

DERMATOLOGY



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HEALTHCARE TRAINING

GUIDELINES

DERMATOLOGY

Develop skills in assessment and management of skin disorders presenting to primary care settings.

OBJECTIVES

- Develop a structured approach to history taking in skin presentations.
- Able to use appropriate terminology in identification of common skin lesions.
- Increase knowledge around common skin disorders and their management
- Recognize when to refer and how to make an appropriate referral.

SESSION CONTENT

- Principles of dermatological assessment and identification of skin disorders.
- Overview of common acute skin problems: diagnosis, differentials and management
- Assessment of skin lesions (benign lesions and skin cancers)
- Emergencies and red flags
- Use of prompt cards to aid assessment and diagnosis
- A quiz
- Case Studies

RECOMMENDED READINGS

- DermNet's worldwide links for patients
- BMJ Learning
- Dermwiz searchable differential diagnoses
- Trip database
- Occupational Dermatology Research and Education Centre
- Cochrane library
- Cochrane Skin Group
- Emedicine dermatology textbook
- WHO adverse drug reactions database (available free of charge)
- European database of suspected drug reaction reports (available free of charge)
- Online Mendelian Inheritance in Man
- Clinical Evidence from the BMJ
- Dermatologic Disorders – The Merck Manual Professional Edition
- DanderM Danish national service on dermato-venereology
- Centre for Evidence-Based Medicine UK
- Centre for Evidence-Based Dermatology updates
- National Institute for Health and Clinical Excellence (NICE) UK NHS including Clinical Knowledge Summaries: accessible in UK only

IMAGES

- Dermatology Online Atlas
- Dermnet.com Dermatologists' image resource
- Global Skin Atlas International Atlas of Dermatology and Dermatopathology



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DERMATOLOGY RESOURCES

- <https://www.osmosis.org/learn/skin-anatomy-and-physiology>
- Dermatology Overview : Armando Hasudungan.
https://www.youtube.com/watch?v=q_745afDEB0
- Psoriasis : <https://www.youtube.com/watch?v=G1f3rIO4E40>
- Erythema Multiforme : <https://www.youtube.com/watch?v=tQNYfUOxLjk>
- Candida Infections : <https://www.youtube.com/watch?v=CeOMzQ1CeMQ>
- Atopic Dermatitis : <https://www.youtube.com/watch?v=z5w4Sw2DBzA>
- Impetigo : <https://www.youtube.com/watch?v=wCxPy6BRC-g>

SKIN

PC

RASH

HPC

Onset

- When did the skin problem start?
- Was the onset acute or gradual?

Course – has the rash/skin lesion changed over time?

Intermittent or continuous – is the skin problem always present or does it come and go?

Duration of the symptom if intermittent – minutes/hours/days/weeks/months/years

Location/distribution:

- Where is the skin problem?
- Number of lesions?
- Is it spreading?

Precipitating factors – are there any obvious triggers for the symptom?

Relieving factors – does anything appear to improve the symptoms (e.g. steroid cream)?

Associated features – are there other symptoms that appear associated (e.g. fever/malaise)?

Previous episodes – has the patient experienced this problem previously?

- When?
- How long for?
- Was it the same or different than the current episode?

Previous or current treatment for this skin problem (did it work?):

- Prescribed medication
- Over the counter medication

Contact history – has the patient been in contact with an infectious skin problem (e.g. chickenpox)?

Sun exposure (including sunbed use)

- Important when considering skin cancer in the differential diagnosis
- Ask patient about how their skin reacts to sun exposure to help determine their skin type (Fitzpatrick scale)



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KEY SYMPTOMS

1. Pain
2. Itch
3. Bleeding
4. Discharge
5. Blistering
6. Systemic symptoms – fever / malaise / weight loss / arthralgia

If any of these symptoms are present, gather further details as shown above (Onset / Duration / Course / Severity / Precipitating factors / Relieving factors / Associated features / Previous episodes)

PAIN

If pain is a symptom, clarify the details of the pain using SOCRATES

SITE – where is the pain?

ONSET – when did it start? / sudden vs gradual?

CHARACTER – sharp / dull ache / burning

RADIATION – does the pain move anywhere else?

ASSOCIATIONS – other symptoms associated with the pain?

TIME COURSE – worsening / improving / fluctuating / time of day dependent

EXACERBATING / Relieving factors – does anything make the pain worse or better?

SEVERITY – on a scale of 0-10, how severe is the pain?



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PMH

Skin disease

- Skin cancer
- Atopy – eczema / hay fever / asthma
- Other dermatological conditions

Other medical conditions – many of which can have dermatological manifestations

- Diabetes – acanthosis nigricans / scleroderma diabeticorum / necrobiosis lipoidica diabeticorum
- Inflammatory bowel disease – pyoderma gangrenosum / erythema nodosum

MEDICATION

Skin treatments – creams / ointments / UV therapy / antibiotics / biologics

Regular medication – including length of treatment (paying particular attention to those started around the time of the skin problem)

Antibiotics

Over the counter drugs

Cosmetics

Herbal remedies

ALLERGIES

Common cause of rashes – ensure to document these clearly

ALLERGIES

Skin conditions – e.g. psoriasis / hereditary hemorrhagic telangiectasia

Skin cancer

Atopy – eczema / asthma / hay fever



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KEY SYMPTOMS

Occupation:

- Are the skin problems worse at work?
 - Do the skin problems improve when the patient is off from work?
 - Is the patient exposed to any skin irritants or other hazardous substances?
- Smoking – How many cigarettes a day? How many years have they smoked for?
- Alcohol – How many units a week? – type / volume / strength of alcohol
- Recreational drug use – e.g. cellulitis from IV drug injection sites

Living situation:

- Own home/care home – adaptations / stairs?
- Who lives with the patient? – is the patient supported at home?
- Any carer input? – what level of care do they receive?
- Any recent changes at home that could be related to skin problems (e.g. new detergent causing allergic reaction to clothing)

Activities of daily living:

- Is the patient independent and able to fully care for themselves?
- Can they manage self-hygiene/housework/food shopping?
- Where did the patient travel to?
- How long was the patient there?
- Is the patient aware of any exposure to infectious disease?
- Sun exposure – was the skin problem worsened by sun exposure? (e.g. facial rash in lupus)



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SYSTEMATIC ENQUIRY

Systemic enquiry involves performing a brief screen for symptoms in other body systems. This may pick up on symptoms the patient failed to mention in the presenting complaint. Some of these symptoms may be relevant to the diagnosis (e.g. arthralgia in psoriatic arthritis).

Choosing which symptoms to ask about depends on the presenting complaint and your level of experience.

Cardiovascular – Chest pain / Palpitations / Dyspnoea / Syncope / Orthopnoea / Peripheral oedema

Respiratory – Dyspnoea / Cough / Sputum / Wheeze / Haemoptysis / Chest pain

GI – Appetite / Nausea / Vomiting / Indigestion / Dysphagia / Weight loss / Abdominal pain / Bowel habit

Urinary – Volume of urine passed / Frequency / Dysuria / Urgency / Incontinence

CNS – Vision / Headache / Motor or sensory disturbance/ Loss of consciousness / Confusion

Musculoskeletal – Bone and joint pain / Muscular pain

SYSTEMATIC ENQUIRY

1. Observe if the patient appears comfortable at rest
2. Observe the number of skin lesions
3. Observe the location and distribution of any skin lesions:
 - Acral – affecting distal areas, hands and feet
 - Extensor – extensor surfaces, elbows, knees
 - Flexural – flexural surfaces, axillae, genital areas, cubital fossa
 - Follicular – arising from hair follicles
 - Dermatomal – corresponding with nerve root distribution
 - Seborrhoeic – associated with areas where there are sebaceous glands, face and scalp
4. Close inspection of individual lesions



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ASSES LESIONS

1. Size - width/height (if raised)
2. Configuration of the lesion(s) - refers to the shape or outline of skin lesions. The pattern of multiple lesions or shape of an individual lesion can assist in diagnosis.
3. discrete or confluent
4. shape of the lesion(s)
5. border of the lesion(s) – well defined vs poorly defined

TYPES OF CONFIGURATIONS

- Discrete lesions – individual lesions, clearly separated from one another
- Confluent lesions – lesions that appear to be merging together
- Linear lesions – e.g. scratching related lesions
- Discoid (coin shaped) – discoid eczema/discoid lupus
- Target lesions – concentric rings of varying colour – resembles a bullseye – erythema multiforme
- Annular – ring like lesions

COLOUR OF THE LESION

1. Erythema:

- Redness of the skin
- Caused by increased blood supply
- Blanches when pressure is applied to it

2. Purpura:

- Reddish/purple discolouration of the skin
- Caused by bleeding into the skin
- Do not blanch when pressure is applied
- Types of purpura include:
 - o Petechiae – small red/purple spots on the skin (<2mm in width)
 - o Ecchymosis – larger red/purple lesions (>2mm) – commonly referred to as a bruise



MORPHOLOGY

Assess the form and structure of the lesion – Is the lesion flat, raised above the plane of skin, or depressed below the plane of skin?

PRIMARY LESIONS

Macule – a flat area of altered colour <1.5cm in diameter

Patch – a flat area of altered colour >1.5cm in diameter

Papule – solid raised palpable lesion <0.5cm in diameter

Nodule – solid raised palpable lesion >0.5cm in diameter

Plaque:

- palpable flat lesion usually >1cm in diameter
- most are raised, but some may just be thickened without being visible raised
- its borders may be well defined or poorly defined

Vesicle – raised, clear fluid filled lesion <0.5cm in diameter

Bulla – raised, clear fluid filled lesion >0.5cm in diameter

Pustule – pus containing lesion <0.5cm in diameter

Abscess – localised accumulation of pus

Wheal – oedematous papule or plaque caused by dermal oedema.

Boil / furuncle – staphylococcal infection around or within a hair follicle

Carbuncle – staphylococcal infection of adjacent hair follicles (multiple boils/furuncles)

SECONDARY LESIONS

Secondary lesions are modifications of primary lesions that occur due to trauma to, or evolution of, the primary lesion.

1. Excoriation – loss of epidermis associated with trauma

2. Lichenification

Thickening of the epidermis seen with exaggeration of normal skin lines

It is usually due to chronic rubbing or scratching of an area

3. Scales

Visible fragments of the stratum corneum as it is shed from the skin

Most commonly associated with psoriasis

4. Crust:

Rough surface consisting of dried serum, blood, bacteria and cellular debris

The serum, blood, bacteria and debris has usually exuded through an eroded epidermis

5. Scar

New fibrous tissue which occurs after skin injury

Atrophic scarring – thinning of the normal tissue

Hypertrophic scarring – hyperproliferation of scar tissue within the wound boundary

Keloidal scarring – hyperproliferation of scar tissue beyond the wound boundary

MORPHOLOGY

6. Ulcer

Localised defect in the skin of irregular size and shape where epidermis and some dermis have been lost

Results in scarring

7. Fissure

Sharply-defined, linear or wedge-shaped tears in the epidermis with abrupt walls

Usually due to excess dryness

8. Striae

Often referred to as stretch marks

Evolution in colour = Purple -> Pink -> White

Associated with growth spurts, excess steroid use or production and pregnancy

ASSESSMENT OF A PIGMENTED LESION

If lesion is pigmented use the ABCDE assessment method³

1. Asymmetry more suggestive of sinister pathology

2. Border irregularity

Are the edges of the lesion well defined?

Less defined borders are more suggestive of sinister pathology

3. Colour variation or changes

Is the colour consistent?

Two or more colours within one lesion is more suggestive of sinister pathology

4. Diameter

Has there been a change in size of the lesion?

Increasing size, particularly over 6mm diameter is more concerning

5. Elevation/evolution

Changes in colour, size, symmetry, surface characteristics, and symptoms.

Symptoms include itching, bleeding and scabbing of the lesion

6. If you feel a lesion is concerning you should perform a comprehensive systematic examination of other areas:

a. Inspect the rest of the skin for suspicious pigmented lesions or dysplastic naevi

b. Palpate major lymph nodes in the regional drainage area



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PALPATION OF SKIN LESIONS

Don gloves if the skin lesion is felt to be infective or is likely to expose you to bodily fluids (e.g. blood/pus).

Assess surface characteristics of the lesion

- Texture – smooth/rough – e.g. roughness in hyperkeratosis (scales)
- Flat, raised or depressed?
- Crust – if present, are you able to remove crust and see what is underneath?
- Temperature – is the lesion warm?

Assess deeper characteristics of the lesion

- Consistency – hard/soft/firm/fluctuant
- Mobility – is the lesion attached to the underlying/overlying tissue?
- Tenderness – is the lesion tender on palpation?

NAILS, HANDS AND ELBOWS

Assess the nails, hands and elbows for signs associated with dermatological disease

1. Nail pitting

Punctate depressions of the nail plate

Associated with eczema, psoriasis and alopecia areata

2. Onycholysis

Separation of the distal end of the nail plate from the nail bed

Associated with psoriasis and fungal nail infection

3. Koilonychia

Spoon shaped indentation of the nail plate

Associated with iron deficiency anemia, can also be congenital

4. Nail clubbing:

Loss of the angle between the posterior nail fold and nail plate

Associated with many conditions including inflammatory bowel disease, cyanotic heart disease, lung cancer, bronchiectasis



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ELBOWS

- Xanthomas – secondary to underlying hyperlipidaemia
- Psoriasis plaques on elbows

HAIR AND SCALP

1. Loss of hair

Alopecia areata – well defined patches of hair loss with surrounding normal hair

Alopecia totalis – loss of all hair from the scalp (affects 5% of those with autoimmune hair loss)

2. Excess hair

Hirsutism – androgen dependent excess hair growth in females

Hypertrichosis – non-androgen dependent excess hair growth

3. Scalp

Psoriasis plaques

Dandruff – e.g. seborrheic dermatitis

Mucous Membranes

Inspect oral mucosa to evidence of skin disease (e.g. pigmented lesions/bullae)

CLASSIFICATION

1. **Assess the severity of the eczema**, examine all areas of affected skin, and ask about itching.

2. Categorize eczema as:

a. Clear — if there is normal skin and no evidence of active eczema.

b. Mild — if there are areas of dry skin, and infrequent itching (with or without small areas of redness).

c. Moderate — if there are areas of dry skin, frequent itching, and redness (with or without excoriation and localized skin thickening).

d. Severe — if there are widespread areas of dry skin, incessant itching, and redness (with or without excoriation, extensive skin thickening, bleeding, oozing, cracking, and alteration of pigmentation).

TREATMENT

1. Most emollient products are plain (that is, contain no active ingredients). However, some emollients contain:
 - Urea (a keratin softener and hydrating agent), for example Aquadrate®, Balneum® Plus, Calmurid®, E45® Itch Relief Cream, and Eucerin® Intensive.
 - Lauromacrogols (which have local anaesthetic properties, and soothes and relieves itchy skin), for example Balneum® Plus and E45® Itch Relief Cream.
 - Lanolin or lanolin derivatives, for example hydrous ointment, E45® cream and lotion, and Oilatum® emollient bath additive.
 - Antiseptic, for example Dermol® preparations (cream, lotion, shower, and bath emollient), Emulsiderm® liquid emulsion, and Oilatum Plus bath additive®.
2. Emollients containing active ingredients are not generally recommended because they increase the risk of skin reactions.
However, they may be useful in some people.
3. All emollients are available on the NHS, but some are classified as borderline substances and as such their prescriptions should be endorsed with 'ACBS' (Advisory Committee on Borderline Substances). These include Aveeno® products (bath oil, cream, and lotion) and E45® products (emollient bath oil, emollient wash cream, and lotion).
4. Preparations marked 'ACBS' are regarded as drugs when prescribed in accordance with the advice of the ACBS for the clinical conditions listed. See the Drug Tariff for more information.
5. Emollients are also available over-the-counter although availability may be limited.[BNF 72, 2016]



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CHOICE OF PRODUCT

1. There is no evidence from controlled trials to support the use of one emollient over another [van Zuuren, 2017]
2. Prescribe an emollient according to the dryness of the skin, and individual preference/tolerance. The key to successful management is finding the correct balance between these factors.
 - a. Creams and lotions are generally better for red, inflamed areas of skin because it is believed that the evaporation of waterbased products cools the skin.
 - b. Ointments are preferable for dry skin (that is not inflamed) because they are more effective than creams. However, they are usually poorly tolerated compared with cream; this may affect their acceptability and hence compliance.
 - c. Experience has shown that proprietary products are often preferred to non-proprietary products; it may be a false economy to prescribe solely on the basis of price.
 - d. Often, several different emollients will be required (for example for different areas of skin, different stages of flare, or for use in different locations).
 - e. Do not prescribe aqueous cream as it is thought to cause a disproportionate amount of skin reaction.
3. Where possible, prescribe an emollient with a pump dispenser to minimize the risk of bacterial contamination.
 - a. For emollients that come in pots, advise that using a clean spoon or spatula (rather than fingers) to remove the emollient helps to minimize contamination.
4. Emollients containing active ingredients are not generally recommended because they increase the risk of skin reactions, and the evidence to support the use of active ingredients in emollients is limited. However, they may be useful in some people. For example, products containing:
 - a. Lauromacrogols are reputed to relieve itch.
 - b. Urea may improve skin hydration. It can enhance the moisture-retaining ability of emollients, thereby improving their efficacy.
 - c. Antiseptics (for example benzalkonium chloride) have a limited role in protecting skin which is prone to infection.
5. Prescribe emollients to replace soap in people with dry skin requiring treatment.
 - a. Ointments dissolved in hot water are suitable soap substitutes.
 - b. Bath additives and shower products are an option for people with extensive areas of dry skin, although the evidence to support their use is limited and there is no universal consensus on their benefit [DTB, 2007; Eichenfield, 2014(b)].



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CHOICE OF PRODUCT

- c. If bath emollients are used, it is essential that they do not replace standard emollients. The person should be advised to continue using standard emollients in addition to any bath emollient product.
- 6. The effectiveness and acceptability of a particular emollient may vary with time.
 - a. If the person feels that a particular product has become unsuitable for them (or if they have developed sensitivity to it), prescribe an alternative emollient.
 - b. It may be necessary to try a range of emollients before the person settles on the best combination.
- [National Collaborating Centre for Women's and Children's Health, 2007; NICE, 2007a; SIGN, 2011; Arkwright, 2013; RCN, 2013; Eichenfield, 2015; Primary Care Dermatology Society, 2016]
- 7. Emollients are typically under-prescribed and under-used. This results in suboptimal treatment of dry skin and eczema, and may increase the occurrence of flares [NICE, 2007a] .
- 8. Once the preferred choice of emollient is known, encourage appropriate usage by prescribing generous amounts (for example 500 g) to be used regularly (often four times daily).
- 9. Where possible, pump-dispensers should be prescribed when large quantities of cream or lotion are required. This is because they are more convenient than other containers and are less likely to become contaminated by potential pathogens.
- 10. The amount of emollient used should far exceed other topical treatments (for example corticosteroids) by a factor of at least ten.
- [NICE, 2007a; Primary Care Dermatology Society, 2016].



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STEPPED TREATMENT OPTIONS FOR ATOPIC ECZEMA

Mild atopic eczema	Moderate eczema	Severe eczema
Emollients	Emollients	Emollients
Mild potency topical	Moderate potency topical corticosteroids	Potent topical corticosteroids
-	Topical calcineurin inhibitors (tacrolimus or pimecrolimus)	Topical calcineurin inhibitors (tacrolimus or pimecrolimus)
-	Bandages	Bandages
-	-	Phototherapy
-	-	Oral corticosteroids

QUANTITY OF TOPICAL CORTICOSTEROID TO APPLY FOR ONE APPLICATION

Body area	Number of finger-tip units* (FTUs) for adults and children
Face and neck	Adult: 2.5 Children: 6–10 years: 2; 3–5 years: 1.5; 1–2 years: 1.5; 3–12 months: 1
Arm and hand	Adult: 4 Children: 6–10 years: 2.5; 3–5 years: 2; 1–2 years: 1.5; 3–12 months: 1
Leg and foot	Adult: 8 Children: 6–10 years: 4.5; 3–5 years: 3; 1–2 years: 2; 3–12 months: 1.5
Trunk (front)	Adult: 7 Children: 6–10 years: 3.5; 3–5 years: 3; 1–2 years: 2; 3–12 months: 1
Trunk (back) including buttocks	Adult: 7 Children: 6–10 years: 5; 3–5 years: 3.5; 1–2 years: 3; 3–12 months: 1.5

* One adult fingertip unit (FTU) is the amount of ointment or cream expressed from a tube with a standard 5mm diameter nozzle, applied from the distal crease to the tip of the index finger.

TOPICAL CORTICOSTEROIDS

1. Topical corticosteroids are available in four potencies: mildly potent, moderately potent, potent, and very potent.

a. Examples include:

- Mildly potent — hydrocortisone 0.1%, 0.5%, 1.0%, and 2.5%
- Moderately potent — betamethasone valerate 0.025% (Betnovate-RD®) and clobetasone butyrate 0.05% (Eumovate®)
- Potent — betamethasone valerate 0.1% (Betnovate®) and betamethasone dipropionate 0.05% (Diprosone®)
- Very potent — clobetasol propionate 0.05% (Dermovate®) and difluocortolone valerate 0.3% (Nerisone Forte®)

b. Preparation: creams, ointments, lotion, gel, and/or scalp applications, available as non-proprietary and/or proprietary products.

c. All available on NHS with an FP10 form. See British National Formulary for a complete list of all topical corticosteroids available in UK.

2. Note that:

a. Hydrocortisone 1% is available over-the-counter for the treatment of mild-to-moderate eczema not involving the face or genitals.

b. Very potent topical corticosteroids should usually only be prescribed by specialists.[BNF 72, 2016]

REGIMEN FOR FLARES

1. For normal skin on the body (not the face, genitals, or axillae):

a. Prescribe a strength of topical corticosteroid to match the severity of the eczema, to be used once a day for 7–14 days:

- For mild eczema — prescribe a mildly potent topical corticosteroid.
- For moderate eczema — prescribe a moderately potent corticosteroid.
- For severe eczema — prescribe a potent topical corticosteroid.

b. The quantities of topical corticosteroid required to treat a flare of eczema for 1 week in an adult are listed below (use half quantity for children) [BNF 72, 2016]:

- Face and neck: 15–30 g
- Both hands: 15–30 g
- Scalp: 15–30 g
- Both arms: 30–60 g
- Both legs: 100 g
- Trunk: 100 g
- Groin and genitalia: 15–30 g

REGIMEN FOR FLARES

- c. If the response to once daily application is inadequate, increase to twice daily.
2. For flares on the face, genitals, or axillae, consider prescribing a mild potency topical corticosteroid and increase to a moderate potency corticosteroid only if necessary [SIGN, 2011].
 - a. For moderate or severe flares on face, genitals, or axillae, use a moderately potent corticosteroid for a maximum of 5 days. If this is insufficient, consider referral.
3. Prescribe an appropriate formulation for the person and their condition. Choosing a topical corticosteroid that is acceptable to the person is important as it will encourage compliance with treatment [DTB, 2003].
 - a. Creams are preferred by most people, especially when used on visible areas, such as the face and hands.
 - b. Ointments provide the strongest emollient effect and may be more effective. However, they are greasy and so may be more suitable for use at night.
 - c. Other formulations (such as for scalp applications) are suitable for specific areas of skin.
4. 'Where more than one alternative topical corticosteroid is considered clinically appropriate within a potency class, drug with lowest acquisition cost should be prescribed, taking into account pack size and frequency of application' [NICE, 2004b]. CKS recommends that cost should be taken into account, but not at expense of preference.

REGIMEN FOR MAINTENANCE

1. For maintenance treatment of chronic eczema ie skin other than face, genitals, or axillae, consider one of following:
 - a. Step down treatment - prescribe lowest potency topical corticosteroid that controls eczema - typically this will be a potency class down from what is used during a flare (for example prescribe a moderate potency corticosteroid for maintenance in people who have severe flares) [NICE, 2007b].
 - b. Intermittent treatment — consider one of the following two regimens:
 - Weekend therapy — prescribe the usual topical corticosteroid, to be used on two consecutive days per week [NICE, 2007b].
 - Twice weekly therapy — prescribe the usual topical corticosteroid, to be used twice a week (for example every 3–4 days) [SIGN, 2011].
 - c. Treatment should be continued indefinitely, although an occasional drug holiday is advisable when step down treatment is being used.
2. For maintenance treatment of chronic eczema on face, genitals, or axillae, use a mild topical corticosteroid. If insufficient, consider referral.
3. Oral antibiotics

PRESCRIBING ISSUES FOR FLUCLOXACILLIN

1. Flucloxacillin is licensed for the treatment of infected skin conditions, including eczema.

2. Dosing regime

a. The usual doses (which should be taken at least 30 minutes before food) are [BNF 72, 2016; BNF for Children, 2017]:

- Adults and children older than 10 years of age — 250 mg to 500 mg four times a day for 7 days.
 - Children 2–10 years of age — 125 mg to 250 mg four times a day for 7 days.
 - Children 1 month to 2 years of age — 62.5 mg to 125 mg four times a day for 7 days.
- b. Treatment duration can be extended to 2 weeks if the initial response is inadequate.

3. Contraindications and cautions

a. Do not prescribe flucloxacillin to people with:

§ A true penicillin hypersensitivity. Gastrointestinal adverse effects alone (such as nausea, vomiting, or diarrhoea) do not constitute an allergy to penicillin.

- History of penicillin-associated hepatic dysfunction.

b. Prescribe flucloxacillin with caution to people with:

- Hypersensitivity to cephalosporins.
- Hepatic impairment.
- Renal impairment - consider dose reduction, or a reduction in dosing interval in severe renal failure, due to the risk of neurotoxicity.

4. Adverse effects

The most common adverse effects of flucloxacillin are nausea, vomiting, skin rash, and diarrhoea. Consider pseudomembranous colitis, an acute, exudative colitis caused by *Clostridium difficile* (a Gram-positive toxin-releasing bacillus), if a person develops severe diarrhoea during or after treatment with flucloxacillin. For more information

5. Antiseptics are used to lower bacterial load. They include solutions of chlorhexidine salts and triclosan, potassium permanganate, and antiseptics incorporated into emollients.

6. A range of topical antiseptics and antibiotics are available, either alone or combined with emollients or topical corticosteroids. See Table 3 for more information.

7. If a topical antibiotic alone is prescribed, continue treatment with a topical corticosteroid.

a. Avoid using combined corticosteroid/antibiotic preparations (such as fucibet® cream) on a regular basis as this will increase the risk of antibiotic resistance [Primary Care Dermatology Society, 2016].

b. If prescribing combined products, generally the same issues and precautions apply as with topical corticosteroids alone. However, sensitization is more likely to occur because of the inclusion of more additives.

TREATMENT OF ECZEMA

Product type	Active components	Formulation (s)	Proprietary name
Topical antibiotic alone	Mupirocin Fusidic acid	Cream and ointment	Bactroban® Fucidin®
Topical antibiotic combined with corticosteroid	Fusidic acid and hydrocortisone	Cream and Cream	Fucidin H® Locoid C® Betnovate-C® Betnovate-N® Synalar-C® Fucibet®
		Ointment	Aureocort®

DIFFERENTIAL DIAGNOSIS

Psoriasis may present similarly to:

- 1. Seborrhoeic dermatitis — may mimic facial or scalp psoriasis, with greasy scale which is more diffuse and less well-defined than in psoriasis; may co-exist with psoriasis (so-called 'sebo-psoriasis').
- 2. Fungal skin infection — lesions are typically either solitary, or unilateral and asymmetrical, and have central clearing with peripheral scaling.
- 3. Fungal nail infection
- 4. Candidal intertrigo — may mimic flexural psoriasis, but typically presents with bright red papules, pustules, and superficial erosions with satellite lesions.
- 5. Norwegian scabies — may present with hyperkeratosis similar to that of psoriasis, with genital and axillary fold involvement.
- 6. Secondary syphilis — consider if there is palmar or plantar involvement with macules, papules, pustules, or plaques, which may mimic localized pustular psoriasis, or may mimic guttate psoriasis if lesions are more widespread.
- 7. Bacterial infection — may mimic flexural psoriasis.
- 8. Eczema — may be distinguishable from psoriasis due to lack of sharp margination. May mimic flexural or chronic plaque psoriasis, as skin can become lichenified. Chronic hand eczema can present as ill-defined psoriasiform plaques on the palms and soles. on Eczema - atopic and Dermatitis - contact for more information.
- 9. Lichen planus — may present with mucosal involvement, scarring alopecia, severe itch, and may affect the nails.

10. Lichen simplex chronicus — localized areas of lichenification resulting from repeated rubbing, scratching, and itching of the skin.
11. Discoid lupus erythematosus — may be exacerbated by sun exposure and result in scarring.
12. Cutaneous T-cell lymphoma — rare; presents with itchy, red, scaly patches however, unlike psoriasis, there is colour variation among the patches.

DIFFERENTIAL DIAGNOSIS

Guttate psoriasis may present similarly to:

1. Viral exanthems.
2. Pityriasis rosea — psoriatic scale involves the whole lesion and is coarser than the finer, localized ring pattern of the scale of pityriasis rosea.
3. Drug eruptions.

Generalized pustular psoriasis may present similarly to:

1. Pyogenic infections.
2. Vasculitis.
3. Drug eruptions.

VITAMIN D PREPARATIONS

1. Topical vitamin D preparations are available as ointments, gels, scalp solutions, and lotions.
2. Three vitamin D preparations are available on prescription in the UK:
 - a. Calcipotriol (Dovonex®) — available as an ointment.
 - b. Calcipotriol (non-branded) — available as an ointment and scalp solution.
 - c. Calcitriol (Silkis®) — available as an ointment.
 - d. Tacalcitol (Curatoderm®) — available as an ointment or lotion.
 - e. Note: calcitriol and tacalcitol may be less irritating than calcipotriol.



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SALICYLIC ACID

1. Products suitable for the scalp include:
 - a. Sebco® scalp ointment (coal tar 12%, salicylic acid 2%, sulphur 4%, coconut oil).
 - b. Psorin® scalp gel (dithranol 0.25%, salicylic acid 1.6%).
 - c. Capasal® shampoo (coal tar 1%, coconut oil 1%, salicylic acid 1%).
 - d. Meted® shampoo (salicylic acid 3%, sulphur 5%).
2. Products suitable for plaques on the trunk and limbs include:
 - a. Zinc and salicylic acid paste BP (Lassar's paste; zinc oxide 24%, salicylic acid 2%).
 - b. Psorin® ointment (dithranol 0.11%, coal tar 1%, salicylic acid 1.6%).
3. Contraindications and cautions - Do not prescribe topical salicylic acid preparations for people:
 - Who are allergic to aspirin.
 - Who have inflamed or broken skin.
4. Prescribe topical salicylic with caution:
 - If applied on large areas of skin — risk of salicylate toxicity.
 - To people who are pregnant or breastfeeding — use on limited areas for a limited time period.

COAL TAR PRODUCTS

1. Several coal tar preparations are available in the UK including ointments, shampoos, and bath additives. Various preparations are combined with other topical treatments for the management of psoriasis (for example salicylic acid).
2. The choice of coal tar preparation should take into consideration product availability, the skin site, previous response to treatment, and the person's preference.
 - a. Newer, branded products are preferred because older, non-branded products contain crude coal tar (coal tar BP) which is smellier and usually messier to use.
3. Preparations suitable for treating scalp psoriasis include:
 - a. Alphosyl 2 in 1® shampoo (alcoholic coal tar extract 5%).
 - b. Capasal® shampoo (coal tar 1%, coconut oil 1%, salicylic acid 0.5%).
 - c. Polytar liquid® shampoo (coal tar 1%).
 - d. Psoriderm® — scalp lotion is also a shampoo (coal tar 2.5%, lecithin 0.3%).
 - e. T/Gel® shampoo (coal tar extract 2%).



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- f. Exorex® lotion (coal tar 1%).
 - g. Sebco® scalp ointment (coal tar solution 12%, salicylic acid 2%, sulphur 2%).
 - h. Note: do not use coal tar shampoos such as Polytar®, Alphosyl 2:1®, or Capasal® alone for treating severe scalp psoriasis.
4. Preparations suitable for treating psoriasis on the trunk and limbs include:
- a. Exorex® lotion (coal tar 1%).
 - b. Psoriderm® cream (coal tar 6%).
5. Bath additives include:
- a. Polytar Emollient® bath additive (coal tar solution 2.5%, peanut oil, extract of coal tar 7.5%, tar 7.5%, cade oil 7.5%, liquid paraffin 35%).
 - b. Psoriderm® bath emulsion (coal tar 40%).
6. Contraindications and cautions
7. Do not prescribe coal tar preparations to people:
- With broken or inflamed skin.
 - With skin infection.
 - With sore, acute, or pustular psoriasis.
 - With genital or rectal psoriasis.
 - Who are pregnant — avoid the use of coal tar preparations in the first trimester of pregnancy.
8. Prescribe coal tar with caution to people:
- Applying to the face (particularly around the eyes) or skin flexures.
 - Who are pregnant — use coal tar preparations with caution in the second and third trimesters of pregnancy if the expected benefit to the mother outweighs the potential risk to the infant.
 - Who are breastfeeding — use coal tar preparations with caution if the expected benefit to the mother outweighs the potential risk to the infant, and ensure the infant does not come into direct contact with treated skin to avoid accidental ingestion by the infant.



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DITHRANOL (SHORT-CONTACT)

1. Dithranol treatments are available as branded and non-branded products (dithranol ointment [BP] and paste [BP]). Branded preparations are most suitable and include:

- a. Dithrocream® (dithranol 0.1%, 0.25%, 0.5%, 1%, and 2%).
- b. Micanol® cream (dithranol 1% and 3%).
- c. Psorin® ointment (dithranol 0.11%, coal tar 1%, salicylic acid 1.6%).
- d. Psorin® scalp gel (dithranol 0.25%, salicylic acid 1.6%).

2. Creams are particularly suitable because they wash off more easily than ointments.

3. Contraindications and cautions

4. Do not prescribe dithranol to people with:

§ Acute or pustular psoriasis, or inflamed psoriasis.

§ Facial psoriasis.

§ Sensitive areas of skin.

5. Adverse effects

- a. Skin irritation, burning sensation (if left on the skin for too long).
- b. Staining of the skin, hair, or fabrics (temporary effect).
- c. Staining of fabric and bathroom fittings (permanent effect).

6. There are no known adverse effects of dithranol use in pregnancy and breastfeeding.

7. Application

Treatment with dithranol should start with the lowest strength (0.1%) cream and gradually increase over about four weeks to the highest tolerated strength that produces the optimum therapeutic effect. Clinical improvement may take up to six weeks.

- Dithranol cream should be applied once a day to psoriasis areas only (avoid application to normal skin between plaques), to avoid excessive skin irritation.
- The cream is left on for 30–60 minutes, and then washed off.
- This is continued for at least one week, and if necessary increased at weekly intervals to the 0.25% strength, followed by the 0.5%, the 1.0%, and finally the 2.0% strength.
- Note: the optimum strength varies from person to person and depends on the thickness of the plaques and the person's tolerance to adverse effects.
- If the areas being treated become inflamed, stop the treatment. When the inflammation settles, restart the treatment at a lower concentration.
- If an emollient is being used, the person should apply this first and then wait 30 minutes before applying the dithranol (only after the emollient has been fully absorbed).
- Once lesions are palpably flat, dithranol should be discontinued.



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HEALTHCARE TRAINING

ORAL ANTIFUNGALS: TERBINAFINE

1. Dosage and duration of treatment

- For adults, the recommended dosage is 250 mg once a day. Treatment should be continued for 4 weeks.
- Oral terbinafine is not licensed for the treatment of scalp ringworm; however, it is well-documented as a treatment
- for Trichophyton infections [Gupta et al, 2004].

The recommended dosage has been extrapolated from the licensed dosage for other tinea infections [BNF 65, 2013], and experts recommend a treatment duration of 4 weeks [HPA, 2007; Moriarty et al, 2012].

2. Oral terbinafine is not licensed for use in children [ABPI Medicines Compendium, 2013c].

3. Contraindications and cautions [ABPI Medicines Compendium, 2013c; BNF 65, 2013]

Terbinafine is contraindicated in people with:

- a. Severe, chronic, or active hepatic disease.
- b. Severe renal impairment.

4. Terbinafine should be avoided in:

- a. Pregnant women — manufacturer advises use only if potential benefit outweighs risk.
- b. Breastfeeding women — terbinafine is secreted in breast milk.

5. Terbinafine should be used with caution in people with:

- a. Psoriasis — increased risk of exacerbation of psoriasis.
- b. Autoimmune disease — risk of lupus erythematosus-like effect.
- c. Renal impairment — the British National Formulary states that half the normal dose of terbinafine should be used if estimated Glomerular Filtration Rate (eGFR) is less than 50 mL/minute/1.73 m² and there is no suitable alternative [BNF 65, 2013]. However, the manufacturer states that the use of terbinafine tablets in this group of people has not been adequately studied, therefore it is not recommended [ABPI Medicines C



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TOPICAL ANTIFUNGALS

1. Ketoconazole 2% shampoo (adolescents and adults only) [ABPI Medicines Compendium, 2013e]
 - a. Adverse effects are uncommon and include folliculitis, increased lacrimation, dry skin, rash, and application site irritation.
 - b. The manufacturer advises that there are no known risks associated with the use of Ketoconazole shampoo in pregnancy or lactation.
2. Selenium shampoo (for adults and children aged 5 years and over) [ABPI Medicines Compendium, 2012c]
 - a. Selenium shampoo should not be used on broken or severely inflamed skin.
 - b. Adverse effects include:
 - Irritation or sensitisation (sometimes described as a burning sensation). Rarely, blistering can occur, especially if the shampoo is kept in contact with the skin for longer than the recommended duration.
 - An increase in the amount of normal hair loss.
 - Discolouration of the hair. This can be avoided or minimised by thorough washing of the hair after treatment.
 - Oiliness or dryness of the hair and scalp.
 - Non-specific allergic reactions such as rash and urticaria (rare).
 - c. Gold, silver, and other metallic jewellery should be removed prior to use, since discolouration may be caused.
 - d. Selenium shampoo should be rinsed thoroughly from the hair before dyeing, tinting, or permanent waving the hair. It should not be applied for two days before or after any of these procedures.
 - e. The manufacturer advises that selenium shampoo should be avoided during pregnancy and breastfeeding.
3. Terbinafine cream (for adults only) [ABPI Medicines Compendium, 2013b]
 - a. Adverse effects include local skin irritations such as rash, burning sensation, and pruritus. These symptoms must be distinguished from hypersensitivity reactions such as widespread pruritus, rash, bullous eruptions and hives, which are reported in sporadic cases and require discontinuation of treatment with terbinafine.



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4. Imidazole creams

a. Clotrimazole cream [ABPI Medicines Compendium, 2012b; BNF 65, 2013]

- Adverse effects include local skin irritations such as rash, pruritus, oedema, and skin peeling.
- Clotrimazole may cause damage to latex contraceptives and can inactivate spermicidal contraceptives. Alternative contraceptive precautions should be used for at least 5 days after using clotrimazole.

b. Miconazole cream [ABPI Medicines Compendium, 2009; BNF 65, 2013]

Systemic miconazole is known to interact with oral anticoagulants. Due to the limited systemic availability of topical preparations, clinically relevant interactions are rare; however, the manufacturer of miconazole advises that caution should be exercised and anticoagulant effect should be monitored during concurrent use of miconazole and an oral anticoagulant.

c. Econazole cream [ABPI Medicines Compendium, 2012a]

Systemic econazole is known to interact with oral anticoagulants. Due to the limited systemic availability of topical preparations, clinically relevant interactions are rare; however, the manufacturer of econazole advises that caution should be exercised and anticoagulant effect should be monitored during concurrent use of econazole and an oral anticoagulant.

d. Ketoconazole cream (for adults only) [ABPI Medicines Compendium, 2013d; BNF 65, 2013]

Adverse effects include local skin irritations such as rash and pruritus.



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SKIN QUIZ

1. Discuss the treatment of shingles in a 30 year old male presenting after 5/7 of rash and a 73 year old with facial herpes zoster of 24 hours duration.

2. What is the cornerstone of eczema and psoriasis treatment?

3. List 3 notifiable diseases.

4. What treatments are available for acne?

5. Which rash may follow a strep throat?

6. In a family of 5 children with recurrent impetigo what might be your management plan?

7. How soon after infestation with scabies does the itching start?

8. Advise a patient on the non-medical treatment of head lice.

9. Name 2 non-blanching rashes.



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SKIN QUIZ

10. What lifestyle advice would you give to a patient with atopic eczema?

11. Name the rashes...

IMAGE 1



IMAGE 2



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MULTIPLE CHOICE QUESTIONS

A 68-year-old woman comes to the surgery because of acute exacerbation of congestive heart failure. She complains that her legs are extremely itchy. Examination shows several circular hives. She has a history of myocardial infarction and has a sulphur allergy. Current medications include aspirin, a β -blocker, an ACE-inhibitor, three diuretics, and a bisphosphonate. Which of the following is most likely to have triggered this rash?



- a) Frusemide
- b) Metoprolol
- c) Spironolactone
- d) Candesartan
- e) Metformin

A 10-year old girl is brought to her pediatrician's office by her parents because of a new onset of skin lesions for the past 3 days. Her father says that the patient had an initial lesion of a small pustule which quickly progressed into an extensive rash. Physical examination shows the following:

Which if the following is the most likely causative organism

- a) Herpes Virus 6
- b) Varicella zoster virus
- c) Staphylococcus Aureus
- d) Streptococcus Agalactiae
- e) Propionibacterium



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MULTIPLE CHOICE QUESTIONS

A 22-year-old woman comes to the clinic because of blisters on her hands. She recently got a summer job designing costumes for a local theatre production group. She says that the lesions first appeared on the lateral edges of her fingers and then spread to her palms. The lesions are very itchy and somewhat tender. Physical examination shows tense vesicles on her fingers and the palms of her hands without any associated erythema.

Which of the following is true about this condition?

- a) The lesions are associated with sweat gland dysfunction
- b) It is associated with systemic lupus erythematosus in 50% of patients
- c) Associated with coeliac disease
- d) It is psoriasis
- e) Triggered by exposure to nickel



A 19-year-old man comes to the clinic because of a rash that started as a single lesion a few days ago. It has since spread throughout his chest and back. The patient had an upper respiratory infection nine days ago. Physical examination shows salmon pink patches, as seen below.

Which of the following is the most likely diagnosis?

- a. Pityriasis Rosea
- b. Syphilis
- c. Porphyria
- d. Tinea Corporis
- e. Eczema



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MULTIPLE CHOICE QUESTIONS

A 24-year-old man comes to his primary care provider's office because of a rash on the back of his head and neck for the past 4 days. He denies significant sun exposure or any new medications. Examination shows multiple golden crusts with surrounding erythema on his posterior neck and scalp as shown below.

- a. acral lentiginous melanoma
- b. Dishydrotic eczema
- c. Basal cell carcinoma
- d. D. scleroderma
- e. Squamous cell carcinoma

A 36-year-old man who recently emigrated from Chile comes to the physician for a wellness check up. He states that he had worked as a farmer for many years. His jobs included spraying plants with pesticide, harvesting crops, and plowing the fields. The pesticide he worked with contains arsenic.

Which of the following skin conditions is he most at risk for developing.

- a. acral lentiginous melanoma
- b. Dishydrotic eczema
- c. Basal cell carcinoma
- d. D. scleroderma
- e. Squamous cell carcinoma

A 73-year-old male comes to the office with a itchy skin rash. The lesions are round, oval, and erythematous on both legs. There is noticeable xerosis of the affected skin. Which of the following is the most likely diagnosis?

- a. Tinea corporis
- b. Seborrheic keratosis
- c. Bullous pemphigoid
- d. Tinea versicolor
- e. Nummular eczema



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MULTIPLE CHOICE QUESTIONS

14-year-old female with a past medical history of chronic partial seizures presents for evaluation of a new skin rash. She says that the rash appeared on her hands, arms and torso yesterday morning. On exam, the rash is slightly pruritic with a morbilliform appearance like that seen in the image below.

She denies fever, abdominal pain, nausea or vomiting and her vital signs are within normal limits. Her medication list consists of a single drug added 3 weeks ago. Which drug most likely caused this reaction?

- a. Valproic acid
- b. Levetiracetam
- c. Lamotrigine
- d. Phenytoin
- e. Carbamazepine



MULTIPLE CHOICE TEST YOUR KNOWLEDGE

1) The integument is separated from the deep fascia around the other organs by (the)

- A) epidermis.
- B) dermis.
- C) hypodermis.
- D) cutaneous membrane.
- E) none of the above

2) Which of the following is not an accessory structure of the integument?

- A) sebaceous glands
- B) hair
- C) nails
- D) sweat glands
- E) teeth



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MULTIPLE CHOICE QUESTIONS

3) The epidermis in a section of thick skin includes the following five layers. In what order do these occur, from the basement membrane to the surface?

- (1) stratum granulosum
- (2) stratum lucidum
- (3) stratum corneum
- (4) stratum germinativum
- (5) stratum spinosum
- A) 1, 2, 3, 4, 5
- B) 4, 5, 1, 2, 3
- C) 5, 4, 3, 2, 1
- D) 3, 2, 5, 4, 1
- E) 1, 3, 5, 4, 2

4) The keratinized stratified squamous epithelium of the skin is called (the)

- A) papillary layer.
- C) simple squamous
- D) simple columnar
- E) transitional

5) Which of the following cell types is not found in the epidermis?

- A) Langerhans' cell
- B) Merkel cell
- C) keratinocyte
- D) melanocyte
- E) fibroblast

6) An individual cell normally remains as a part of the epidermis for

- A) five to eight hours.
- B) about two weeks.
- C) four to six weeks.
- D) at least one year.
- E) the entire life of the individual.



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MULTIPLE CHOICE QUESTIONS

7) Sensory structures in the epidermis responsible for monitoring light touch are called

- A) free nerve endings.
- B) Merkel cells.
- C) Langerhans' cells.
- D) lamellated corpuscles.
- E) all of the above.

8) The most abundant cells in the epidermis are

- A) melanocytes.
- B) keratinocytes.
- C) Merkel cells.
- D) Langerhans' cells.
- E) All of the above are in equal numbers

9) Cells in the stratum germinativum that are used as sensory receptors are called

- A) melanocytes.
- B) Merkel cells.
- C) Langerhans' cells.
- D) keratinocytes.
- E) stem cells

10) Which of the following is a desirable result of skin exposure to ultraviolet radiation?

- A) a deep bronze tan
- B) assistance in conversion of a cholesterol-like steroid into vitamin D
- C) mild sunburn to promote replacement of old epidermal cells
- D) a decrease in melanocyte activity
- E) none of the above

11) Which of the following skin conditions is the most common?

- A) acne
- B) squamous cell carcinoma
- C) seborrheic dermatitis
- D) capillary hemangioma
- E) cavernous hemangioma



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MULTIPLE CHOICE QUESTIONS

12) The blood supply to the skin is called (the)

- A) brachial plexus.
- B) cutaneous plexus.
- C) hypodermis.
- D) venous anastomosis.
- E) none of the above.

13) The area of the skin that contains the highest density of blood vessels is the

- A) epidermis.
- B) papillary layer.
- C) reticular layer.
- D) hypodermis.
- E) stratum corneum.

14) Specialized sensory receptors in the skin include all of the following except

- A) tactile corpuscles.
- B) Ruffini corpuscles.
- C) lamellated corpuscles.
- D) melanocytes.
- E) Merkel cells.

15) Eccrine sweat glands

- A) are most common in the axilla.
- B) are the same as apocrine glands.
- C) respond to elevated body temperature.
- D) are usually attached to hair follicles.
- E) cause "sweaty palms."

16) As cells are pushed from deeper layers of the epidermis toward the surface they

- A) continue to divide.
- B) become dermal cells.
- C) receive a better nutrient supply.
- D) start to die.
- E) do all of the above



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MULTIPLE CHOICE QUESTIONS

17) Functions of the hair on the body include

- A) protecting the skin from ultraviolet radiation.
- B) cushioning blows.
- C) providing insulating benefits.
- D) providing nervous sensation.
- E) all of the above.

MISSING WORD

- 1.Repeated sunburn of the skin can damage the connective tissue of the _____ and cause premature wrinkling.
- 2.Male pattern baldness occurs when terminal hairs on the head are replaced by _____.
- 3.Apocrine sweat glands are linked to odor because of the effect _____ have on their secretion.
- 4.An area of skin that has suffered a third-degree burn usually will not regrow hair because of extensive damage to the _____.
- 5.In addition to epidermal factors, pale skin can result from decreased _____ in the dermis.



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MATCHING QUESTIONS

Match each of the items with its description.

- (a) keloid
- (b) granulation tissue
- (c) cavernous hemangioma
- (d) xerosis
- (e) scab

1. Material containing fibrin, fibroblasts, and capillaries that forms during tissue repair following inflammation
2. A fibrin clot that forms at the surface of a wound to the skin
3. A thickened area of scar tissue covered by a smooth epidermal surface
4. A birthmark created by a tumor affecting the large vessels in the dermis, which will last a lifetime
5. A condition of abnormally dry skin, common among older people and those living in a dry environment

Match each clinical term with its description.

- (a) eczema
- (b) sepsis
- (c) acne
- (d) urticaria
- (e) Erysipelas

1. A dangerous, widespread bacterial infection
2. A widespread inflammation of the dermis caused by bacterial infection
3. An extensive dermatitis resulting from reaction to food, drugs, insect bite, or other stimulus
4. A sebaceous gland inflammation caused by an accumulation of secretions
5. A dermatitis that can be triggered by temperature changes, fungus, etc., and may be hereditary



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MATCHING QUESTIONS

Match each clinical term with its description.

- (a) contact dermatitis
- (b) basal cell carcinoma
- (c) squamous cell carcinoma
- (d) psoriasis
- (e) decubitus ulcer

1. A condition marked by rapid division in the stratum germinativum of scalp, elbows, or palms
2. A "bedsore" caused by restricted circulation
3. A skin inflammation typically caused by strong chemical irritants such as poison ivy
4. The most common skin cancer, originating in the stratum germinativum
5. A less common form of cancer; almost totally restricted to sun-exposed skin

MATCHING QUESTIONS

1) How does melanin protect the skin from the effects of ultraviolet light?

2) What is the importance of the secretion of sebum?

3) What is the clinical importance of the lines of cleavage of the skin?



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MATCHING QUESTIONS

4) What is the importance of "baby fat"?

5) Why does acne worsen at puberty?

6) Compare and contrast sensible and insensible perspiration.

7) How does scar tissue form?.

8) Why does hair turn grey or white in older individuals?



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