PAEDIATRIC QUICK HITS

HEAD INJURY (CONCUSSION) ADVICE

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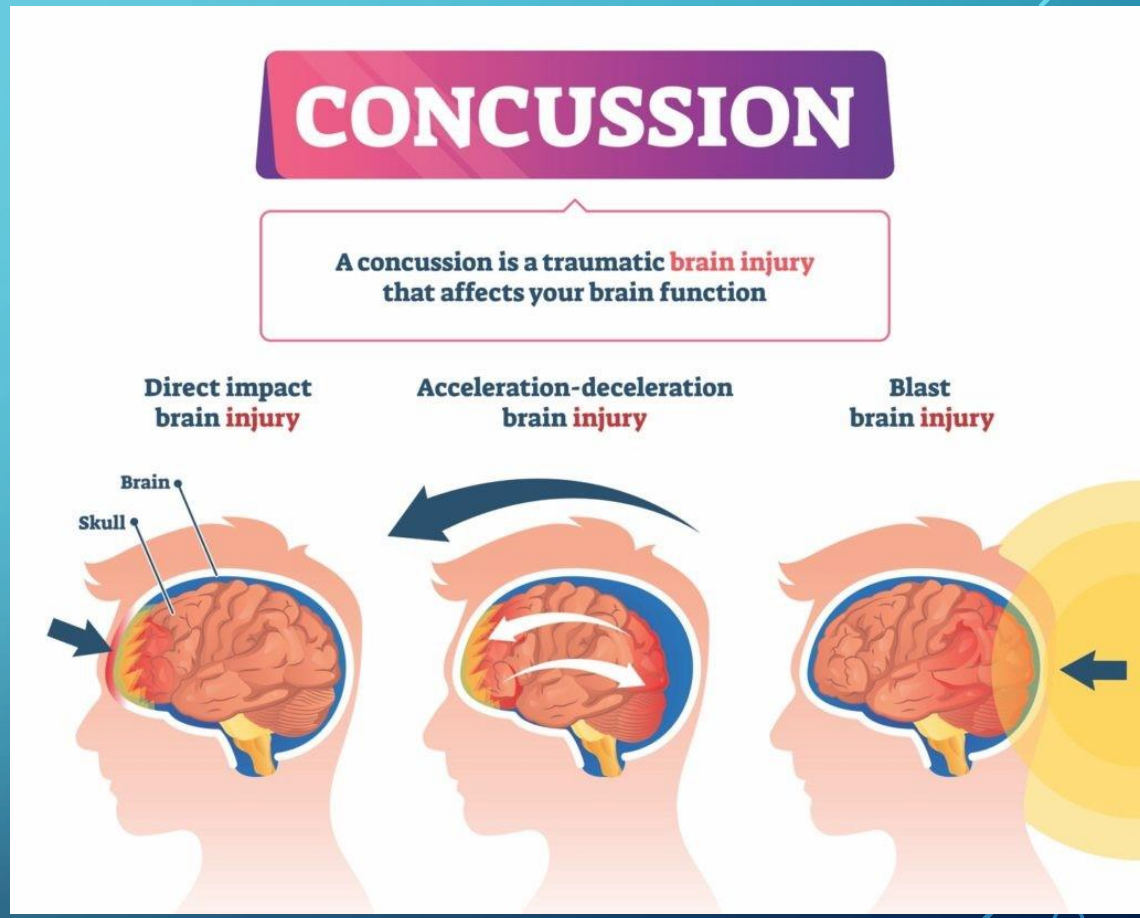
DISCLAIMER

- This does not cover acute head injury management. This pertains to the management once serious head injury has been excluded and concussion has been diagnosed.
- If a patient has a head injury then follow the standard head injury algorithm (suggest PREDICT) to decide what management is required
- Equally, if a patient presents days/weeks after head injury with ‘concussion’ symptoms, then consider if imaging required to exclude more serious diagnosis

BACKGROUND

- Concussion is the term for the symptoms/signs experienced after a head injury
  - Can occur without any evidence of macroscopic brain damage on imaging
  - For children- most commonly occurs with falls or during sport (fall, collision or blow to head)

- Children are more prone to concussion than adults
  - Believed to be because their brain is still undergoing myelination



SHORT TERM COMPLICATIONS

- The diagnosis and its management is poorly explained to patients and their families
- Can cause symptoms for days - weeks (or longer)
- Causing a significant impact on daily life
  - Prolonged feeling of 'unwell' (headache, nausea)
    - In some can lead to mental health issues due to chronically feeling unwell
  - Can't play sport
  - Poor school attendance or poor function at school
- Affects the family as they try to manage the above issues

LONG TERM COMPLICATIONS

- Post concussive syndrome
  - Consider when symptoms are lasting for over a month
  - More likely if child younger, had previous concussion, has ADHD, has mental health issues or had prolonged loss of consciousness
  - Need to see GP and consider referral to paediatric services and physiotherapist (specialising in concussion)
- Second impact syndrome
  - Rare
  - Occurs in some people who sustain a second head injury before they have recovered from the first head injury
  - Can cause death
- Increased risk of dementia and chronic traumatic encephalopathy (with recurrent head injuries)

SYMPTOMS

Symptoms can be obvious or can be subtle and may take time for parents/teachers to notice them if they aren't looking for them

Nausea/ vomiting

Headaches

Lethargy or sleep disturbance

Bothered by bright lights or noises

Difficulty concentrating or confusion

Moody

Dizzy

Loss of consciousness does not need to occur to get concussion

MANAGEMENT

- Children need 24-48 hours of mental and physical rest
  - This means avoiding sporting activities, computer use, tablets, television, texting and gaming consoles (anything that requires concentration)
- Then they need to do a phased return to activities
- Prolonged complete mental or physical rest can be detrimental to their healing.

RETURN TO SCHOOL

Stage	Activity	Aim of stage
Stage 1: No activity	Complete mental rest	Recovery
Stage 2: Minor cognitive activity at home	Short periods (5-15 minutes) of mental activity (homework)	Gradual, closely monitored increase in sub symptom threshold activities
Stage 3: Moderate cognitive activity at home	Longer periods (20-30mins) of mental activity (homework)	Increase cognitive stamina, self-paced activity
Stages 4: Partial school entry	Part day of school attendance, plus 1-2 hours of homework	Re-entry into school with accommodation to maintain cognitive load below symptom threshold
Stage 5: Gradual reintegration to school	Gradual increase to full day of school attendance	Increase cognitive stamina
Stage 6: Full mental workload resumed	Catch up on missed work, testing and assessments	Full return to school

- Stages 1-3 should last minimum 24 hours
- Stages 4-6 should last 1-2 weeks minimum
- If symptoms recur, the child should go back one step

RETURN TO SPORT

Stage	Activity	Aim of stage
Stage 1: No activity (for first 48 hours after injury)	Complete physical and mental rest	Recovery
Stage 2: Light aerobic exercise	Walking, swimming, stationary cycling	Gentle increase in heart rate
Stage 3: Sport-specific exercise	Running drills at football codes, cricket, basketball, netball, hockey	Adds movement
Stages 4: Non-contact training drills	Passing drills at football codes, cricket, basketball, netball, hockey	Adds co-ordination and exercise
Stage 5: Full contact practice	Participate in normal training activities	Restores confidence and allows coaching staff to assess progress
Stage 6: Return to play	Normal game play	

- Each stage should last 24-48 hours
- If the child remains symptom free, they can move on to the next stage
- If the child develops any symptoms (headache, dizziness, nausea, or tiredness), they should move back a stage and try to progress again after a further 24-48 hour rest period
- If the child has persistent headaches, dizziness, nausea or vomiting, they should be reassessed by their

EXTRA

- Please give parents information to take home
  - There are handouts in the paeds area or they can be printed from PCH or RCH websites
- We do not provide clearance to return to sport documentation
  - If they have symtomps then they should follow the staged return programme and follow up with their GP
- Other resources to consider giving to parents
  - https://www.concussioninsport.gov.au/
    - Gives advice to athletes, parents, coaches, doctors and physios
  - https://www.nmhs.health.wa.gov.au/concussion
    - Lots of information on concussion symptoms, management and patient stories
- Advise follow up with GP and physiotherapist (one who specialises in concussion) if prolonged symptoms