Return to play: Tips from an athletic trainer

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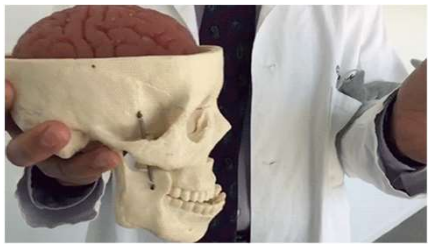
Goals:

- To be able to define what an Athletic Trainer (AT) is/does.
- To understand the role of an AT when an injury occurs?
- To understand the concussion return to play protocol.



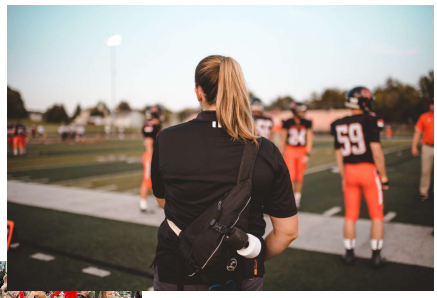
What are athletic trainers?

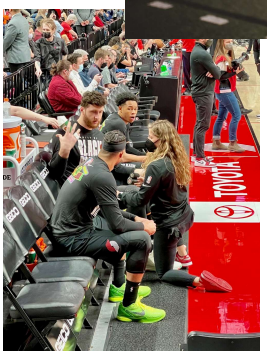
Athletic trainers (ATs) are highly qualified, multi-skilled health care professionals who render service or treatment, under the direction of or in collaboration with a physician, in accordance with their education, training and the state's statutes, rules and regulations.

As a part of the health care team, services provided by athletic trainers include primary care, injury and illness prevention, wellness promotion and education, emergent care, examination and clinical diagnosis, therapeutic intervention and rehabilitation of injuries and medical conditions.

https://www.nata.org/about/athletic-training

Where ATs Work:





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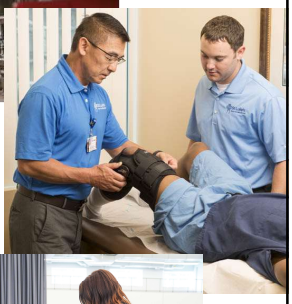
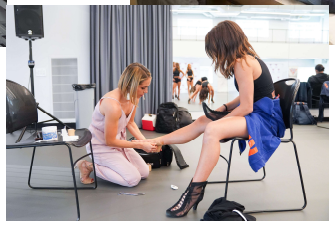
Also Where ATs Work:

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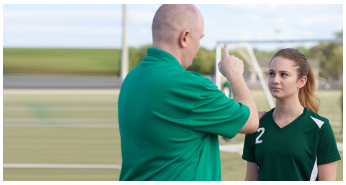
What does the AT do when a concussion occurs?

- Evaluation
  - Immediate and emergency care
  - Subacute care and follow up
- Education
- Documentation

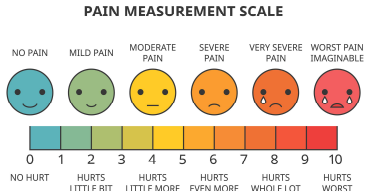


Home care

- No same day return to play
- Rest - mentally and physically (but only for the first 2-3 days)
- The athlete can be allowed to sleep if symptoms do not progressively get worse
- Do not let the athlete drive home
- Do not go home alone
- OK to stay home from school 2 - 3 days if symptomatic
- Contact school counsel[illegible] Athletic Trainer

Pain Management

- Do not take any medication that thins the blood (ie. Aspirin, Ibuprofen, Aleve)
- Only Tylenol is OK
- Ice any painful area
- Light/pain-free stretching of the neck is ok.
- Physical Therapy
- Massage Therapy
- Acupuncture



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When to go to the Emergency Room ?

Monitor athlete for 1-3 hours after concussion is sustained for:

- Loss of consciousness
- Deteriorating conscious state
- Increasing confusion or irritability
- Trouble maintaining balance
- New symptoms arise or old ones become worse
- Repeated vomiting

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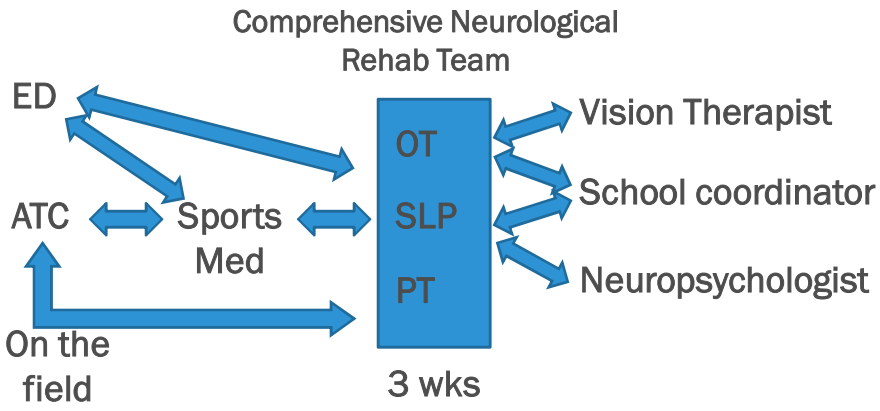
When to go to the Doctor?

- Initial visit: within 1 week of the initial injury.
  - Preferred within the first 2-3 days from injury
  - Documentation
  - Education
  - Imaging?
  - Tests?
- Clearance visit: depends on symptoms.
- PCP may refer to a concussion specialist.



Interdisciplinary approach: OHSU Model



Interdisciplinary Approach

- **Physician**: coordinator of care, medication management
- **Athletic Trainer**: Intake/follow up testing, exercise tolerance, return to play
- **Occupational therapist**: functional visual and cognitive deficits, fatigue management
- **Physical therapist**: vestibular/balance deficits, neck pain, and return to play
- **Speech and Language Pathologist**: cognitive remediation and compensatory strategies
- **Neuro-optometrist/Vision therapist**: visual deficits
- **Neuropsychologist**: in-depth cognitive evaluation and education
- **School coordinator**: return to school
- **School teacher:** support and communication

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Return to Play

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'Return to Play' Guidelines for Sports

Step 1- Symptom limited activity
Goal: Gradual introduction of activities of daily living, subthreshold activity, and academic activities.

Step 2- Symptom free activity - Light aerobic exercise (stationary cycle, walking, swimming); Activity should be no longer than 60 minutes, 85%-max HR should be achieved (Max Heart rate is equal to 220 –Age). No resistance training.
ImPACT testing may be taken anytime between this step and step 4.
Goal: Continued subthreshold activity and increased heart rate.

Step 3- Sport specific training (wind sprints, cutting drills, up-downs, bear crawls, push-ups, crunches, etc.).
Goal: Dynamic movement and cognitive clearance.

Step 4- Non-contact training drills (full practice with shells NO CONTACT).
Begin progressive resistance training
Goal: Exercise, coordination, and dual task with cognitive load.

Step 5- Full contact training *after medical clearance by medical provider*.
Goal: Increase/restore confidence, coaches can assess functional level.

Step 6- Return to competition.

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Aerobic exercise

- Benefits:
  - Improve mental health/depression
  - Promote neuroplasticity/growth factors
  - Improve overall fitness
  - Increase brain profusion
  - Decrease fatigue/improve energy levels
  - Improved sleep
  - Improved cognitive functioning

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The Buffalo Concussion Treadmill Test (BCTT): Uses

1) Establish exercise intolerance—acute or PCS (Kozlowski et al., 2013)
2) Establish differential diagnosis of PCD (physiological, cervicogenic, vestibulo-ocular) (Baker et al, 2012; Leddy et al., 2013)
3) Individualized management protocols
4) Safe Return To Play (RTP) through re-established exercise tolerance (Leddy et al., 2011)

Kosderka, Active Recovery for Sport Related Concussion: The Buffalo Concussion Treadmill Test. 2018

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Aerobic Exercise: Balke protocol/BCTT

- Provocative exercise test: help to determine if ready for RTP
  - Protocol: Measure BP, HR and RPE
    - Treadmill: 3.3-6 mph, 0.0% incline
    - Minute 1: 3.3-6 mph, 2.0% incline
    - Minute 3: 3.3-6 mph, 3.0% incline
    - Minute 4: 3.3-6mph, 4.0% incline
    - Keep going: ↑ 1.0% incline every minute until symptomatic or max HR

Leddy JJ et al, Clin J Sport Med. 2011
Baker JG et al, Rehabil Res Pract. 2012

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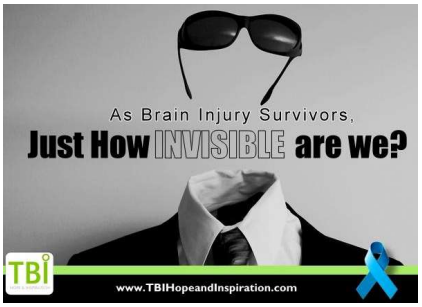
Early intervention

- Shown to reduce short and long term symptoms of TBI
- Reassurance symptoms are “normal”
- Providing resources:
  - Educational
  - Team intervention
  - Support groups



Ponsford et al; J Neurol Neursurg Psychiatry 2002
Paniak C et al; Brain Inj 2000

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Concussion Resources:

- OHSU Sports Medicine: 503-494-1950
- CBIRT: Center on Brain injury Research & Training
- CDC: HEADS UP in Youth Sports
- Brain 101: The Concussion Playbook
- NFHS: Concussion in Sports

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Thank You!