Don't Lose to the Top Seeds of Tennis Injuries

The sun is shining and the tennis season is upon us, inspiring many of you to get back out on court (if you're not already). Unfortunately this is also the time when we're most injury prone, and never is this more true than with tennis elbow, which tends to strike with sudden, unaccustomed use of the forearm.

Many people presume that tennis elbow is the number one tennis injury, and to those who haven't played regularly over the winter and who start with too much of a bang, it is a main contender. However, for regular tennis players (and many other people who lead active lives) the top seed in the injury rankings is the ankle sprain, so we're going to start with some advice on the immediate treatment of an ankle sprain before moving onto some helpful hints for both treating as well as preventing tennis elbow injury.

NO. 1 SEED THE ANKLE SPRAIN

The sudden sideways movements, quick lunges and changes in direction can cause the ankle to twist, particularly if the surface is slippery or the player is fatigued. A sprain is defined as a tearing or partial tearing of the ligaments that connect bone to bone and help stabilise the joint.

On the inside of the ankle (medial side), the joint is stabilised by a thick, strong fibrous ligament called the deltoid ligament. Sprains to this ligament are very uncommon. However, on the outside of the ankle (lateral side), the joint is stabilised by three smaller ligaments. Sprains to any of these ligaments (inversion sprains, foot twisting inwards) account for more than 80% of all ankle sprains.

Proven risk factors:

- Previous or existing ankle injury especially if poorly rehabilitated
- Lack of strength and stability related to the ankle
- Lack of, or extreme flexibility in the ankle (laxity or unstable ankle joint)
- Poor balance
- Sudden change in direction
- Increasing age of player.

Other risk factors:

- Poor condition of playing surface
- Inappropriate, inadequate, or no warm-up
- Wearing inappropriate footwear
- Lack of external ankle support (taping or bracing) for previously injured ankles.

Signs and Symptoms

A twisted ankle causes damage to ligaments and other soft tissues around the ankle. The damage causes bleeding within the tissues, which produces a swollen ankle that can be extremely painful. Swelling and bruising can move into the foot and toes, and even upwards above the ankle. Sprains are graded on a scale of 1 to 3 (mild, moderate, and severe), depending on the degree of tearing to the ligaments.

Treatment

Immediately after a sprain you should apply the PRICE protocol for 48-72 hours. The aim is to reduce the bleeding and damage within the joint. Get help from a physical therapist regarding this protocol, but essentially it stands for Protection, Rest, Ice, Compression, Elevation.

Most ankle sprains heal within 2 to 6 weeks; however severe sprains many take as long as 12 weeks. After the first 72 hours, physical therapy treatment may start with gentle mobilising of the joint to prevent stiffness developing, and gentle hands-on treatment to promote healing and reduce pain. Ultrasound and taping may be used to reduce swelling.

As soon as pain allows rehabilitation should start with a physical therapist. It is proven that good rehabilitation significantly improves the level of ankle function and minimizes the chances of the injury recurring. These treatments may include flexibility, balance, stretching, strengthening and sport-specific exercises.

Prevention

A physical therapist can help you with many of these things listed below which can reduce the chance of you having an ankle injury this season!

- General physical fitness, jogging or cycling. Injuries often happen when you are getting tired
- Gradually increasing the intensity and duration of training
- Undertaking flexibility, balance, stretching and strengthening exercises in weekly training programmes

- Including agility work in training programs so the ankle joint becomes accustomed to changes in direction
- Adequate recovery time between workouts or training sessions
- Warming up
- Wearing ankle taping or bracing especially for previously injured ankles
- Checking the training and playing area to ensure an even surface and no loose balls to trip over
- Wear firm, stable, well-fitting tennis shoes and pay attention to how the shoelaces should be tied. An ideal tennis shoe should have good shock absorption, sideways stability, grip and optimal comfort.

NO. 2 SEED TENNIS ELBOW

Overuse injuries most often affect the upper limb (elbow, shoulder and wrist) and are due to the high-velocity and repetitive arm movements required in tennis. The good news is that these injuries can often be prevented with some changes to technique, equipment and sometimes training routines.

Tennis elbow, also known as lateral epicondylitis, occurs in about 40% of all tennis players, generally more commonly in players aged between 35 and 50. Acute tennis elbow is an injury to the muscles and tendon that extend (straighten) the wrist and fingers. The site of the pain is typically the lateral epicondyle, a bony bump on the outside of the elbow where these muscles attach via the extensor tendon.

Symptoms

The tennis elbow sufferer will experience pain when performing gripping tasks or resisted wrist/finger extension. Pain can also be present when the muscles are stretched. There will be tenderness directly over the bony condyle and tender points (trigger points) in the muscles. Some people may also suffer from neck stiffness and tenderness, and signs of nerve irritation. Most elbow movements are pain-free despite the surrounding area being painful.

Causes

Acute tennis elbow is caused by damaged muscle tissue at the point it anchors to the arm at the elbow, also known as the 'extensor tendon'. It occurs when more force is applied to that area than the normal healthy tissue can handle.

For example:

- Unaccustomed hand use such as starting the tennis season too quickly (ie. playing too often for too long when re-starting the season)
- Excessive gripping or wringing activities, or possibly using a new racket or different grip size
- Poor forearm muscle strength or tight muscles
- Poor technique (such as a biomechanically inefficient tennis shot).

Chronic (or longer term) tennis elbow is associated with degenerative changes in the extensor tendon. Although a sudden acute flare of tennis elbow may have some inflammatory response and swelling, chronic tennis elbow is now known not to be due to inflammation. Chronic tennis elbow is associated with changes in the nerves and blood supply to the tendon, as well as changes in the actual tendon structure resulting in break down of the tendon tissue.

Tennis elbow should be diagnosed by a physical therapist or doctor. A history is taken and clinical tests performed. Referred pain from the neck and reduced nerve mobility can mimic tennis elbow. The physical therapist should check your neck and clear it from any involvement in your elbow pain. An ultrasound scan or MRI are the best tests to identify tendon damage although are usually unnecessary.

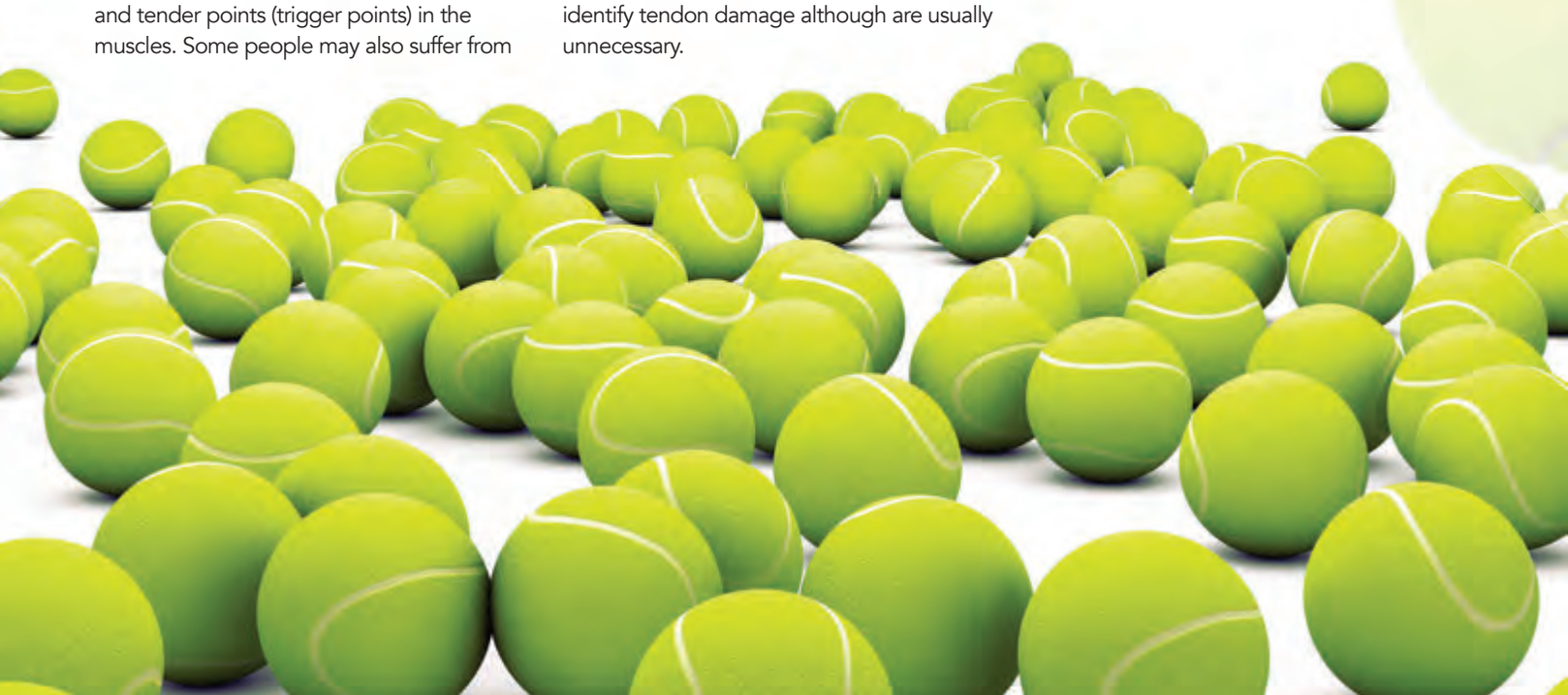
Treatment

Untreated tennis elbow can last anywhere from 6 months to 2 years. Physical therapy can however be very effective in both short and long term. Massage therapy will relieve pain and help lengthen and stretch tight muscles and structures. Manual therapy can mobilise joints in the elbow and around the neck to ensure normal function. Exercise therapy can be prescribed to strengthen and balance the muscles of the forearm; and stretches given to lengthen muscles and relieve pressure on nerves. Taping and braces are beneficial in reducing pain in the elbow and supporting the muscles when you return to sport. Ice and ultrasound therapy may be used to reduce inflammation. Dry needling can also be effective for pain relief, releasing trigger points in the muscle and promoting tissue healing.

Tennis elbow unfortunately has a knack of recurring. It's important to try and identify what caused the injury and address these issues, a physical therapist may also be able to help with this.

A quick note on grip size: Make sure your racket has the correct grip size and string tension to reduce stress on your elbow and shoulder. You should also pay attention to the size and weight of your racket based on your needs and ability. A professional can help you to choose the right racket. If the grip is too small you tend to squeeze the handle excessively to prevent it slipping or moving in your hand and this can overstress the muscles of the forearm and lead to tennis elbow. Check out this link for some guidance on grip size http://spxj.nl/2qvQ9F9

Talk tennis with your local physical therapist so you can play this season in Grand Slam form without any early retirements.



TENNIS ELBOW: Prevention and Treatment

If you have tennis elbow you can experience pain when performing gripping tasks or resisted wrist/finger extension. Pain can also be present when your forearm muscles are stretched. There is probably tenderness directly over the lateral epicondyle, the bony bump on the outside of the elbow, and tender points (trigger points) in the forearm muscles. In some cases you may also experience neck stiffness and tenderness, and possibly also signs of nerve irritation like numbness and tingling. Most elbow movements are pain-free despite the surrounding area being painful.

WHO IS AFFECTED?

You don't have to be a tennis player to suffer from tennis elbow. It is caused by the repetitive movements and the gripping actions common in tennis hence the term 'tennis' elbow. However, it may also occur in other activities requiring repetitive gripping actions. Tennis elbow can therefore stem from daily activities such as using scissors, cutting meat, carrying grocery bags, gardening, manual work that involves repetitive turning or lifting of the wrist, such as plumbing, or bricklaying, and typing.

ACUTE VS CHRONIC

Acute tennis elbow, also known as lateral epicondylitis, is an injury to structures involved in extending (straightening) the wrist and fingers at the site where the forearm muscles attach to the bone via the extensor tendon. It occurs when more force is applied to that area than the normal healthy tissue can handle.

For example:

- Unaccustomed hand use such as starting the tennis season, or increasing the frequency or amount of time playing tennis too quickly. Sometimes just a weekend of home DIY may trigger it
- Excessive gripping or wringing activities, possibly a new racket or different grip size
- Poor forearm muscle strength or tight muscles
- Poor technique (this may be a poor tennis shot).

Chronic (ie. longer term) tennis elbow is associated with degenerative changes in the tendon. While a sudden acute flare up of tennis elbow may have some inflammation or swelling, chronic tennis elbow generally doesn't involve inflammation and is instead associated with changes in the nerves and blood supply to the tendon.

Unfortunately, rest as a treatment is rarely helpful. If left untreated, tennis elbow can last anywhere from 6 months to 2 years and can have a serious affect on your sport, daily activities and work. Physical therapy is effective both in acute and chronic tennis elbow, and there are several things you can do to help in recovery and prevention.

TREATMENT

Tennis elbow should be diagnosed by a physical therapist or doctor. A history is taken and tests performed. Referred pain from the neck and reduced nerve mobility can mimic tennis elbow. The physical therapist must check your neck and clear it from any involvement in your elbow pain. An ultrasound scan or MRI are the best tests to identify tendon damage, but are often not necessary.

Physical or manual therapy treatments than can help include:

- Massage therapy to relieve pain and stretch tight muscles and structures
- Manual therapy can mobilise joints in the elbow and around the neck to ensure normal function
- Taping and braces are beneficial in reducing pain in the elbow and supporting the muscles when you return to sport
- Ice and ultrasound therapy may be used to reduce inflammation.
- Dry needling can also be effective for pain relief, releasing trigger points in the muscle and promoting tissue healing
- Exercise therapy should be prescribed to strengthen and balance the muscles of the forearm. While stretches help to lengthen tight muscles.

Other treatment options may include injections, which should only be considered if the exercises have not helped. Surgery can be carried out under local injection (subcutaneous tenotomy) with a 95% success rate and no reduction in grip strength.

You need to try and prevent tennis elbow from occurring or recurring, which unfortunately it has a tendency to do, which means finding out what caused the injury and addressing these issues with the help of your therapist.

Try the following modifications to the equipment causing your 'tennis' elbow:

- Use a lighter racket or one with a more flexible shaft
- Increase the racket grip size
- Use string vibration dampners
- Reduce string tension
- Increase the racket head size
- Play with newer balls
- Don't play with wet balls
- Use softer grip material.

These changes refer to tennis but some changes are relevant to tools/work equipment too. Always increase your work load or tennis time gradually, allowing your muscles time to adapt to the new demand. Conditioning your muscles and arm with specific exercises will go a long way to playing pain-free tennis!

TENNIS ELBOW

YOUR REHABILITATION PROGRAMME

This exercise programme has specific exercises to strengthen muscles around your elbow as well as improve muscle balance and flexibility in your forearm. In order to achieve proper rehabilitation of your injury it is important to ensure the exercises are performed with good technique. Poor practice may place potential strain on your injury.

GUIDANCE FOR STRETCHING EXERCISES

Hold all the stretches for 20 seconds each and repeat them five times.

PROGRESSION SPEED

Your therapist will advise you on the speed you should progress on the strengthening/movement control programme. Progression is not just about being able to do the exercise but to do it correctly, with appropriate control. Remember poor practice leads to poor performance and potential strain on your injury. If at any time you feel pain or discomfort stop the exercises and consult your therapist.

BALL SQUEEZE

Squeeze a small ball in your hand. Use this to strengthen your thumb and fingers. You can also use putty, a small towel, or other small squeezy items.

SETS	REPS

Video:
http://youtu.be/EMx8Ufccvik

RADIAL DEVIATION BAND

Hold an exercise band, and deviate your wrist to the side of your thumb, to create resistance in the band. This is a strengthening exercise for the wrist, forearm and elbow.

SETS	REPS

Video:
http://youtu.be/KNFV34MzMug

ELBOW FLEXION BAND

Stand on one end of an exercise band, and hold the other end, then bend your elbow. When you reach your end of range, let your elbow return to the start position in a controlled manner. This is a strengthening exercise for the upper arm muscle (biceps).

SETS	REPS

Video:
http://youtu.be/gCUCvmHOaL0

ELBOW FLEXION PRONATION BAND

Bend your arm to 90 degrees, and holding a band in your other hand, rotate your forearm to feel tension in the band. Your should feel resistance from the elastic as you rotate your arm from thumb inwards to thumb out position. Keep your elbow tucked into your side at all times. This will strengthen the muscles around the elbow.

SETS	REPS

Video:
http://youtu.be/w8AgmGRfcEA

FOREARM EXTENSOR STRETCH

Hold your arm out in front of you, straighten it, rotate your arm inwards (thumb down) and bend your wrist back. Don't shrug your shoulder. Hold this position to create a stretch. This exercise stretches the forearm Extensor muscles, and can help with tennis elbow pain and other repetitive strain injuries.

SETS	REPS

Video:
http://youtu.be/gRmAdcJvGJ0