Skin assessment in adults

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Abstract

The skin has often been described in fictional literature as the window to the soul. It is the largest organ in the body and integral to both physical and psychosocial health. A complete skin assessment is essential for holistic care and must be completed by nurses and healthcare professionals on a regular basis. Providing patients and relatives with information on good skin hygiene can improve skin integrity and reduce the risk of pressure damage and skin tears.

Skin assessment

The skin is the largest organ in the body accounting for 15% of all body weight. It is integral to both physical and psychosocial health and can have an impact on patients' quality of life (Wounds UK, 2018). In a healthy individual, the skin is strong, resilient and has a remarkable capacity for repair. The skin consists of 3 layers. The epidermis is the outermost layer which provides a waterproof barrier. The dermis lies beneath the epidermis, it has a rich blood supply and contains tough connective tissue, hair follicles, sweat glands and sensory nerve endings. The hypodermis (deep subcutaneous tissue) is made of fat and connective tissue.

Editor, please add image of the skin and layers

The skin has many functions these include:

- Protection – intact skin acts as a protective barrier and prevents internal tissues from trauma, ultraviolet light, toxins, pathogens and allergens, and temperature.
- Barrier to infection – part of this is the physical barrier but also the presence of sebum, a natural antibiotic chemical in the epidermis and a surface acidic environment.
- Sensory perception – nerve endings in the skin respond to painful stimuli, temperature, vibrations, touch and itch.

- Temperature regulation – the rich blood supply in the skin can act as a 'heat dump' to enable body cooling. The subcutaneous fat acts as a heat source and heat insulation (Timmons, 2006).
- Production of vitamin D and melanin – vitamin D is important for bone development and melanin is responsible for colouring the skin and protection from sunlight and radiation damage
- Communication – the skin is a sensory organ enabling communication through touch and physical appearance. It also provides a good window into patients' health and well-being (Moncrieff et al, 2015).

If the skin becomes vulnerable to external and internal injury due to ageing and altered physiology (Moncrieff et al, 2015) damage can occur. Changes to the skin can be extrinsic, for example pressure, shear or friction or environmental damage. This could be caused by regular detergent use or sun exposure. Intrinsic factors can also have an effect on the skin for example psoriasis, atopic eczema or an underlying illness. The aging process has a significant effect on the skin. Skin becomes thinner, losses elasticity, and moisturising factors, there is a reduced blood supply and a decrease in the amount of fat under the skin (Moncrieff, 2015). This can result in the skin becoming fragile, vulnerable and dry (Kottner et al, 2013). Gender also has an effect on skin integrity and sex hormones can inhibit skin repair. Females repair faster than males due to the oestrogen and lack of testosterone (Pyter et al., 2021). However, in females the menopausal transition involves a time of hormonal instability which affects the skin. These changes lead to decreased collagen content, water content, elasticity and thickness which impacts on all skin layers quality (Reus et al., 2020).

Other increased risk factors include

- long-term conditions
- Critical illness
- Paralysis
- Obesity
- Cancer

There are several skin conditions that affect skin integrity see table 1.

Table 1: Skin conditions that affect skin integrity (Wounds UK, 2018)

Rash	This could be a simple irritation, reaction, or medical condition
Dermatitis/Eczema	This is an inflammation of the skin that can cause a itchy rash
Psoriasis	A genetic condition that causes sliver, scaly plagues on the skin
Pruritus	Often associated with dry skin
Cellulitis	An infection of the subcutaneous and dermis tissues
Malignant melanoma/basal cell carcinoma/squamous cell carcinoma	Skin cancers
Lipodermatosclerosis	Painful, tight, hardened subcutaneous tissue

Assessment

Early recognition of people who are at risk of developing skin breakdown is an essential part of prevention. Assessment of the skin should be part of a holistic approach and carried out regularly in practice.

- Ensure good hand hygiene and appropriate personal protective equipment is worn
- Explain to the patient how the skin assessment will be carried out and the reason for the assessment. Gain consent
- Ask the patient for a full medical history this includes long term conditions, medications. Has the patients skin changed recently? Has their health deteriorated?
- Ask the patient about their normal skin hygiene. Skin hygiene is essential for maintaining healthy skin and personal wellbeing. If the person is elderly and has dry skin, it is important to ensure a balance between cleanliness and over-washing is maintained. Ask the patient which washing products they are using. There is a lack of evidence base for bathing practices which means it is often guided by rituals and 'tried and tested methods' (Voegeli, 2008b). Many detergents are alkaline and can alter bacteria flora on the skin. This increases the likelihood of pathogenic organisms' colonisation. An increase in skin PH can damage the skin barrier and cause irritation. Healthy skin can take up to 48 hours to recover following a change in PH. Younger or older skin and skin with inflammatory conditions such as eczema can take longer

(Moncrieff et al, 2015). Soap removes lipids from the surface of the skin which can result in dryness. It is recommended that the use of emollients and soap substitutes will help promote skin health, reduce dryness and improve symptoms of itching and tightness. The use of emollients applied twice daily are also a key part in the prevention of skin tears and superficial pressure ulcers (Bale et al., 2004)

- Identify if the patient has any risk factors for vulnerable skin. Complete a full head to toe skin examination paying particular attention to any areas of redness, discolouration, dryness, tenderness, irritation, or rash. A patient's pressure ulcer risk status should be assessed using a validated pressure ulcer risk assessment tool, such as the Braden Scale (Bergstrom et al, 1987) or the Waterlow Scale (Waterlow, 1985). All patients admitted to a healthcare setting, hospital, or nursing home should have an appropriate pressure ulcer risk assessment performed within 6 hours of admission to the acute setting (NICE, 2015). The patient should be reassessed if there is any change in clinical conditions or deterioration, following a surgical procedure or a change in mobility. Females are at greater risk of pressure ulcer development due to distribution of body fat (Arnaoutakis et al., 2017).
- Use finger palpation to determine whether erythema or discolouration is blanchable. Initiate pressure ulcer prevention strategies in adults who have non-blanching erythema and repeat skin assessment hourly (Mitchell, 2018).
- Assess skin integrity and pressure areas. Note any changes of colour or discolouration. Are there any variations in firmness or moisture? Is the patient incontinent? Is there any moisture associated skin damage (MASD)? Make sure that you include the correct classification for MASD (Mitchell and Hill, 2020) (Table 2).

Peri wound moisture-associated dermatitis	Exposure to exudate from the wound in the inflammatory stage
Peristomal moisture associated dermatitis	Exposure to urine, stool, sweat, wound drainage
Incontinence-associated dermatitis	Predominantly a chemical irritation resulting from urine or stool
Intertriginous dermatitis	Caused by sweat being tapped in the skin folds with minimum air circulation

Table 2: Types of Moisture associated skin damage (Mitchell and Hill, 2020)

- The SSKIN Care Bundle is commonly used in the NHS as a structure inspection protocol of checking skin and identifying risk of pressure damage. The SSKIN acronym spells out fundamental stages of skin inspection (See box 1)

Surface
Skin inspection
Keep moving
Incontinence/moisture
Nutrition/hydration

Box 1: SSKIN acronym

- Check if the patient has a wound and the history of the wound. It may be necessary to complete a full wound assessment (Mitchell, 2020).
- Check if there is a skin condition present. This could be a rash, dryness, sore of itchy skin. Ask the patient to describe how it feels. How is it affecting their activities of daily living? Ask the patient how long they have had the skin condition? How often does it occur? Are there any triggers? Are there seasonal variations? Is there a family history of skin conditions? Do the patients' occupation/hobbies affect their skin condition for example repeated hand washing/use of hand sanitiser, exposure to chemicals/environmental factors? (Wounds UK, 2018)
- Does the patient take any medications or use any topical preparations to manage the skin condition? Have any past treatments been effective?
- Does the patient have any known or suspected allergies?
- Ask the patient of there are any treatments, actions or behaviours that influence the condition? Is there an odour present (this could be an indication of the presence of bacteria)? For menopausal women a discussion around hormone replacement

treatments which have been shown to increase collagen content, dermal thickness, elasticity and hydration (Brincat et al., 2005) maybe appropriate.

- Touch the patient's skin. Apply gentle pressure to feel the texture and temperature of the skin. A raised temperature may indicate skins of infection. Ideally skin texture should be soft and smooth with an even texture. Document any areas where the skin feels coarse or irregular the use of a body map would be beneficial.
- Assess the patient for any signs of medical adhesive-related skin injury (MARSI). MARSI can occur when a dressing is removed. The attachment between the skin and the adhesive is stronger than individual skin cells causing the epidermal layers to separate of detach from the dermis resulting in mechanical trauma (Fumarola et al., 2020). There are three main categories of MARSI identified in table 3.

Table 3: Categories of MARSI

Mechanical	Skin stripping, blistering, skin tears
Dermatitis	Irritation in response to the adhesive
Other	Maceration and folliculitis

- Assess the patient's nutritional status. Good nutrition is the main strategy for maintaining good skin integrity and health (Kottner et al., 2013). A nutritional assessment should be used for example the Malnutrition Universal Screening Tool (MUST; Malnutrition Advisory Group, 2003). Have a discussion with the patient about the type of meals they eat. Suggest supplementing diet with additional proteins, fatty acids and vitamins. Protein is essential to skin health to allow optimal keratin production (an important protein in the epidermis). The function of keratin is to stick cells together and form a protective layer on the outside of the skin. If there is a protein deficiency and therefore a decreased amount of keratin the risk of skin breakdown is increased. Fatty acids help to lubricate and moisturise the skin and other essential vitamins such as C and A play an important role in tissue strengthening and regeneration (NHS, 2010).
- Assess the patient's risk for skin tears. Elderly patients are at higher risk of skin tears. During the ageing process the skin becomes thinner, loosing elasticity and moisture. Elderly patients can develop skin folds and wrinkles and lose the subcutaneous fat layer, making the skin more prone to tearing and bruising (Wounds UK, 2018). Risk factors include extremes of age, dry/friable skin, previous skin tear. History of falls,

impaired mobility, mechanical trauma and dependence on assistance for activities of daily living. General health, comorbities, polypharmacy, malnutrition and impaired or changes in cognition are all risk factors.

- Discuss with the patient and relatives' ways to mitigate risks of skin tears identified in Box 2. Skin tears can be extremely painful and affect patients' quality of life and may increase likelihood of hospitalisation.

Box 2: Reducing the risks of skin tears (Wounds UK, 2018)

Keep fingernails trimmed short and avoid wearing sharp jewellery

Consider protective padding or removing hazardous furniture to reduce risk of falls

Cover skin with appropriate clothing, shin guards, stockings or retention bandages

Use emollients and other skin-friendly products (Wounds UK, 2015)

Avoid friction and shearing and use good manual handling techniques

- Discuss with the patient an individualised skin care plan. This would include using a skin friendly cleanser (not traditional soap), warm water (not hot) and promote good general skin health.
- Ask the patient their perception of their skin status. Identify the patients' goals and priorities in maintaining health skin. Agree a treatment plan with the patient and identify regular review dates.

Where possible it is recommended that full skin assessments should be carried out face to face with the patient. However, the current COVID 19 pandemic has impacted on patient consultations and moved many of these online. For online skin assessments nurses must ensure the following:

- Prepare the patient for the virtual consultation. Explain what will happen and how this will take place. Ask the patient to have all previous skin treatments with them, any prescription items and anything else they use on their skin.
- Ask the patient to take pictures of the skin condition prior to the consultation particularly if these are in hard to see areas. They may need a family member to support with this. Ask the patient to make sure that there is good lighting (free from shadows) and ideally that files are less than 1MB for sending.
- Confirm who you are speaking to and if there is anyone else in the room? Start by asking the patient for verbal consent.
- Take a full medical history. You may be able to view the skin condition online or from the pictures sent. Ask the patient to describe the condition i.e., how does it look and feel? Are there any noticeable changes in colour or texture in particular areas? Does it appear anywhere else? The more descriptive information you can get from the patient the better.
- Review the pictures and discuss self-care with the patient. Arrange for a follow up consultation within 2 weeks depending on diagnosis and treatment.

Conclusion

Good skin health is essential for personal health and wellbeing. The skin is often a 'window' to patient's overall health condition and should be assessed regularly as part of a holistic assessment. Early recognition of skin changes and interventions can have a significant impact on patients' quality of life and reduce the risk of pressure damage and skin tears.

Reflective questions

- How often do you carry out a full skin assessment on patients?
- How often do you discuss skin hygiene with patients and families?
- Is there anything you can do to improve this area of practice?

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