National MajorTrauma Rehabilitation Group

**NMTRG Guidelines for the assessment and rehabilitation of the Major Trauma patient**

## Discipline: Multidisciplinary

### Guideline 1: Management of SCI

Therapists working with patients with SCI should have a **basic knowledge** of:

- Spinal Anatomy
  - Bony anatomy of the spinal column
  - Ligamentous complex
  - The spinal cord and spinal nerves
  - Spinal plexus
  - Autonomic nervous system
  - Vascular anatomy of the spine

- Spinal injury
  - Types of spinal injury, including spinal stability: unstable Vs stable
  - Spinal precautions
  - Respiratory/cardiovascular complications associated with SCI
  - Bladder and bowel complications, including neurogenic bowel requiring reflexic/areflexic bowel regime, or catheterisation/intermittent self catheterisation, suprapubic catheterisation
  - ASIA classification and implication of this on recovery
  - Complete/incomplete injuries, including common incomplete syndromes (such as Brown-Sequard syndrome/central cord/ventral cord/dorsal cord/cauda equina syndrome)
  - Common associated injuries
- Medical/surgical management of SCI
  - Awareness of CT/MRI findings, link with neuroanatomy and clinical presentation
  - Surgical vs non surgical management
  - Acute medical management of SCI

Therapists working with patients with SCI should be able to **recognise signs and implications of**:

- Deterioration in neurology
- Respiratory distress or deterioration
- Cardiovascular compromise
- **Autonomic dysreflexia**
- Secondary complications - eg pressure areas, contractures, UTI, constipation
- Spinal shock
- Changes in muscle tone
- Psychological deterioration
- Swallow difficulties

Any of these signs/symptoms should be escalated appropriately, as per local systems

Therapists should be able to offer the following **assessments within your scope of practice**:

- Observations (e.g. BP monitoring)
- Risk assessment (e.g. Task, Individual, Load, and Environment) in line with all of the above.

- Tracheostomy status
- Cognition (if appropriate e.g. SCI with TBI)
- Respiratory insufficiency and function (As per local guidelines)
- ASIA
- Further Impairment based assessments which may include:
    - Range of movement
    - Tone
    - Co-ordination
    - Balance
    - Vestibular
- Functional assessment that is appropriate to the patients' physical, cognitive, communication and behavioural capacity.
- Functional assessments may be used to identify neurological impairments through observation when formal assessment of impairments is not possible.
- Wheelchair provision
- Nutrition

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The Therapists should be able to offer the following **interventions within their scope of practice:**

- Head hold and log roll
- Ability to fit and change collars and braces (Referral to orthotics for spinal orthoses)
- Management of collar and brace care once in situ (as per local guidelines)
- Respiratory management as clinically indicated (As per local guidelines)
- Tracheostomy management:
    - Secretion management
    - Use of speaking valve (one-way and above-cuff)
    - Weaning (VFB) through to decannulation where appropriate (As per local guidelines)
    - Referral to specialist teams (e.g. ENT, max fax, etc)

- Alternative augmentative communication (AAC) methods
- FEES or video fluoroscopy (if appropriate)
- Adaptive eating and drinking aids
- Seating
- Use of appropriate outcome measures

- Goal directed rehabilitation programme to address impairments and functional limitations using specific approaches and strategies
    - Postural management, including specialist seating, 24 hour positioning programmes, education sheets, use of TEDS/abdominal binder where clinically indicated.
    - Management of pressure areas and the patients ability to pressure relieve independently or with assistance
    - Gradual tolerance to sitting up (monitor for autonomic dysreflexia, use of medication/TEDS/Abdo binder)
    - Management of tone including focal and generalised anti spasmodic benefits
    - Provision of upper and lower limb splints including fabricated soft and scotch resting and functional splints as well as off the shelf products including a pressure relieving ankle foot orthosis (PRAFO)
    - Exercise programmes to improve/maintain: strength, ROM, balance and cardiovascular fitness
    - Sensory re-education programme as appropriate
    - Practise of transfer method
    - Early standing (when appropriate)
    - Education with focus on importance of pressure relief
    - Use of adjuncts for neuro-rehabilitation such as Functional Electrical Stimulation (FES), taping.
    - Gait re-education and use of appropriate aids and technology e.g. partial bodyweight support treadmill training
    - Equipment prescription e.g. walking aids, wheelchairs.

    - Specific upper limb functional and conditioning programme

The Therapists are expected to complete these assessments and interventions from an early stage post injury in critical care, HDU and all points in the care pathway as clinically indicated.

If required the patient has access to:

- Specialist spinal cord injury units (Referral completed at the earliest opportunity, ideally <24 hours via the SCI database)
- Level 1/2 rehabilitation Units
- Psychology support
- Community neurological rehab
- Local wheelchair services
- MSK outpatients and/or specialist service eg. Orthotics, spasticity clinic.
- Local charities
- Citizens Advice
- Social Services
- Major Trauma Signposting service if available.

Therapists should have knowledge of **additional services** including:

- Local spinal specialist unit
- Local specialist teams e.g. pain team, SCI specialist, orthotics, Trauma psychologist and neuropsychology (if appropriate), rehab coordinator, neuro navigator, older adult liaison team, tracheostomy specialist team, pain team, mental health team
- Back up trust
- Spinal Injuries Association (SIA)
- Major Trauma Signposting Partnership (MTSP)
- Citizens Advice Bureau (CAB)
- Macmillan Benefits Service
- Drug and Alcohol Team
- Homeless team
- SCI case management
- Patient support groups/group rehabilitation
- Youth support for violence intervention
- Regional spinal network

**References:**

**RISCI: Weaning guidelines for Spinal Cord Injured patients in Critical Care Units can be found at:**
Weaning guidelines for Spinal Cord Injured patients in Critical Care Units | RISCI