Injury Definition, Classification and their Consequences for Return-to-Sport

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Injury Definition

- Varies greatly by study causing inconsistencies in reported data and study comparison difficult.
- Consensus statements:
  - Football. Fuller, 2006
  - Rugby. Fuller, 2007

Injury Consensus

- Standardization of:
  - Injury definition
  - Injury classification
    - Type, location, event
  - Injury location
    - Specificity: anterior or posterior thigh,
  - Type of Injury
    - New, recurrent, medical attention, non-fatal catastrophic, acute, overuse, non-structural vs. structural, etc.

Injury Classification

- Most studies have only collected time loss injuries.
- Recent development and validation of a new method for the registration of overuse injuries
  - Found 10 times as many overuse injuries than standard injury registration methods.

Injury Classification

- Injury severity has traditionally been measured in total time loss
- Overuse injuries require a measure that accounts for participation and pain levels

Injury Mechanism

- Stretch Vs. Contraction of Hamstring
  - 50 Vs. 16 weeks for return to play
  Askling C, Saartok T, Thorstensson A. Type of acute hamstring strain affects flexibility, strength, and time to return to sport level. British journal of sports medicine 2006;40:4.
3 Reasons R-T-P is Difficult

1. There are almost no absolute contraindications to sports participation.
2. Pressure to use treatment approaches that are not scientifically validated.
3. Return-to-play decisions are usually made on a case by case basis.

Class Participation...

- In your opinion, what is the most important factor in deciding upon return to play?

Importance of Signs Influencing RTP

Definitions

- Evidence
  - Case report ➔ case series
  - Cross-sectional
  - Case control
  - Prospective cohort
  - Randomized Controlled Trial

Who Can’t Play?

- Questions
  - repeated concussion retirement
  - RTP after fever/acute infection?
  - one kidney or testis?
  - first time shoulder dislocation?
  - spondylolysis
  - patellar tendinopathy
  - chronic groin pain
  - corticosteroid injection shoulder
  - plantar fasciitis

- Answers
  - no evidence-based guidelines
  - use cautious common sense
  - evidence remains limited
  - not an easy question to answer
  - avoid extension activities
  - conservative treatment
  - there are no short cuts
  - no definitive effectiveness
  - rest, stretch, inject - all else is controversial & unsupported
RTP Definitions

- allowed to practice
- partial return (no contact)
- medical clearance of an athlete for full participation in sport without restriction (strength and conditioning, practice, and competition).

Clearance vs Monitoring

- Clearance decisions require the assurance of appropriate monitoring of identified problems
- If “clearance” is dynamic, physicians must feel comfortable with follow-up & participation status

Considerations in R-T-P

- We need to learn more about the factors involved in return-to-play to limit case by case decisions
  - Biological factors
  - Functional testing
  - Imaging data
  - Risk factor analysis (informed consent)

“If a team physician does not fully inform an athlete of the potential dangers associated with playing with a particular injury, or the risks of a proposed treatment, the athlete’s decision is uninformed.”


Return-to-Play Decisions

The Most Important Factor?

- ... is not a factor
- It is an approach
  - Synthesizing evidence
  - Blended into a decision making process
Decision Making: the Rational Decision Model

Benefits or Advantages

Risks Or Disadvantages

RTP: A Decision-based Model

From Evidence to Decision Making

- Extensive literature review
- Categorized variables noted in the literature
- Many factors mentioned, but poor evidence regarding importance

Decision Making: the Influence Diagram

- Representation:
  - States of nature elements are circles
  - Circumstances under which decisions are made
  - Arrows are used to illustrate when information from one element contributes information to another element
- Integrates and sequences factors, how they interact and when they should be considered in the clinical decision process

Decision-Based RTP Model

Step 1: Evaluation of Health Risk
- Patient Demographics
- Symptoms
- Personal Medical History
- Physical Exam
- Lab Tests
- Psychological

Step 2: Evaluation of Participation Risk
- Type of Sport
- Position Played
- Competitive Level
- Ability to Protect
- Timing & Season

Step 3: Decision Modification
- Risk Evaluation Process
- Decision

Return-to-Play Decision

Your Role?

- Advisor / Advocate?
- Paternalistic / Authoritarian?
By What Standard are you Judged?

Daily Environment = SPORT
- Coach
- Manager
- Agent

Professional Environment = MEDICAL
- Colleagues
- Licensing bodies
- Malpractice Insurer

Who’s in Charge?

- Who has the final say?
  - Medical staff
  - Official, coach, manager, administrator?
- Who assumes final responsibility?
  - “point person”
  - liability

Take Home Message

- Many factors
- Consider them in the right order
  1. Medical
  2. Participation Risk
  3. Decision Modification
- Can be recursive
- *In sport medicine we look after the athlete.*
- We should practice good medicine in sport, and look after our patient, the athlete

Thank You!

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