**NMTRG Guidelines for the assessment and rehabilitation of the Complex Lower Limb injury in a Major Trauma patient**

| **Discipline: Occupational Therapy and Physiotherapy** |
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| **Complex Lower Limb injury Physiotherapy and Occupational Therapy Rehabilitation Guideline** |
| The PT/OT should have a working knowledge of:* Lower limb anatomy and biomechanics
* Fracture healing
* Lower limb nervous and vascular system
* Lower limb reconstruction surgery techniques including limb lengthening, bone transportation, & deformity correctional procedures
* Surgery including plastics involvement e.g. grafts and flaps
* Rehabilitation expectations
* Spanning knee frames/ tibial frames/ tibial frames with footplate
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| The Physiotherapist and the Occupational Therapist should be able to complete basic limb observations to include the following:* Capillary Refill
* Pulses
* Motor activity and grading with a standardised measure
* Sensory testing
* Palpation
* Passive muscle stretch
* Be able to escalate concerns where additional injuries are suspected
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| The Physiotherapist and Occupational Therapist should be able to identify problems as a result of fractures/surgery and escalate if required:* Swelling
* Fracture blisters
* Limb swelling
* Infection
* Circulation compromise
* Wound/dressing issues (including PICO/negative pressure dressing)
* Compartment Syndrome
* Sensory changes
* Motor changes
* Internal degloving
* Understanding rhabdomyolysis
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| Understand the rationale for use and identify problems with * Thomas / Kendrick splint
* Braun frame
* Traction (skeletal & skin)
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| Demonstrate knowledge of common orthopaedic surgery:* ORIF
* External Fixator
* Ilizarov/TSF
* DHS / Cannulated hip screws / hemi arthroplasty / total hip replacements
* Distal femoral replacements
* Inter medullary fixation
* K-Wire fixation
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| To be aware of the local hip precautions / consultant preferences for a fractured neck of femur (NOF) and adhere to the national guidelines and any local best practice tariff (BPT) for this group |
| Demonstrate awareness of common post-operative complications, how to identify them, how to escalate and when safe to continue therapy:* Compartment Syndrome
* Deep Vein Thrombosis (DVT)
* Cardiovascular instability
* Low Hb
* Pulmonary Embolus (PE)
* Fat emboli
* Wound infection/dehiscing
* Nerve injury/palsy
* Delirium
* Intracranial pathologies post-operative
* Acknowledgement of other soft tissue or bony injuries
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| To be aware of potential modalities to assist muscle and joint range of motion:* CPM
* Splinting
* Exercise therapy
* Soft tissue techniques
* Understanding analgesia
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| To be able to complete:* A comprehensive assessment of the lower limb (physical, sensory, cognitive and psychosocial as per NICE Guidelines)
* Devise a patient centred appropriate treatment plan and goals
* Progress and amend as required
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| To be able to understand rationale for, bespoke and off the shelf equipment ,application, adjustment and education for patient/carer on the use of:* Hip dislocation brace
* Cricket pad splint
* Hinged knee brace
* Dynamic PCL brace
* Walking / rigid / fixed walker boot
* Offloader shoe / plaster shoe
* AFO
* Speed brace
* Foot up splint
* Dorsiwedge
* Foot drop splints (bespoke and off-shelf)
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| To demonstrate awareness of varying weight bearing restrictions and appropriate: * walking aid selection
* transfer aids(banana board, sara stedy, Re-Turn, ETAC & hoist)
* mobility progression
* maximisation of outcomeand independence
* Environmental/equipment needs for discharge
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| Be aware of common issues around daily life with an external fixator/frame and advise the patient accordingly (please see the lower limb reconstruction guideline for in depth information)* Personal care
* Dressing
* Functional tasks
* Mobility/Transportation
* Body image/psychological acceptance
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| Demonstrate knowledge of the professionals available to input care into patients with complex lower limb injury* Specialist nurse
* District nurse
* Orthotics
* Plaster technician
* Prosthetics
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| Understand the indications for wheelchair assessment and be able to educate patient/carer on the following: * Wheelchair set up
* Self-propelling (where able)
* Access to a vehicle
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| With regards to plastics surgery, to be able to do the following: * Administer the free flap dangling protocol for the lower limb and educate others
* Understand the potential psychological impact to the patient and refer onto psychology
* Understand when to escalate any concerns
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| Be able to identify and refer on for: * Provision of longer term rehabilitation needs (including vocation & education) and educate patient/carer around these
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| If required the patient has access to:* Outpatient MSK rehab within two weeks of discharge
* Community therapy within a week of hospital discharge
* Community psychology
* long term access to pain services
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**References and Further Reading**