Injury prevention programs/exercises
An evidence-based update with focus on football

Overview
- Contact injuries/
  Laws of the Game
- Non-contact injuries
- Injury prevention
- Exercises/programs
- Children
- Professionals
- Implementation challenges

Injuries
sport dependency

Injuries
Sport dependency

Football injuries
Incidence and severity

Study at Olympic Games 2004, Junge et al (BJSM)

Acute injuries
contact vs non-contact

Elbowing (trauma) CONTACT
Acute hamstring muscle strain NON-CONTACT

Prevention of contact injuries (example)

New rules, IFAB approved, first implemented at the World Cup 2006 in Germany, following F-MARC research and FIFA Medical ExCo actions

Prevention of contact injuries - male pro-players only -

FIFA World Cup: average nr. injuries per match (Dvorak et al. BJSM 2015)

"Good" evidence that prevention programs can reduce non-contact injuries in sports (mostly in football)
- Injuries in general > multimodal programs
- Ankle sprains > orthosis, proprioceptive training
- ACL, knee injuries > neuromuscular/plyometric training
- Hamstring strains > eccentric training

**Neuromuscular (warm-up) programs for injury prevention (2005-2015)**

- 16 key papers
- 14 RCTs
- 12 on soccer
- 9 with female athletes
- 13 with significant reduction of overall injuries (incl. knee, ACL injuries)

**Injury prevention – evidence**

**Age, gender and level of play**

**SERIE A**
- Serie A - Prima divisione
- Serie B - Seconda divisione
- Serie D - Lega Nazionale Dilettanti

**Eccoferrara**
- Promozione
- Prima Categoria
- Seconda Categoria
- Terza Categoria

**Age range**
- 13-25 yrs

**Key elements of these programs:**
- Neuromuscular control
- Body awareness
- Balance
- Core strength/stability
- Hamstring
- Landing, cutting techniques
- Plyometrics

**Injury prevention programs Content**

Thorborg et al. BJSM 2017

Hewett NAJSPT 2010
Injury prevention programs
Content – umbrella review (team sports)

Specific preventive exercises
Nordic Hamstring
- Peterson et al., AJSM 2011
- RCT, Denmark
- 942 male players (pro, amateur)
- mean age 23 y
- Intervention: nordic hamstring exercise
- Results: significant reduced rate of overall, new, and recurrent acute hamstring injuries

Specific preventive programs
Groin-I
- RCT
- 977 male players
- Intervention: exercises (hip add, trunk, stab/strength)
- Results: 30% reduction (although NS) of groin injuries

Estève et al., Br J Sports Med 2014
- Systematic review
- Lack of evidence!
- Estimate reduction 19-52% in football players (clinical relevance?)
- Efficacy unknown (compliance unreported)
Specific preventive programs
Groin-II

- 35 semi-pro teams (652 football players)
- Cluster RCT
- Intervention group: hip adductor strengthening program (single exercises, 3 progression levels)
- Results: reduction of prevalence and risk of groin problems in male players by 41%

What about children?
=> 11+ KIDS
Rössler et al. Sports Med 2017

- Large cluster RCT (2015)
- 4 countries (CH, D, CZ, NL)
- ~4’000 children (9-12 yo)
- 11+ KIDS
- ~50% reduction of injuries

What about professional football?

- Epidemiological data: many studies! (UEFA CL)
- Prevention studies: (almost) no data!
- Difficulties/barriers: pressure, congested calendar, training myths & beliefs, ...

Bahr et al. BJSM 2015
- UEFA CL & Norway clubs survey
- 150 teams adopting/performing „Nordics“:
- Results: 83% of all teams NON compliant, 6% partly compliant, 11% fully compliant

IMPLEMENTING INJURY PREVENTION
THE ROCKY ROAD FROM RCT TO REAL-WORLD INJURY REDUCTION

www.aspetar.com/journal (June 2018)
Take home messages - most data in amateur football -

Contact injuries
- Strict refereeing (laws of the Game; pro football)

Non-contact injuries ↓ up to 50%
- Adolescent, youth (female > male)
- Children (9-12 yo) - missing –
- Neuromuscular based programs (11+, PEP; Kk)
- Specific exercises (hamstrings, adductors)
- Implementation challenges!

Grazie per la vostra attenzione!

https://fit4football.co.nz

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