

TENNIS INJURIES don't be a statistic



TENNIS AND INJURY HAVE BECOME SYNONYMOUS – ESPECIALLY IN SOUTH AFRICA. PLAYERS ACCEPT THIS AS PART OF THE GAME AND CONTINUE AS IF THERE ARE NO REPERCUSSIONS FOR CONSTANTLY PLAYING IN STATE OF PAIN. BUT THERE IS A PRICE! THE PRICE VARIES FROM EVER-DECLINING TENNIS ABILITY TO SURGERY (OFTEN BEFORE THE AGE OF 16). MY FRUSTRATION WITH THIS SCENARIO IS THAT 70% OF INJURIES SUSTAINED BY TENNIS PLAYERS ARE PREVENTABLE. THIS ARTICLE WAS WRITTEN WITH THE INTENSION OF EDUCATING PLAYERS WITH REGARDS TO INJURY PREVENTION AND MANAGEMENT.

Why are tennis players so prone to injury?

Any player wishing to succeed in this game has to put in the hours – countless hours. Research suggests that it typically takes 10 000 intensive training hours to develop a talented player to elite levels. Over and above the endless hours of practice, players are also required to perform rigorous supplementary training (strength, endurance, speed etc.). The pressures of ongoing competition, the asymmetrical nature of the sport and erratic court surfaces places even more of a physical toll on the body.

Not surprisingly the imposed stresses eventually surmount and

exceed the body's ability to recover and adapt resulting in injury. When injury will strike is impossible to predict, but what is apparent is that it is normally during phases of increased psychological and physical stress. Competitive periods are therefore when players are most at risk.

Professional players have long recognized this phenomenon. In fact, professional tennis players are one of the only groups in the athletic world that travel with a personal therapist/trainer. This essentially means that they will receive treatment on a daily basis for up to 30 weeks a year.

You may ask yourself whether or not this may be a bit extreme and if this is really necessary? According to Davis Cup captain/coach **John Laffnie De Jager**, it is more important to have a trainer/therapist (25-30 weeks) traveling with a professional player these days than a coach (15-20). His reasoning behind this is that the margins at elite level are so fine that any physical limitation (pain or poor fitness) has enormous negative repercussions. Federer is a perfect example of this philosophy. His trainer is with him full-time and his coach (Tony Roach) will only travel to grand slams and masters series events.

Surface type	Characteristics/demands on player	Most probable sites of injury
Clay	<ul style="list-style-type: none"> – Long matches > need for good physical preparation/nutrition – Long points > good strength endurance, power endurance – Baseline game (60% of points are played off the baseline) > good lateral movement essential – High bouncing ball – Need for good rotational strength – Need for high levels of leg strength 	<ul style="list-style-type: none"> – Shoulder – Elbow – Wrist – Abdominals – Lower back
Grass	<ul style="list-style-type: none"> – Lower bouncing ball > requires good player flexibility – Short points (1.5-5 sec on average) > requires faster player reaction times, hand eye coordination – Greater balance demands – Difference in ground reaction force > more yielding > more inclined to muscle related injuries 	<ul style="list-style-type: none"> – Lower back – Hamstring – Groin – Hip – Calf/lower limb
Hard (does vary)	<ul style="list-style-type: none"> – Very damaging on players bodies > high incidence of joint related injuries – Suits players who can express power effectively > good athlete – Suits players who are physically balanced and adaptable > good alignment and muscle balance – Suits players with good movement skill and proficiency > need for great footwork 	<ul style="list-style-type: none"> – Shoulder – Lower back – Knee – Thigh

How do the injuries in tennis differ from other sports?

Two thirds of the injuries that occur in tennis are as a result of overuse. This differs from many other sports such as rugby, soccer or hockey where physical contact and/or equipment are major contributing factors.

Although there are many influences in the development of an injury in tennis, one of the primary causes is that the human body is **not well suited to repeating the same movement**. Constant repetition of movement (such as repeated forehands etc.) is known to disrupt joint function, resulting in tissue (muscle, tendon etc.) damage and over time **structural deformity**.

The problem here is that success in tennis is completely dependent upon repetition. So practice makes perfect, yet practice induces pain? Seems a bit unfair doesn't it? This is where prophylactic (preventative) exercise is useful. Naturally the prescription of such exercises requires a specialist in sports therapy.

The most common injuries

This is a question that is posed to me on a daily basis. Common sense suggests that the knees and ankles would be prime sites of injury owing to the stop-start nature of the game. Based on statistics, the shoulder is the most frequently injured joint in the sport. This is followed closely by the lower back. Wrist, elbow, knee, ankle and hip injuries are also common.

Surface type and influence on the player

Certain surfaces predispose players to particular sites of injury. The following chart illustrates the defining characteristics of each of the major surfaces as related to the physical demands and the impact thereof.

Injury – expected recovery time

Once an injury has surfaced it is impossible to predict how long it will take to recover. Variances range from a few hours to

years! Reasons for this include individual differences in age, physical health, genetics, site of injury, severity, etiology, treatment history and nutrition. Having said this, what is important is receiving immediate attention.

The shoulder – the weakest link

Due to its prevalence and high rate of reoccurrence, I have chosen to focus on some key exercises to assist in prevention of shoulder injuries.

A contributing factor in the high injury rate, is the speed the shoulder joint reaches – especially during the serve. The shoulder joint has been shown to internally rotate at approximately 2500° per second during the serve in professional players. When you consider that the average exercise in the gym will reach joint speeds of 60-90° per second, it puts things in perspective.

4 easy steps to healthy shoulders

STEP 1:

Ensure optimal muscle flexibility. Key muscles to focus on are: Pecs, Latissimus dorsi, shoulder lateral rotators (part of the rotator cuff)

[1a] Swiss ball lat stretch:

Kneel on the floor with a 65cm Swiss ball placed in front of you. Place hands on ball facing down. Ensure that your elbows are extended. Sink your buttocks to your heels and move the ball to the side. Maintain your head position and hold for 30 seconds. Move the ball to the opposite side. Repeat 2-3 times.

[1b] Swiss ball pec stretch (emphasis on the pec minor):

Get onto all-fours with a Swiss ball placed next to you. Flex elbow to 90° and place the arm on the ball. Ensure that the shoulder is firmly supported by the ball. Extended the leg on the same side and “drop” your body weight into the stretch. Hold for 30 sec. Repeat on other side and perform 2-3 times.

[1c] Lying shoulder lateral stretch

Lie on your side. Your head should be supported by a towel or pillow. The shoulder is at 90° and elbow flexed to 90°. Use your opposite hand to gently apply downward force. If performed correctly the stretch will be felt at the back of the shoulder. Hold for 30 sec. Perform the stretch on the opposite side and repeat 2-3 times

STEP 2:

Ensure nerve extensibility. Poor elastic properties of the nervous system can often lead to pain and movement dysfunction. Part of every tennis player's daily routine is to ensure good mobility of this sensitive system.

The following exercise serves a gentle mobilization technique.

Look at hands

The exercise is performed in standing. Extend your arms to the side, one palm facing up and the other facing down. The head is turned in the direction of the palm that faces upwards. Turn the head and change the hand position. Repeat 20 times. 2 times daily

STEP 3:

Improve function of the local stabilizers. These important muscles are responsible for maintaining proper rotational mechanics of the shoulder joint and ideal levels of joint “stiffness”. Tennis players are often lacking in strength and control in these key muscles and should therefore perform these exercises on a regular basis.

[3a] Standing shoulder external rotation with band (strengthening exercise for the Infraspinatus and teres minor)

For this exercise you will need some exercise band/tubing. The exercise is performed in standing. From a position of good body posture the elbow is flexed to

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1a



1b



1c

FACT: 50 % of shoulder injuries will recur!

Tip – Making rational decisions as you do is vital in sports.

F = Feeling – You make decisions more from the heart than the head.

Tip – Focus on the process not the result. The more you love and enjoy this game, the better your ability to keep matters in perspective under pressure.

HOW YOU CHOOSE TO LIVE YOUR LIFE

P = Perceptive – You are open ended in your approach to sports and life – Play first, work second. You adapt well to changing variables (which suites you well out there on the court.) Sometimes your spontaneous practice habits drive those around you nuts.



Next issue will show the training techniques of a top US Junior player preparing for the French open.

Tip – You love the action – the hands on stuff. You hate repetition. Repetition is the mother skill of all tennis players.

J = Judgmental – You are driven to closure. You like to be organized and probably work harder than most tennis players around you. You respond well to patterns of play.

Tip – you sometimes miss the cues from your opponent that would tell you exactly how to react because you are in too much of a hurry to make a

decision. Don't get ahead of yourself. Relax and enjoy the sport as much as you can. Stay loose and breath

Try www.Braintypes.com for their online questionnaire.

“Realizing the advantage of awareness sensates have, I endeavor to develop sensing in all my players.”

.../continued from page 27

90° with the palm facing inward. Maximally rotate the arm in an outward direction without compromising body position in any way. The feeling is best described as the shoulder “spinning in the socket”.

Perform 20-30 reps in a slow controlled manner and repeat on the opposite side. Perform 1-3 sets as tolerated. Don't allow technique to deteriorate.

[3b] Lying internal rotation (strengthening exercise for the Subscapularis muscle)

The exercise is performed lying on your stomach. A rolled up towel is placed under the shoulder and the head is

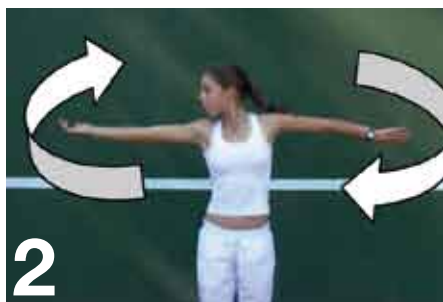
turned to the side, facing the active arm. Flex the elbow to 90° and ensure that the elbow is in-line with the shoulder. Keep as much of the shoulder on the bench as possible. Rotate the shoulder so that the forearm moves towards the head. Care must be taken not to compensate with the shoulder blade muscles or neck. “Spin” the shoulder in the socket. Perform 20-30 reps in a slow controlled manner and repeat on the opposite side. Perform 1-3 sets as tolerated. Don't allow technique to deteriorate.

STEP 4:

Promote good posture. Good posture is a state of muscular and skeletal balance which

protects the supporting structures of the body against injury or progressive deformity. Interestingly enough shoulder injuries are often a result of poor **posture** and movement emanating elsewhere in the body. The neck, shoulder blades and middle back exert the biggest influence in this regard.

The exercise can be performed off the floor or on a Swiss ball. Lie n your stomach with the hands by the sides. Your feet should be together and your hands placed by your sides with the palms facing up. Lift your chest off the floor or ball and rotate your arms so that your palms face down. Hold the position for 30 seconds. Repeat 2-6 times as tolerated without compromising form in anyway.



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