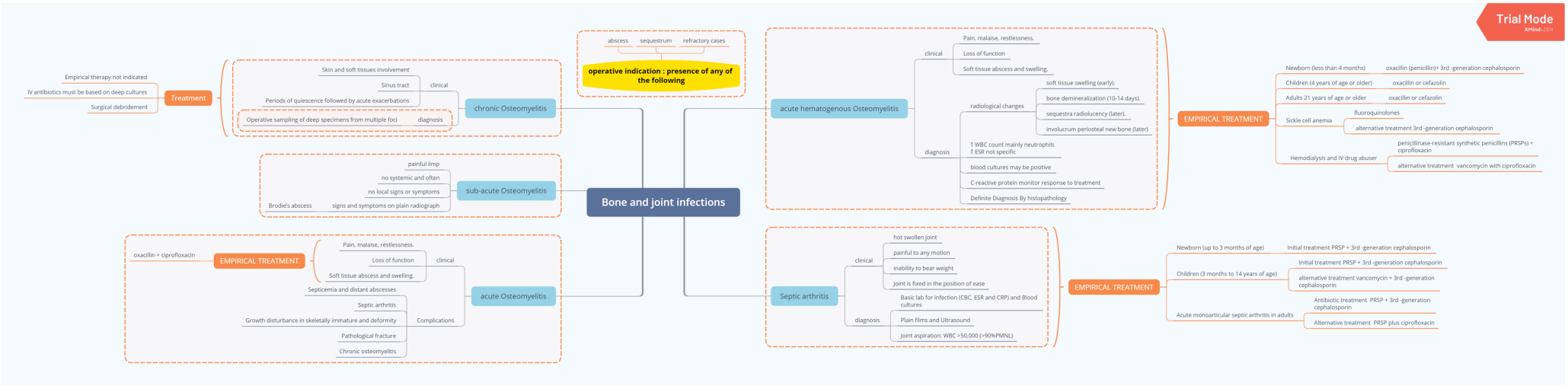
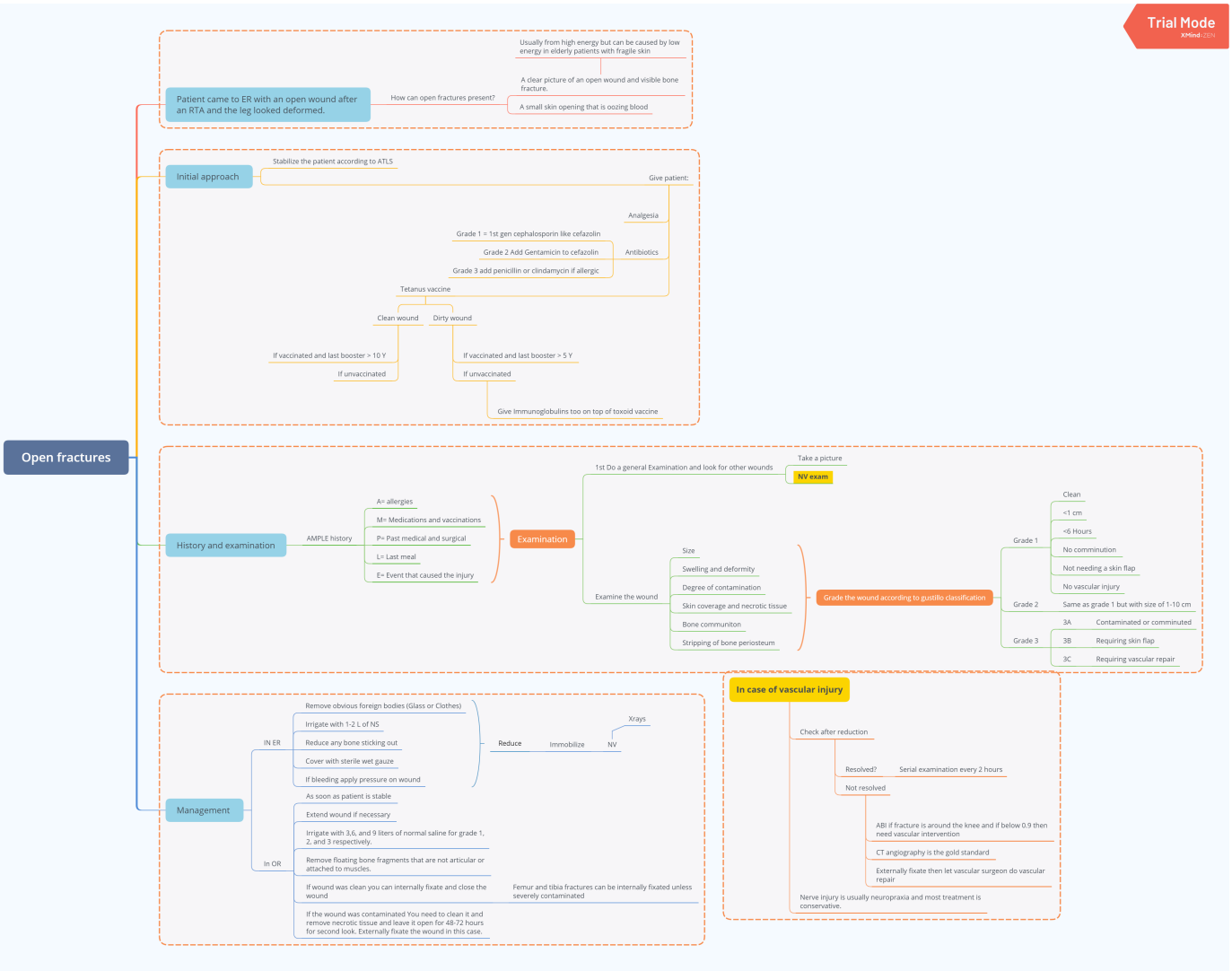
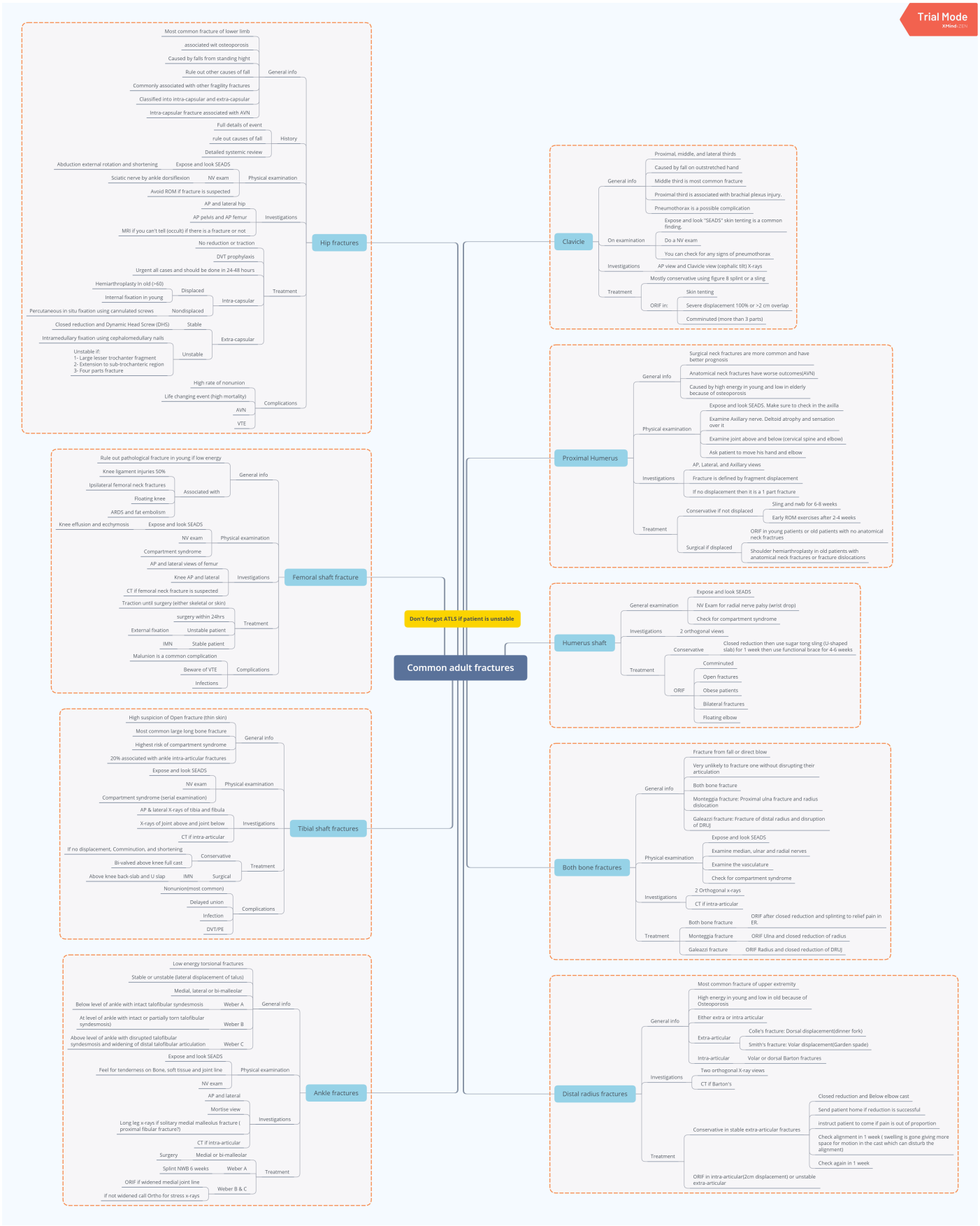
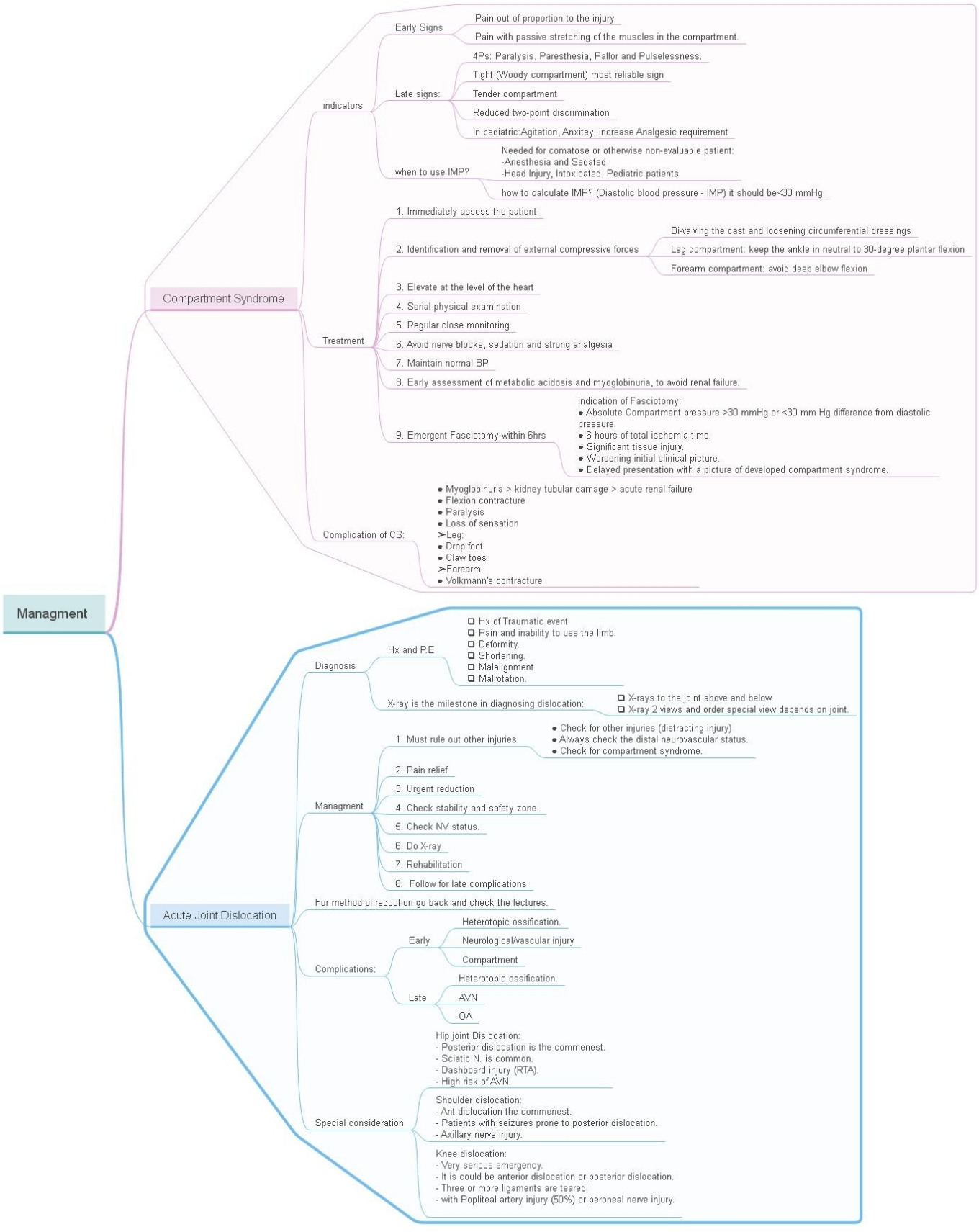
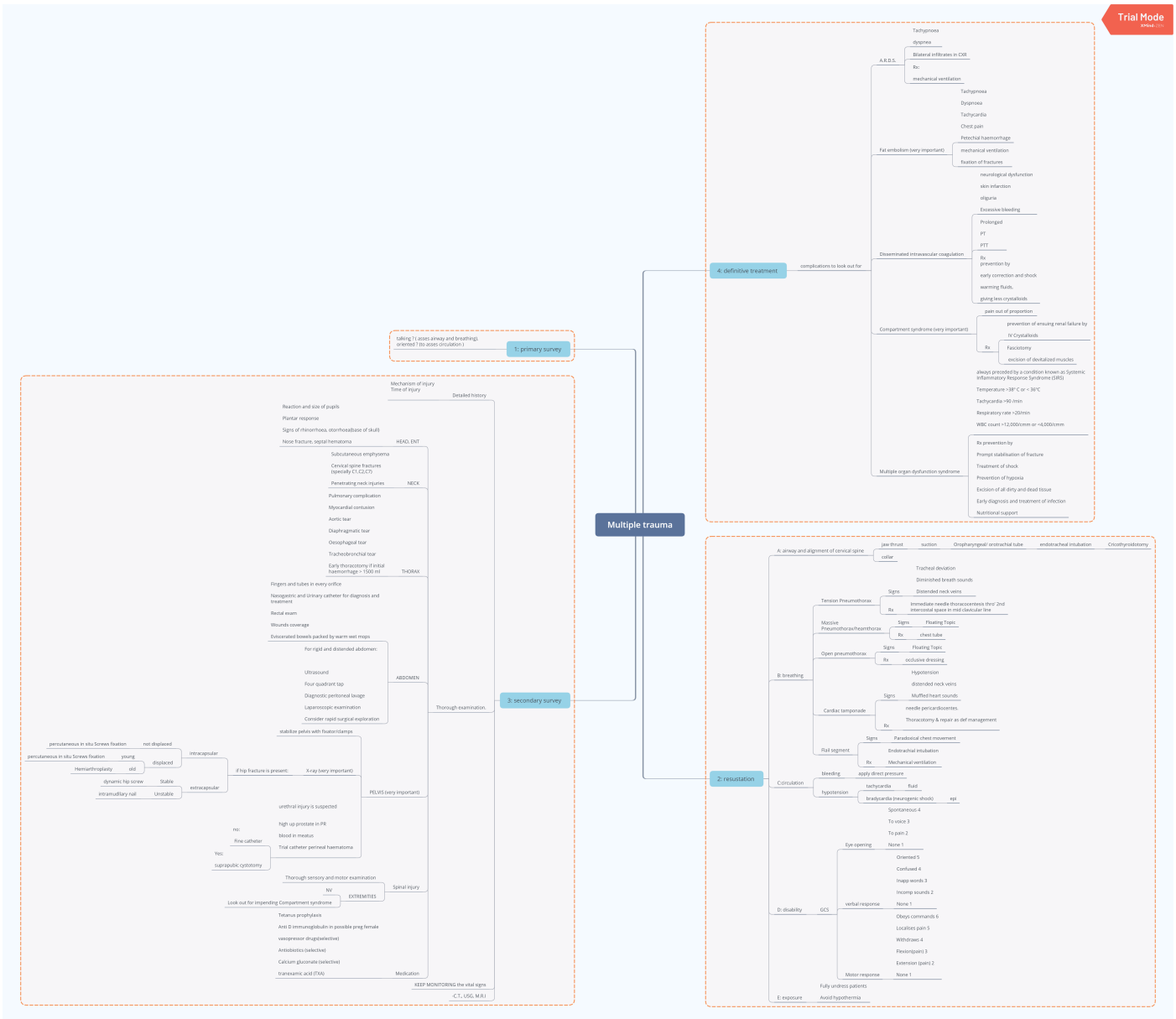
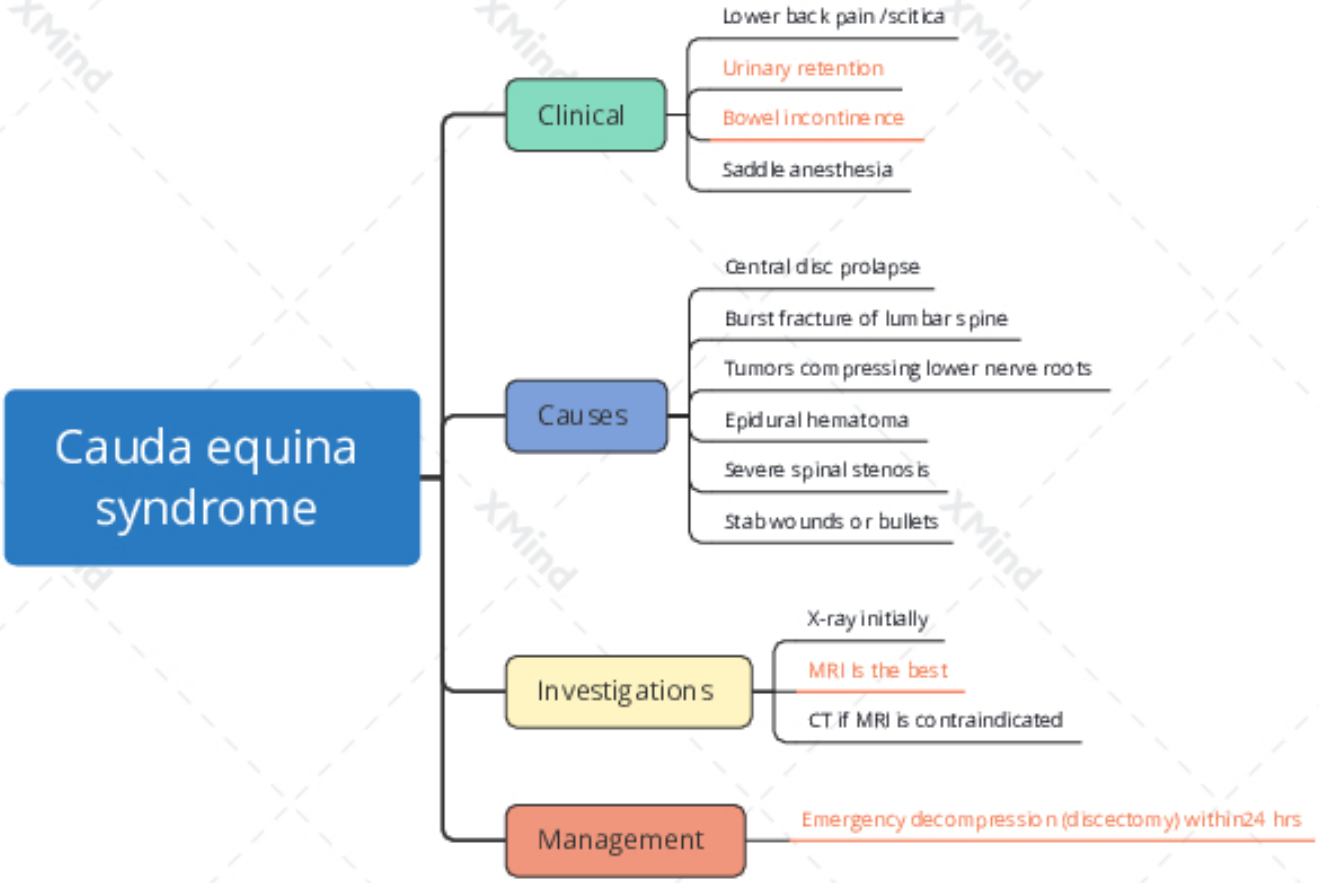

Trial Mode
XMind ZEN
Bone and joint infections
chronic Osteomyelitis
Treatment
Empirical therapy not indicated
IV antibiotics must be based on deep cultures
Surgical debridement
clinical
Skin and soft tissues involvement
Sinus tract
Periods of quiescence followed by acute exacerbations
diagnosis
Operative sampling of deep specimens from multiple foci
operative indication : presence of any of the following
abscess
sequestrum
refractory cases
sub-acute Osteomyelitis
painful limp
no systemic and often
no local signs or symptoms
Brodie's abscess
signs and symptoms on plain radiograph
acute Osteomyelitis
EMPIRICAL TREATMENT
oxacillin + ciprofloxacin
clinical
Pain, malaise, restlessness.
Loss of function
Soft tissue abscess and swelling.
Complications
Septicemia and distant abscesses
Septic arthritis
Growth disturbance in skeletally immature and deformity
Pathological fracture
Chronic osteomyelitis
acute hematogenous Osteomyelitis
clinical
Pain, malaise, restlessness.
Loss of function
Soft tissue abscess and swelling.
diagnosis
radiological changes
soft tissue swelling (early).
bone demineralization (10-14 days).
sequestra radiolucency (later).
involucrum periosteal new bone (later)
1 WBC count mainly neutrophils
1 ESR not specific
blood cultures may be positive
C-reactive protein monitor response to treatment
Definite Diagnosis By histopathology
EMPIRICAL TREATMENT
Newborn (less than 4 months)
oxacillin (penicillin)+ 3rd -generation cephalosporin
Children (4 years of age or older)
oxacillin or cefazolin
Adults 21 years of age or older
oxacillin or cefazolin
Sickle cell anemia
fluoroquinolones
alternative treatment 3rd -generation cephalosporin
Hemodialysis and IV drug abuser
penicillinase-resistant synthetic penicillins (PRSPs) + ciprofloxacin
alternative treatment vancomycin with ciprofloxacin
Septic arthritis
clinical
hot swollen joint
painful to any motion
inability to bear weight
Joint is fixed in the position of ease
diagnosis
Basic lab for infection (CBC, ESR and CRP) and Blood cultures
Plain films and Ultrasound
Joint aspiration: WBC >50,000 (>90%PMNL)
EMPIRICAL TREATMENT
Newborn (up to 3 months of age)
Initial treatment PRSP + 3rd -generation cephalosporin
Children (3 months to 14 years of age)
Initial treatment PRSP + 3rd -generation cephalosporin
alternative treatment vancomycin + 3rd -generation cephalosporin
Acute monoarticular septic arthritis in adults
Antibiotic treatment PRSP + 3rd -generation cephalosporin
Alternative treatment PRSP plus ciprofloxacin






Managment
Compartment Syndrome
indicators
Early Signs
Pain out of proportion to the injury
Pain with passive stretching of the muscles in the compartment.
Late signs:
4Ps: Paralysis, Paresthesia, Pallor and Pulselessness.
Tight (Woody compartment) most reliable sign
Tender compartment
Reduced two-point discrimination
in pediatric:Agitation, Anxitey, increase Analgesic requirement
when to use IMP?
Needed for comatose or otherwise non-evaluable patient:
-Anesthesia and Sedated
-Head Injury, Intoxicated, Pediatric patients
how to calculate IMP? (Diastolic blood pressure - IMP) it should be<30 mmHg
Treatment
1. Immediately assess the patient
2. Identification and removal of external compressive forces
Bi-valving the cast and loosening circumferential dressings
Leg compartment: keep the ankle in neutral to 30-degree plantar flexion
Forearm compartment: avoid deep elbow flexion
3. Elevate at the level of the heart
4. Serial physical examination
5. Regular close monitoring
6. Avoid nerve blocks, sedation and strong analgesia
7. Maintain normal BP
8. Early assessment of metabolic acidosis and myoglobinuria, to avoid renal failure.
9. Emergent Fasciotomy within 6hrs
indication of Fasciotomy:
● Absolute Compartment pressure >30 mmHg or <30 mm Hg difference from diastolic pressure.
● 6 hours of total ischemia time.
● Significant tissue injury.
● Worsening initial clinical picture.
● Delayed presentation with a picture of developed compartment syndrome.
Complication of CS:
● Myoglobinuria > kidney tubular damage > acute renal failure
● Flexion contracture
● Paralysis
● Loss of sensation
➢Leg:
● Drop foot
● Claw toes
➢Forearm:
● Volkmann's contracture
Acute Joint Dislocation
Diagnosis
Hx and P.E
❑ Hx of Traumatic event
❑ Pain and inability to use the limb.
❑ Deformity.
❑ Shortening.
❑ Malalignment.
❑ Malrotation.
X-ray is the milestone in diagnosing dislocation:
❑ X-rays to the joint above and below.
❑ X-ray 2 views and order special view depends on joint.
Managment
1. Must rule out other injuries.
● Check for other injuries (distracting injury)
● Always check the distal neurovascular status.
● Check for compartment syndrome.
2. Pain relief
3. Urgent reduction
4. Check stability and safety zone.
5. Check NV status.
6. Do X-ray
7. Rehabilitation
8. Follow for late complications
For method of reduction go back and check the lectures.
Complications:
Early
Heterotopic ossification.
Neurological/vascular injury
Compartment
Late
Heterotopic ossification.
AVN
OA
Special consideration
Hip joint Dislocation:
- Posterior dislocation is the commenest.
- Sciatic N. is common.
- Dashboard injury (RTA).
- High risk of AVN.
Shoulder dislocation:
- Ant dislocation the commenest.
- Patients with seizures prone to posterior dislocation.
- Axillary nerve injury.
Knee dislocation:
- Very serious emergency.
- It is could be anterior dislocation or posterior dislocation.
- Three or more ligaments are teared.
- with Popliteal artery injury (50%) or peroneal nerve injury.


Trial Mode
Multiple trauma
1: primary survey
talking ? (asses airway and breathing), oriented ? (to asses circulation)
3: secondary survey
Thorough examination.
Detailed history
Mechanism of injury
Time of injury
Reaction and size of pupils
Plantar response
Signs of rhinorrhoea, otorrhoea(base of skull)
HEAD, ENT
Nose fracture, septal hematoma
NECK
Subcutaneous emphysema
Cervical spine fractures (specially C1,C2,C7)
Penetrating neck injuries
THORAX
Pulmonary complication
Myocardial contusion
Aortic tear
Diaphragmatic tear
Oesophageal tear
Tracheobronchial tear
Early thoracotomy if initial haemorrhage > 1500 ml
ABDOMEN
Fingers and tubes in every orifice
Nasogastric and Urinary catheter for diagnosis and treatment
Rectal exam
Wounds coverage
Evisceated bowels packed by warm wet mops
For rigid and distended abdomen:
Ultrasound
Four quadrant tap
Diagnostic peritoneal lavage
Laparoscopic examination
Consider rapid surgical exploration
PELVIS (very important)
stabilize pelvis with fixator/clamps
if hip fracture is present:
X-ray (very important)
intracapsular
not displaced
percutaneous in situ Screws fixation
displaced
young
percutaneous in situ Screws fixation
old
Hemiarthroplasty
extracapsular
Stable
dynamic hip screw
Unstable
intramuldilary nail
urethral injury is suspected
no:
high up prostate in PR
blood in meatus
Yes:
Fine catheter
Trial catheter perineal haematoma
suprapubic cystotomy
Spinal injury
Thorough sensory and motor examination
EXTREMITIES
NV
Look out for impending Compartment syndrome
Medication
Tetanus prophylaxis
Anti D immunoglobulin in possible preg female
vasopressor drugs(selective)
Antibiotics (selective)
Calcium gluconate (selective)
tranexamic acid (TXA)
KEEP MONITORING the vital signs
-CT, USG, M.R.I
4: definitive treatment
complications to look out for
A.R.D.S.
Tachypnoea
dyspnea
Bilateral infiltrates in CXR
Rx:
mechanical ventilation
Fat embolism (very important)
Tachypnoea
Dyspnoea
Tachycardia
Chest pain
Petechial haemorrhage
mechanical ventilation
fixation of fractures
Disseminated intravascular coagulation
neurological dysfunction
skin infarction
oliguria
Excessive bleeding
Prolonged
PT
PTT
Rx
prevention by
early correction and shock
warming fluids,
giving less crystalloids
Compartment syndrome (very important)
pain out of proportion
Rx
prevention of ensuing renal failure by
IV Crystalloids
fasciotomy
excision of devitalized muscles
Multiple organ dysfunction syndrome
always preceded by a condition known as Systemic Inflammatory Response Syndrome (SIRS)
Temperature >38° C or < 36°C
Tachycardia >90 /min
Respiratory rate >20/min
WBC count >12,000/cmm or <4,000/cmm
Rx prevention by
Prompt stabilisation of fracture
Treatment of shock
Prevention of hypoxia
Excision of all dirty and dead tissue
Early diagnosis and treatment of infection
Nutritional support
2: resustation
A: airway and alignment of cervical spine
jaw thrust
suction
Oropharyngeal/ orotracheal tube
endotracheal intubation
Cricothyroidotomy
collar
B: breathing
Tracheal deviation
Diminished breath sounds
Tension Pneumothorax
Signs
Distended neck veins
Rx
Immediate needle thoracocentesis thro' 2nd intercostal space in mid clavicular line
Massive Pneumothorax/haemthorax
Signs
Floating Topic
Rx
chest tube
Open pneumothorax
Signs
Floating Topic
Rx
occlusive dressing
Cardiac tamponade
Hypotension
distended neck veins
Signs
Muffled heart sounds
Rx
needle pericardiocentes.
Thoracotomy & repair as def management
Flail segment
Signs
Paradoxical chest movement
Rx
Endotracheal intubation
Mechanical ventilation
C:circulation
bleeding
apply direct pressure
hypotension
tachycardia
fluid
bradycardia (neurogenic shock)
epi
D: disability
GCS
Eye opening
None 1
Spontaneous 4
To voice 3
To pain 2
verbal response
None 1
Oriented 5
Confused 4
Inapp words 3
Incomp sounds 2
Motor response
None 1
Obeys commands 6
Localises pain 5
Withdraws 4
Flexion(pain) 3
Extension (pain) 2
E: exposure
Fully undress patients
Avoid hypothermia


Cauda equina syndrome
Clinical
Lower back pain /scitica
Urinary retention
Bowel incontinence
Saddle anesthesia
Causes
Central disc prolapse
Burst fracture of lumbar spine
Tumors compressing lower nerve roots
Epidural hematoma
Severe spinal stenosis
Stab wounds or bullets
Investigations
X-ray initially
MRI is the best
CT if MRI is contraindicated
Management
Emergency decompression (discectomy) within24 hrs