Managing Injuries in Adolescents

The Problem

With professionalism in sport and competitive sport scholarships on the rise, overuse injuries in adolescents are becoming more and more prevalent. Recent research shows a 60% increase in sports-related injuries to children aged 10-14 since 2008, with over 50% of these injuries related to overuse. Overuse injuries occur due to high training loads being placed on immature skeletal systems causing stress reactions. This can present slightly differently depending on the sport, the child and their rate/stage of growth and development.

A 'sporting' child may have multiple trainings a week across different sports or teams and then play in 2-3 games. On top of this, physical education hours at school, running around at lunch and after school plus active weekends, mean that often our adolescent athletes training load is getting close to the same hours we would expect of a professional athlete!

Common Overuse Injuries

- **Osgood Schlatter; Severs; Sinding-Larsen-Johansson**

Growth cartilage present at the articular surfaces of adolescents (skeletally immature) is less resistant to tensile, shear and compressive forces than mature bone or more immature prepubescent bone. These conditions will resolve over a 12-24 month period in most cases, often resolving as growth slows.

- **Stress Fractures**

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Occur as the result of repetitive forces on the body that has not had sufficient time to recover. In adolescents' hormonal changes, thinner cortices and weaker osteochondral junctions predispose them to stress fractures.
The prevalence of stress injuries in children has increased in correlation with the increased number of children participating in competitive sports.

- **Red-S (Relative Energy Deficiency in Sport)**

Result of insufficient calorie intake **or** excessive energy expenditure. Previously this was called the Female Athlete Triad, but this has been changed to include males who we now know, can suffer similarly with hormonal and bone changes. A myriad of symptoms may be present including increased load/high demand, weight loss, stunted growth, recurrent colds/illness, decreased athletic performance, anaemia, changes in menstrual cycle or delayed puberty, history of stress fractures or other recurrent injuries/slow healing, along with general feeling of exhaustion/fatigue. A component of Red-S may be disordered eating so this should be considered especially in athletes whose sport requires or leans towards a lighter/smaller physique for results.

The Solution

With all the above conditions (and other overuse injuries), the most important treatment is managing your child's training loads. Your physiotherapist will help educate you on the best way to do this and will also help to strengthen, improve flexibility, and correct any poor movement patterns.

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In the absence of injury, learning to assess and alter your child's sporting schedule will help to keep them injury free. Here are some simple 'rules' to follow:

- **Rest:** Aim for 1-2 rest days per week, these are days where a child has **no** trainings, fitness sessions or games. Evidence suggests that having 2-3 months off organised sport per year is also beneficial in reducing injury risk.
- **One Team at a time:** Try and have children only play for one team at a time. A short period of playing for two teams due to seasonal sport crossover or representative trainings is acceptable.
- **Train Injury Prevention** – encourage your child to stretch, foam roll and approach a professional to help improve sport-specific strength.
- **Return:** Ensure that sport is re-introduced slowly after periods of rest such as the summer school holidays.
- **Rule:** The number of hours per week of sport and training should always be less than the age of the child (e.g. less than 10 hours per week for a 10-year-old). Caution with this rule is advised during the ages of 10-13 years, some studies have found that in these age groups, children were not exceeding this rule and still had a relatively high injury rate. It is hypothesised that this may be due this being an age where many children experience rapid growth.
- **Remember:** Take into account how active your child is outside of organised sports and ensure you count this towards their activity allowance each week.

If you have any questions please contact us here at In Balance, we are always happy to help.

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