Pressure area prevention and care

Learner information pack and workbook
Introduction

Pressure sores (also known as pressure ulcers) are a common problem, which can severely affect the quality of life for individuals. However with good care, most can be avoided, by removing the causes of pressure damage.

This workbook will enable you to undertake pressure area care for individuals, following the individual’s care plan and risk assessment, as well as relevant protocols and procedures within your work area. The aim is to maintain healthy skin and thus prevent breakdown and the development of pressure sores.

You will learn about the risk factors that make an individual more susceptible to developing pressure sores, changes in skin condition to look out for and how to position individuals to reduce pressure.

You will learn the 5 elements of care that can be bundled together to prevent pressure sores developing:

- **Surface**
- **Skin inspection**
- **Keep moving**
- **Incontinence**
- **Nutrition & hydration**

The workbook also covers the equipment and materials for maintaining hygiene, moving, handling and positioning individuals as well as pressure relieving aids. It stresses the importance of taking adequate Health & Safety precautions, providing physical and emotional support and working as a team with other professionals, the individual and their family.

Throughout the workbook, you will have the opportunity to demonstrate your learning through activities and questions.
1. The normal structure and function of the skin

The skin is an amazing organ. Measuring around 2 square meters and accounting for up to 15% of your body weight, it is the largest and heaviest organ of your body. It is made up of three layers:

- **The epidermis** - this is the thin outer layer of the skin that you can see when you look at yourself. It is only about 0.04mm thick and does not have its own network of blood vessels, so that it has to get its nutrients from the underlying dermal layer. Every 4 weeks the epidermis completely renews itself as the outer cells are worn away and replaced with new ones from underneath.

- **The dermis** - this lies beneath the epidermis, it is about 0.5mm thick and is the active part of the skin. It contains blood vessels, nerves, hair follicles, sebaceous (oil) and sweat glands and lymphatics. The dermis contains collagen, fat and elastin fibres which give the skin its strength and flexibility.

- **Subcutaneous fat layer** - this layer of subcutaneous fat lies under the dermis. It also contains blood vessels and connective tissue. It forms a protective layer over the underlying organs and structures and also acts as an energy source for the body and provides insulation from changes in the outside temperature.
The skin has several different functions, but its main job is to protect the body. It does this by:

- **Regulating temperature** - when the outside temperature rises, the body is cooled by the production and evaporation of sweat from the skin. Blood vessels in the skin dilate to increase blood flow near the surface of the skin (that's why you go red when you get hot) so that heat can be radiated away from the body. When the outside temperature falls, the skin tries to insulate the body by forming goose bumps, this makes the hairs stand up trapping warm air near the body and the blood vessels contract to limit the heat lost at its surface.

- **Forming a physical barrier** - the skin helps to shield the body from mechanical, thermal or chemical damage. It also protects you from UV radiation, bacterial invasion and stops you becoming dehydrated.

- **Providing sensation** - nerve endings within the skin can detect changes in temperature and pressure. They can also detect vibration and pain.

- **Excreting waste products** - the skin is one way in which the body gets rid of excess heat, water, salts and toxic organic compounds

The skin is considered to be an organ because one of its important functions is to help in the production of Vitamin D. When your skin is exposed to sunlight, the UV rays activate modified cholesterol in the dermis to produce Vitamin D. This is needed to help the body absorb calcium to form healthy bones.

The appearance of the skin is important because if damaged or abnormal in any way, it can affect an individual’s body image and quality of life. For example a teenager who develops severe acne may become very self-conscious, lose their confidence and stop socializing.

Finally, skin plays a part in communicating with others. Like body language, changes in skin colour (e.g. blushing), facial expression and body odour can all give clues as to how an individual is really feeling. Sometimes this may be at odds with what the individual is actually saying.
Activity 1

1. What are the 3 layers of the skin? Briefly describe each one.

2. Name four functions of the skin.

3. Why is the skin considered to be an organ?
2. How pressure sores develop

Pressure sores (ulcers), often called bed sores, can be a problem for any individuals known to health and social care. They develop when pressure or shear is applied to the skin and the underlying soft tissue closes or damages local capillary, venous or lymphatic networks. The cells around the closed vessels die and if the pressure is not removed, the damage will spread.

The severity of the damage can range from reddening of the skin, to large cavity wounds with damage to muscles and even bones.

**Damage may be caused by:**

- **low pressure for prolonged periods**
  (e.g. lying in bed or sitting in a chair for hours without moving)

- **high pressure for relatively short periods of time**
  (e.g. a commode for 20 minutes or rough handling when being moved)

- **pressure from equipment being used to monitor or treat an individual**
  (e.g. urine catheters, heart monitors or bandages).

**The most common sites for pressure ulcers to develop are:**

- **The sacrum** (the curved triangular bone just above the buttocks): accounts for over 30% of all pressure ulcers
- **The heels**: accounts for 25-30%
- **The ischial tuberosities** (buttocks): accounts for around 10%

However, they can occur over any bony prominence.

**Activity 2**

List where you think the pressure areas would be on a person lying in bed on their back.
Common pressure areas

3. The importance of using pressure damage risk assessment tools

Individuals who are confined to a bed, or wheelchair, or who spend a long time sitting each day are particularly prone to developing pressure sores. However some individuals are more at risk of developing pressure ulcers than others, and a number of factors have been identified as being important in predicting who is most at risk. Walsall Score Risk Calculator is used in the Community and Waterlow Risk Assessment Tool in the In-patient setting. A risk assessment tool looks at both the internal and external risk factors.

Internal (Intrinsic) risk factors - these are factors to do with the individual and include:

- **Age** - those over 65, neonates and very young children are at highest risk.
- **Health** - if the individual is unwell, they are at increased risk. Acute illness can cause changes in the body’s normal functioning e.g. raised temperature, low blood pressure, constriction of the blood vessels. Chronic or terminal illness may result in reduced mobility or poor circulation. Certain medications can also increase the risk, e.g. by increasing sedation.

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3. Continued...

- **Level of consciousness** - if the individual is lethargic or becomes unconscious, he or she will not be able to change position to reduce pressure e.g. following acute illness or surgery. This and are at greater risk.

- **Weight** - Underweight and overweight individuals are at risk of developing pressure ulcers: underweight as the bony areas on the body become more prominent and overweight because there is more weight on the pressure points and the blood supply has further to travel through the fat layer to the dermis.

- **Nutritional status** - those who are malnourished or dehydrated are at most risk. Poor nutrition can affect the elasticity of the skin and its ability to fight infection.

- **Previous history** - individuals who have suffered from pressure damage in the past are more likely to develop pressure sores.

- **Mobility** - patients who have reduced mobility or are immobile are most at risk, because they are less able to relieve pressure by moving position.

- **Sensory functioning** - individuals with sensory impairment (e.g. those unable to sense pain due to nerve damage or spinal injury) may not receive the stimulus to move to relieve pressure and are at greater risk.

- **Urinary or bowel incontinence.**

- **Vascular disease** - individuals with poor circulation due to damaged or partially blocked blood vessels are at increased risk of pressure damage. This is due to reduced blood volume and reduced flow of blood in the arteries and capillaries supplying the skin and underlying tissues.

**Extrinsic risk factors - these are factors to do with the surrounding environment e.g.**

- **Amount of pressure** - e.g. from a bandage that has been applied too tightly.

- **Type of pressure** - e.g. from being moved across a bed.

- **Duration of pressure** - e.g. how long the individual remains in the same position.

- **Level of care available** - e.g. staffing levels may mean that the individual can be moved every 2 hours or only 4 times per day.

- **Type of mattress** - using low pressure foam mattresses may reduce the risk.

- **Design of seat or wheelchair**

- **Education** - showing individuals how to sit correctly and explaining why frequent repositioning is important can reduce the risk

- **External influences upon the skin** e.g. urine, faeces, starch from sheets, perfumes etc

Risk assessment tools, combined with clinical judgment of the staff are used to formulate the individual’s care plan to prevent pressure ulcers developing and to treat or manage any already present. The level of risk will be indicated in the Think SSKIN pressure sore prevention guide.
Activity 3

Mr. Brown is 67, weighs more than he should (15 stone when his height is only 5ft 7ins), he has a history of high blood pressure and is recovering from a hip replacement operation.
1. What are the factors that put Mr. Brown at risk of developing pressure ulcers?

Mrs. Smith is 75; she is in the terminal stages of breast cancer and is confined to bed. She finds it difficult to eat, and needs diamorphine to help control the pain. Unfortunately this medication makes her very drowsy and she spends much of the day drifting in and out of consciousness.
2. What are the factors that put Mrs. Smith at risk of developing pressure ulcers?

3. Who do you think is more at risk and why?
4. The prevention and management of pressure ulcers

The best way of preventing pressure damage from starting or getting worse is to remove the cause of the pressure. This can be done by following the Think SSKIN guide:

**Surface:**
- Using a suitable support surface such as a foam mattress/cushion or a well-designed and adjustable chair or one of the many types of pressure reducing aids available.
- Ensuring individuals do not place any blankets on top of cushions or mattresses negating the pressure relieving qualities.

**Skin inspection:**
- Checking the skin at every opportunity and preventing pressure sores through early intervention. Any redness gets reported to health to ensure a community nurse visits to assess.

**Keep moving:**
- Getting individuals mobile again - so that they can change position by themselves.
- Making sure that individuals are regularly repositioned to relieve pressure over bony prominences when sitting in a chair or lying on a bed. Keeping time spent on the damaged area to a minimum.
- Moving and handling individuals with great care to prevent friction, abrasion or stretching of the skin.

**Incontinence:**
- Keeping the skin clean and dry, using soap and water or prescribed skin cleansers not baby wipes.
- Ensuring any prescribed barrier creams are applied at each wash.

**Nutrition and hydration:**
- Making sure each individual has access to a drink to keep the skin hydrated and adequate nutrition to maintain healthy skin.
- Finally educate individuals on how to avoid damage by involving them in their care and implementing the SSKIN bundle.
4. Continued....

Prevention

- **Two important aspects of your job** in preventing pressure damage will be skin inspection and repositioning.

- **Skin inspection** - this is the best way of identifying whether pressure damage could become a problem. Ideally the individual should inspect their own skin regularly for any changes, but this is not always possible and you may have to carry out the inspection for them. This will involve checking the skin over bony prominences (e.g. the heels, sacrum, buttocks) and any other areas likely to be affected by pressure. The signs of early pressure damage that you should look out for are:

  - **Non-blanching redness** - this is redness of the skin (erythema) which does not go white (blanche) if you apply light finger pressure. On pigmented skin, redness will not be seen; a blue/purple tone may be seen as the indicator of pressure damage. The skin may also feel warm to the touch, show signs of oedema (swelling) or become hard.

- **Blisters** - blisters over a bony prominence indicate that the epidermis has become separated from the underlying dermis.

- **Discolouration** - in the early stages the skin usually becomes red. However watch out for other discolouration which may indicate that significant damage has already occurred. If the skin appears more blue, purple or black, it could mean that there is more extensive damage below the surface of the skin. In particular if the skin is black with a hard or leathery covering it indicates that tissue necrosis (death) has occurred and the individual has a severe pressure ulcer. It is more difficult to see early signs of pressure damage in dark or heavily pigmented skin, which may appear purple or blue rather than red.
4. Continued....

Repositioning

- **If possible the individual should be encouraged to reposition themselves whenever** they begin to feel uncomfortable. However if this is not possible, or practical, you will have to carry out regular manual repositioning.

- **Frequency** - in the past repositioning the individual every 2 hours was recommended, but there is no evidence to support this practice. It is better to be guided by the appearance of the skin and the needs of the individual. However if the individual is at high risk, then sitting in a chair should be restricted to less than 2 hours.

- **Support surfaces** - it is important to choose an appropriate support surface when repositioning individuals. Community nurses will undertake this assessment for you.

- **Mattresses** - There are many beds and mattresses which claim to reduce pressure, however the only recommendation that can be made based on current research is that low-pressure foam mattresses should be used rather than standard hospital mattresses for all individuals at risk of developing a pressure sore. Foam, static air and alternating air mattresses are used in Birmingham.

- **Seating** - selecting appropriate seating should be left to a trained assessor such as a physiotherapist or occupational therapist. They should ensure that the entire chair and cushion ensure correct weight distribution, postural alignment and support for the feet.

- **Heel protectors** - the heels are at high risk of developing pressure sores, because there is very little soft tissue protecting the bone. The risk is even greater if the individual suffers from oedema of the lower leg due to circulatory problems. To reduce the risk an inflatable heel protector should be used when the individual is in bed or sitting with their feet on a footstool. If an inflatable heel protector is not available, foam heel lift protectors or pillows may be used instead. The community nurse will plan which heel protector is to be used by the individual.

- **Other aids** - there are many aids available claiming to help reduce the risk of pressure sores. However none of these have been scientifically proven to help and indeed some may even make things worse. In particular you should not use:
  
  - Ring cushions or other doughnut shaped devices
  - Genuine sheepskins
  - Synthetic sheepskins
  - Water-filled gloves

The community nurses will need to be alerted if any of the equipment looks like it is not functioning. For example an air mattress that is alarming or deflated, a foam mattress that is ripped/torn or dipped in the centre.
You may be asked to reinflate static air equipment (Repose). This may include a mattress, cushion or foot protectors. The hand held pump will be provided with the equipment. Ask for training if you are unsure.

- **Alternative positions** - there are many repositioning alternatives. One of the most popular is the lateral (sideways) 30 degree tilt. The body is positioned using pillows to reduce pressure over the bony prominences.

- **The advantages are that repositioning** can be carried out regularly with minimal disturbance to the patient and less risk of back injury for the carer. However, so far there is little research to say that this method is effective in preventing damage, but for the individual there is far less risk of pressure than the 90 degree turn.

**Activity 4**

1. List 5 things you can do to help prevent pressure damage:

2. What are the three most common early signs of pressure damage?
5. Health and safety when carrying out pressure area care

There are two main areas of concern for Health & Safety when carrying out pressure area care:

**Infection control**

It is very important to prevent any areas with pressure damage becoming infected. Not only will infection delay healing of the wound, but it could lead to more serious systemic (whole body) infections such as septicaemia (bacterial infection of the bloodstream). Such systemic infections can be fatal in vulnerable patients such as neonates (newborn infants) and the elderly. You can help to prevent the spread of infection by taking standard precautions including:

- Washing your hands thoroughly before and after carrying out pressure area care.
- Wearing disposable gloves and aprons.
- Wearing a new pair of gloves for each patient and washing your hands thoroughly between individuals.
- Making sure the pressure ulcer is covered with a dressing to minimize the risk of airborne cross-infection. Contact a trained nurse if the dressing has come off.
- When treating multiple ulcers on the same individual, attending to the most contaminated ulcer last (e.g. in around the anus).

**Moving and handling**

Moving and handling injuries are unfortunately fairly common in any care setting. There is a risk both to the carer and the service user. To reduce the risk of moving and handling injuries when carrying out pressure area care, you should carefully follow the procedures specified by your workplace. These should include:

- Using correct techniques for lifting, carrying, moving, setting down and repositioning individuals.
- Checking your position and posture throughout the move.
- Using hoists or other technical moving and handling aids wherever possible particularly a slide sheet to prevent shearing on the skin.
- Taking particular care when moving vulnerable individuals across a bed or cushion to prevent abrasion of the skin due to friction between the skin and the mattress or cushion. Any abrasion can make superficial pressure ulcers worse especially if the individual’s skin is moist or wet due to sweating or incontinence.
- Encouraging individuals to move more by themselves.
- Getting help if the individual is too heavy or the position is too awkward for one person to manage.
- Using the lateral 30 degree tilt to reposition individuals lying in bed as this lowers the risk of back injury for the carer.
6. How to encourage individuals to be involved in their own pressure area care.

Some individuals may only be at risk of developing pressure damage for a short while e.g. whilst they recuperate from an acute illness or surgery. For others, there may be a constant risk of pressure damage due to loss of mobility or a chronic illness.

It is impossible for any carer to monitor an individual for pressure damage 24 hours a day. That’s why it is important that you encourage individuals to be involved in their own pressure area care. You can do this by:

• Explaining the importance of pressure area care.
• Educating them on the signs of pressure damage to look out for.
• Making sure they know what to do if they suspect pressure damage. Contact the carer or community nurse direct.
• Getting them to regularly check the condition of their skin.
• If possible reminding them to frequently reposition themselves.
• Stressing the need for them to maintain a high standard of hygiene to keep skin clean and dry.
• Explaining the importance of eating a healthy diet and drinking enough water.
• Helping them to become mobile again as soon as possible e.g. by using mobility aids or exercise.

How can you make a difference?

Working together as a team of carers with the individual is the only way to prevent pressure sores occurring.

Pressure Prevention is everyone’s business and by working together and knowing when to contact each other, the development of pressure sores will become a rare event.

Activity 6

Put together a sheet of information that you could give to individuals to encourage them to be involved in their own pressure care. You can use the following headings to organise the information:

• What is pressure damage?
• Why is pressure area care important?
• How often do I need to check my skin?
• What signs should I look out for?
• What should I do if I suspect pressure damage?
• How should I look after my skin?
• What else can I do to prevent pressure damage?