

24 Hour Positioning, Passive Movements,
Shoulder pain, Splinting, Use of Assistive
Technology, Early Mobilisation, and the
Home Environment.

Christine Hogg
Physiotherapy Team Leader
and
Vicky Thomas
Senior Occupational Therapist



24 Hour Positioning

- It is important to assess and plan for optimal 24 hour positioning in order to avoid the risks of
- **Pain and discomfort** (increased need for medication and reluctance to engage which could lead to increased length of stay)
- **Pressure marks** (increased risk to the patient of developing sores, psychological issues due to time spent in bed, unable to participate in therapy)
- **Soft tissue/structural changes** (reduced Range Of Movement in joints, pain, loss of function, deformity including scoliosis and kyphosis and negative body image)



Patients should have a Positioning Schedule

Whilst in bed the patient should be repositioned not just for pressure prevention but also for management of posture.

Some patients may require splints to maintain their joints in optimum position to prevent deformity and consequent loss of potential function.

Whilst in a wheelchair correct posture needs to be maintained i.e. hips, knees and ankles maintained at 90 degrees, seated centrally without pelvic obliquity or tilt and good lumbar support, arms supported at correct height to prevent shoulder pain or subluxation, and head supported with appropriate headrest. Ideally a tilt in space wheelchair should be used to maintain the angle between seat and backrest whilst redistributing pressure.



Maintenance of joint range of movement and prevention of contractions

Passive movements

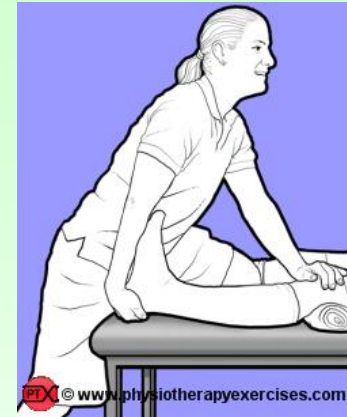


Splints



Passive Movements:

- Passive movements to the paralysed limbs are essential to help maintain range of movement in joints and soft tissue and to promote circulation (Bromley 1998).
- Maintenance of good range is important as limited joint range and soft tissue contractures prevent good functional positioning (Cash 1998).
- Passive movements will also facilitate the carer with washing, dressing, transferring and positioning of the patient comfortably in the bed and wheelchair.
- Also passive movements can help maintain the patient's good appearance and posture.



Things To Consider When Completing Passive Movements:

Position of the patient

Dignity

Manual handling

Decreased sensation

Spasms

Autonomic Dysreflexia

Handling of a paralysed limb

Skin

Risk of DVT's Restrictions following SCI/ surgery

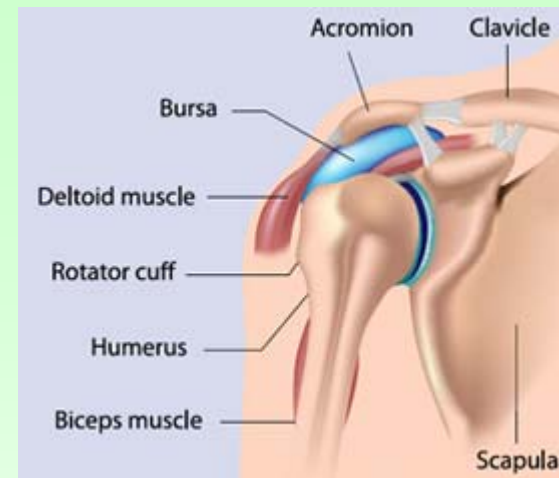


Shoulder Pain:

25-73% of patients will have an episode of shoulder pain after SCI injury.

Around 75% of individuals with SCI have shoulder pain at some time during their lives, and the rate increases with the number of years since spinal cord injury.

Shoulder pain can be very debilitating, decreasing a person's independence and decreasing the quality of life.



Shoulder Pain:

Possible causes:

Muscle weakness due to the SCI

Altered muscle tone

Trauma during the injury

Overuse after your injury (transfers/wheelchair use)

General aging process

Instability

Impingement

Capsulitis (Frozen shoulder)



Shoulder Pain

- How can we help:
 - Inform the Physiotherapist/Occupational Therapist.
 - Optimise the environment.
 - Think about the patients position in bed/in the wheelchair.
 - Exercises if appropriate, to prevent reduced range of movement at the shoulder and to strengthen the shoulder if able.



Splinting

- Flexion contracture is common in the elbow and fingers and can often be prevented by careful positioning of the upper limb, and regular passive stretching but it may be necessary to provide appropriate splints together with information on how and when they should be applied. A contracted limb equates to reduced function and negative body image.
- Ankle and foot splints may be required to prevent foot drop.





A static elbow splint will maintain the joint at a set angle.

Skin needs to be monitored closely to ensure that there are no problems with pressure.



A dynamic splint will allow the joint to move within set parameters and can be used for preventing contractures but also for the patient to exercise within a pre determined range which can be increased over time rather than using serial casting.



Assistive Technology

- Advances in assistive technology has opened a world of opportunity to people with profound disability.
- It offers independence to those who would not otherwise have it, and, as we know, to have the ability to exert some control over our life is vitally important and never more so than to the newly injured patient.
- A simple switch operated environmental control system will allow patients to carry out the functions of any remote control thus enabling them to use their TVs or DVD players independently without having to rely on staff.
- The importance of being to be able to communicate with loved ones via Skype (where appropriate) email or phone cannot be overstated.



Patients are assessed early on to ascertain which type of man machine interface will be most appropriate for them. A variety of different switches are available which can be operated by pressing, raising an eyebrow, biting, blinking, sip and puff . Eye movement , Infra Red and Voice activation are also widely used. Even ventilator dependent patients without speaking tubes can manipulate their environment and communicate much more easily than ever before.



Technology doesn't always have to be high tech. A simple stylus has been elongated to enable this C4 tetraplegic to use his mouth to manipulate his Smartphone which he has clamped to the arm of his wheelchair.



- Currently , Laptops and appropriate interfaces are provided to the patients on loan whilst in hospital for use on the ward and as part of their therapy.
- The OT staff will set up the system and show the patient how to use it if they are not familiar with it.
- They also assist in providing patients with information regarding purchasing equipment and details of Charitable organisations who may be able to help with funding.
(Unfortunately, Technology is not cheap!)
- With the patient's consent they will also refer to Assistive Technology North West for assessment and provision of environmental controls in the home post discharge.



INITIAL MOBILISATION

Postural hypotension can be a problem when patients first start to mobilise.

For this reason patients should initially be mobilised in a tilt in space wheelchair with a headrest and elevating leg rests which provides staff with the ability to quickly change the patient's position if there is a significant drop in blood pressure.

The wheelchair needs to be supportive and an appropriate pressure relieving cushion must be used. The importance of maintaining a good posture from the outset cannot be overstated if contractures/deformity and negative body image are to be avoided.





As mentioned earlier, patients should initially be mobilised in a tilt in space wheelchair as the angle between seat and backrest is maintained when the patient is reclined which will prevent the patient sliding forward or experiencing shearing as so often happens when just the backrest is reclined. Additional lateral supports can be fitted to maintain truncal alignment.





'Roho' air cushions



'Jay' fluid based cushion



Hybrid combined air and fluid based cushion



In order to maintain skin integrity a pressure relieving cushion will be required. For initial mobilisation a Roho air cushion would normally be the cushion of choice as it offers excellent pressure relief. Later on other cushions that offer more stability as well as pressure relief such as the Jay fluid based or 'hybrid' cushion may be used.





Experienced therapists will carry out comprehensive seating and postural assessments and patients can expect to be seated in a number of different wheelchairs during their treatment and rehabilitation in order to ascertain their individual needs. Considerable time is spent liaising with the individual's local wheelchair services.



Home Environment

If we think about our own homes would they be suitable for a wheelchair user. The chances are the answer will be no.

The Occupational therapist will visit the patient's home as soon after admission as possible in order to ascertain if the property is suitable or can be adapted to meet their needs.

If adaptations are required it can be a lengthy process so it is important to get the ball rolling straight away. More often than not a patient is ready for discharge before their home has been adapted and they will either have to be accommodated in an interim facility or 'rough it out' until the work is carried out.



In order to prepare patients for discharge they will go on day and weekend leave wherever possible as part of their rehabilitation and eventual reintegration into their community.

Leaving hospital can be a daunting prospect regardless of how much a patient wants it and by going on leave they and their families can identify problems and, hopefully, rectify them prior to discharge.



Thank you for your attention

Any questions ?

