

**LET'S TALK  
ABOUT**

**OSGOOD  
SCHLATTER'S**

**A PATIENT GUIDE**



**kids back  
@sport**



# WHAT IS OSGOOD SCHLATTER'S?

It is not yet known exactly what causes Osgood Schlatter's Disease. However, what we do know is, despite the name, it is definitely not a disease. We should therefore really call this type of injury tibial (shin bone) apophysitis or inflammation in the growth plate.

During rapid growth spurts, tension increases in the muscle on the front of the thigh (the quadriceps) at the point where it attaches to the shin bone just below the knee cap.



In sporty children, a sudden spike in repetitive activities such as running and jumping activities can cause a traction type injury where the tendon attaches. The local bone and soft tissues can become inflamed and sore especially when they are compressed during kneeling or squatting type activities.

As it starts to heal, it can generate new bone creating a hard bony lump, which can be really sore when kneeling or if the area gets bumped.

## WHO GETS OSGOOD SCHLATTER'S ?

Around 10% of children and 21% of athletes get Osgood's Schlatter's. The children usually participate in repeated high intensity and higher volumes of hopping, jumping and change of direction type activities. It is even more common in athletes who specialise early in only one sport at the expense of others.

The children who get symptoms are usually around 9-15 years of age and it is more prevalent in boys than girls, especially those who grow faster and those who have a large growth spurt.

There have also been links made to low Vitamin D levels so it is worth considering supplementation in some parts of the world.

## WHAT ARE THE SYMPTOMS?

1. Pain on running, jumping, squatting, hopping, change of direction
2. Typically eases with rest
3. Swelling at the top of the shin bone
4. Tenderness on pressure such as kneeling
5. Tight hamstring muscles

# HOW IS OSGOOD'S DIAGNOSED?

X-rays are not usually needed to make the diagnosis. If the symptoms do not settle down with modifying activity, ultrasound or MRI scans can be helpful to grade the severity of the injury.

## HOW CAN I REDUCE MY PAIN?



Taking a short break from high impact activities such as jumping and running for 2-4 weeks can help.

If you are still experiencing pain it may be that you are still doing too much and need to do less strenuous activity until it settles.

Do not take pain medication to mask the pain. Massaging the thigh muscles and applying ice for 10-15 minutes may help to ease the symptoms.

Using a knee support or taping may help too. The best way to improve symptoms is to modify what you are doing until you get stronger.

## CAN I PLAY WITH PAIN?

If the child has been diagnosed with Osgood's by a health professional, it is not usually harmful to continue to play sport. In fact, providing it does not cause an increase in pain after they play, or causes them to limp or run differently, it may help to keep them fitter and stronger and increase their capacity to do more. If they totally rest, when they return to play again, their bones and muscles are even less tolerant of the loading.

To help the symptoms settle, they may need to reduce what they are doing and try doing some different types of training such as swimming or cycling instead of running. See the chart below for examples.

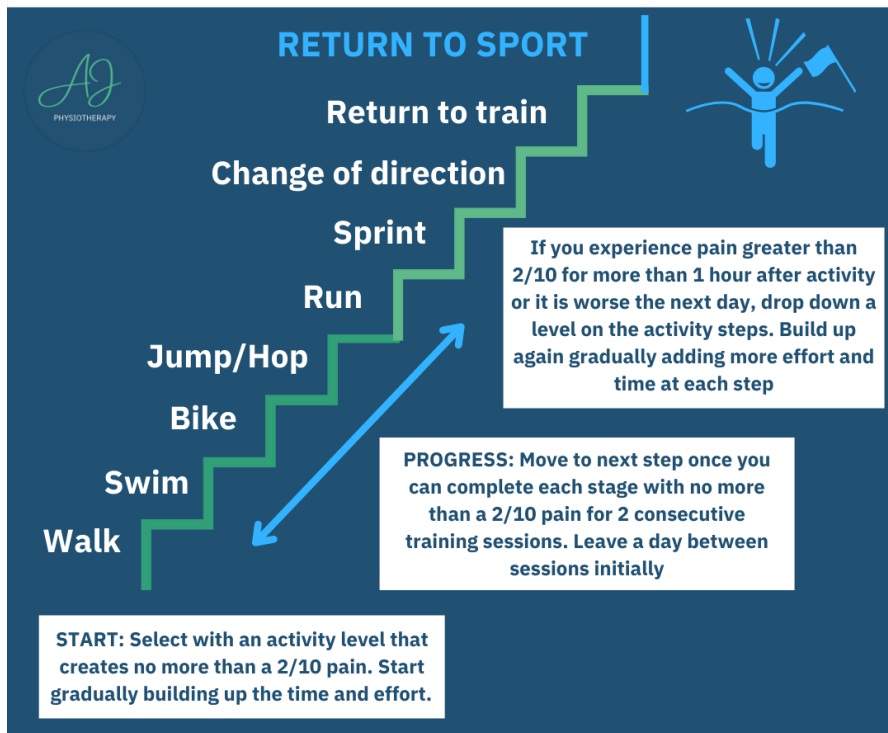
Using a pain scale of 0-10 (where 10 is severe pain and 0 is no pain), assess your pain level during and after activities.

**NO PAIN 0 1 2 3 4 5 6 7 8 9 10 SEVERE PAIN**

## THE PAIN ON ACTIVITY SHOULD NOT BE:

- Greater than a 2/10 score
- Does not cause you to limp
- Settles within 1 hour
- Is not worse the next day

## BACK TO SPORT TOOL



## WHAT IF MY PAIN FLARES UP?

If the pain starts to flare up again, drop down a level on the activity steps for 2 consecutive sessions and then build up again gradually adding more effort and time.

You don't have to stop everything if the pain recurs, just find a level that is more tolerable and then begin to build up again.

If the pain persists, try total rest for 2-4 weeks and consider seeing a therapist with experience in treating children. They will confirm the diagnosis as not all pain in these region does come from Osgood's. They will also prescribe some strength exercises based on the type of symptoms the child presents with. Stretching can sometimes aggravate the symptoms so they will advise the best approach.

**IT IS IMPORTANT TO STAY INVOLVED WITH YOUR TEAM OR CLUB, SO TRY TO FIND A ROLE YOU CAN DO WHILST INJURED.**

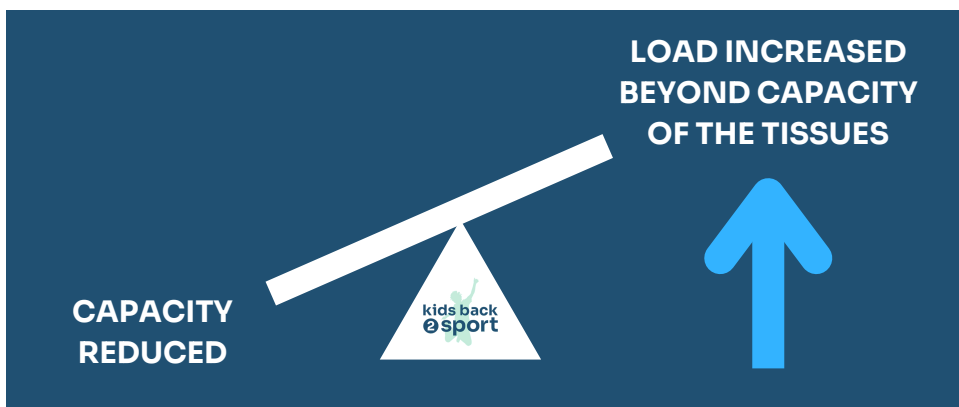
# HOW DO I STOP THE PAIN COMING BACK?

If they do not change the factors that contributed to developing pain, it is likely that the pain will recur. The highest incidence of Osgood's occurs in the third week of a school term or season, when kids do too much too soon. Their symptoms may also recur at times when their capacity has dropped such as during a growth spurt or if they are ill or stressed.

## WHY DO SOME KIDS GET INJURED?

Injuries occur when we exceed the current capacity of the body and place more stress on young tissues than they can tolerate at that time. This may occur after a period of lower-level activity such as the long school holidays, and kids go back to a new or increased volume of activities. They do too much, too soon. Allow a gradual build up in load at the start of term to allow tissues to adapt and get stronger. However, that does not explain why, when a class of children do the same sports session, they do not all get injured at the same time.

### INJURIES OCCUR WHEN WE EXCEED THE CAPACITY OF THE BODY



HOW MUCH SPORT THEY CAN DO THIS WEEK,  
DEPENDS ON HOW MUCH RECENT TRAINING THEY HAVE DONE

1. HOW MUCH HAVE THEY DONE IN THE LAST 3-4 WEEKS?
2. TAKE THE AVERAGE OF THE LAST 4 WEEKS
3. IF THEY COPE WELL LAST WEEK - ADD 10% MORE

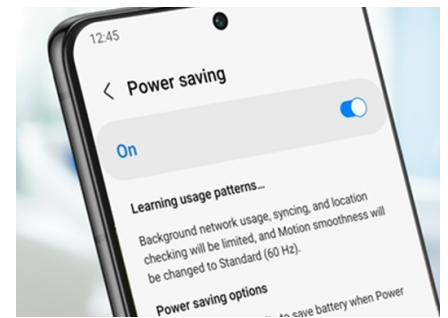
# HOW CAN I BUILD THEIR CAPACITY TO DO MORE?

If the child has a reduction in their capacity to exercise due to inadequate sleep, nutrition or recovery or they are going through a period of heightened stress levels, they may not be able to tolerate the same level of exercise intensity or volume as usual and develop an injury. Specialising in just one sport all year round before the age of puberty, can also increase injury risk, so it is helpful to play different sports, not just one. Training errors, such as spikes in volume or intensity of sport beyond what they have trained for, or not scheduling rest days will increase the risk that they will exceed the current capacity of their body and get injured.

## RECHARGE THEIR BATTERY

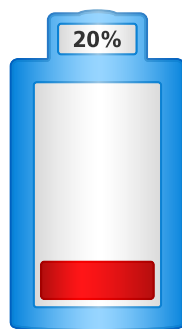
Just like your phone needs to be recharged so does your brain and body. In the deep part of our sleep, we perform many of the same functions achieved by plugging your phone in to the mains. We perform vital updates, virus scans, repair damaged tissues, build stronger muscles and bones and upload skills learnt in the day to the hard drive.

Children need more sleep during growth spurts so make sure they are getting lots of early nights and feel refreshed in the morning.

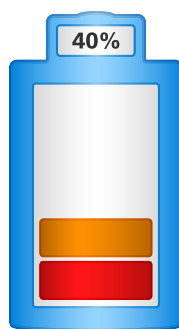


## LISTEN TO YOUR BODY

### SHOULD I TRAIN OR NOT?



**GO HOME**



**GO EASY**



**GO HARD**

At times when they are ill, sore, stressed or tired, their body is more at risk of illness or injury. It is important to adapt how much and how hard they play to allow their body to recover and avoid increasing the risk of further injury. Sometimes a day out to recover can avoid a week off ill or injured. For more information, see the handout on Let's Talk About Why Kids Get Injured

# EAT FOR ENERGY

Getting adequate nutritional intake for the level of activity that the child does is important for bone health and growing stronger muscles. Make sure they eat a balanced diet including good protein sources for building muscles and repairing injured tissues. Many children don't feel hungry in the morning, but it is difficult to achieve adequate energy intake if children miss a meal.

On days when they do more, they may need more regular intake of food and drink, especially during growth spurts. Adjust what they eat to meet the demands of what they do. Just like cars need refuelling so do young athletes.

Many children require a Vitamin D supplement to improve bone health so discuss appropriate dosage with a health professional.



# GET STRONGER

Stronger athletes have been shown to develop fewer injuries and be able to tolerate greater changes in sport volume and intensity.

Children who get Osgood Schlatter's often develop weaker muscles due to the pain they experience and through not being able to do as much exercise. Doing exercises set by your therapist to strengthen the muscles in the calf, hamstrings, quadriceps and trunk muscles will build up your strength so that your body can tolerate more.

Some muscles may feel tight when you are growing. Doing some daily stretches for the calf, hamstrings, hips and quadriceps may improve this, however in some children, doing stretches can aggravate the symptoms, so seek guidance from your therapist.

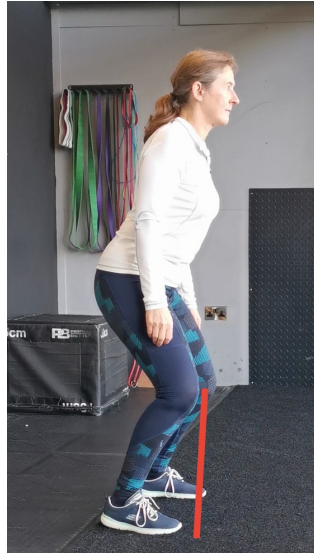
Every individual is different. The type of exercises may differ between each person so it is recommended to see a health professional to learn which exercises are right for you. You could try these exercises and see if they help.

# STRONGER ATHLETES GET FEWER INJURIES

The athletic set up position is important in most sports. The way you initiate the movement may aggravate your knee pain. Push your hips back to hinge at the hips (see Fig.1) rather than buckle at your knees (see Fig. 2) to initiate the movement



**Fig 1. Good athletic set up initiated with hip hinge**



**Fig 2. Buckling at knees rather than hip hinge**



**Fig 3. Hamstring mobility maintain athletic set up**

Increase hamstring mobility (Fig 3.). Start in your athletic ready posture by pushing the hips back and then straighten one leg. Keep your spine straight. Hold x 5 seconds, repeat 10 times. Repeat 2-3 x per day.



**Fig 4. Strengthen quads with static pain free holds x 5 second holds**

## STATIC QUADS

In sitting, put your foot up against a table leg, swiss ball or your other leg. Bend the knee to any degree that is pain free.

Push against the ball making sure you keep the knee still. Hold x 5 seconds and then release slowly. Repeat x 8-12 times. Build up hold times and repetitions.

When you can do this exercise pain free, progress to the exercise in Fig 5.



# STRONGER ATHLETES GET FEWER INJURIES



Fig 5. Progress to static wall squat in pain free range x 5 second holds

## WALL SQUAT

Lean against a wall. Gently lower yourself in to a comfortable mini squat. You may not be able to fully take your weight on to the sore leg initially but gradually try to take your weight equally.

Build up the hold times each day. As it gets easier, increase the knee bend.

When you can do this exercise pain free, progress to the exercise in Fig. 6



Fig 6. Single leg wall squat in pain free range x 5 second holds

## SINGLE LEG WALL SQUAT

Gradually start to vary the degree of bend in your knee and take more and more weight on to one leg. Build up the hold times each day.

**THESE EXERCISES SHOULD NOT BE PAINFUL DURING OR AFTER YOU COMPLETE THEM.**

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