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

| **Discipline: Occupational Therapy and Physiotherapy** |
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| **Complex Upper 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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| Be aware of and able to complete basic limb observations including the following:* Capillary Refill
* Pulses
* Motor activity and grading with a standardised measure
* Sensory testing
* Palpation
* Passive muscle stretch
* Understand the presentation of split skin grafts and free flaps
* Be able to escalate concerns where additional injuries are suspected
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| To 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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| Demonstrate knowledge of common orthopaedic surgery and its impact on rehabilitation:* ORIF
* External Fixator
* K-wiring
* Joint replacement (shoulder replacement / radial head replacement)
* Inter Medullary fixation
* Combination of the above and its impact on mobility
* Soft tissue repair and post-operative local protocol
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| 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 able to complete a comprehensive assessment of the upper limb, devise an appropriate treatment plan, 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:* Bradford sling
* Polysling
* Specific abduction or external rotation slings
* Futura splint
* Hand resting splint (bespoke and off-shelf)
* Thumb spica
* Thermoplastic splints
* Hinged elbow brace
* Humeral brace
* Collar and cuff sling
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| To demonstrate awareness of varying weight bearing restrictions and appropriate: * walking aid selection if able
* transfer aids (banana board, sara stedy, Re-Turn, locally used standing aid & 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 a complex upper limb injury and advise the patient accordingly* Copine one handed
* Personal care
* Dressing
* Functional tasks
* Mobility/Transportation
* Body image/psychological acceptance
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| Demonstrate knowledge of the pathway and professions involved for any patient with a complex uppe r limb injury* Specialist nurse
* District nurse
* Orthotics
* Plaster technician
* Prosthetics
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| With regards to plastics surgery, to be able to do the following: * Administer the local free flap dangling protocol for the lower limb and educate others
* Understanding the local management plan of pedicle/ rotational flap or split skin grafts.
* Understand the potential psychological impact to the patient and refer onto psychology
* Understand when to escalate any concerns
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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**