YOUTH INJURIES IN RUGBY

Forty percent of all youth (children, teenager and adolescent) injuries are sports-related. Overall, boys and girls injury rates are becoming equal due to a gradually increasing participation of girls in sports like rugby, basketball and football.

Injuries in the young athlete are often trivialised. They are usually asked or encouraged to 'toughen up and play through the pain.'

This approach is not in the young athlete's best interest for the following reasons:

- It often leads to both delayed injury healing and return to sport
- It can turn an easily treated injury into one that becomes difficult to treat
- In some cases, it can result in a serious permanent injury that precludes future sports participation.

In most cases, your physical therapist can make an accurate diagnosis by listening to your child's injury history and performing a thorough clinical examination. The adolescent's age, sex, and level of participation in sports are important. A description of how the injury occurred is valuable. Your physical therapist will want to know if there was a 'pop', swelling, history of previous injury, family history of similar injury, locking or giving way, or other signs or symptoms. They'll also ask you about how much training and game time your child is participating in to detect whether 'overtraining' could be predisposing them to injury.

While special diagnostic tests such as x-rays, MRIs and ultrasound scans may be required, in most cases an accurate diagnosis can be made by taking a good history and performing an examination of the injured structures.

Most overuse injuries, such as stress fractures and tendinopathies, are preventable. If your child suffers any overuse injury, the first choice of treatment is rest until a medical opinion can be sought. In young athletes, this means avoiding the activity that is causing the problem, or reducing the intensity, until the discomfort resolves. Bed rest or immobilisation are rarely needed.

Managing your child's exercise load is particularly important. 'Gifted' athletes are often the victims of over-training and over-competing. Their natural athleticism encourages their school, club and representative coaches to over-play and over-train these kids. They are usually the start of the team and everyone wants them to play. As a parent, it is very important that you convey the volume of training and game time to their coaches and physical therapists. Good coaches, and therapists will understand that overloading is a problem and can advise on a management plan. But unfortunately, not every coach does what is best for the child!

Whilst children, teenagers and young adults can sustain any of the common rugby injuries seen in adults, like contusions, muscle strains or concussion, there are some specific injuries that young players are more prone to due to their immature skeleton. The term an 'immature' spine refers to the fact that as children grow and develop, their bones slowly change from a more cartilaginous (slightly softer and 'flexible') consistency to a fully 'hardened' (ossified) bone. Complete fusion of the growth plates, the time when bones stop growing and fully harden, varies but is around ages 12-16 in girls and 14-19 in boys.

Their immature spine can protect them from some injuries as their bones are more forgiving and less likely to fracture or dislocate. At the same time however, children lack the physical muscle strength that is often required to support their spine and joints and therefore can be prone to neck and back injuries and rolling their ankles. Some specific injuries that occur in children with an immature spine are explained in the table.

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1 OSGOOD-SCHLATTER'S DISEASE

This is an inflammation of the bone at the top of the tibia (shin bone), where the tendon from the patella (kneecap) attaches. It is an overuse knee injury rather than a traumatic injury. The pain can be quite debilitating. The most common groups are boys aged 11-15 years and girls aged 8-13 years.

Symptoms
- Pain, swelling, tenderness just below the kneecap on the top and front of the shin bone
- Pain worse with exercise, running, jumping or kneeling (direct pressure on the painful area)
- Pain with stairs or squatting
- Weak thigh muscles
- Enlarged bony lump below knee

Causes
- Strong repeated contraction of thigh muscles pulls on immature (weaker) attachment to bone – lots of running, jumping, squatting activities
- Often coincides with growth spurt, where bone grows and lengthens faster than thigh (quadriceps) muscles. Thus the muscle pulls on its attachment below the kneecap causing pain and inflammation

Treatment

Symptoms can come and go for 12-24 months:
- Reduce jumping and running
- Rest or relative rest – sports with less impact, like swimming, cycling
- Strapping
- Physical therapy: ice, ultrasound, TENS machine, massage, gentle stretching
- Strengthening around the knee area
- Foot arch or orthotic for good leg alignment

Prognosis
- Complete recovery once bony growth plates closed (essentially once child stops growing)
- Surgery seldom necessary

2 SINDING-LARSEN-JOHANSSON SYNDROME

This is an inflammation of the bone at the bottom of the patella (kneecap), where the patellar tendon attaches to the tibia (shin bone). It is an overuse knee injury rather than a traumatic injury. The causes and symptoms, as well as management are the same as Osgood-Schlatter disease described above. It is essentially the same type of injury just a few centimetres higher up, on the bottom of the knee cap rather than on the shin bone itself. So the child will point to pain or complain of pain on the bottom margin of the kneecap.

3 SEVER'S DISEASE

Sever's disease is a common cause of heel pain in active children. Sever's disease, also called calcaneal apophysitis, occurs when the growth plate of the heel bone is injured by excessive forces during early adolescence.

It usually occurs during the growth spurt of adolescence, the approximately 2-year period in early puberty when kids grow most rapidly. This growth spurt can begin anytime between the ages of 8 to 13 for girls and 10 to 15 for boys. Peak incidences are girls 8 to 10 years old and boys 10 to 12 years old. Whilst painful it is recommended a child should not walk around barefoot, but should have the support and cushioning of a sports shoe.

Symptoms
- Pain on the heel
- Limping or running awkwardly
- Pain increases when stand on toes

Causes
- High impact and training volume – running, jumping
- Poor foot alignment/ biomechanics
- Decreased ankle mobility
- Tight calf muscles

Treatment

Symptoms can come and go for 12-24 months:
- Reduce jumping and running
- Rest or relative rest – sports with less impact, like swimming, cycling
- Strapping the calf and Achilles tendon
- Physical therapy: ice, ultrasound, TENS machine, massage, gentle stretching of calf.
- Mobilise the ankle joint
- Balance exercises for the ankle
- Foot arch or orthotic for good leg alignment
- Heel cup to reduce pressure

Prognosis
- Complete recovery once bone growth plate has closed, as the child's skeleton matures

TIPS FOR PARENTS AND COACHES

Adolescents have a lot of enjoyable sporting years ahead of them. It would be a shame to see this enjoyment cut short too soon due to an injury that is mis-managed or a child that becomes disillusioned by pain and/or adults that won't listen.
- Allow your kids to play at their own intensity and pace
- Encourage your child to start getting in shape and conditioning a month before any team sports are due to begin
- Emphasise stretching and flexibility exercises
- Start core stability and postural exercises early in life as good body alignment can prevent injury
- Make sure fields are in reasonably good condition and that protective equipment fits correctly (helmets, shoulder pads, etc.).

When in doubt, seek expert medical advice. It's better to be safe than sorry. In general, kids are motivated to play sports because it is fun. Parents and coaches who demand too much may be putting their children at risk.

If your child is complaining of pain don't brush it off as growing pains or simply an excuse to miss training. Seek the professional help of a physical therapist so your child can continue enjoying a healthy lifestyle of sports and physical activity with their peers.

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