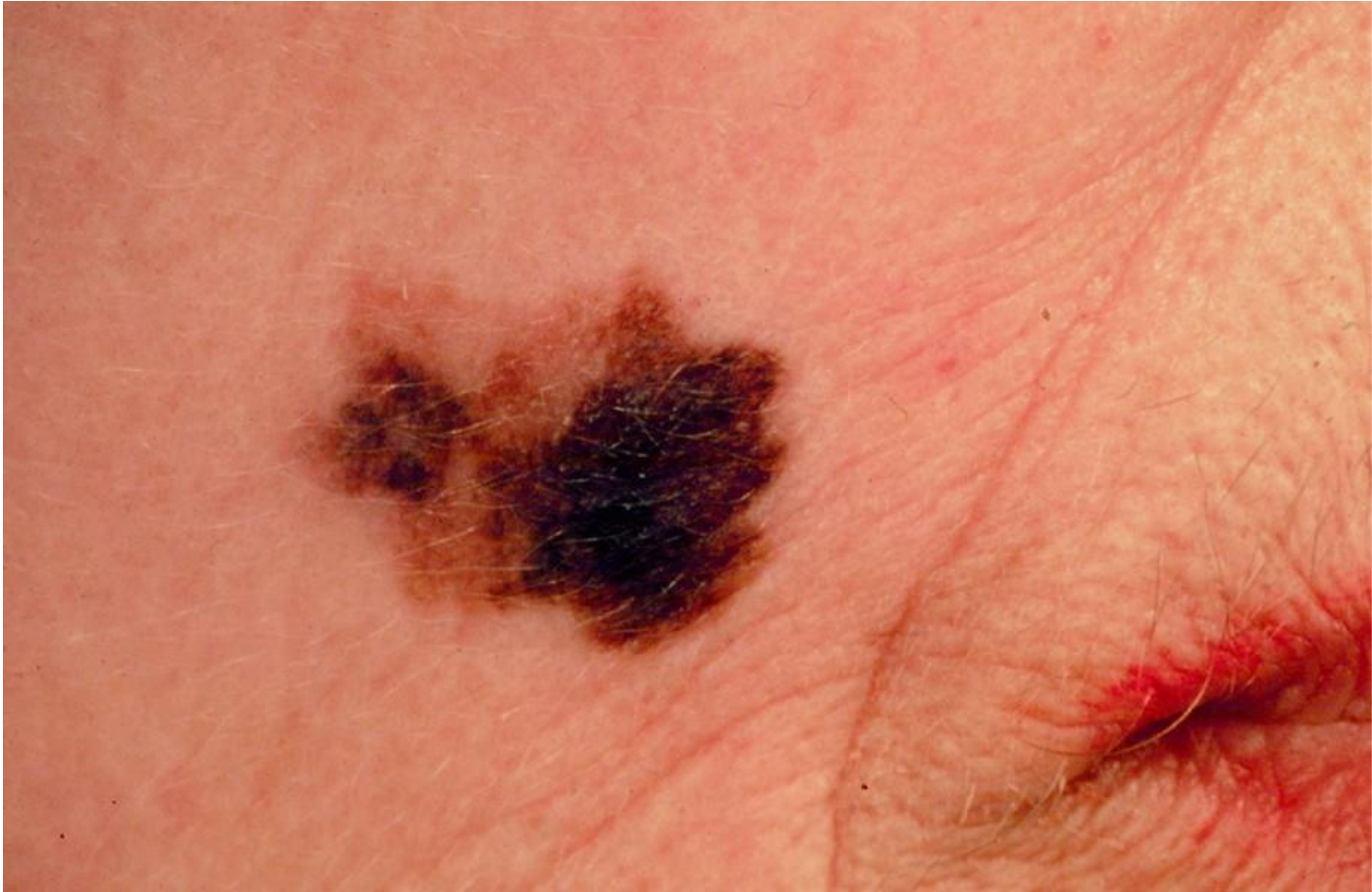


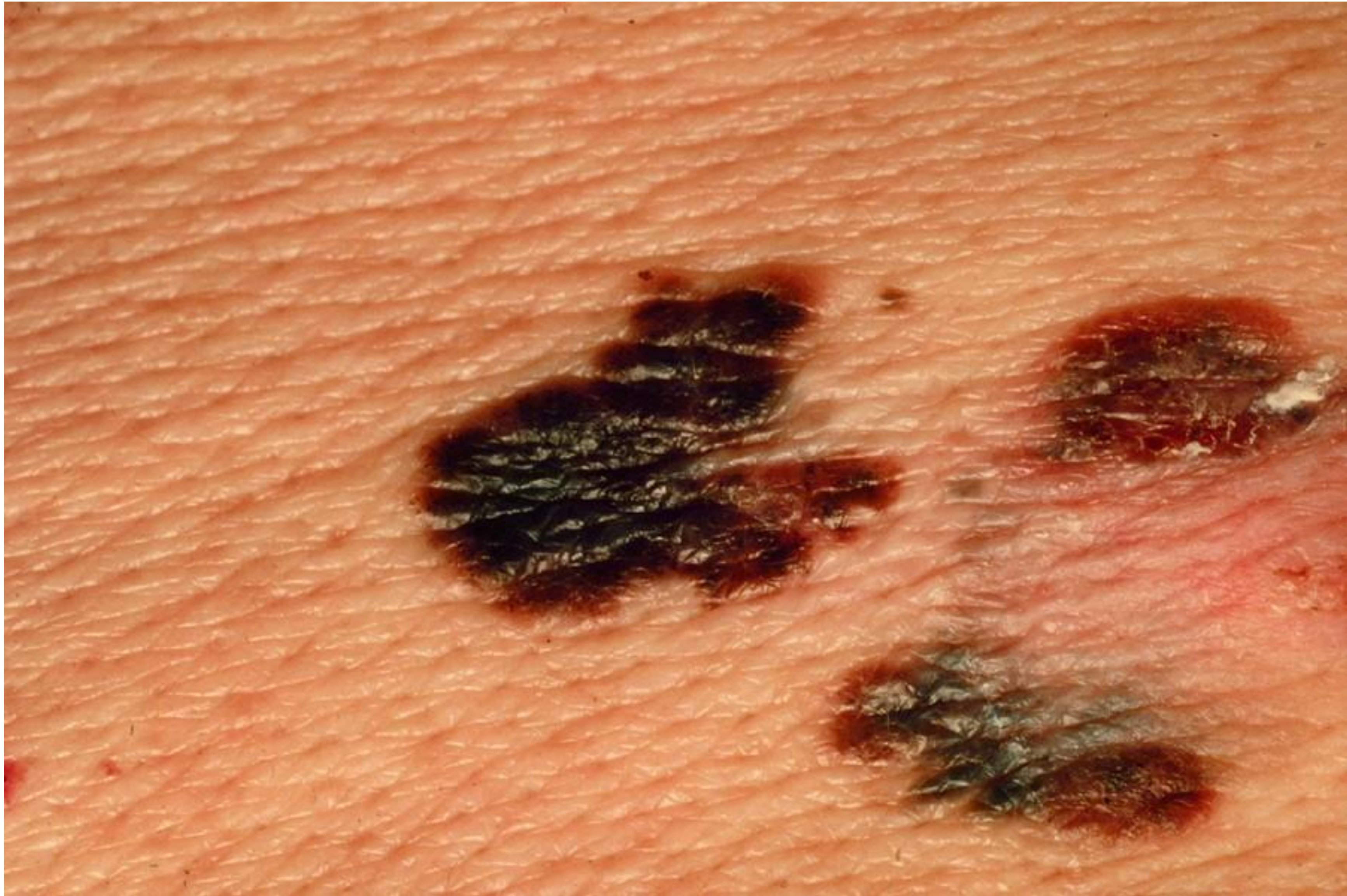


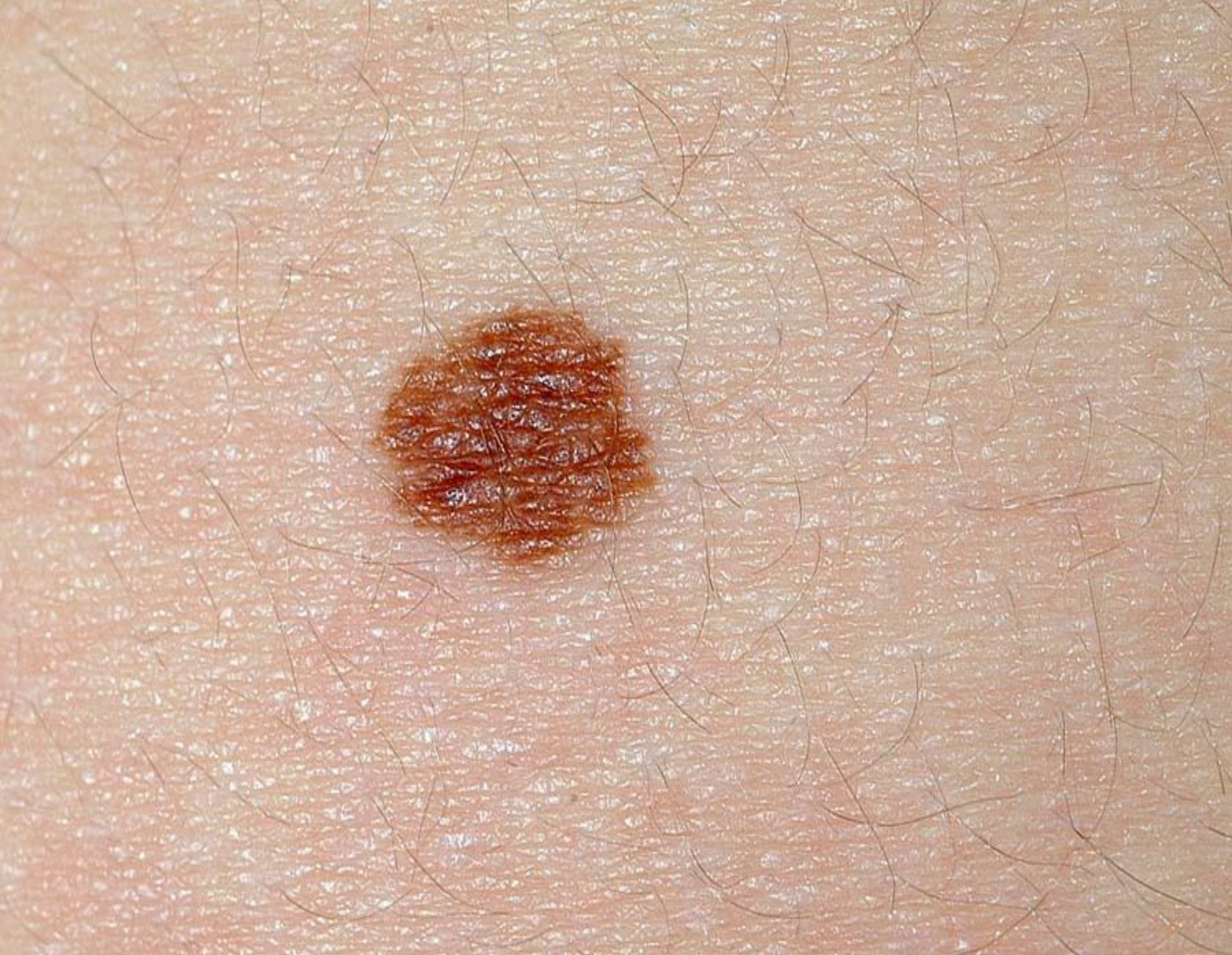












Worrying Signs in Moles

- Asymmetry
- Border irregularity
- Colour variation
- Diameter > 0.5cm
- Elevation irregularity
- Skin markings

7 point weighted check list

- 3 or more suggests referral
- <u>Major features (2pts</u>)
- Change in size
- Irregular pigmentation
- Irregular border
- <u>Minor features (1pt)</u>
- Inflammation
- Itch
- >7mm
- Oozing/crusting

Psoriasis

KIM KARDAS
© Kim Kardashian

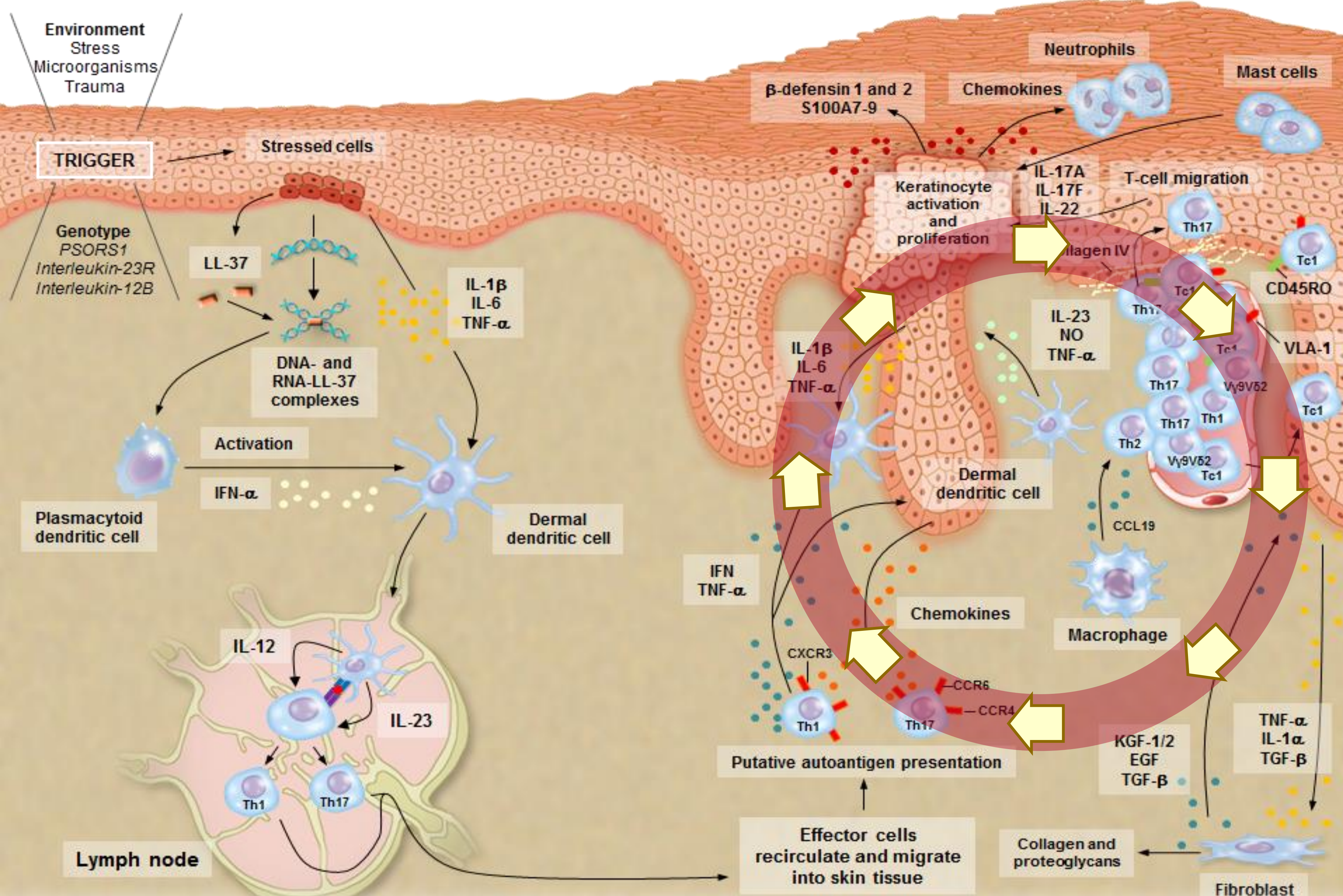
SUPER NEW
KARDASHIANS
E
© Splash

Psoriasis

- Psoriasis is a common, chronic, inflammatory, immune-mediated disease affecting the skin[1]
- Most common presentation is chronic plaque psoriasis[1]
  – Characterised by well-demarcated bright red plaques covered by adherent silvery white scales
- Approximately 94% of patients in primary care are managed with topical therapy[2]

1. Scottish Intercollegiate Guidelines Network (SIGN). Diagnosis and management of psoriasis and psoriatic arthritis in adults; October 2010. Available from www.sign.ac.uk (Last accessed 16 January 2012)
2. Gillard SE & Finlay AY. Int J Clin Practice 2005;59:1260-1267

The vicious cycle of psoriasis



Adapted from: Nestle FO, et al. N Engl J Med. 2009;361:496-509;

Prevalence

- Prevalence of psoriasis is up to 2% of the population[1]
- Around 1.2 million individuals in the UK are affected[2]

1. Papp K *et al*. J Eur Acad Dermatol Venereol 2007;21:1151-1160
2. Burd RM *et al*. Br J Hosp Med 2006;67:259-62

Epidemiology

- Psoriasis may develop at any age
  - Most frequently presents in young adults and in 50 to 60 year olds[1]
- Two key types[2]
  - Early onset (Type I)
    - Family history, severe disease, on or before 40 years old
  - Late onset (Type II)
    - No family history, after 40 years old
- Both sexes affected equally[3]
- Higher incidence in white people[3]
- Uncommon in certain populations[1]

1. Neimann AL *et al*. Expert Rev Dermatol 2006;1:63-75
2. Langley RGB *et al*. Ann Rheum Dis 2005;64:ii18-ii23
3. National Institute of Clinical Excellence (NICE) Etanercept and efalizumab for the treatment of adults with psoriasis. July 2006:
   TA103. Available from www.nice.org.uk (Last accessed 16 January 2012)

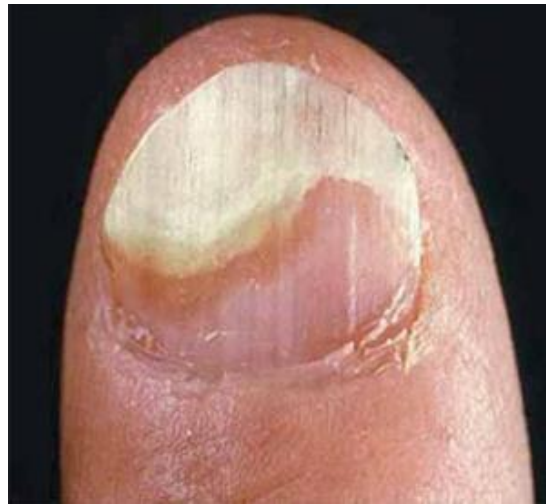
Types of psoriasis

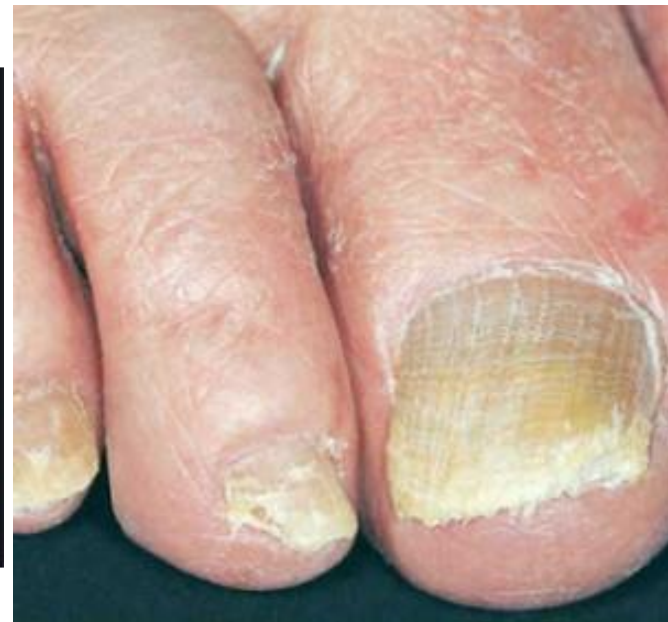
Plaque psoriasis	Pustular psoriasis	Guttate psoriasis	Erythrodermic psoriasis

• Accounts for 80% to 90% of cases[1]
• Commonly affects the trunk, buttocks, elbows, knees, and scalp[1]
	• Palmoplantar pustulosis
	  • Usually affects palms of hands and soles of feet only[1]
	  • Strong link to cigarette smoking[2]
	  • Mainly presents in patients 40-60 years old[2]
	• Generalised pustular psoriasis
	  • Uncommon and severe[1]
	  • Medical emergency associated with systemic upset[2]
		• Common in under-30s but affects less than 2% of patients with psoriasis[1]
		• Usually triggered by streptococcal throat infection[1]
		• Small drop-shaped papules occur primarily over the trunk and proximal extremities[1]
			• Can develop gradually from chronic plaque psoriasis or acutely[1]
			• Associated with widespread erythema of skin surface[1]
			• Rare – **requires urgent hospital treatment[3]**

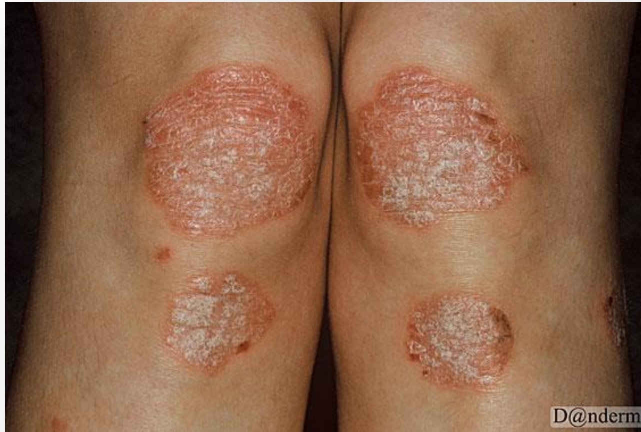
1. Menter A *et al*. J Am Acad Dermatol 2008;58:826-850
2. Langley RGB *et al*. Ann Rheum Dis 2005;64:ii18-ii23
3. British Association of Dermatologists (BAD) and Primary Care Dermatology Society (PCDS). Recommendations for the initial management of psoriasis. 2009. Available from www.bad.org.uk (Last accessed 17 January 2012)

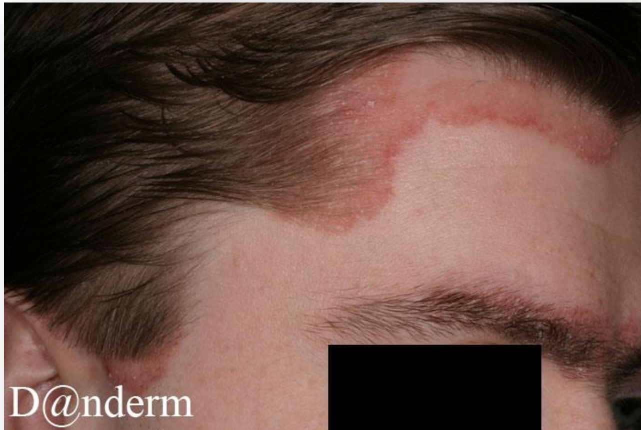
Nail psoriasis





Plaque psoriasis

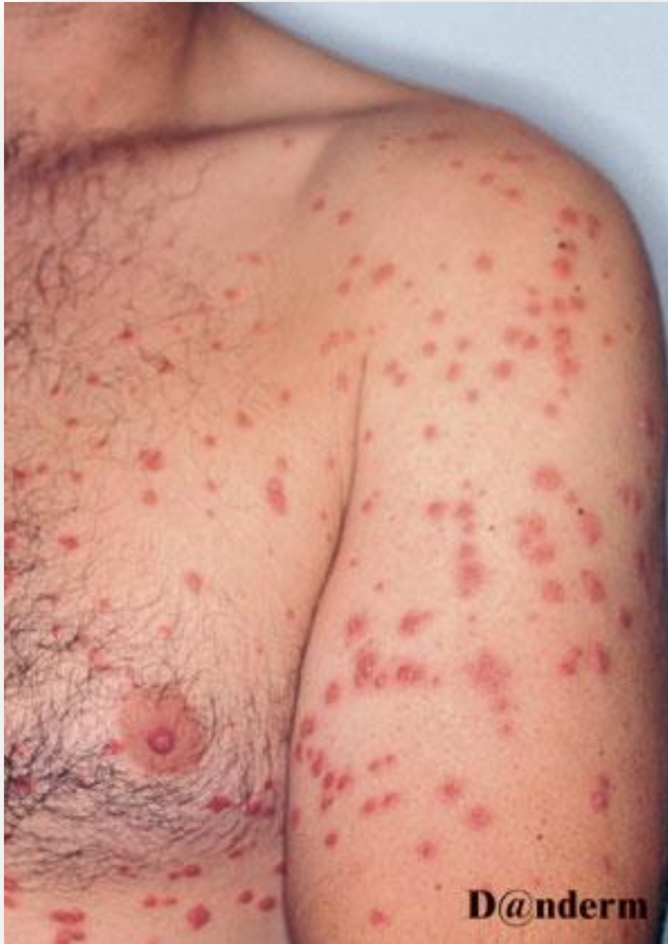




- Most common form, accounting for 80% to 90% of cases[1]
- Symmetrical with predilection for extensor surfaces[1]
- Red, well-defined plaques[2]
- Silvery surface scale[2]
- Scalp disease can extend outside the hairline[3]

1. Menter A *et al*. J Am Acad Dermatol 2008;58:826-850
2. Langley RGB *et al*. Ann Rheum Dis 2005;64:ii18-ii23
3. Papp K *et al*. J Eur Acad Dermatol Venereol 2007;21:1151-1160

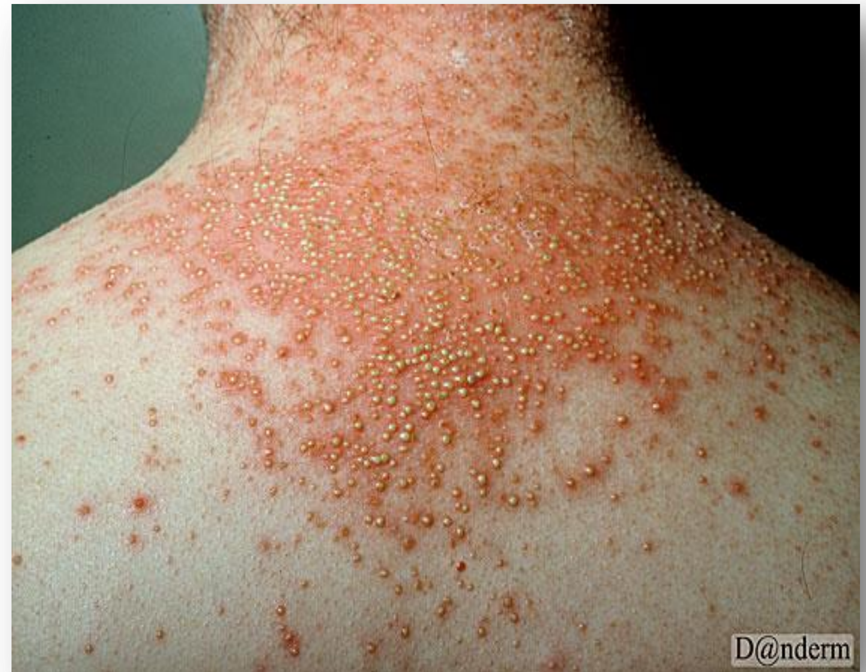
Guttate psoriasis



- Even body distribution, especially on trunk and proximal limbs
- Small, dew-drop like salmon-pink papules of
  1-10mm within a fine scale

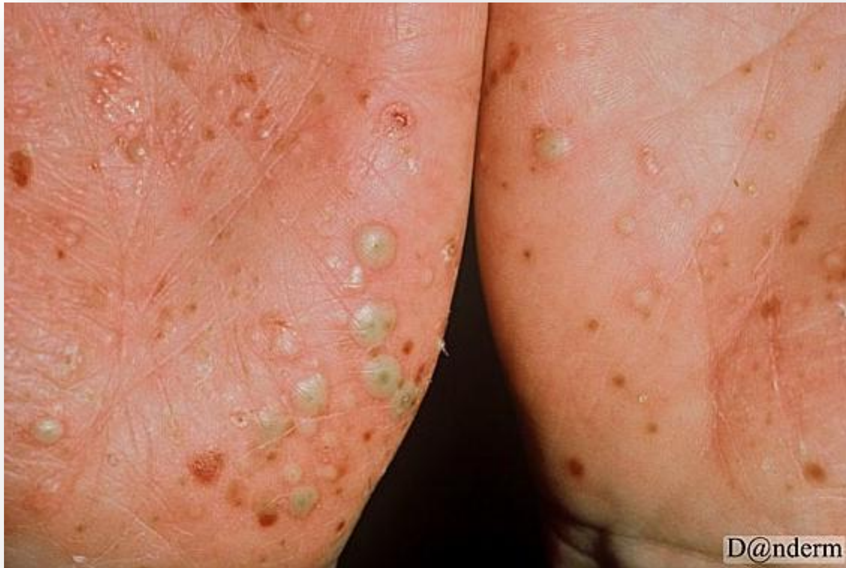
Generalised pustular psoriasis[1]

- Is a rare and represents active, unstable disease
- Red, painful and inflamed skin with fever
- Similar sized, sterile pustules which may coalesce to form sheets



1. Langley RGB *et al*. Ann Rheum Dis 2005;64:ii18-ii23

Palmoplantar pustulosis

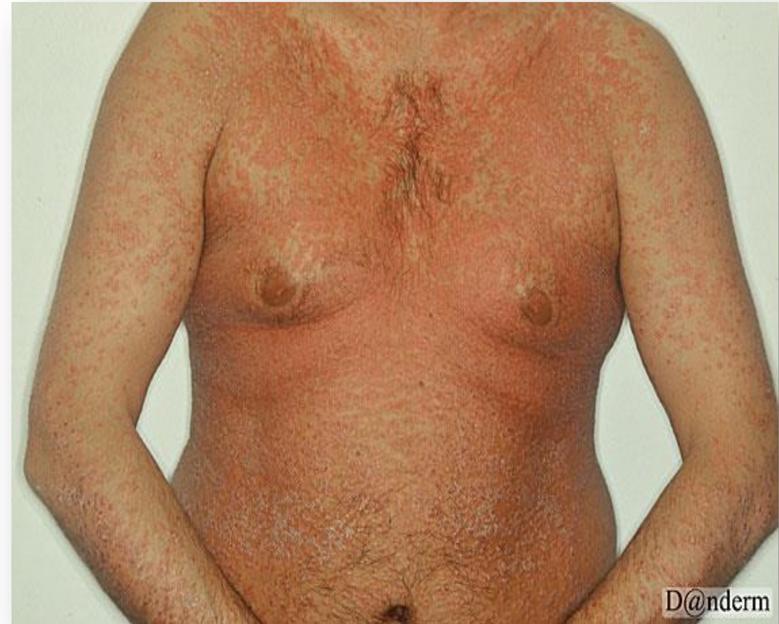


- Found on palms and/or feet[1]
- Erythematous plaques with tender yellow/brown pustules[1]

1. Langley RGB *et al*. Ann Rheum Dis 2005;64:ii18-ii23

Erythrodermic psoriasis

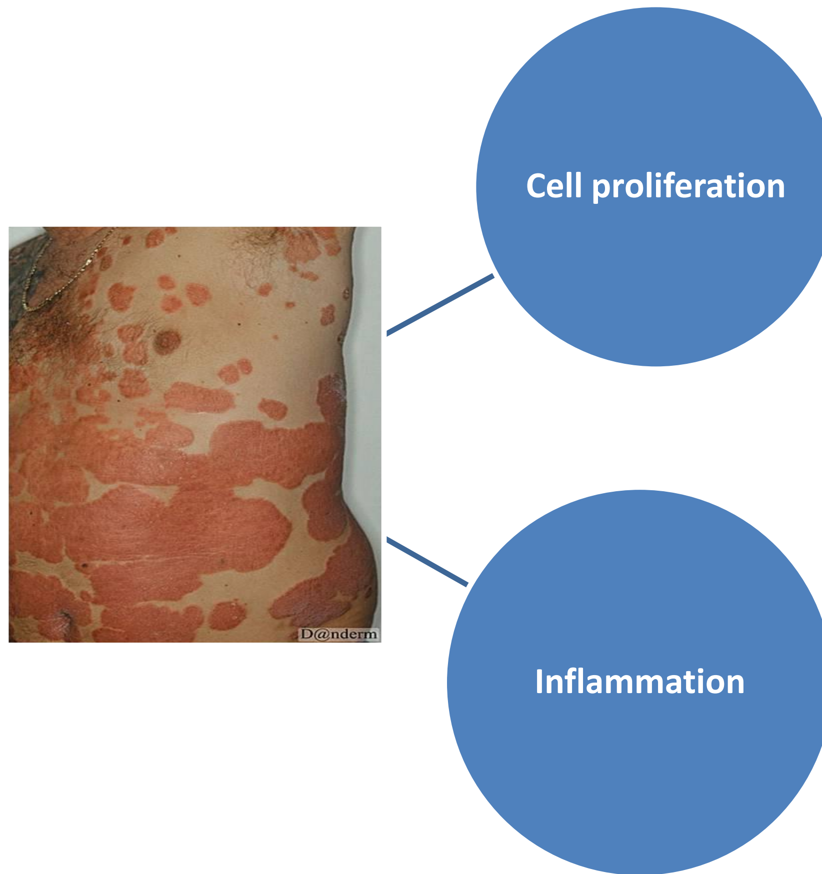
- Covers almost entire body surface area with various degrees of scale[1]
- Altered thermoregulatory properties of skin may cause hypothermia and dehydration due to fluid loss[1,2]



1. Menter A *et al*. J Am Acad Dermatol 2008;58:826-850
2. Langley RGB *et al*. Ann Rheum Dis 2005;64:ii18-ii23

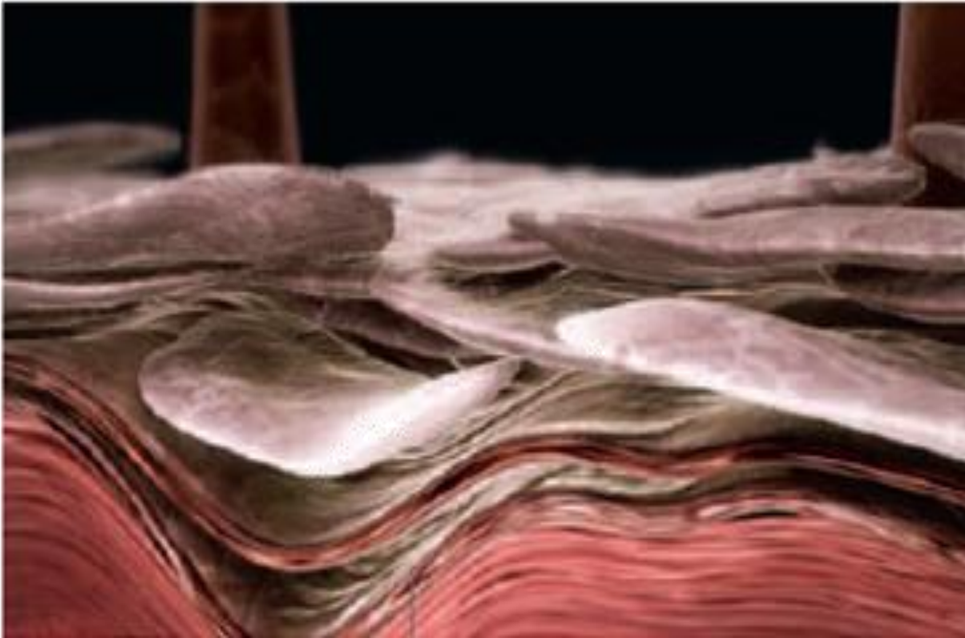
Pathophysiology

Two key disease processes underlie psoriasis[1]



1. Ryan S. Br J Nurs 2010;19:820-825

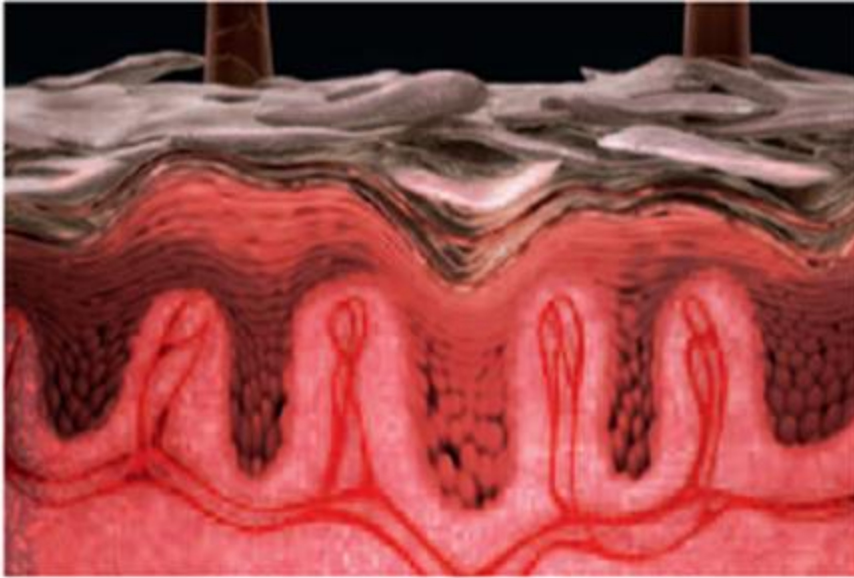
Cell proliferation



- Normal skin – cell reproduction and proliferation takes ~28 days[1]
- Skin turnover in just 4 days in psoriasis[1]
- Immature cells deposited on skin surface[1]

1. Ryan S. Br J Nurs 2010;19:820-825

Inflammation



- Immune-based inflammatory disease processes initiated and maintained by T-cells[1]
- Abnormally large numbers of T-cells trigger release of pro-inflammatory cytokines in the skin[1]

1. Racz and Prens. Expet Rev Mol Med 2009;11:1-18.

Factors affecting psoriasis

Triggers

Smoking[1]

- Risk factor for palmoplantar pustulosis

Trauma[2]

- Psoriasis at the injury (Köbner phenomenon)

Infection[1]

- Streptococcal throat infection is strongly associated with the onset and flaring of guttate psoriasis

HIV[1]

- Psoriasis occurs at a higher rate in HIV patients

Affect disease severity

Pregnancy[3]

- Psoriasis may improve during pregnancy

Drugs[1]

- Wide range of medicines thought to exacerbate psoriasis

Stress[1]

- May worsen symptoms
- The data is conflicting

Alcohol[1]

- Heavy drinking more common in psoriasis patients
- Resulting reduction in compliance

Sunlight[2]

- Generally beneficial

1. Neimann AL *et al*. Expert Rev Dermatol 2006;1:63-75
2. Buxton PK. BMJ 1987;295:904-906.
3. Murase JE *et al*. Arch Dermatol 2005;141:601-606.

Drugs and psoriasis

- Large number of commonly-prescribed drugs can impact on psoriasis
- Drugs that may precipitate or worsen psoriasis include[1,2]
  - Beta-blockers
  - NSAIDS
  - ACE inhibitors
- Drugs associated with severe deterioration of psoriasis[1,2]
  - Lithium
  - Antimalarials
- These medications should be taken into consideration during medicines use reviews with psoriasis patients

1. Ryan S. Br J Nurs 2010;19:820-825
2. Neimann AL *et al*. Expert Rev Dermatol 2006;1:63-75

Common comorbidities

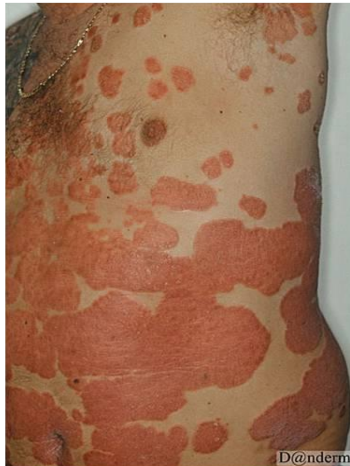
- Psoriatic arthritis
  - Affects around 20% of psoriasis patients[1]
- Inflammatory bowel disease
  - Association documented between psoriasis and Crohn's disease[1]
- Coronary heart disease
  - Psoriasis may be an independent risk factor for MI[1]
- Lymphoma[1]
- Depression[1]

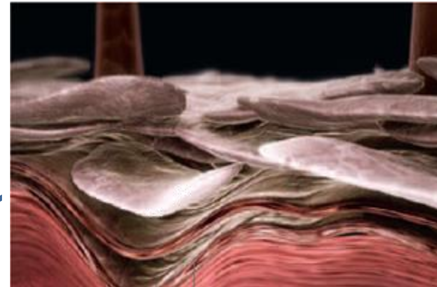
Healthcare professionals should consider comorbidities in patients with psoriasis and conduct detailed assessment to identify and manage comorbid conditions where necessary[1]

1. Scottish Intercollegiate Guidelines Network (SIGN). Diagnosis and management of psoriasis and psoriatic arthritis in adults; October 2010. Available from www.sign.ac.uk (Last accessed 16 January 2012)

Targeting dual disease processes

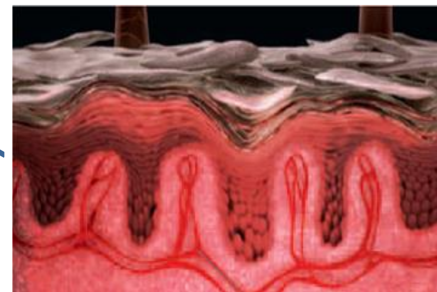
Two key disease processes underlie psoriasis[1]





Cell proliferation

Reduced cell turnover time



Inflammation

Infiltration of inflammatory cells into the epidermis

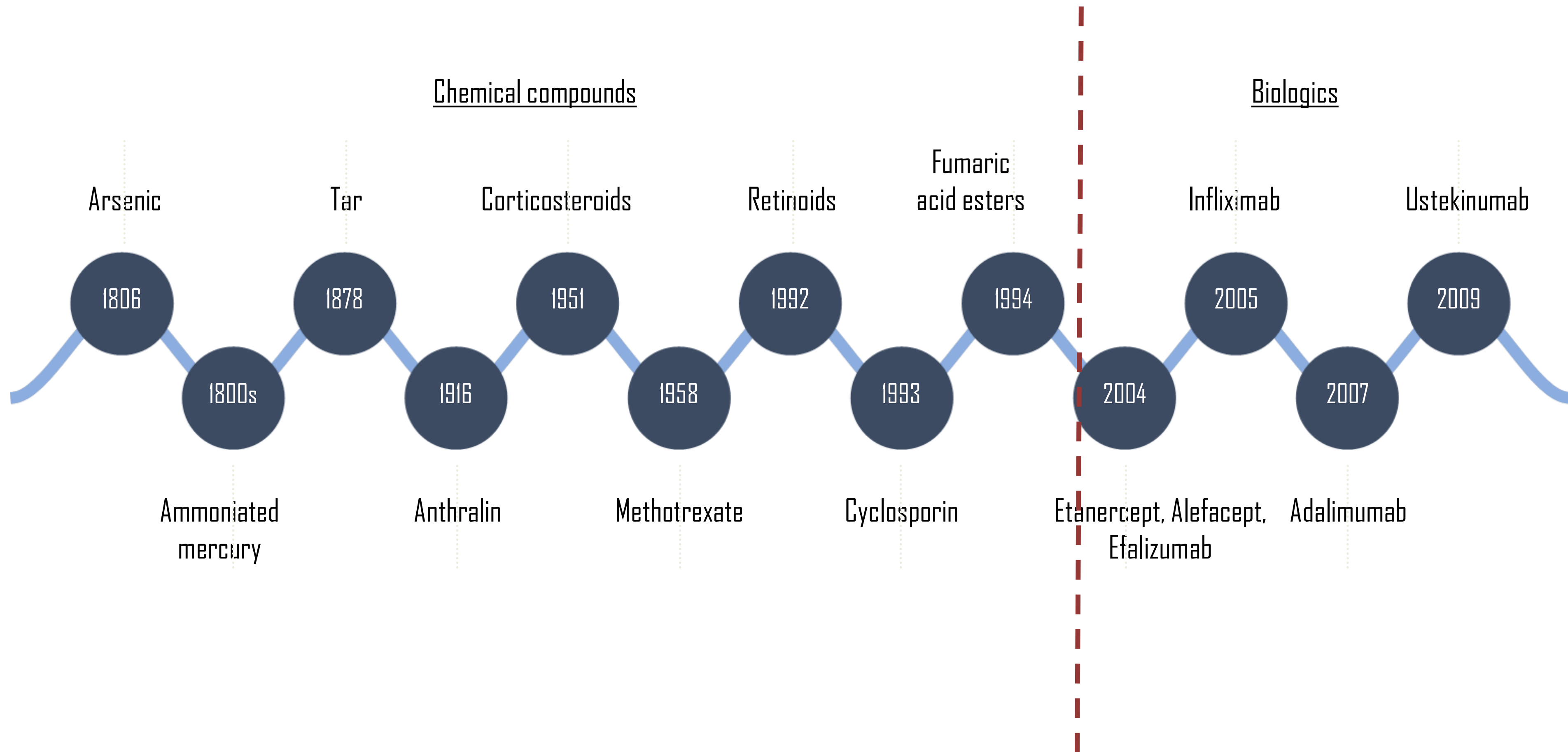
1. Ryan S. Br J Nurs 2010;19:822-5

Traditional treatment routes

- NICE recommends mild-to-moderate plaque psoriasis is managed with topical treatments including:
  - emollients and occlusive dressings, keratolytics (salicylic acid), coal tar, dithranol, corticosteroids, retinoids and Vitamin D analogues[1]
- More severe/resistant psoriasis should be treated with phototherapy, and oral drugs such as ciclosporin, methotrexate and acitretin or injectable biologics[1]
- 94% of people with psoriasis begin therapy with topical treatments[2]
  - These can include gel and cream, or ointment formulations that are applied to the skin and/or scalp

1. National Institute of Clinical Excellence (NICE) Etanercept and efalizumab for the treatment of adults with psoriasis. July 2006: TA103. Available from www.nice.org.uk (Last accessed 16 January 2011)
2. Gillard SE & Finlay AY. Int J Clin Practice 2005: 59: 1260-1267

The History of Psoriasis Treatment



Three step management

Step 1- Topical[1]

- First step of treatment for mild-to-moderate plaque psoriasis
- E.g. Calcipotriol + betamethasone dipropionate (Dovobet®)

Step 2 – Second line[1]

- Patients with moderate-severe psoriasis at onset or patients with inadequate response to topicals
- Phototherapy or oral agents i.e. methotrexate, acitretin, ciclosporin

Step 3 – Biologics[1]

- Etanercept, infliximab and adalimumab
- If 2nd-line treatments ineffective or not tolerated – as per NICE guidance

1. Adapted from Primary Care Dermatology Society (PCDS) 2010. Available from www.pcds.org.uk (Last accessed 24 January 2012)

Treatment options - Topical

Treatment type	Mode of action	Treats inflammation	Treats cell proliferation
Emollients[1]	Reduce dryness, scaling and cracking	✘	?
Topical corticosteroids[2]	Dampen down inflammation	✓	✘
Tar preparations[1]	Remove loose scales may act as an anti-inflammatory	✓	✘
Dithranol[2]	Suppresses production of skin cells	✘	✓
Vitamin D analogues[2]	Reduce excessive skin cell production	✘	✓
Vitamin D + steroid combination[3]	Reduce excessive skin cell production + dampen down inflammation	✓	✓
Tazarotene[2]	Slows production of skin cells	✓	✓

1.British National Formulary (BNF) BNF 62 Section 13.5.2; September 2011: 62. Available from www.bnf.org (Last accessed 19 January 2012)
2.Menter A *et al*. J Am Acad Dermatol 2009:60;643-659
3.Dovobet® Gel Summary of Product Characteristics. Available from www.medicines.org.uk (Last accessed 9 January 2012)

The role of emollients

- Recommended to soften scaling and make the skin more comfortable[1]
- May be the only treatment necessary in mild psoriasis[2]
- Particularly useful in inflammatory psoriasis and plaque psoriasis of the palms and soles[2]
- When in control of psoriasis, regular use of emollients should be encouraged[3]

1. British Association of Dermatologists (BAD) and Primary Care Dermatology Society (PCDS). Recommendations for the initial management of psoriasis. 2009. Available from www.bad.org.uk (Last accessed 17 January 2012)
2. British National Formulary (BNF) BNF 62 Section 13.5.2; September 2011: 62. Available from www.bnf.org (Last accessed 19 January 2012)
3. Adapted from Primary Care Dermatology Society (PCDS) 2010. Available from www.pcds.org.uk (Last accessed 24 January 2012)

Topical corticosteroids

- Not indicated for widespread psoriasis[1]
- Effect may be enhanced by occlusion in suitable patients[1]
- Careful patient supervision advised in psoriasis[1]
- Maybe hazardous for a number of reasons including:[1]
  - Rebound relapses
  - Development of tolerance
  - Risk of generalised pustular psoriasis
  - Development of local or systemic toxicity due to impaired barrier function of the skin

1. Betnovate Cream Summary of Product Characteristics. Available from www.medicines.org.uk (Last accessed 25 January 2012)

Emollient Ladder

Very Greasy

. 50% Liquid soft Paraffin/ 50%White soft Paraffin

Greasy

. Hydromol Ointment
. Epaderm Ointment
. Emulsifying Ointment

Ointment- Greasiest prep
Creams- Emulsion combination of oil and water. Less greasy. Cosmetically more acceptable
Lotions- Higher water contents. Easy to apply. Not as good emollient

Rich Cream

. Unguentum Cream
. Doublebase Gel
. Dermamist Spray
. Neutrogena Dermatological Cream

Ointments- Dry, scaly skin
Creams- Red, inflamed, weeping lesions

Creamy

. Diprobase cream
. Cetraben Cream
. Oilatum Cream
. E45 Cream
. Dermol 500 Cream (with Antimicrobial)
. Aveeno Cream

Creamy with Urea

. Aquadrate Cream
. Calmurid Cream
. Eucerin Cream
. Balneum Plus Cream
. E45 Itch relief Cream

Light

. E45 Lotion
. Aveeno Lotion
. Kerl Lotion
. Dermol 500 Lotion (with Antimicrobial)
. Aqueous Cream (Not really a good emollient)

Light with Urea

. Eucerin Lotion

COMMONLY USED TOPICAL STEROIDS AND STEROID COMBINATIONS

DERMATOLOGY DEPARTMENT, BIRMINGHAM CHILDREN'S HOSPITAL
IN ASSOCIATON WITH THE BRITISH ASSOCIATION OF DERMATOLOGISTS

POTENCY MILD

Hydrocortisone Cream 1%
Synalar 1 in 10 Dilution
Canesten HC
Daktacort
Eurax Hydrocortisone Cream
Fucidin H cream
Fucidin H ointment
Timodine cream
Vioform Hydrocortisone
Nystaform-HC
Nystaform-HC
Terra-Cortril Nystatin Cream
Terra-Cortril Ointment

POTENCY MODERATE

Betnovate RD cream
Betnovate RD ointment
Eumovate cream
Eumovate ointment
Haelan Ointment
Modrasone Cream
Synalar 1 in 4 Dilution
Trimovate cream

POTENCY POTENT

Betnovate cream
Betnovate ointment
Cutivate cream
DiproSone Ointment
Elocon Ointment
Locoid Cream
Metosyn
Metosyn
Nerisone Cream
Nerisone Ointment
Synalar
Aureocort Ointment
Betnovate-C ointment
Betnovate-C cream
Betnovate-N cream
DiproSalic Ointment
Fucibet cream
Locoid C Cream
Lotriderm Cream
Synalar-C
Synalar-N
Tri-Adcortyl Ointment

POTENCY VERY POTENT

Dermovate cream
Dermovate ointment
Nerisone Forte Ointment
Nerisone Forte Oily Cream
Dermovate-NN cream
Dermovate-NN ointment
Halciderm Topical

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Vitamin D analogues

- Affect cell division and differentiation[1]
- Recommended treatments for plaque psoriasis[2]
  - Tacalcitol (Curatoderm) and calcipotriol (Dovonex) – psoriasis vulgaris
  - Calcitriol (Silkis) – mild/moderate, severe plaque psoriasis
- Available in a range of preparations for body and scalp psoriasis[3,4]

1. British National Formulary (BNF) BNF 62 Section 13.5.2; September 2011: 62. Available from www.bnf.org (Last accessed 19 January 2012)
2. British Association of Dermatologists (BAD) and Primary Care Dermatology Society (PCDS). Recommendations for the initial management of psoriasis. 2009. Available from www.bad.org.uk (Last accessed 17 January 2012)
3. Curatoderm Summary of Product Characteristics. Available from www.medicines.org.uk (Laccessed 25 January 2012st)
4. Curatoderm OintmentSummary of Product Characteristics. Available from www.medicines.org.uk (Laccessed 25 January 2012st)

Calcipotriol/ betamethasone dipropionate

- A combination product containing calcipotriol and betamethasone dipropionate
- Considered as a first-line topical therapy for the majority of patients for the management of plaque psoriasis[1]
- Available in gel and ointment formulations[2, 3]
  - Gel is suitable for both mild to moderate body psoriasis and scalp psoriasis[2]
  - Ointment is suitable for topical treatment of stable plaque psoriasis vulgaris amenable to topical therapy in adults[2]

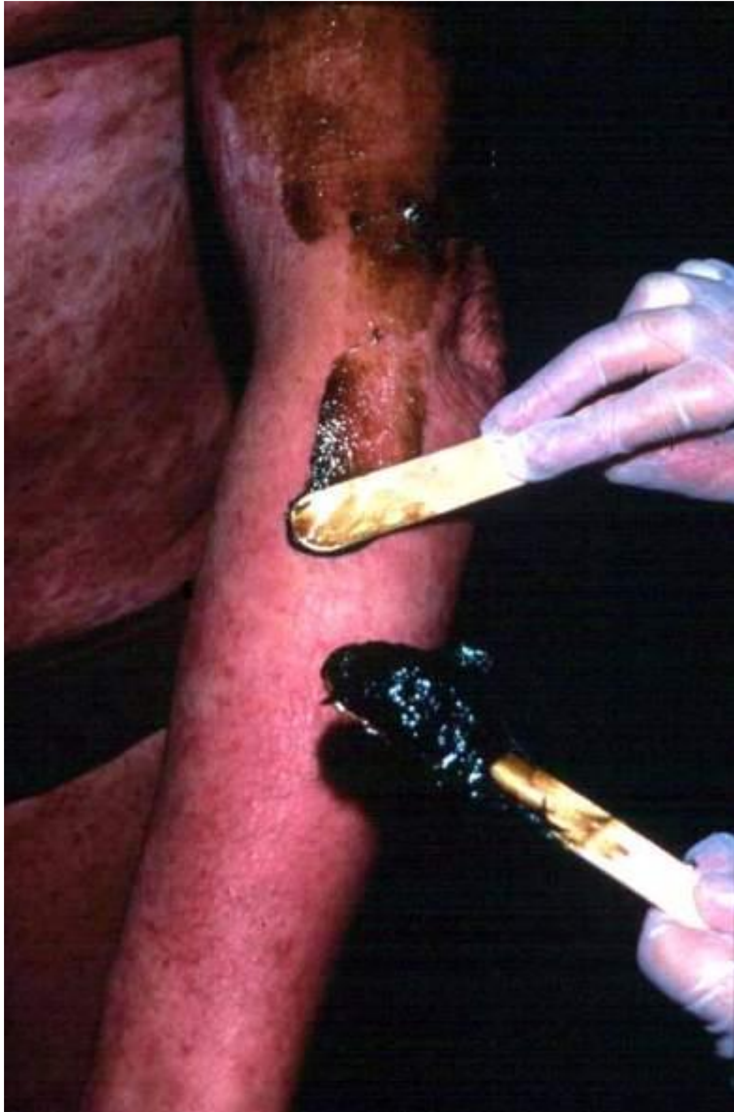
1. British Association of Dermatologists (BAD) and Primary Care Dermatology Society (PCDS). Recommendations for the initial management of psoriasis. 2009. Available from www.bad.org.uk (Last accessed 17 January 2012)
2. Dovobet® gel Summary of Product Characteristics; Available from www.medicines.org.uk (Last accessed 9 January 2012)
3. Dovobet® ointment Summary of Product Characteristics; Available from www.medicines.org.uk (Last accessed 9 January 2012)

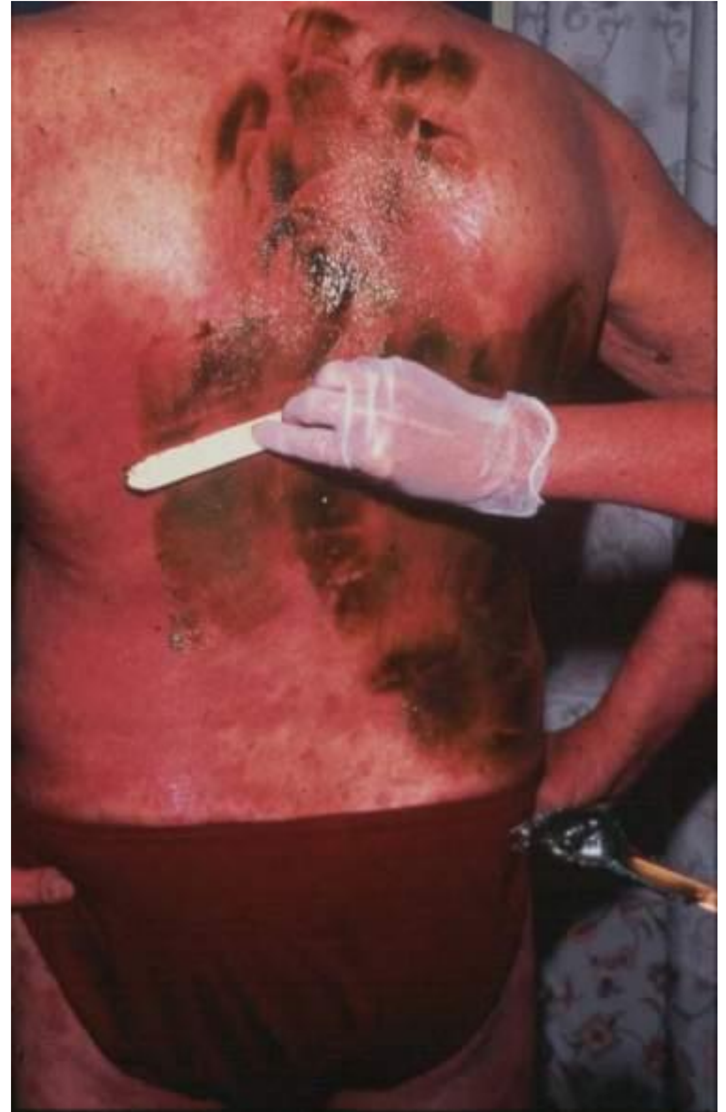
Coal tar preparations

- Treatments available for skin and/or scalp psoriasis[1]
- Keep away from the eyes, mucous membranes, genital or rectal areas[2]
- Local side-effects do not normally occur[2]
- E.g. Exorex/Psoriderm/Crude Coal Tar in YSP

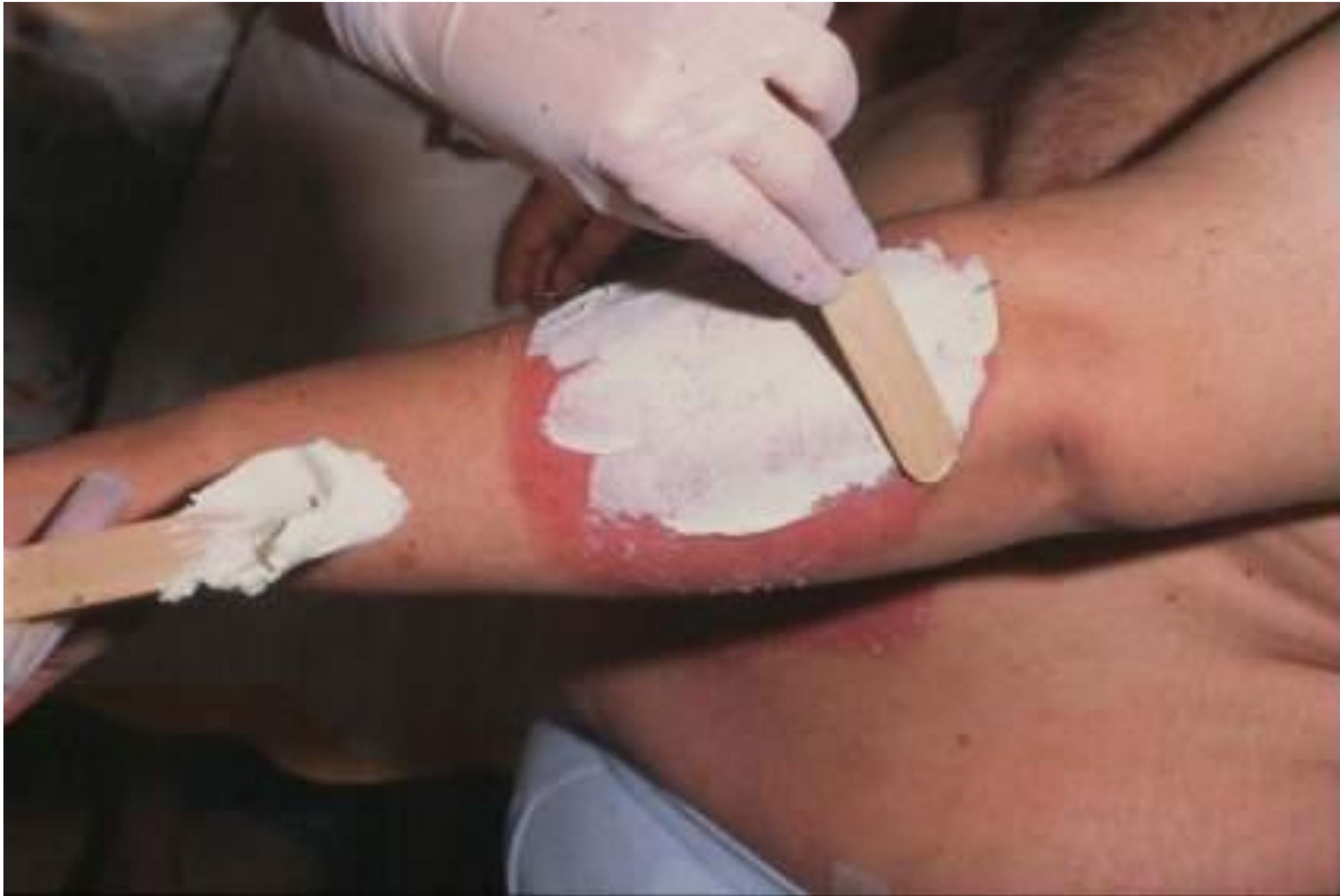
1. British Association of Dermatologists (BAD) and Primary Care Dermatology Society (PCDS). Recommendations for the initial management of psoriasis. 2009. Available from www.bad.org.uk (Last accessed 17 January 2012)
2. Psoriderm™ Cream Summary of Product Characteristics. Available from www.medicines.org.uk (Last accessed 25 January 2012)

TAR





Dithranol



Treatment options - Phototherapy

Phototherapy type	Characteristics
UVB Phototherapy	• Patients receive TL01 narrow band UVB[1] • Effective treatment for psoriasis[2] • UVB slows skin cell production[2]
PUVA – psoralen plus UVA	• UVA wavelength penetrates skin more deeply than UVB[3] • Used for those with a long history of psoriasis unresponsive to UVB[3]
Combination light therapy	• UVB phototherapy in combination with coal tar[3]

1. Gambichler T *et al*. J Am Acad Dermatol 2005:52;660-670
2. Menter A *et al*. J Am Acad Dermatol 2010:62;114-135
3. Lapolla, W *et al*. J Am Acad Dermatol 2011:64:936-949

Treatment options - Systemic

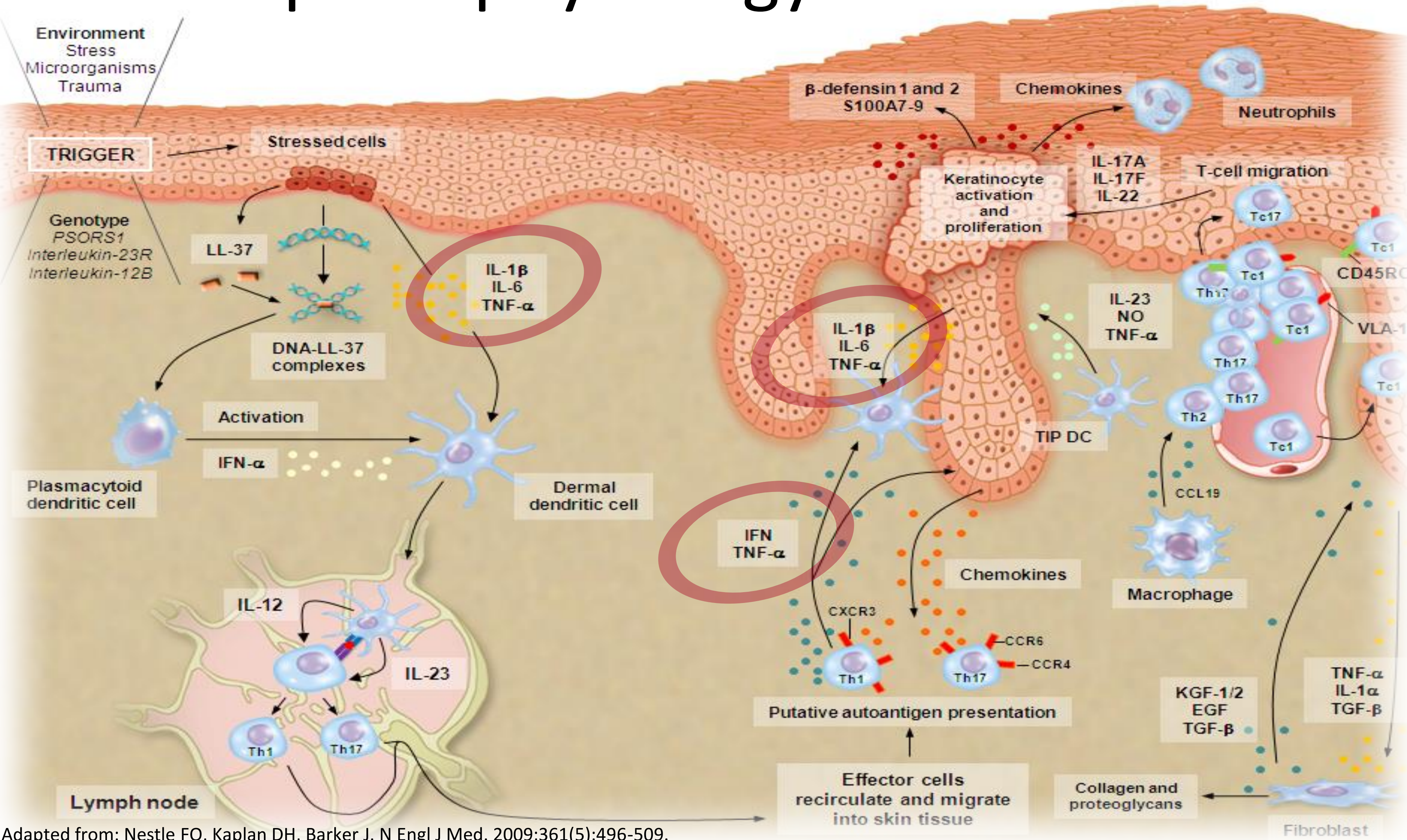
Treatment	Action
Oral agents	
• Methotrexate[1]	Inhibits production of lymphoid tissues[1]
• Acitretin[1]	Oral retinoid – reduces skin cell production and is an anti-inflammatory[1]
• Ciclosporin[1]	Immunosuppressant[1]
Biologics	
• T-cell blocker[2] Alefacept	Inhibits activation and number of T-cells[2]
TNF blockers[2] Etanercept Infliximab Adalimumab	Block activity of TNF alpha –cytokine involved in psoriasis[2]

1. Menter A *et al*. J Am Acad Dermatol 2009;61:451-485
2. Menter A *et al*. J Am Acad Dermatol 2008;58:826-850

Biologics

Advantages	Disadvantages
• Effective in the treatment of moderate to severe chronic plaque psoriasis • Infliximab, etanercept & adamimumab can be used to treat psoriatic arthritis • Generally well tolerated	• Potentially increased risk of infection and malignancy • Administered by injection or infusion

Anti-TNF therapy in the pathophysiology model



Adapted from: Nestle FO, Kaplan DH, Barker J. N Engl J Med. 2009;361(5):496-509.

Stelara
1 pre-filled syringe
solution for injection
in pre-filled syringe
JANSSEN-CILAG

HUMIRA PEN
(adalimumab)
40 mg / 0.8 mL

1 vial
100 mg
Remicade
100 mg
powder for
concentrate
for solution for
infusion
Infliximab

The impact of psoriasis for patients

- The daily burden of the disease:
  - Sense of stigmatisation[1]
    - Embarrassment and shame at visible nature of disease[1]
  - Considerable treatment burden[2]
    - Messy, strong-smelling preparations that require application up to x3 per day
  - Strong sense of patient dissatisfaction with medical management of psoriasis[1]
- Negative impact of psoriasis on health-related quality of life is comparable to ischaemic heart disease, diabetes, depression and cancer[1]

1. Scottish Intercollegiate Guidelines Network (SIGN). Diagnosis and management of psoriasis and psoriatic arthritis in adults; October 2010. Available from www.sign.ac.uk (Last accessed 16 January 2012)
2. National Institute of Clinical Excellence (NICE) Etanercept and efalizumab for the treatment of adults with psoriasis. July 2006: TA103. Available from www.nice.org.uk (Last accessed 16 January 2012)

Thank You
Questions?