



## **Trauma & Orthopaedic Undergraduate Syllabus**

### **Introduction**

The purpose of this document is to provide a recommended syllabus for medical students in Trauma & Orthopaedics (T&O). It should help students on their T&O attachments, and their supervisors, to define learning outcomes. Individual institutions will have their own preferred methods of assessment and therefore no recommendations are made for this element.

Each feature is described in a different way e.g. by process and by anatomical region, to reflect the different approaches and ways of learning, so there will be some repetition.

The document is built upon a core level of competency and knowledge required to pass medical degree examinations, and recognises that some trainees only need this basic level of knowledge. Other trainees will want a deeper understanding. Given that 50% of graduates will ultimately become GPs and few are likely to have much further T&O education, it is essential that a strong foundation in T&O is provided.

### **General Statement**

On qualification, a doctor should be able to:

- Outline the aetiology, pathophysiology and clinical presentations of common T&O conditions.
- Make a differential diagnosis and select the most appropriate initial investigations.
- Set priorities and plan management of the critically injured patient.

There are several broad sections

1. Assessment of the patient
2. Pathological processes
3. Conditions related to specific anatomical regions
4. Common treatment modalities and experience of specific musculoskeletal procedures

### **1. Assessment of the Patient**

On qualification, a doctor should be able to:

- Elicit an accurate and problem-focused musculoskeletal history.
- Undertake a targeted musculoskeletal physical examination.
- Select the most appropriate initial investigations.
- Make an appropriate differential diagnosis based on these findings
- Communicate findings efficiently.

### **Examination**

On qualification, a doctor should be able to:

- Perform a screening examination e.g. GALS (Gait, Arms, Legs, Spine<sup>1</sup>)
- Examine major joints and spine, including specific tests for pathology.
- Examine an acutely injured patient, including a focused neurological examination.



- Interpret findings elicited and relate them to the history.

Extremity/regional examinations to include:

- Spine
- Hip and pelvis
- Knee
- Ankle and foot
- Shoulder
- Elbow
- Wrist and hand

## 2. Pathological Processes

On qualification, a doctor should be able to associate findings with specific pathological processes including:

- Vascular (ischaemic)
- Infective
- Traumatic
- Autoimmune
- Metabolic (endocrine /drugs)
- Inflammatory
- Inherited (congenital)
- Neurological
- Neoplastic
- Degenerative
- Idiopathic

## Specific Rheumatological Conditions

- Autoimmune/connective tissue disorders
- Lupus
- Scleroderma
- Dermatomyositis
- Psoriatic arthritis
- Spondyloarthropathies
- Rheumatoid arthritis
- Juvenile idiopathic arthritis
- Gout

## 3. Conditions related to specific anatomical regions

On qualification a doctor should be able to identify pathology, based on anatomical location.

By necessity this list is long but not exhaustive. Doctors should have some knowledge of all of the common conditions detailed below. The examining body will determine the level of detail assessed prior to qualification.



| <b>Condition</b>                                    |
|---|
| <b>HIP</b>  |
| Degenerative joint disease (DJD)                    |
| Greater trochanteric bursitis                       |
| Sacroiliac (SI) joint dysfunction                   |
| Transient synovitis of the hip                      |
|   |
| <b>KNEE</b>   |
| Degenerative joint disease/osteoarthritis           |
| Meniscus tears                                      |
| Anterior cruciate ligament (ACL) tear               |
| Medial collateral ligament (MCL) sprain             |
| Osgood-Schlatter's disease                          |
| Iliotibial band syndrome (ITBS)                     |
| Patellofemoral pain syndrome                        |
|   |
| <b>SHOULDER</b>                                     |
| Rotator cuff pathology (tear/strain/tendinopathy)   |
| Impingement syndrome/subacromial bursitis           |
| Adhesive capsulitis                                 |
| Degenerative joint disease/osteoarthritis           |
| AC Joint degenerative joint disease /osteoarthritis |
| Biceps tendinopathy                                 |
|   |
| <b>ELBOW</b>  |
| Lateral epicondylosis                               |
| Medial epicondylosis                                |
| Olecranon bursitis                                  |
| Ulna nerve entrapment (cubital tunnel syndrome)     |



|                                  |
|----------------------------------|
|                                  |
| <b>WRIST/HAND</b>                |
| Carpal tunnel syndrome           |
| Wrist ganglions                  |
| DeQuervain's tenosynovitis       |
| Dupuytren's contracture          |
| Carpometacarpal arthritis        |
| Trigger finger                   |
|                                  |
| <b>ANKLE/FOOT</b>                |
| Bunions                          |
| Plantar fasciitis                |
| Achilles tendinosis              |
| Morton's neuroma                 |
|                                  |
| <b>SPINE</b>                     |
| Low back pain                    |
| Degenerative disc disease        |
| Spondylolysis/listhesis          |
| Scoliosis                        |
| Nerve root entrapment / sciatica |

## Trauma

| Condition  |
|--|
| <b>Emergency conditions</b><br>On qualification, a doctor should be able to recognise musculoskeletal conditions which are life or limb threatening and institute the appropriate management |
| Compartment syndrome (any site)  |
| Neurovascular injuries (any site)  |



|   |
|---|
| Septic arthritis                                    |
| Open fractures                                      |
| Cauda equina  |
|   |
| <b>Emergency conditions (not covered elsewhere)</b> |
| Physiological response to trauma                    |
| The limping child                                   |
| Assessment/management of pathological fractures     |
|   |
| <b>Regional pathology</b>                           |
| <b>HIP</b>  |
| Fractured neck of femur                             |
| Pubic ramus fracture                                |
|   |
| <b>KNEE</b>   |
| Meniscus tears                                      |
| Anterior cruciate ligament (ACL) tear               |
| Medial collateral ligament (MCL) sprain             |
| Patella fracture                                    |
|   |
| <b>SHOULDER</b>                                     |
| Dislocation   |
| AC joint separation                                 |
| Clavicle fracture                                   |
| Biceps tendon ruptures                              |
|   |
| <b>ELBOW</b>  |
| Olecranon fracture                                  |
| Radial head fracture                                |



|                                    |
|------------------------------------|
| Dislocation                        |
|                                    |
| <b>WRIST/HAND</b>                  |
| Distal radius fracture             |
| Scaphoid fracture                  |
| Metacarpal / phalangeal fractures  |
| Tendon injuries                    |
|                                    |
| <b>ANKLE/FOOT</b>                  |
| Ankle fracture                     |
| Metatarsal stress fracture         |
| Lisfranc injury                    |
| Achilles tendon rupture            |
|                                    |
| <b>SPINE</b>                       |
| Cauda equina                       |
| Spinal fracture / spinal trauma    |
| Spinal infections                  |
| Metastatic spinal cord compression |
| The painful spine in the child     |

#### **4. Common treatment modalities**

On qualification, a doctor should be able to explain common treatment modalities including:

- Simple practical procedures required in the emergency setting (limb realignment and splinting)
- Non surgical management
- Surgical management

#### **Simple Practical Procedures**

On qualification, a doctor should be able to:

Limb realignment:

- Explain the principles of emergency limb realignment.
- Describe reduction of a long bone fracture and joint relocation procedures e.g. shoulder
- Outline immobilisation techniques



### Splinting:

- Apply principles of splinting including
- Plaster of Paris and fibreglass as well as pre-formed splints
- Explain splinting techniques including the advantages and disadvantages of backslab and full cast
- Safely use splint removal equipment

### Non Surgical Management

On qualification, a doctor should be able to:

- Outline non-operative management options for common musculoskeletal conditions
- Explain potential benefits and limitations including
  - Pharmacological
  - Physical (physiotherapy, rest, exercise)
  - Supports and aids (e.g. sticks, home modification)
  - Nutritional (e.g. weight loss)
  - Psychological

### Surgical management

On qualification, a doctor should be able to:

- Explain common elective orthopaedic surgical procedures
- Clarify indications, potential benefits, risks and results for:
  - Arthroplasty: total hip and total knee replacement (with knowledge of other joints)
  - Arthroscopy
  - Meniscectomy
  - Anterior cruciate ligament reconstruction
  - Simple shoulder procedures
  - Tendon repair
  - Wound management and Debridement
  - Nerve decompression (e.g. carpal tunnel)
- Explain common trauma procedures
- Clarify indications, potential benefits, risks and results for:
  - Open and closed reduction
  - Wiring, plating, intramedullary nailing and joint replacement in trauma
  - Dynamic hip screw and hemiarthroplasty for hip fracture

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### References

1. M Doherty, J Dacre, P Dieppe, and M Snaith (October 1992). "The 'GALS' locomotor screen". *Ann Rheum Dis.* **51** (10): 1165–9. doi:[10.1136/ard.51.10.1165](https://doi.org/10.1136/ard.51.10.1165)