High-performance programs in schools

Safe and sustainable athlete development

SSISA Wellness and Fitness Convention 2016

Jason Tee
twitter: @JasonCTee
Email: jasonctee@gmail.com
Who am I?

- S&C coach
- Youth athlete development
- 10 years experience in high school sport.

- Sport Scientist
- Training load management
- Injury prevention
What’s the problem?

Kids are getting hurt

In the USA
- 2 million injuries/year
- 1 in 4 children are injured playing sport every season
- Overuse injuries ≈ 50% of high school sports injuries

*U.S. Centers for Disease Control (CDC) data*
Situation in South Africa?

It's hard to say…

Injury incidence in high school rugby in FS and NC is **DOUBLE** Super Rugby
Holtzhausen et al., (In press)

Majority of private and traditional monastic schools have physiotherapists on site.

Personal experience – aware of more than 20 ACL injuries that have taken place at my own school in the past 2 years.
Effect of serious injury

Life changing event

- Cost of surgery/rehabilitation
- Time loss – academics and sport participation
- Mental/social effects

Labella et al., Pediatrics, 2014 133(5)

Long term effects

Previous injury is the largest risk factor for subsequent injury in all sports.

Fulton et al., IJSPT, 2014 9(5)

Less likely to sustain long term participation in sporting activities

DiFiori et al., CJSM, 2014 24(1)
Reasons for Increased Injuries

- Increased competitiveness
- Sponsorships
- Media attention
- Rankings

Lead to

- Earlier specialisation
- Increased training time
- Gyms in schools
Preventing injuries in young athletes

Key concepts
- Adequate strength
- Movement quality

 Strength training reduces sports injuries by less than one third

Injuries prevented by training

Overuse injuries could be almost halved by adequate strength training

3464 injuries

The effectiveness of exercise interventions to prevent sports injuries

@JasonCTee #FitCon2016
Over-powered athletes
Strength training and injury risk

Potential Injury Burden
(risk x severity)

Increasing absolute strength

Strength training only

Diminishing returns

Strength training + movement skills

Increased risk
Movement skills
Training loads

Relationships between training load, training phase, and likelihood of injury in elite team sport athletes.

Stress, illness and injury in college football players

The odds of an injury/illness restriction during weeks of high academic stress are nearly twice as high than during weeks of low academic stress.

Reference
The effect of physical and academic stress on illness and injury in division 1 college football players by Bryan Mann et al. in J Strength Cond Res, May 2015

Designed by @YLMSportScience
HIGH TRAINING WORKLOADS ALONE DO NOT CAUSE SPORTS INJURIES: HOW YOU GET THERE IS THE REAL ISSUE

LARGE INCREASE IN ACUTE:CHRONIC WORKLOAD RATIO = INCREASED INJURY RISK ++


Designed by @YLMSportScience
High-risk after holidays

Figure 3. Injury incidence rates for all players by month of season.

18 non-training weeks per year
Fixture timing
Pre-season training
The Constant ‘Rehab-er’

“Load” might contribute to injury – just not in the way you might expect (or have been led to believe)...


Tim Gabbett, PhD
www.gabbettperformance.com
Reducing injuries improves performance

Performance success or failure is influenced by weeks lost to injury and illness in elite Track and Field athletes

Reference: by BP. Raysmith MK. Drew JSMS 2016

RESULTS

The majority of new injuries occurred within the first month of the preparation season (30%)

Likelihood of achieving a performance goal increased by 7-times in those that completed >80% of planned training weeks

Most illnesses occurred within 2-months of the event (50%)

Training availability accounted for 86% of successful seasons
Take home messages

• Extreme **competitiveness** in high school sports is increasing injury risk
• These **risks can be managed** through good training plans
• Must consider **BOTH** strength and movement quality
• **Acute:Chronic training loads** affect injury risk – know what your athletes have been doing
• **Cautious approach** to training load, more likely to ensure **long-term success**.
Thanks for listening!

Jason C Tee
Email: jasonctee@gmail.com
Twitter: @JasonCCTee