

Skin and Temperature Management following Spinal Cord Injury



Functions of the skin

- The skin is the largest organ of the integumentary system
- The skin is the interface with the environment and plays an important role in protecting (the body) against pathogens.
- Its other functions are insulation, temperature regulation, sensation, synthesis of vitamin D, the protection of vitamin B folates and water resistance



Why are SCI patients so vulnerable???

- “The skin is the biggest affected system after SCI” (Samuel, Stover. 1993)
- Sensory and motor function loss
- T6 and above injuries – Dysreflexia
- “No single complication of SCI is as potentially preventable or as difficult to manage as skin breakdown” (Thomas 1977)



Effects Of Spinal Cord Injuries On The Skin.

- Interruption of nerve pathways causes change in sensation.
- Sensations usually recognised as pressure, sharpness, hot/cold are felt differently or not at all
- Lack of mobility or decreased mobility results in pressure not being relieved as it would with normal mobility. Risk of pressure injury.
- Excessive spasticity creates abrasions and shearing damage to the skin as it is rubbed against bedding, clothing & wheelchair parts



Cont...

- Flaccidity leads to muscle wasting, thereby decreasing the vitality and resistive capacity of the skin. Daily tasks like transferring from bed to wheelchair can cause skin to breakdown and will require time to heal.
- Compromised blood circulation leads to a decrease in the amount of oxygen and nutrients reaching the cells. This can lead to increased susceptibility to skin breakdown and delayed healing.



Implication Of Loss Of Sensation.

Nerve endings in the skin transmit messages involving temperature and pressure. This gives us an awareness of our surrounding environment, therefore enabling us to protect ourselves.

For example sensation of burning, sharp objects or prolonged pressure which could damage the skin if undetected. Pins & needles may occur if prolonged periods of pressure prevent the skin from getting an adequate blood supply.

These warning signs can be lost following spinal cord injury.

Actions to prevent skin damage must be in place.











Preventing skin breakdown

1. The use of a pressure relieving mattress if appropriate. Routine checking and servicing of mattress to ensure optimum functioning.
2. Frequent and effective position change.
3. Pressure relieving wheelchair cushions, and vigilance to ensure cushion and wheelchair in good condition before transfer.
4. Pressure lifts if able.
5. Altering backrest position help to ensure all areas of the skin receive an adequate blood supply and so help to prevent skin breakdown.
6. Vigilance in skin check for pressure marks, ensuring any marks that do occur remain pressure free.
7. Good skin hygiene.
8. Referral to podiatrist for nail care.
9. Ensuring a good nutritional intake by eating a balanced diet and adequate fluids.



Vulnerable areas of skin

Occipital

Scapulae

Elbows

Spinus processes

Hips

Sacrum

Heels

Ischiums

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Neutral Position



Side Lying position



Recognising compromise to skin integrity

1. Frequent monitoring of the skin condition, especially over bony prominences or pressure areas will ensure early detection of any changes.
2. Any red marks need checking for blanching to determine underlying capillary and tissue damage. This will allow interventions to be implemented to prevent further damage occurring. "React to Red"
3. Consider cause of red mark and remove.





NATIONAL
PRESSURE
ULCER
ADVISORY
PANEL

STAGE 1



North West Regional Spinal Injuries Centre
Southport & Ormskirk NHS Trust



Managing compromise to skin integrity

1. It is essential that if a non blanching red mark appears the area is maintained pressure free even if this requires a **period of bed rest**.
2. If there is a breach in the skin integrity it will require referral to the district nurse team and a suitable dressing to promote healing, cover and protect to prevent infection.
3. Contact case management on 01704 70 4691 if any concerns re skin integrity.



Temperature Control

The internal temperature of the body is regulated to ensure an optimum environment for vital organs to function. This is usually around 36.5 – 37.0c. The body responds to temperature changes by sweating and dilating of blood vessels to cool off, or shivering and constriction of the vessels to help conserve heat. These responses are initiated via the spinal cord



Management of Extremes of Temperature

Following spinal cord injury the body can no longer adequately regulate its internal environment and respond to temperature changes by sweating or shivering. This means a person will overheat much faster in a hot environment, or become very cold or even hypothermic in a cold environment.

1. Ensuring appropriate clothing worn, i.e. thermal underwear in winter & cool cotton clothing in summer.
2. Environmental temperature control using heating or fans as appropriate.
3. Consideration of maintaining body temperature during showering and bathing is essential.



Recognising hypothermia

Signs of hypothermia can occur if the body temperature is allowed to drop below 36.0c. These may include

- Slurred speech.
- Drowsiness or falling asleep.
- Reduced urine output.
- Bradycardia.

If the body temperature continues to drop loss of consciousness and death will eventually occur.



Managing hypothermia

1. Ensure the environmental temperature is increased by going indoors or increasing heating
2. Application of blankets and provision of warm drinks.
3. *Do not* apply a heat source direct to the skin to increase temperature i.e. hot water bottles.



Recognising and managing heat exhaustion.

Heat exhaustion can occur if body temperature increases above 38.0c. Symptoms include:

- Headaches
- Slurred speech
- Confusion
- Visual disturbances
- Tachycardia
- Fitting.



Managing Heat Exhaustion

1. Lowering the environmental temperature i.e. getting out of direct sunlight into shade, turning heating down, use of a fan.
2. Items of clothing should be removed.
3. Provision of cool drinks.
4. Application of a 'cool collar' a cold flannel or towel placed around the back of the neck.



Any Questions???

