

The Tennis Player's Posture – The Value of Balance

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You are probably aware that tennis is a one sided game in terms of dominant hand and you have probably readily accepted that imbalance is prevalent in the tennis player? Have you noticed that the common process is that tennis players are expected to have imbalances as if to say it supports the game they play? I would like to show the downside of imbalance and the value of balance and that actually one does not need to be imbalanced just because you play tennis.

Posture forms an important part of therapeutic processes, something for yogis, Pilates, osteopaths and physiotherapists, right? **Wrong!**

Hiked left hip creating lengthened abductors compared to the right and will reduce movement potential in moving to the backhand side (right hander) and hinder the actual stroke itself and will give rise to limited tactical options. Consider as a coach and/or trainer how the game of tennis is evolving and notice that players require that extra edge and efficiency in their movement to remain at and reach the highest level.

The tennis player adopts a posture that reflects the way in which the player functions most of the time but the question really is, does this newly adopted posture mean maximum output of strokes, tactics, mental approach or total performance?

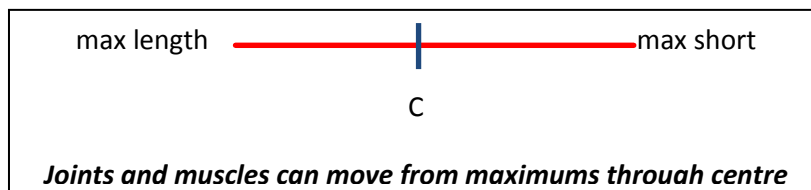
The “tennis player posture” could be in fact detrimental to the performance of the tennis player not only in how they actually function in stroke production but also how they develop mindsets and tactics which can depend on how they perceive their performance and capabilities. For example, a player may believe that their backhand is not capable of hitting certain shots in certain situations and so adopts defensive mindsets and tactics to “cope” with an opponent who tries to exploit the backhand as opposed to being more proactive. This could be due to the player not actually being able to access the required movements to hit effective backhands in given situations and the mindset and tactical approach therefore being reactive and negative.

The premise

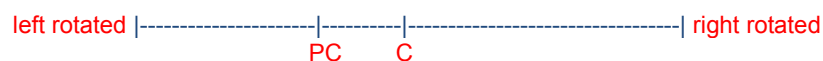
In an ideal situation optimum output and performance relies on there being zero tension in the system (musculoskeletal system) but muscular imbalance gives rise to tension being present. Tension is where a muscle is lengthened and should there exist tension in the system it follows that there will be limited access to the complete range. Not only this, but it is highly likely there will be tension distributed elsewhere in the system with other muscles in lengthened states as a result of adopted joint positions. If a muscle is lengthened then muscles must also be shortened to compensate as the body works out a way to function.

For maximum performance, function, output it is logical to suggest that joints and muscles require full access to the complete, ideally available range and therefore the system is required to be in a zero tension resting state, i.e. BALANCED, which also implies that joints must be optimally aligned.

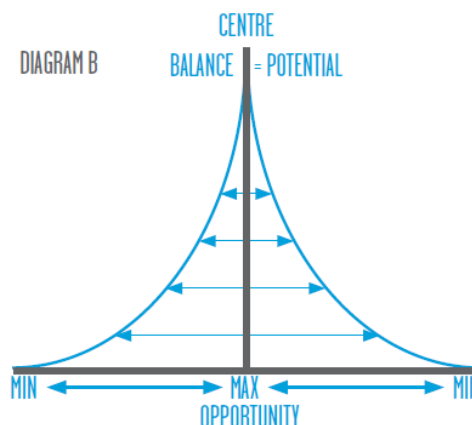
In this perfect, ideal, often theoretical posture the joints and muscles have full potential in that they can access maximum lengthened and shortened states. Centre refers to the position in which joints and muscles move away from, and through, in their maximum range and would come to zero motion or rest (if rest was actually possible) in centre (C), centre is the ideal and offers maximum potential.



However, through the imbalanced nature of the game of tennis we inflict imbalance onto the body and adopt this new posture as our now perceived posture or perceived centre (PC). Check one of your player's pelvic alignments in the transverse (rotation) plane; it may be rotated in one direction more than the other leaving a perceived centre shifted in favour of the rotation.



The majority of joints have 3D potential and joint actions are coupled together to form the kinetic chain. This gives rise to the potential of tension being present in variety of sites in the chain as joints are misaligned in 3D. Now there is a real mess and it seems logical to suggest that performance is seriously hindered.



(Ward- what the foot)

The kinetic chain is a series of joint actions coupled together to produce whole actions and therefore the system must be considered as wholly and integrated. Where there is imbalance and tension present in the system the body will work out a way to perform the action. This is not efficient or maximising output just putting the body under extra stress.

In tennis stroke production it is commonly said that the force is generated from the ground and transmitted through the body to the racket. The feet interact with the ground and the body sets up in a manner best suited to do this. The ability of the foot to pronate and absorb force allows for greater and more efficient knee flexion which is coupled with hips, pelvis and spinal actions further up the body. These actions carry muscle loading capabilities which would be limited if the joints are misaligned. Therefore in addressing posture and motion, the complete impact on each joint must be considered. What would be the outcome if there is tension present? Simply put, not as good as it

could be. Furthermore force transmission is at its optimum when there is reduced time lag between joint actions and that the transfer is seamless. To achieve this each joint must be optimally positioned in order to allow appropriate, balanced range of muscles.

The Tennis Players' Posture

As previously mentioned, Tennis is an asymmetrical sport and this is reflected in the postures that players carry. The player pictured (right) is right handed and it is clear to see that the shoulder complex and the scapula have adopted a new posture in that the seemingly the right shoulder has dropped in the frontal plane. There also seems to be a discrepancy in the length of the arms due to this drop as seen in the top, right hand image. This adopted posture is due to the stresses and strains of tennis namely hitting a favoured forehand more often, stretching up on the serve and reaching across for the backhand take back. The question, is this adopted posture, perceived centre reducing his output? I am suggesting a massive YES.



Due to the sub optimal position of the scapula and shoulder complex there must be tension throughout the system and in order for the body to effectively function it has altered its makeup. If we follow through and test positions of other joints we will see that there are indeed other imbalances. In this case the player also had a hiked left hip creating a lengthened hip flexor compared to the right and a rotation to the right side and in addition to all that there is relative difference in the foot postures, right foot more pronated than the left. There could also be spinal deviations such as lateral flexions to compensate for the misaligned scapula and possibly rotation of both the spine along with the pelvic rotation to compensate for the internally rotated shoulder.

From the rear view the relative scapula positions can clearly be seen but let's compare this with another tennis player who is a few years older and with much more playing hours. In this image (left) it is



seemingly the right shoulder that is higher (right handed also) and the left shoulder dropped but a much more evident rotated pelvis (to the right). If you were to try and exaggerate these postures what happens in other parts of the body such as the feet, spine and neck? It feels weird and wrong to be in these places and the distribution of tensions throughout the body will facilitate some motions, albeit with sub maximum output also and limit others.



Imbalances allow access to movement to one side more than the others, and yet moving from a tensioned state versus a balanced state always inhibits any motion either way

What does this mean for the player?

This could mean many things for the tennis player. Firstly, as previously mentioned there is tension in the system and so maximum output cannot be achieved, even that massive forehand could be better in terms of power, control, ease of execution, fluidity, access to adaption (flights, spins, speeds) etc. It also means that certain movements would be hindered. Movement out to the backhand, rotation of the upper body, extension of the hip, engaging the lower body to develop force are a few examples. **Consider why a player seems to collapse on the serve? Could a hip hike and pelvic rotation play a role in collapsing?** Linking this to tactical intentions players will find that they are tactically limited to what they are capable of and once again not reaching maximum performance.

There is of course, as I am sure some of you who have got this far are thinking, an increased injury possibility as opponents exploit weakness and matches become more and more gruelling if tension and imbalances are present.

What if it was possible to find centre, have a balanced body with optimum access to all ranges with more efficient muscle function and no compromise on joint health or mobility? Maybe this is an ideal but wouldn't it be great to get somewhere near this state of perfection?

When a player can play his ordinary game from closer to centre everything will improve. Serves are harder, defense is stronger, court positions are better, tactical intentions have greater effect more frequently and more consistently with the player having less pain/injury issues, allowing improved training and development. Now, why wouldn't a player want this?

As coaches and trainers we must consider and accept that the game will evolve and that players will have to become more and more competent. Our young players will be facing a game that will challenge them further and require the body to handle more. Will they be ready for this? I am going to go as far as to suggest that the top players in the world today have postural imbalances and are therefore not operating at peak performance. Is it possible that the weapons of Nadal, Djokovic, Wimbledon champion Andy Murray and even the elegant Federer all have tension in their systems and are not operating at max potential? I fear it is and that even they could all be that little bit better, imagine that!

From a total development point of view a player must be able to move through a real centre, away from it, towards it, out the other side and back again. The ideal is that a player can move in this manner in an infinite amount of combinations creating maximum adaptability and potential. If a player amounts this potential with the development of the required skills the results will be magical. Simply working on skills is a sure way to inhibit potential and equally, moving well won't allow someone to play like Andy Murray. One without the other is incomplete.

The bar is always being raised and players need to be equipped to keep up with new rates of developmental acceleration, increased demands on training and an ever increasing standard in the battle field. I'm sat thinking about how it's the finer details, that extra millimetre that will make the difference. It's not shoes, strings or rackets. It's easier found in the body's ability to move better, more efficient in strokes, more efficient in positioning, more possibility tactically and mentally. **The combination of efficient movement and game training is the key to huge potential, perhaps more than you thought.**

If you have questions about this article or want to find out more about the approach please do not hesitate to contact Mike Crooks – The Tennis Engineer (details below).

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