Keep Moving

The Role of the Physiotherapist in the prevention and management of Pressure Ulcer

Cathy Quinn

Physiotherapist

Spinal injury programme

National Rehabilitation Hospital
Pressure Ulcer Prevention

STOP
LOOK
LISTEN
REduce the pressure
INSpect the skin
USE the skin care bundle

Use the SSKIN Care Bundle

SSKIN
Skin Inspection
Support Surface
Keep Moving
Incontinence
Nutrition

Pressure Areas

The key to success is the collaboration of the patient, family, and the interdisciplin ary team in order to achieve ‘Pressure Ulcers To Zero’
Use a structured approach to risk assessment that includes assessment of mobility and activity

<table>
<thead>
<tr>
<th>High risk</th>
<th>Medium risk</th>
<th>Mild risk</th>
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<tbody>
<tr>
<td>• Dependent for bed mobility</td>
<td>• Needs some help for change position in bed</td>
<td>• Can change position in bed</td>
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<tr>
<td>• Requires assistance for all weight shifting</td>
<td>• Full time wheelchair user</td>
<td>• Can tolerate any bed position</td>
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<tr>
<td>• Impaired sensation</td>
<td>• Fatigue requires some help with sitting balance</td>
<td>• Full sitting balance</td>
</tr>
<tr>
<td>• Spasms – difficult to maintain position</td>
<td>• Poor weight shifting ability</td>
<td>• Can fully weight shift in all directions when sitting</td>
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<tr>
<td>• Pain – infection/delay healing</td>
<td>• Prone to falls</td>
<td>• Has some ability to stand step</td>
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<tr>
<td>• Muscle contracture</td>
<td>• Smoking</td>
<td></td>
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<tr>
<td>• Underweight/overweight†</td>
<td>• Co morbidities</td>
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### Physio Role

<table>
<thead>
<tr>
<th>Positioning</th>
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<tr>
<td>• Evaluate repositioning avoid shear friction during repositioning</td>
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<tr>
<td>• Make movement effective: Can patient assist in movement?</td>
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<tr>
<td>• Functional context of daily life</td>
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<tr>
<td>• 24 hour perspective</td>
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<table>
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<tr>
<th>Sitting protocols</th>
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<tr>
<td>Pressure mapping practice for safe sitting technique and appropriate surface</td>
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<tr>
<td>Pressure relieving techniques</td>
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<tr>
<td>Modalities eg Ultrasound/TENS</td>
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<th>Education</th>
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<tr>
<td>strengthening and functional training through activities such as bed mobility, transfers and gait re-education</td>
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<tr>
<td>Education patient family carers: Regular, simple and personal most effective: Encourage reflection</td>
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<th>Physiotherapy wound management</th>
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<tr>
<td>Physiotherapy involvement appears to lack any standardised protocol during the healing phase of the pressure sore, however once healed there are standardised practices to follow.</td>
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</table>
Therapy Intervention while on Bed rest

- Upper limb muscle strengthening
- Prone positioning
- Passive movements of lower limbs/upper limbs
- Positioning into side lying
- Passive/Active stretching of all limbs
- Bed mobility training
- Lower limb muscle strengthening
- ADL practice in bed
- Sitting balance re-education
- Pain treatment modalities
- Positioning into supine
- Positioning into high sitting
- Group therapy
- TENS treatment
- Pressure relief exercises
- Mobility training
- Use of tilt table
**Positioning: Rule of 30°**

- HOB elevated no more than 30°
- Place body in 30°, laterally inclined position
- Hips and shoulders 30° from supine
- Support with pillows or wedges
- Lower the bed head before repositioning
- Use slide sheets with every reposition
- Visual/photographs of plan and repositioning schedule visible
- 24 hour positioning plan
- Repositioning plan: change > 2 hours if required
- Liaising with Medics/HCA/Nursing for assistance/advice on transferring patients and repositioning
Passive Movements

7.15: Maintenance of range of motion and flexibility
Use active or active-assisted movements to maintain joint range of motion and muscle flexibility, when possible. Use conventional passive range-of-motion programs for individuals without motor function. Canadian guide clinicians PU SCI 2013

- Passive movements are an intervention whereby a patient’s joints are cyclically moved through available range of motion by another person, typically a therapist or carer (Wiles 2009).

- Maintain or increase joint mobility
- Improves the extensibility of soft tissues
- Decrease stiffness
- Improve circulation.
- PM can take 20 to 30 minutes to administer.
- Family/Carer training in handling & Movement for maintenance programme
Bed mobility

- Basic skill to promote independence and self care
- Task analysis for component skills for movement strategy
- Task specific training, repetitive for efficiency of movement

- Rolling side to side independently versus modified independence
  Eg use of bed rails/monkey poles
- Able to inspect skin (sacral area) in sidelying using a long handled Mirror
- Teach transfers lying to sitting, rolling side to side
- Maintain sitting balance and leg management able to move/lift legs to inspect heels/put on socks etc..

- Be mindful of shear/friction in transfer practice.
Factors which influence to take Pu patient from ward to gym

Doctors orders
Grade of pressure sore
Duration of pressure sore
Size of pressure sore
Pain levels Psychological status
Urinary and bowel incontinence
Spasticity
Past medical history/ Co-morbidities present
Infections /suction dressings or vacuum dressings

The grade, duration and size of the pressure sore considered before taking the patient to the gym
Pressure mapping and the correct wheelchair cushion prescription is an important aspect of treatment in patients with pressure sores (Reagen et al., 2009).

Other seating interventions involve close collaborative work with OT in specialised seating clinics. These clinics involve pressure education and recommendations for appropriate seating systems such as an appropriate cushion etc…

All support surfaces and pressure redistribution equipment in use by the patient, including its physical condition, suitability and whether use is appropriate and safe, should be assessed (RNAO, 2016). Examples of equipment to consider include bed, chair/wheelchair, toilet seat, bathing stool, foot rest, transfer equipment, and interventional medical device.
Seating considerations/Goals

- Sitting equipment for initial remobilisation and first sitting as skin allows/wound healing
- Sitting balance, assessment of skin tolerance, instruction in pressure relief and safe transfers
- Evaluation of seating /posture/positioning/sitting tolerance
- Duration of sitting (one hour 3x time day and progress if skin condition allows)
- Written seating schedule for communication and feedback and to monitor skin condition
- Adequacy of postural support in all positions to reduce the risk of shear due to sliding
- Protection of vulnerable bony prominences from trauma at rest and during movement

**Seat height:** to avoid slump/pressure

- **Seat depth:** or 2.5cm between the front of the seat and the back of the legs
- **Seat width:** There should be a space of 2.5cm between the patient’s hips and the side of the chair/ wheelchair
- **Armrest height:** Should support the elbows comfortably
Injuries to the skin can also occur during transfers due to shearing forces (particularly if you ‘slide’ rather than lift) or impact with obstacles such as the wheel of your chair.

Correct technique should minimise risk of skin injuries. Incorrect technique can increase your risk of falls during transfers.

Managing the injuries which result from poor technique can be difficult and lengthy. Prevention is far superior to cure!
How Often should I do pressure relief – every 15 to 30 minutes
Teaching correct pressure relief techniques.
Leaning to side – High Injury

Tilt and recline > 45°
Benefits of standing: Institute a regular standing programme as per guidelines & recommendations

7.12: Standing Consider individual risks of standing and encourage appropriate individuals to stand with a support, such as a standing frame or alternative device. Physiologic and psychological benefits of prolonged standing include improved circulation, digestion, respiration, bowel and bladder activity, sleep pattern, pain, and spasticity.

**Canadian Best Practice Guidelines for the prevention and management of pressure ulcers in people with SCI February 2013**
Exercise for pressure ulcer prevention

7.14 Encourage the person with spinal cord injury to participate in regular exercise that is consistent with Canadian physical activity guidelines to optimize muscle strength and endurance, encourage postural alignment, improve cardiovascular endurance, and prevent fatigue and deconditioning.  

**Canadian Best Practice Guidelines for the prevention and management of pressure ulcers in people with SCI February 2013**

Perform aerobic exercise **at least twice a week.**

Exercise for **at least 20 minutes.** This does not include a 5 minute warm-up at the start and 5 minute cool-down at the end. (Total exercise time including 30 minutes).

Exercise at ‘moderate to vigorous intensity’ for the full 20+minutes.  
Moderate to vigorous intensity’ means that you shouldn’t be able to hold a conversation while exercising, and should feel tired afterwards.
Strengthening exercises are ones that aim to stimulate muscles to help build muscle mass and strength.

To achieve the minimum amount of strengthening exercise recommended each week, it is necessary to:
Perform strengthening exercises **at least twice a week**
(for example: using weights, theraband or gym equipment)
Exercise in **three sets of 8-10 repetitions** with rest of 1-2-minutes between each set

**Individual strength-training Programmes**

These exercises can help patients develop the muscles they need for mobility and self-positioning. A strength-training program can be tailored to any position (supine, sitting, or standing) and improve strength and conditioning

Eg: triceps specific strengthening may benefit an individual who is having difficulty offloading the buttocks during transfers.

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PATIENT, CARER AND FAMILY EDUCATION

2.7: Individualise education
Provide education specific to the individual after each assessment and reassessment. This education should include:
Potential causes and risks of pressure ulcer development
Methods of self-monitoring
Reduction of pressure ulcer risks as part of the prevention plan

The content and mode of delivery are tailored to the needs of the individual.
A combination of educational methods: A discussion allows the information presented to be tailored to the understanding of the individual and the opportunity to ask questions. Combining discussions with other methods of providing information, e.g. printed leaflets and website links, will give further opportunities for learning and reflection (Colledge et al, 2008)

Written for a 12 year old: Different learning styles, simple concise structured. eg: Feedback—’explain back to me’ ‘how do tell a family member what I have just told you…..’
<table>
<thead>
<tr>
<th><strong>S</strong></th>
<th><strong>Skin Inspection</strong></th>
<th>How often do you check your skin? Is there a red mark on your skin especially over your bony areas? If yes, is it blanching? If it is not blanching, do you know what to do?</th>
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<tbody>
<tr>
<td><strong>S</strong></td>
<td><strong>Support Surface</strong></td>
<td>What type of cushion do you have? Does it have a cover and how do you maintain it? What mattress are you on? What shower equipment do you use?</td>
</tr>
<tr>
<td><strong>K</strong></td>
<td><strong>Keep Moving</strong></td>
<td>How often do you pressure relieve in your chair and how do you do it? How do you pressure relieve in bed?</td>
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<tr>
<td><strong>I</strong></td>
<td><strong>Incontinence</strong></td>
<td>How are your bowel and bladder managed? Do you have problems with incontinence?</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td><strong>Nutrition</strong></td>
<td>How many glasses of fluid (tea, water, milk etc.) do you drink each day? Have you recently gained or lost a lot of weight? Are you over- or under-weight? Are you aware of the healthy options on the menu? If you have been advised to take a nutritional supplement(s), do you take them?</td>
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Self Management in prevention of Pressure sores

Change positions regularly
Check your skin daily
Keep your skin clean and dry
Use pressure relieving cushions/mattress as advised by your therapist/nurse and correctly
Check your equipment regularly e.g. cushion, wheelchair, bed
Choose appropriate clothing
Maintain a healthy weight and monitor regularly
Be careful about heat
Eat a well balanced diet and drink plenty of fluids
Regular exercise, regular standing, HEP
Other points to consider in self management of skin care.

**Clothing**
Proper fit is important. Avoid sitting on seams and back pockets, and always check your skin carefully after wearing new shoes or clothing.
Too loose — Loose clothing can form wrinkles that put pressure on your skin.
Too tight — Overly tight clothing can hinder circulation.
Leg bags — Are the straps too tight?
External catheters — Is the correct size being used? Is it being changed frequently enough?

**Splints/Braces** — Do they fit properly? Do you do skin checks after wearing them. Is the bandage too tight? Each time you remove your orthosis check your skin, including the sole of your foot, for signs of pressure or redness.

Sweep shoes before putting them on.
**IDT approach:**

involves team members from different disciplines working collaboratively, with a common purpose, to set goals, make decisions and share resources and responsibilities.

Role based professional practice
Excellent communication skills, reporting feedback updating
Robust Documentation/record keeping
Good problem solving skills

Further research is required to guide standardised interventions of therapy by assessing what current practices are and then to determine the best practice to decrease complications of immobility. By determining the most effective treatment techniques, guidelines for the various inter-disciplinary teams may then be established (Henzel et al., 2011).
Future direction of Pressure Ulcer management
• Need for improved prevention and treatment
• Standardise structured education
• Continuum of care not fragmented approach
• Interprofessional approach to identify gaps
• Self management resource
• Technology advances
References

Understanding the association between pressure ulcers and sitting in adults what does it mean for me and my carers? Seating guidelines for people, carers and health & social care professionals. Stephens M¹, Bartley CA J Tissue Viability. 2018 Feb;27


Repositioning and pressure ulcer prevention in the seated individual Moore, M van Etten publishe 2011

HSE National Wound Management Guidelines 2018