## Airway Management

1. Preparation
    i. Ask for airway trolley
    ii. Eqpt check
    iii. Brief team
    iv. Delegate roles
2. Airway Assessment
    i. Looks into oropharynx
        - Removes FB/vomit - suction/Magill's **NOT** finger sweep
    II. Listens for signs of obstruction
        - Stridor
        - Snoring
        - Gurgling
        - Movement of Air
    iii. Looks at chest wall
        - Paradoxical chest excursion
        - Indrawing of the chest
3. Airway Management - reassess between each intervention
    i. Suction
    ii. High flow $O_2$
    iii. L lateral
    iv. Chin lift/Jaw thrust
    v. OPA (+sizing -upper central incisors to angle of jaw)
    vi. NPA (+sizing - nostril to angle of jaw)
    vii. BVM/Mapleson C
    viii. ?LMA
    ix. Intubation

## Intubation 1

1. Introduction
    i. Introduction to team
    ii. Assign roles
    iii. Airway trolley
    iv. Asks for help and an assistant
2. Airway Assessment
    i. Looks into oropharynx
        - Removes FB/vomit - suction/Magill's **NOT** finger sweep
    II. Listens for signs of obstruction
        - Stridor
        - Snoring
        - Gurgling
        - Movement of Air
    iii. Looks at chest wall
        - Paradoxical chest excursion
        - Indrawing of the chest
        - LEMON
            - ✳ **L**ook externally
            - ✳ **E**valuate 3:3:2 (3 fingers between incisors, 3 fingers mentum to hyoid, 2 fingers hyoid to thyroid)
            - ✳ **M**allampatti
            - ✳ **O**bstruction
            - ✳ **N**eck mobility
3. Preparation
    i. Pre-oxygentaion - assistant
    ii. Suction
    iii. Ensures monitoring
        - Sats
        - BP
        - ET $CO_2$
    iv. Ensures IV access
    v. Sets up airway trolley
    vi. Take over pre-oxygenation
    vii. Brief team on plan A-D
        - **A -** direct tracheal intubation with bougie. Max 3 attempts. Change something each time
        - **B -** Supraglottic airway. 2 attempts
        - **C -** Facemask ± OPA/NPA
        - **D** - Surgical airway

## ALS 1

1. Initial actions
    i. SAFE approach
    ii. Confirms cardiac arrest
    iii. Calls for Help
        - In house
        - 2222
2. Management of arrest
    i. CPR
    ii. Airway management
    iii. Defib ASAP
    iv. ALS algorithm
    v. IV access
    vi. 4Hs & 4Ts
        - Hypoxia
        - Hypovolaemia
        - Hypothermia
        - Hyper/Hypokalaemia
        - Tension Pneumothorax
        - Tamponade
        - Toxic/Metabolic
        - Thromboembolism
    vii. Special circumstances
        - Hyperkalaemia
            - ✳ 10ml 10% $CaCl_2$
            - ✳ 50mmol $NaHCO_3$ (50ml of 8.4%)
            - ✳ 50ml glucose + 10 IU actrapid
            - ✳ Dialysis
        - Hypokalaemia
            - ✳ Replace $K^+$ 20mmol over 10/60 then 10mmol over 10/60
        - Hypercalcaemia
            - ✳ Fluid
            - ✳ Diuresis with furosemide 1mgkg$^{-1}$
            - ✳ Dialysis
        - Hypocalcaemia
            - ✳ 10-40ml of 10% $CaCl_2$
        - Opioid OD
            - ✳ Naloxone 400-800 mcg IV
        - Hypothermia
            - ✳ Warm
            - ✳ 3 shocks if <30 Deg C
            - ✳ Delay further shocks until >30 Deg C
            - ✳ No drugs <30 Deg C
            - ✳ Double time between drugs between 30-35 Deg C

## Conscious Sedation

1. Review need for conscious sedation
2. Ensure safety
    i. Appropriate area
    ii. Adequate back up
    iii. Sufficient staff
4. Introduce self to patient
5. Relevant history
    i. Previous complications with anaesthesia
    ii. FHx of complications with anaesthesia
    iii. Allergies and meds
    iv. Significant PMHx (esp. resp, CVS, hepatic and EtOH)
    v. HTN and thyroid Ds
    vi. Last ate and drank
4. Airway assessment
    **i.** **L**ook externally
    **ii.** **E**valuate 3:3:2 (3 fingers between incisors, 3 fingers mentum to hyoid, 2 fingers hyoid to thyroid)
    **iii.** **M**allampatti
    **iv.** **O**bstruction
    **v.** **N**eck mobility
**5.** Get written consent
**6.** Drug options
    **i.** Sedatives
        - Midazolam
            - ✳ Lipophilic
            - ✳ Crosses BBB
            - ✳ Adults 0.02-0.1mgkg$^{-1}$
            - ✳ Hepatic metabolism so unaffected by renal failure
        - Propofol
            - ✳ 2, 6-diisopropylpehol
            - ✳ Positively modulates the inhibitory neurotransmitter GABA via $GABA_A$ receptors
            - ✳ 3 compartment model of elimination (v. rapid distribution, rapid elimination, slower re-distribution from poorly perfused tissues)
            - ✳ Predominant hepatic metabolism

## Teaching a procedure

1. Normal teaching prologue
2. Asks patient's permission to teach
3. Indications
4. Contraindications
    i. Patient non-compliance
    ii. Allergies
    iii.
4. Preparation
5. Position
6. Ways of performing procedure
    i. Blind
    ii. US guided etc

## Wound Management

1. Wash hands
2. Manage ABCDE
3. Analgesia
4. Mechanism of injury
    i. Type of injury
    ii. Site of injury
    iii. Risk of rabies/tetanus
        - Rabies risk low in UK
        - Tetanus imms at 2/12, 3/12, 4/12, preschool and fifth and final dose between 13 & 18
        - If all 5 vaccines given:
            - ✳ very heavily contaminated wounds should be given human tetanus Ig 250-500 iu
        - If incomplete vaccine schedule/unknown
            - ✳ Vaccine immediately and compete schedule
            - ✳ Human tetanus Ig 250-500 iu for any tetanus prone wound
3. Patient Factors
    i. Medications and allergies
    ii. Hand dominance and occupation
    iii. PMH (Immunocompromise)
    iv. Vaccine status
4. Examination
    i. Top to toe looking for other bite injuries
    ii. Completely expose affected limb and examine
        - MSK
        - Neuro
        - Vascular
        - Beware of compartment syndrome
5. Investigations
    i. Bloods
    ii. Wound swabs
    iii. X-ray
6. Preparation
    i. Considerations
        - Department vs specialty
        - Immediate vs delayed
        - Abx

## ALS 2

- Trauma
  - ✳ Airway
  - ✳ Bilateral finger thoracostomy
  - ✳ Blood resus
  - ✳ USS for tamponade
  - ✳ If arrest in front of you thoracotomy - more successful in penetrating than blunt
- Pregnancy
  - ✳ Tilt 15 Deg
  - ✳ Resuscitative hysterotomy if foetus viable

## Intubation 2

4. Intubation
   i. Positions patient
   ii. Drugs - appropriate choice of induction agent
   iii. Intubates
   iv. Inflate cuff with air
   v. Check ETT position
      - Direct vision
      - Chest expansion and auscultation
      - Fogging of ETT
      - Capnography
      - CXR

## Major Trauma

1. Trauma Call ± TXA advice
2. Allocate rolls to team
3. Check Eqpt
4. AMPLE
5. Primary survey - if carried out by junior may need repeating
6. Imaging adjuncts
   i. Explain why no lateral C-spine
   ii. FAST
   iii. Pan CT- may need to justify
4. If intervention required must go back to top and reassess
5. Secondary Survey
   i. Head and neck
   ii. Trunk including spine ± log roll
   iii. Pelvis
      - In an adult remember PV and PR
   iv. Limbs
6. Is there anything else?
   i. Management issues
   ii. Procedural issues e.g. junior running trauma
7. Debriefing

## Wound Management Cont.

ii. Do not suture facial injuries which:
- Cross vermillion border
- Involve eyelid
- Marked tissue loss
- Are infected

iii. Wash hands - 6 point technique
•Palm to palm
•Palm to back
•Between fingers
•Fingers interlocked
•Thumbs
•Nails

iv. Set up eqpt
•Ask for assistant if necessary

v. Anaesthetic
•Local vs regional
•Aspirate

6. Wound closure
7. Dispose of sharps
8. Written advice

## Teaching Generic

1. Introduction
   i. Hello my name is.....
   ii. I'm one of the.....
   iii. I understand you want to learn about.....
2. Assess prior knowledge
   i. Tell me what you already know about....
3. What do you want to learn?
   i. Are there any specific areas of ..... you want to know about?
   ii. OK that's great
4. We can certainly talk about that..... BUT this is quite a short session so afterwards we should see some patients and apply what you've learnt/I'd like you to look at (this resource)/I'd like you to go away and find some interesting examples to show me
5. So we're going to talk about.....
6. Does that cover everything you want to know?
7. Teaching
   i. Go through each bit summarising as you go
   ii. Demonstrate if possible
   iii. Ask questions to check knowledge
8. We don't have much time left. Do you have any burning questions?
9. Summary

## Conscious Sedation Cont.

- Ketamine
  - ✳ NMDA receptor inhibitor
  - ✳ Dissociative state
  - ✳ Emergence phenomena

**ii.** Opiates
- ✳ G-protein coupled receptors
- ✳ Inhibit adenylate cyclase
- ✳ Reducing intracellular cAMP
- ✳ Also effects on ion channels
- ✳ Leads to opening of $K^+$ channels and inhibition of opening of voltage gated $Ca^{2+}$ channels
- ✳ Leads to reduced neuronal excitability and transmitter release

- Morphine
  - ✳ Rapid onset
  - ✳ 3-4/24 duration of action
- Fentanyl
  - ✳ More rapid onset of action and crosses BBB
- Alfentanil
  - ✳ 5-8x less potent than fentanyl
  - ✳ Even more rapid onset
  - ✳ Rapid offset

**7.** Monitoring
**i.** SpO2
**ii.** ECG
**iii.** BP
**iv.** $ETCO_2$

**8.** Post-procedure care
**i.** Same standards of monitoring until returned to pre-procedure state
**ii.** Discharged into the care of another adult
**iii.** Do not drive or operate machinery for 24/24s

## Paediatric Major Trauma

Same overall principles as adult major trauma. Only deviations from adult scheme are included below

1. Calculation of paediatric doses
    i. Use pre-determined formulae on computer
    ii. Broselow tape
    iii. WETFLAG
        - **W** eight
            - 0-12/12 = (0.5xage in months) + 4kg
            - 1-5 years = ( 2xage) +8kg
            - 6-12 years = (3xage) + 7
        - **E** nergy
            - $4JKg^{-1}$
        - **T** ube size
            - Pre-term = 2.5
            - Neonates = 3-3.5
            - Internal diameter mm = Age/4+4
            - Length cm = Age/2+12 oral
            - Length cm = Age/2+15 nasal
        - **F** luids
            - $10mlkg^{-1}$ crystalloid or blood
        - **L** orazepam
            - $0.1mgkg^{-1}$
        - **A** drenaline
            - $10micrograms/0.1mlkg^{-1}$ 1:10000
        - **G** lucose
            - $5mlkg^{-1}$ 10% Dextrose
2. Remember to engage parents

## C-Spine Rules

**Canadian -** only able to use if patient is 16>Age>65, GCS 15, a trauma patient, is haemodynamically stable, has no paralysis and has no known vertebral disease or previous C-spine surgery.

1. Any High Risk Factors?
    i. Dangerous Mechanism of Injury
        - Fall from >1m/5stairs
        - $MVC > 100kmh^{-1}$
        - Rollover ejection
        - Bicycle Collision
    iii. Paresthaesia in extremities
2. Any Low Risk Factors that allow neck movement?
    i. Sitting position in ED
    ii. Ambulatory at any time
    iii. Delayed onset of neck pain
    iv. Absence of midline tenderness
    v. Simple rear end collision
        - Unless:
            - Pushed into oncoming traffic
            - Hit by bus or truck
            - Rollover
            - Hit at high speed
3. Able to move neck 45 deg L and R

**Nexus**
If patient meets all the following criteria no x-ray is necessary

1. No posterior midline c-spine tenderness
2. No intoxication
3. No painful distracting injury
4. No focal neurological deficit
5. No reduction in normal level of alertness

## Shoulder 1

1. Generic introduction
2. Exposure
    i. I would like to fully expose the shoulder whilst maintaining the patient's dignity
    ii. Shirt off
3. Look
    i. Front
        - Sinuses
        - Asymmetry
        - Deformity
            - Prominent SCJ - subluxation
            - Clavicular deformity
            - Prominent ACJ - subluxation or OA
            - Wasting - disuse or axillary nerve palsy
    ii. Side
        - Sinuses
        - Swelling
            - Infection
            - Inflammation - Calcifying supraspinatus tendinitis
    iii. Above
        - Swelling/asymmetry of supraclavicular fossa
        - Clavicular deformity
        - Posterior gleno-humeral dislocation
    iv. Behind
        - Sinuses
        - Muscle wasting
        - Asymmetry
        - Abnormally small or high scapulae - Sprengel shoulder or Klippel-Feil syndrome
    v. Press on wall ?winging
4. Feel
    i. SCJ, clavicle & ACJ
    ii. Acromion process and coaracoid process - 2cm infero-medial to tip of clavicle
    iii. Glenohumeral joint and and lat and via axilla
    iv. Scapula spine
    v. Bicipital groove
    vi. Supraspinatus tendon (hand behind back) - painful with calcific tendonitis and ligamentous tears

## Elbow

1. Generic Intro
2. Look
    i. Overall alignment - N carrying angle 11-13 Deg
    ii. Swell/bruising/scars
    iii. Bursitis
    iv. Synovitis between lat epicondyle and olecranon
    v. Rheumatoid nodules on prox ext surface - usually ulnar side
3. Feel
    i. Feel bony prominences
    ii. Sponginess either side of olecranon - synovitis
    iii. Focal tenderness over lateral - tennis and medial - golfers' elbow
    iv. Rheumatoid nodules on proximal extensor surfaces
4. Move
    i. Flexion/Extension 0-145 Deg
    ii. Supination/pronation
        - Elbows flexed at 90 Deg
        - Shoulders adducted
        - Normal range
            - Sup 0-90 Deg
            - Pron 0-85 Deg
5. Special Tests
    i. Tennis elbow (lateral epicondylitis)
        - Elbow flexed to 90 Deg
        - Pronate and flex wrist
        - Support elbow
        - Extend wrist against resistance
        - Pain at lateral epicondyle and down extensor surface
    ii. Golfer's elbow (medial epicondylitis)
        - Elbow flexed to 90 Deg
        - Suppinate wrist fully
        - Support elbow
        - Flex elbow against resistance
6. Key Knowledge
    i. Humero-ulnar, radio-capitellar and superior radio ulnar articulations
    ii. Medial epicondyle flexor origin
    iii. Lateral epicondyle extensor origin
    iv. These bony prominences form an equilateral triangle when elbow flexed at 90 Deg and a straight line in elbow extension

## Wrist and Hand 2

3. Feel
    i. "I'm feeling for tenderness and swellings over":
        - DIstal radius
        - Distal Radioulnar joint
        - ASB ± Watson's
        - APL & EPB
        - Carpals
        - MCPJs
        - IPJs
4. Move
    i. Prayer/Reverse prayer 75 Deg
    ii. Radial deviation 20 Deg
    iii. Ulnar deviation 35 Deg
    iv. Pronation 75 Deg
    v. Supination 80 Deg
    vi. MCPJ 90 Deg
    vii. PIPJ 100 Deg
    viii. DIPJ 80 Deg
    ix. Check function of:
        - FDP/FDS
        - ED
        - F/EPL
        - EPL (hand flat hitchhiker)
    x. Thumb opposition
    xi. Functional
5. Neurovascular Status of Hand
    i. Temperature and CRT
    ii. Palpate radial and ulnar arteries
    iii. Allen's Test
    iv. Median
        - Motor
            - Hand flat supinated. Abduct thumb against resistance
            - Touch tip of little finger. Keep it there against resistance
        - Sensory
            - Radial border of index finger
    v. Ulnar
        - Motor
            - Abduct extended little finger against resistance/hold card (interossei)
            - Froment's Test (adductor pollicis)

## Shoulder 3

    ii. Impingement
        - Painful arc
        - Neer's Test.
            - Stabalise Scapula
            - Arm flexed forward to 90 Deg with thumb to floor
            - Arm then raised
            - Pain = impingement
    iii. Dislocations
        - Anterior Drawer Test
            - Supine
            - Hand on scapula stabalise accromion with thumbs
            - Try to pull humeral head anteriorly
        - Posterior Drawer Test
            - As for Anterior Drawer Test
            - Try to displace humeral head posteriorly
    iv. Bicipital tendinitis
        - Palpate for pain as above
        - Supinate forearm (palm up) then flex against resistance
    v. Rupture of long head of biceps
        - Flex elbow against resistance
6. Potential Pathologies
    i. Rotator cuff injury
        - Pain & restriction on abduction, ext rot & int rot
        - No further Ix
        - Analgesia + RICE + physio
        - F/u ± steroid injection/surgery
    ii. ACJ Dislocation
        - Deformity/pain over ACJ max on abd
        - Plain x-ray
        - Analgesia + RICE
        - # clinic
        - ?steroid injection

## Shoulder 2

5. Move
    i. It is possible to perform screening tests to test shoulder movement however I will perform the more detailed examination
    ii. Flexion (165 deg) and extension (60 deg)
    iii. Active Abduction - place hand on inferior pole of the scapula
        - Difficulty initiating abduction suggests supraspinatus or rotator cuff tear. After initiation deltoid takes over
        - Painful arc 70-100 deg indicative of rotator cuff pathology. Higher painful arc 100-150 deg more likely to be OA
        - Ability to hold arm fully abducted - deltoid and axillary nerve
    iv. Passive abduction - in external rotation
        - Fix scapula
    v. Adduction (50 deg)
        - Hand on opposite shoulder. Swing elbow across chest
    vi. Internal and Eternal Rotation
        - Exclusively at GHJ
            - Arms by your side with elbows flexed to 90 Deg. Swing your arms out like a door opening (70 Deg)
            - Now back in again - tests internal rotation (90 Deg)
        - In abduction
            - Now hold your arms out like a puppet. Swing your arms up like a weight lifter and now back down again
6. Special Tests
    i. Rotator Cuff Pathologies
        - Subscapularis - **Gerber's Lift Off Test**
            - Attempt to lift hand off of back
        - Supraspinatus - **Empty Can Test**
            - Shoulder flexed 90 Deg
            - Thumb pointing toward floor
        - Teres Minor and Infraspinatus
            - Arm flexed at 90 Deg
            - Opposed External rotation

## MSK Generic

1. Introduction
2. Wash hands
3. Focussed History
    i. Mechanism of injury
    ii. Hand dominance
    iii. Occupation/hobbies
    iv. Tetanus
    v. Previous problems with area to be examined
4. I would exclude other life threatening injuries first (if suggested by mechanism
5. ? any analgesia
6. I would like to examine your..... Do you mind if I talk to these other doctors as I go along?
7. Consider need for chaperone
8. Body of examination
9. Joints above and below
10. I would like to examine the neurovascular status of the limb
11. Summary
    i. There is .....
    ii. I would further investigate this by.....
    iii. The immediate management is.....

## Knee 1

1. Generic Introduction
2. Exposure
3. Gait
4. Look
    i. Front, sides and backs for:
        - Swelling
        - Erythema
        - Ecchymosis
        - Scars
        - Sinuses
        - Rashes
        - Deformity - valgus or varus
        - Quads muscle wasting
        - Eye signs
5. Feel
    i. Warmth
    ii. Patella Tap and ripple test
    iii. Joint lines
    iv. Down quads to quads tendon
    v. Patella
    vi. Patella tendon
6. Move
    i. SLR for extensor mechanism
    ii. Flex and extend actively and passively. Feel for crepitus during passive movement 0-140 Deg = Normal
7. Special Tests
    i. Patella apprehension
        - Knee extended
        - Push patella laterally and flex knee
    ii. Med and lat collat in extension and at 30 Deg
    iii. Ant and post drawer
        - Don't forget to inspect for posterior sag
    iv. Lachmann's (ACL)
        - Knee flexed to 30 Deg. Attempt to translate tibia anteriorly
    v. McMurray's (Meniscus)
        - Knee in flexion
        - Externally rotate and varus stress for medial
        - Internally rotate and valgus stress for lateral
    vi. Apley's
        - Axial load vs distraction
        - If positive in load = meniscus
        - If positive with distraction = ligamentous

## Shoulder 4

    iii. Frozen shoulder
        - Global restriction in movement
        - Pain on ext rot
        - Worse at night
        - Diabetes
        - MSU for glycosuria
        - Analgesia + RICE + physio
        - Steroid injection
        - NSAIDs
    iv. Long head of biceps rupture
        - Ball like mass in upper arm
        - Weakness in flexion and suppination
        - Conservative management
    v. Clavicular #
        - CXR to exclude ptx
7. Key knowledge
    i. Rotator cuff
        - Subscapularis
        - Supraspinatus
        - Teres Minor
        - Infraspinatus
    ii. Sprengel Shoulder - congenital abnormality with high shoulders, small scapulae ± webs of skin running from shoulder to neck
    iii. Klippel-Feil Syndrome - high scapulae, short neck, multiple abnormalities of C vertebrae. Associated with diasomatomyelia, cord tethering, lumbosacral lipomata and renal abnormalities
    iv. Brachial plexus origins of peripheral nerves
        -

## Wrist and Hand 3

        - Sensory
            - Ulna border little finger
    i. Radial
        - Motor
            - Extension fingers and wrist
        - Sensory
            - ASB
7. Special tests
    i. Tinnel's
    ii. Phalen's
    iii. Finkelstein's
8. Key Knowledge
    i. Hard swellings
        - Osteophytes
        - Tumours
        - Heberden's Nodes - DIPJ **HD**
        - Bouchard's Nodes - PIPJ **BP**
        - Both of the above suggestive of OA
    ii. Soft swellings - synovitis
        - Palpate APL and EPB for sponginess associated with De Quervians
        - Palpate flexor tendon sheaths
        - Palpate metacarpal heads
        - Palpate IPJs by squeezing from the side then pressing top and bottom
        - Feel for crepitus at radio carpal joint D/P IPJs and MCPJs

## Wrist and Hand 1

1. Generic Intro
2. Exposure
    i. From above elbows distally
2. Look
    i. Deformity
        - Wrist
            - Volar displacement suggest subluxation (RA)
            - Radial deviation (RA)
        - MCPJ
            - Ulnar deviation (RA)
        - IPJ
            - Boutonniere - damage to central slip of extensor expanse causes PIPJ to be exposed to unopposed flexion and herniate through extensor expanse. This causes lateral slips to be forced volarly and placed under tension leading to extension at DIPJ
            - Swan Neck - damage to volar plate allowing hyperextension causing PIPJ to sublux volarly
            - Mallet - fixed flexion at DIPJ due to injury to terminal extensor expanse
    ii. Swelling
        - At MCPJ or IPJs suggests synovitis
        - At MCPJ loss of normal "hill-valley" contour
        - AT PIPJs results in spindling (RA)
    iii. Bruising
    iv. Erythema
    v. Scars
    vi. Muscle wasting
        - T1 nerve root or ulnar nerve injury
    vii. Trophic changes to skin/nails
        - Pitting - psoriasis
        - Onchyolysis - separation of nail from nail bed - psoriatic arthritis
    viii. Rashes - vasculitic/psoriatic
    ix. Contractures

## Knee 2

8. Ottawa Knee Rule
    i. >55
    ii. Isolated patella tenderness
    iii. Fibula head tenderness
    iv. Inability to flex to 90 Deg
    v. Inability to weight bear (4 steps) immediately and in the ED

## Hip 1

1. Generic Introduction
2. Exposure
3. Gait
4. Look
    i. Front
        - Stance
        - Pelvic tilt
        - Muscle wasting
        - Scars
        - Sinuses
        - Erythema
    ii. Side
        - Stoop
        - Increased lumbar lordosis
    iii. Back
        - Scoliosis
        - Gluteal atrophy
5. Special Tests 1
    i. Trendelenburg's Test
        - If pelvis tilts below the horizontal this is a sign of abductor weakness (Glut med and min) on the stance side e.g. L5 lesion, proximal myopathy, congenital hip abnormality
    ii. Ask patient to get on couch and measure true and apparent leg length
        - Apparent first - xiphisternum to med mall
        - True second
            ✳ Straighten legs and lie them next to each other
            ✳ Meaasure ASIS to Med mall
            ✳ If abnormal decide whether above or below trochanter by placing fingers on ASIS and greater trochanter
                ➡ If shorter distance between thumb and finger on affected side then cause is above trochanter
                ➡ If no difference flex knees and lay legs next to each other and compare sides

## Cervical Spine 1

1. Generic Introduction
2. Exposure
3. Consider the need to clear the cervical spine
4. Look
    i. Swelling
    ii. Deformity
    iii. Scars
    iv. Sinuses
    v. Webbing of neck - Klippel-Feil
    vi. Muscle spasm
    vii. Thyroid enlargement
    viii. Lymphadenopathy
    ix. Erythema
    x. Eye problems
    xi. Rheumatological abnormalities
5. Feel
    i. Tenderness and swelling
    ii. Uneven spacing between spinous processes
    iii. Facet joints (one fingerbreadth lateral to the midline)
    iv. Paraspinal muscles
    v. Crepitus during flexion/extension = cervical spondylosis
    vi. Supraclavicular fossa for cervical rib and lymphadenopathy
6. Move
    i. Flexion -45 Deg
    ii. Ext - 45 Deg
    iii. Lateral flexion - 45 Deg
    iv. Rotation - 70-90 Deg
    v. Lhermitte's Sign - Multiple causes - MS
        - Flex nexk
        - Electric shock sensations down middle of spine.
7. Special Tests
    i. Spurling's Manouvere - Foramina stenosis or nerve root compression
        - Actively extend and laterally flex neck
        - Rotate spine to both sides
        - Apply axial compression and ask about ipsilateral sx

## Lumbo-sacral spine 1

1. Generic Introduction
2. Exposure
3. Gait
4. Look
    i. Swelling
    ii. Deformity
    iii. Scars
    iv. Sinuses
    v. Hair patch
    vi. Muscle spasm
    vii. Erythema
    viii. Eye problems
    ix. Rheumatological abnormalities
4. Feel
    i. Tenderness and swelling
    ii. Uneven spacing between spinous processes
    iii. Facet joints (one fingerbreadth lateral to the midline)
    iv. Paraspinal muscles
5. Move
    i. Flexion - 45 Deg+ Schober's Test
        - Identify lumob-sacral jctn (@ level of Dimples of Venus)
        - Mark horizontal lines at this level, 10cm above and 5cm below
        - Measure between the top and bottom lines
        - Ask patient to flex & remeasure
        - Subtract 15cm.
        - Normal result is 6-7cm <5cm = spinal pathology
    ii. Extension - 25 Deg
    iii. Lateral flexion - 30 Deg
    iv. Rotation - 40 Deg
6. Special Tests
    i. SLR
        - Normal = 60 Deg
        - If pain present passively dorsiflex foot
        - Bowstring Test
            ✳ Flex knee and apply form pressure to popliteal fossa
            ✳ Positive if causes paraesthesia and radiating pain.
            ✳ Indicative of sciatic nerve compression

## Foot and Ankle 1

1. Generic Introduction
2. Exposure
3. Gait
4. Look
    i. Look at soles of shoes for abnormal wear
    ii. Behind
        - Heel alignment
    iii. Side
        - Longitudinal medial arch - may be flattened - pes planus or exaggerated - pes cavus
        - If pes planus ask patient to stand on tip toes. This will correct abnormality if mobile abnormality
    iv. Scars
    v. Sinuses
    vi. Swelling
    vii. Bruising
    viii. Callous
    ix. Nail changes
    x. Oedema
    xi. Deformity
    xii. Toes for deformity (esp hallux valgus)
    xiii. Dactylitis (sausage digits seen in psoriatic arthropathy)
    xiv. Claw/Hammer/Mallet toe
        - Claw = Extension @ MTPJ and flexion at P/DIPJ
        - Hammer = boutonniere in finger
        - Mallet - same as finger
5. Feel
    i. Temperature
    ii. Compress over MT heads
        - Tenderness without sponginess
            ✳ Morton's neuroma
        - Tenderness with sponginess
            ✳ Synovitis
6. Move
    i. Active
        - Plantar flexion - 45 Deg
        - Dorsi flexion - 15 Deg
        - Inversion
        - Eversion

## Psych 1

**S** ex male
**A** ge older
**D** epression/Hopelessness (better predictor than just depression)
**P** revious attempt
**E** thanol abuse
**R** ational thought loss
**S** ocial support lacking
**O** rganised plan
**N** o spuse
**S** ickness

0-4 = low risk
5-6 = medium risk
>6 = high risk

**Schneider's First Rank Symptoms**

1. Auditory hallucinations
    i. Hearing voices referring to himself / herself (3rd person auditory hallucination)
    ii. Voices heard commenting on one's actions (hallucination of running commentary)
    iii. Thought echo (a form of auditory hallucination in which the patient hears his/her thoughts spoken aloud)
2. Somatic hallucinations
3. Passivity experiences e.g. made volition, made feeling & made impulse (delusions of control / of being controlled)
4. Thought withdrawal
5. Thought insertion (thoughts are ascribed to other people who are intruding into the patient's mind)
6. Thought broadcasting (also called thought diffusion)
7. Delusional perception (linking a normal sensory perception to a bizarre conclusion, e.g. seeing an aeroplane means the patient is the president)

## Cervical Spine 2

8. Neuro exam
    i. Cervical lesions tend to cause UMN signs
        - Weakness
            - ✳ Extensors weaker than flexors in arms
            - ✳ Reverse in legs
        - No/minimal uscle wating
        - Hypertonia
        - Hyperreflexia
        - Clonus
        - NO fasciculations
        - Exrensor plantar responses

## Hip 2

6. Feel
    i. Temperature
    ii. Effusion
    iii. Quads, GT & NoF
    iv. Lesser trochanter - iliopsoas
    v. Ischial tuberosity - hamstring
6. Move
    i. Thomas' Test plus flexion 120 Deg
    ii. AB/AD duction - stabilise pelvis with hand on opposite iliac crest 40/25 Deg
    iii. Int and Ext rot in flexion 45 Deg
    iv. Ext 5-20 Deg
    v. Int/Ext rotation in extension 35/45 Deg
7. Special Tests
    i. See above

## Alcohol

1. Wernicke's
    i. Ataxia
    ii. Confusion
    iii. Nystagmus
    iv. Opthalmoplegia
2. Korsakoff's
    i. Selective Memory Impairment
    ii. Confabulation
    iii. Disorientation in time
    iv. No clouding of consciousness
3. CAGE
    i. Have you ever tried to **C**ut down your drinking?
    ii. Do you ever get **A**ngry when people talk to you about your drinking?
    iii. Do you ever feel **G**uilty about your drinking?
    iv. Do you ever have an **E**yeopener?
    v. 3 or 4 yes = +ve
4. PAT
    i. Quite a number of people have times when they drink more than others. What's the most in units you ever drink in a day?
    ii. If you drink more than 8 units (male)/6 units (female), is this at least once a week
    iii. Do you feel that your current attendance to the ED is as a result of EtOH?
    iv. If answer >8/6 units for i and yes to ii or iii then they are PAT positive and should receive a referral to EtOH worker ± written info
5. Definitions
    i. Hazardous drinking - > 2x the upper limit of normal (8 units for a man/6 units for a woman)
    ii. Dependent Drinking - >2x upper limit every day.
        - Do not benefit from brief intervention - need referral to alcohol worker
        - ?any signs of withdrawal
        - ?failed attempts to stop
        - Specifically question for concomitant psychiatric disease
        - Encourage patietn to make connection between EtOH and negative consequences

## Psych 2

**MMSE**

1. Orientation
    i. Year, Month, Day, Date, Time - *1point for each*
    ii. Country, Town, District, Hospital, Ward - *1point for each*
2. Registration
    i. Name 3 objects *1 point for each if correct first time* (keep repeating until patient learns)
3. Attention and calculation
    i. Subtract 7 from 100 five times/spell world backwards. *5 points*
4. Recall
    i. Recall the earlier objects *3 points*
5. Language
    i. Name a pencil and a watch *1point for each*
    ii. Repeat "no ifs, ands or buts" *1 point*
    iii. Give a three stage command *1 point for each stage*
    iv. Ask patient to read and obey a written instruction *1 point*
    v. Ask the patient to write a sentence. Score if it is sensible and has a subject and verb *1 point*
6. Ask patient to copy a pair of intersecting pentagons *1 point*
7. Total score out of 30

**Medical causes of depression**

1. Hypothyroid
2. Diabetes
3. Addison's
4. SLE

**Mental Capacity Act 2005**

1. In order to have capacity a patient must
    i. Understand on broad terms what is proposed
    ii. Retain the information
    iii. Weigh up that information
    iv. Be able to communicate that decision

## Foot and Ankle 2

    ii. Passive
        - Dorsi/plantar flexion
            - ✳ Hold heel in cup of left hand
            - ✳ Index and thumb on malleoli
            - ✳ Put foot through RoM
            - ✳ If restricted dorsiflexion test with knee flexed and extended
            - ✳ If more flexion possible with knee flexed then consider gastrocnemius contracture
        - In/eversion
            - ✳ Dorsiflex foot to examine subtalar joint in isolation
7. Special Tests
    i. Simmond's

## Lumbo-sacral spine 2

    ii. Reverse Laségue test
        - Patient Prone
        - Flex the Patient's knee
        - If pain in femoral distribution suggests upper L spine disc problem
        - If pain in ipsilateral buttock/thigh suggests more distal disc problem
    iii. Patrick's Test
        - Hip and knee flexed
        - Lat mall on opposite patella
        - Press on knee
        - Positive if pain. Suggests OA hip/SI ds
7. Completion
    i. Neuro exam of lower limbs
        - Loss of hallux flexion is suggestive of cauda equina
    ii. I would like to perform an abdominal examination and examine peri-anal sensation and anal tone
    iii. I would also like to examine the hip and perform a vascular examination of the lower limb

## Psych 3

**MSE**

1. Appearance
    i. Hygiene
    ii. Dress
2. Behaviour
    i. Don't necessarily try and make patient sit down e.g. if manic patient pacing talk to them as they walk around the room
    ii. Check eye contact
3. Speech
    i. Look for
        - Retardation
        - Pressure
        - Knight's move thinking
        - Neologisms
        - Clang associations
        - Word salad
4. Mood
5. Thought
    i. Depression
        - Thoughts of suicide/DSH
        - Worthlessness
        - Guilt
        - Low self-esteem
        - Misery
    ii. Mania
        - Flight of ideas
        - Delusions of grandeur
    iii. Schizophrenia
        - First Rank Sx
6. Cognition
    i. Formal MMSE
    ii. If not possible (time)vattempt to briefly assess
        - Orientation
        - Memory
        - Concentration
        - Calculation skills
7. Insight
8. Focussed medical and psychiatric history
9. Summary

## Major Incident

An event where the location, number, severity or type of live casualties requires an extraordinary response

**M** ajor incident standby/declared
**E** xact location
**T** ype of incident
**H** azards
**A** ccess
**N** umber of cas
**E** mergency services

| | | Psych 4 |
|---|---|---|
| | | **1. Mental Health Act 1983**<br>A person suffering from a mental disorder may be treated under the act if they are considered to be a risk to themselves or others. Mental disorder is defined as<br>ii. Mental illness<br>iii. Mental impairment (incomplete or arrested development of mind)<br>iv. Psychopathic disorder<br><br>**2. Section 2**<br>i. Admission for up to 28/7<br>ii. 2 practitioners - one approved<br>iii. Application made by social worker or nearest relative<br>**3. Section 3**<br>i. As above but detention for 6/12s<br>**4. Section 4**<br>i. Emergency section when admission required<br>ii. Only requires one (preferably approved) doctor<br>iii. To be used when a section 2 would be used if it were not an emergency<br>**5. Section 5 (2)**<br>i. Doctor's Holding Power<br>ii. Only used if impossible to use section 2-4<br>iii. Only applicable to inpatients - CAN NOT BE USED IN ED<br>iv. Can not be used for treatment<br>v. Used to detain patient for 72/24 - can not be renewed<br>**6. Section 5 (4)**<br>i. Nurses Holding Power<br>ii. As above but for 6/24 only<br>iii. Must be a mental health nurse<br>**7. Section 135**<br>i. Allows an approved social worker to remove a patient to a place of safety<br>ii. Needs a magistrate's warrant<br>**8. Section 136**<br>i. Allows police to remove patient to "place of safety"<br>ii. Cannot extend by using Section 5(2) or 5(4) - must convert to Section 2 or 3 if admission required |
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