



# Initial Management of Acute Sports Injuries

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***Owned and operated by Perth physios with over 20 years experience***

- **Sports Medicine  
Wholesaler**

- Strapping tapes
- First Aid
- Massage creams
- Braces
- Clinical consumables
- Electrotherapy equipment
- Rehabilitation Equipment
- Orthotics

- **Preferred supplier to..**

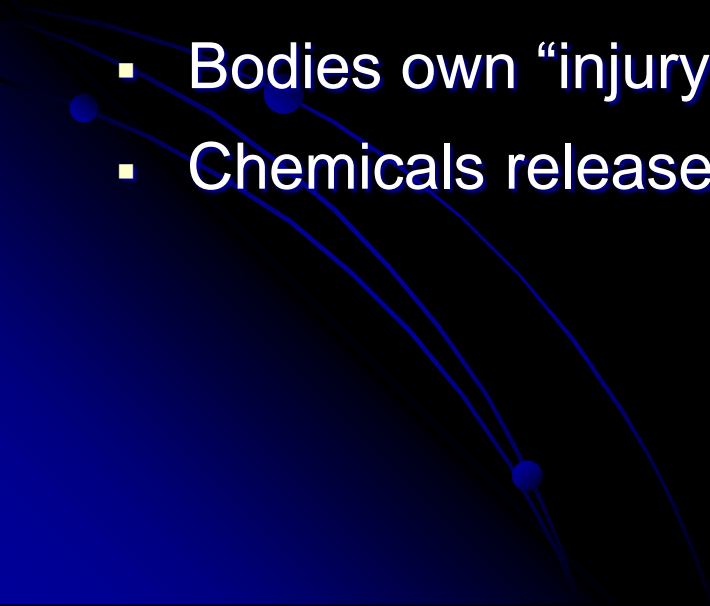
- Football West
- NetballWA
- RugbyWA- *Western Force*
- WAFL clubs;
  - Perth Demons
  - Claremont Tigers
  - West Perth Falcons
  - East Perth Royals
  - Peel Thunder
  - East Fremantle Sharks

# What we will cover...

1. Pathology of acute injuries and the healing process
2. Initial Assessment of injuries
  - Spinal Emergency
  - DRABC
  - TOTAPS
3. Immediate First Aid treatment
  - RICER
  - No HARM
  - Blood

# Pathology of injury

## Initial Injury

- Tissue damage
  - Bleeding due to capillary damage
  - Increased water drawn to the area
  - Bodies own “injury army” attracted to area
  - Chemicals released into area
- 

## Results in...

1. Swelling
2. Inflammation
3. Heat
4. Bruising
5. Pain



# The Healing Process

## Acute Phase of Injury (24 hrs -72hrs)

- Bleeding continues from damaged capillaries
- Dying cells release chemicals/ toxins that irritate nerve endings → pain
- Swelling is made up of bodies “injury army” and leakage of fluid from damaged tissues. Increased pressure leads to more tissue damage and cell death.
- Blood vessels dilate → increased blood flow → are becomes pink, warm and swollen

# The Healing Process

## Sub-Acute Phase (3+ days – weeks)

- Removal of debris
  - macrophages and lymphatic system
- Re-Capillarisation
  - Capillaries begin to regrow
- Scar tissue
  - Scar tissue development begins
  - Laying of new damaged tissue begins- collagen
  - Building blocks of new tissue

# The Healing Process

## Remodelling (weeks to years...)

- The initial collagen matrix layed down is remodelled over time.
- Collagen is initially messy and un-organised. This is re-organised and slowly becomes original tissue again.
- Collagen develops strength through lines of stress
- Collagen that is messy, unorganised and weak is more likely to be re-injured
- Rehabilitaiton important in this phase to ensure proper healing of collagen

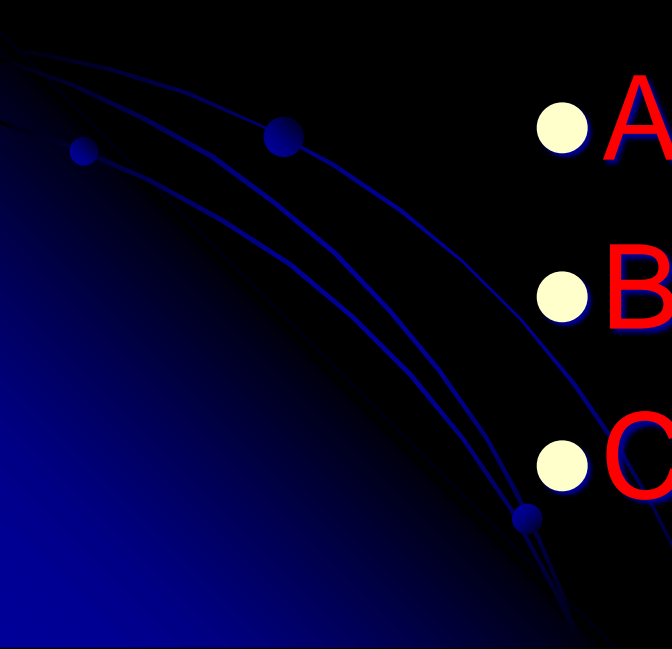


# Examples



# Assessment of Player Situation

## DRABC

- Danger
  - Response
  - Airway
  - Breathing
  - Circulation
- 

# Spinal Injury Signs

- History of head injury
- History of neck injury
- Pins and needles in limbs
- Numbness in limbs
- Unable to move limbs- hands/feet
- Marked neck/lumbar pain



***Wait until trained personnel arrive to help***

# Initial Assessment of Injuries

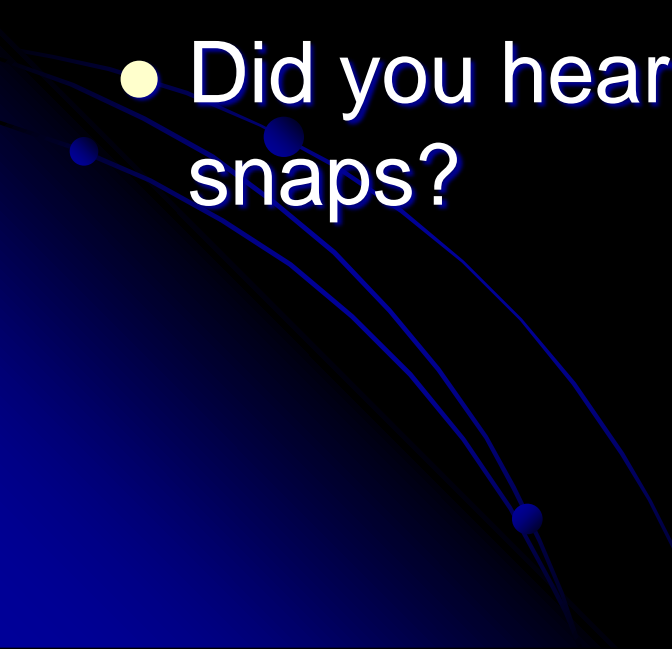
*Deciding if a player can continue on...*

## TOTAPS

- Talk
- Observe
- Touch
- Active
- Passive
- Skills



# TALK

- What happened?
  - What was the mechanism of injury?
  - Where does it hurt?
  - Did you hear any sounds ie cracks, snaps?
- 





*The story of how it happened tells you a lot about the injury*



# Observe

- Look for obvious deformity
  - If it doesn't look right....  
It probably isn't...



- Look for swelling
- Look for discolouration



***Compare the bad side to the good side***

# Touch

- Tenderness –

- mild
- moderate
- severe

- Location-

- soft tissue
- bony

- Heat/ Temperature-

- If hot more blood





# Active Movement

- Assess how much movement athlete can do by themselves..
- Is it Full Range?
- When does it get painful?
- Where is it painful?



# Passive Movement

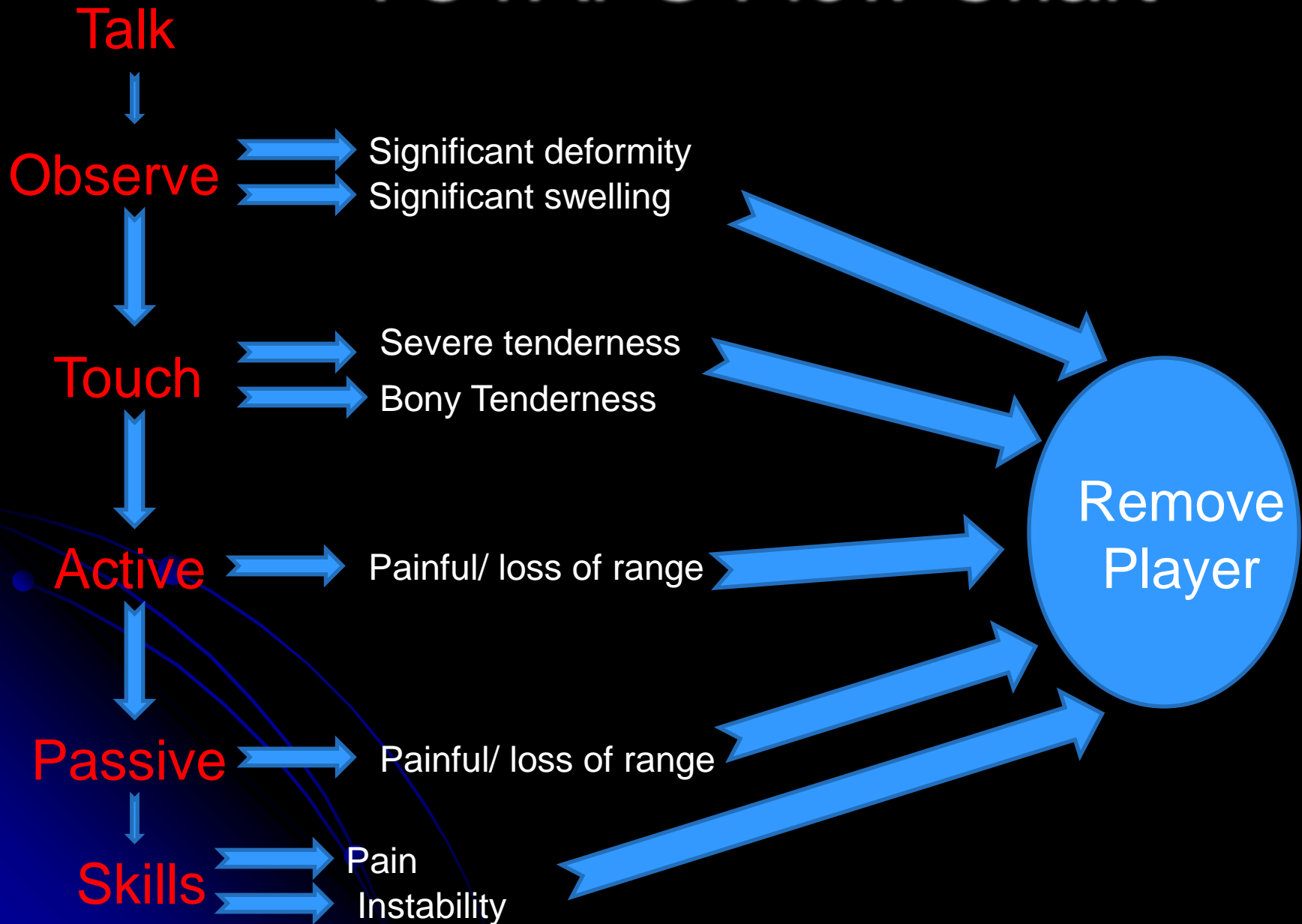
- How much movement is there *passively*?  
ie movement *YOU* can make
- Compare the bad side to the good side



# Skills

- If all OK so far.. then need to test the athlete with sport specific skill..
  - Running on the spot
  - Hopping
  - Jumping
  - “Z” running
- Must be something to test the injury..

# TOTAPS Flow Chart



# More examples.....



# Initial Treatment of Injuries

## *RICER*

- Rest
- Ice
- Compression
- Elevation
- Referral

*Most important in  
the first  
24-72 hours*

### Aim-

- Reduce further damage to tissue
- Prevent excessive scar formation



# REST

- Remove player from field
- Rest injured area
- Immobilise area
- Why?
  - Reduces further tissue damage
  - Reduces blood flow
  - Allows for full assessment of injury

# ICE

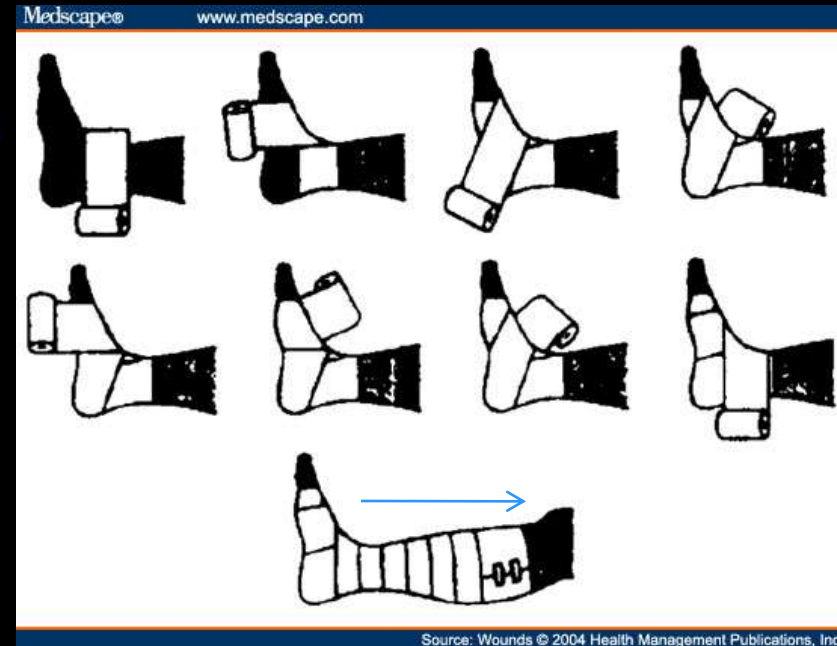
- Icing
  - Ice bags- gel packs, frozen peas
  - Instant ice packs
  - Ice water baths
  - 20 mins on/ 2 hours off
- Why?
  - Cools the area
    - constricts blood vessels
      - reduces blood flow and fluid leakage
      - less swelling, pressure and pain





# COMPRESSION

- Compress injured area
  - Elastic Bandage
  - Cohesive bandage
  - Strapping
  - Move distal to proximal



- Why?

- External pressure reduces fluid leakage and bleeding into tissues
- Provides support the area
- Immobilises the area ie REST

# ELEVATION

- Elevate area above heart

- On chair
- Medical kit



- Why?

- Reduces bleeding as blood has to flow up hill
- Gravity helps swelling to move towards lymph nodes

# REFERRAL

- Physiotherapist
- Hospital
- Doctor/GP

- Why?

- Diagnosis
- Treatment can commence
- The sooner treatment begins, the better the outcome



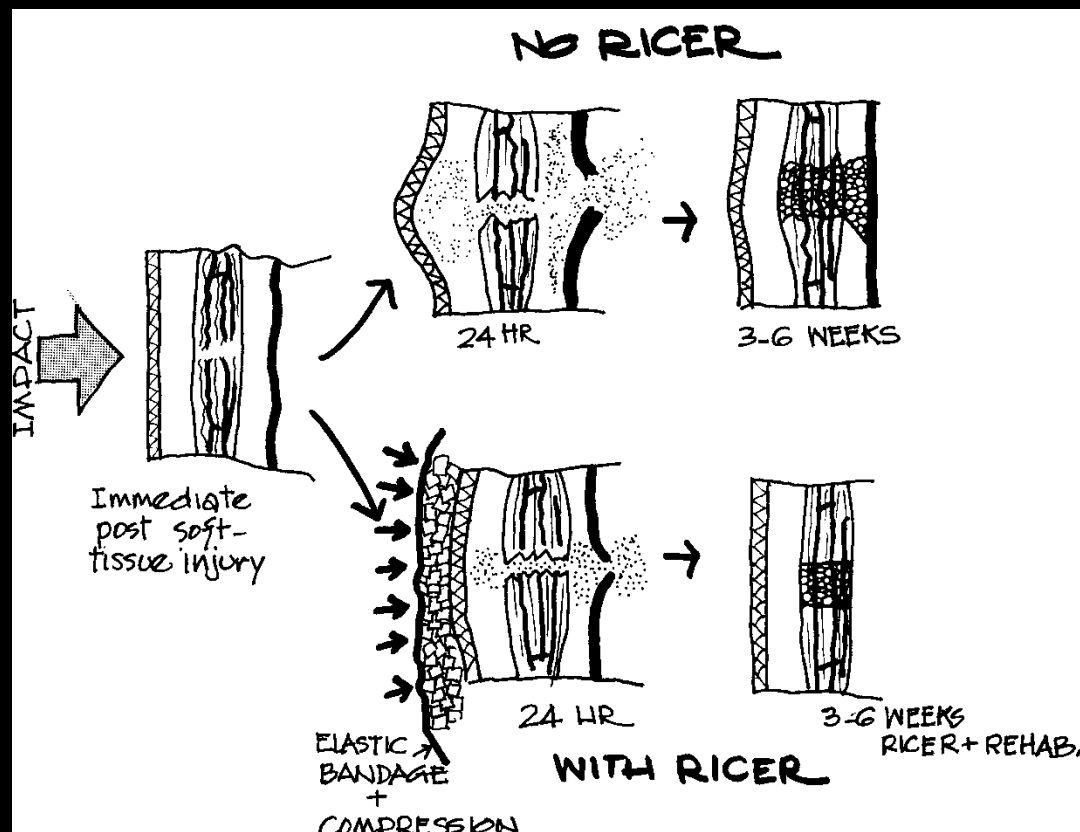
# Summary

- Reduce

- Inflammation
- Bleeding
- Scar tissue

- Improve

- Healing time
- Healing quality
- Time away from sport



# No HARM

NO.....

**H**

**Heat**

**A**

**Alcohol**

**R**

**Running**

**M**

**Massage**

***Most important in  
the first  
24-72 hours***

# No Heat

- Includes

- Hot packs
- Saunas
- Spas

- Why?

- Increases blood flow to area therefore increases swelling

# No Alcohol

- Includes

- Most things adults enjoy after a game of sport!

- Why?

- Thins blood —————> increases swelling
- In excess brings on silly behaviour
- Less pain felt therefore more damage caused
- Adds to toxins already in injured area

# No Running

- Includes
  - Running
  - Any exercise that is painful
- Why?
  - Increase in tissue damage
  - Overload to other areas as compensation



# No Massage

- Includes

- Rub downs
- Massages
- Mobilisations

- Why?

- May increase tissue damage
- Increases blood circulation to the injured area



# Bleeding

- Cuts
- Lacerations
- Impact injuries



***Universal Precautions  
must be used  
at all times***

# Aims

## 1. Stop bleeding

- Compression
- Anusol
- Alginate stop bleed products
- Vaseline

## 2. Clean wound

- NaCl irrigation
- Betadine/iodine wipes

## 3. Close/Dress wound

- Steri/Leuko strips
- Sterile dressing- bandaid/primapore
- Bandage down to continue play

# Key Points

- Understand pathology of injury
- Use DRABC in any situation
- Understand the Emergency Signs for spinal injury
- Use TOTAPS to decide whether a player can continue
- Use RICER and No HARM for initial injury management
- Stem blood flow

Thank You

Questions??

