



# Laterality in tennis.

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## ABSTRACT

The purpose of this article is to present an overview of laterality and its influence on tennis strokes. Laterality refers to the preference of the human being to use one side of the body instead of the other one to perform different activities. This preference is present in daily activities when we write, play tennis and so on. Everybody prefers to perform activities with one hand, one arm or one leg in particular.

**Key words:** Laterality, Ambidextrous, Dominance.

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## INTRODUCTION

Laterality has recently interested many coaches. As regards tennis, research is still at an early stage of development and it will take some time to gather more scientific research on this matter. The brain is a complex machine made up of two hemispheres between which a great communication is necessary for any kind of motor activity. The left hemisphere, among other things, controls the right part of the body, while the right hemisphere is responsible for the left part of the body. Although the brain receives visual and auditory information in both hemispheres simultaneously, there is a preference to use one eye or one ear over the other one. It is still uncertain when the individual acquires a right or a left dominance. There are explanations based on genetics, on tests made at birth, and others that consider that the social and family background have a significant impact on laterality. But, laterality is acquired at pre lateral stages just as shown in Table 1.

fundamental part. Rigal (2012) states that “with the lack of appropriate stimulation, available at certain ages, nervous cells do not evolve and nervous circuits do not achieve their maximum functional value”. The lack of a good physical education in early development stages (3-10 years) has a direct impact on the motor coordination capabilities and laterality of the individual.

## LATERALITY AND TENNIS

Tennis related research has concluded that there exist some parts of the body like eyes, shoulders, arms, hip, legs and feet that have a certain laterality and are very important when moving, hitting, turning and getting a greater space temporal perception of the body and the environment.

The different types of tennis specific laterality are summarised in Table 2.

Name of the stage	Characteristics
Mono-laterality	Period between birth and 6 months old. There is no relation between one side of the body and the other one. This stage is marked by the tonic reflection of the neck.
Dual laterality	Period between 6 months and one year old. Asymmetric functioning between both sides of the body but no relationship between them. The child works on the middle line of the body but does not go beyond.
Contra-laterality	1-6 years old. Coordinated and voluntary but asymmetric function. Motor control, posture balance and motor coordination are developed. Both hemi-bodies work exactly the same way. It is at this point that preferences of one side of the body over the other one occur.
Uni-laterality	After 6 years old. Final process in which preference becomes dominance.

Table 1. Development of laterality stage (Caña & Sánchez, 2003).

During the process of growth of the human being, laterality is one more element of the individual and it will always exist as a

Type of laterality	Description
Homogeneous	When the dominant eye and the hand used to play tennis are on the same side.
Crossed	When the dominant eye and the hand used to play tennis are in different sides.
Inverted	When a right handed or left handed player has learnt to use his/her non-dominant hand to play tennis.
Ambidextrous	When the dominance of both hands is not defined and a player can use both hands to play tennis relatively easily.

Table 2. Different types of laterality in tennis.

The coach or trainer must determine their players' laterality. There exist various tests which are described below:

Ocular laterality: Hold a sheet of paper with your hands. Make a 0.5 cm diameter hole in the centre of the page, focus your eyes on a certain object, stretch your arms holding the paper, look at the object through the hole. When you can see the

object through the hole, close first one eye and then the other one. The eye that sees the object will be the dominant eye. Another way of doing this is when approaching the paper to the face, the hole goes to a particular eye, this eye will be dominant.

Laterality of the shoulder: The player stands facing a wall, his feet parallel to the wall. His hands on the wall with stretched arms. The coach stands behind the player and throws a ball for him to turn without moving his feet from the ground. If the player turns left, his laterality is right, if he turns right his laterality is left.

Type of laterality	Influence on tennis strokes
Homogeneous (considering the foot and the hand)	<ul style="list-style-type: none"> <li>•Better sense of direction towards the backhand side.</li> <li>•Tends to use extreme grips like an extreme western</li> <li>•Tends to hit the forehand late.</li> <li>•Feels comfortable hitting a sliced return.</li> <li>•Turns his body quickly to hit a forehand.</li> <li>•Hits the forehand better from an open stance.</li> <li>•Hits the backhand in front and with the centre of the racket.</li> <li>•Can hit the backhand from closed positions.</li> <li>•He structures his tactics and is fond of planning.</li> <li>•He plays from the baseline and sometimes counter attacks.</li> <li>•He plays a down the line forehand and a cross-court backhand.</li> <li>•He has no problem with the one handed backhand.</li> <li>•He is a regular player</li> </ul>
Crossed	<ul style="list-style-type: none"> <li>•He has a better sense of direction from the forehand.</li> <li>•He is a player who attacks.</li> <li>•He tends to hit a late backhand.</li> <li>•A better two handed backhand.</li> <li>•He feels more comfortable hitting a down-the-line backhand and a cross-court forehand.</li> <li>•He does not use extreme grips.</li> <li>•He is better hitting the backhand from an open or semi-open stance.</li> <li>•He can hit the forehand properly from a square stance.</li> <li>•He tends to play forward or inside the court.</li> <li>•He is a creative but irregular player.</li> </ul>
Shoulder laterality	<ul style="list-style-type: none"> <li>•Right shoulder (natural turn towards the left), left shoulder (turns more naturally to the right).</li> <li>•Right handed player with a right dominant shoulder (or a left handed player with a left dominant shoulder).</li> <li>-It facilitates the open stance forehand.</li> <li>-It facilitates the rotation of the body in service.</li> <li>-It does not facilitate an open backhand.</li> <li>•Right handed player with a left dominant shoulder (or the other way about).</li> <li>-It facilitates the open stance backhand.</li> </ul>
Laterality of the hip	<ul style="list-style-type: none"> <li>•Right handed player with a right dominant hip (or a left handed player with a left dominant hip).</li> <li>-It facilitates the open stance forehand.</li> <li>-It facilitates impulse and rotation of the body in service.</li> <li>-It facilitates lateral movement (recovery) after hitting a forehand (if he is right handed) or a backhand (if left handed) at the time of crossing the step and recovering.</li> <li>•Right handed player with a left dominant hip (or the other way about).</li> <li>-It facilitates a backhand in open stance.</li> </ul>
Laterality of the leg	<ul style="list-style-type: none"> <li>•Right handed player with a left dynamic leg (or a left handed player with a right dominant leg).</li> <li>-Facilitates a powerful service with a separate stance.</li> <li>-It facilitates the backhand impulse in open stance to transfer the force of the ground.</li> <li>-It could not transfer the weight of the body from the left leg (dominant) to the one in front in the backhand with a closed stance.</li> <li>-It could transfer the weight of the body from the back leg (non dominant) to the one in front in the forehand with a closed stance.</li> </ul>

Table 3. Influence of the different types of laterality in tennis strokes.

Manual laterality: We will consider dominant hand the one the player uses to play.

Laterality of the hip: The player stands with his hands on his waist and his feet shoulder width apart. Then, he will jump and make a 360° turn without moving his hands. He will turn right and left. If he finds it easier to turn right in good balance he will have a left laterality, if his balance is better when turning left, he will have a right laterality.

Laterality of the leg or the dynamic leg: The player makes a scissors jump with both legs stretched, jumping on a not very high object. The player will tell the coach which leg he jumps more comfortably with. The first leg to go up will be the dynamic or dominant one.

Laterality of the foot or leading foot: It is the foot that will preferably be used to kick a football.

Table 3 summarises the influence of each type of laterality in tennis strokes.

CONCLUSION

Even though research on this subject is still at an early stage, we know that the non-dominant side of the body can be improved by means of appropriate training. Even though in professional tennis no laterality can guarantee a better performance, coaches should know more about it in order to be able to help their players to provide more accurate and appropriate responses to the demands of modern tennis.

REFERENCES

Caña, P. y Sánchez, M. (2003). Influencia de la Lateralidad en los Problemas de Aprendizaje.

Domínguez, G. (2010). La lateralidad en el tenis y sus consecuencias como deporte asimétrico. Revista digital. Buenos Aires.

Dorochenko, Pl. (2005). El ojo físico y el ojo mental. Curso de formación interna Global Tennis Team.

Garipuy, C. (2001). El uso de la lateralidad en el entrenamiento del tenis. ITF CSSR, 9, 23.

Holtzen, D. W. (2000). Handedness and professional tennis. International Journal of Neuroscience, 105(1-4), 101-119. <https://doi.org/10.3109/00207450009003270>

Huyberechts, J. (2006). Psychomotor control by expert and non-expert tennis players.

McManus, I. C., Porac, C., & Bryden, M. P. Boucher. R.(1999). Eye-dominance, writing hand and throwing hand. Laterality, 4(2), 173-192. <https://doi.org/10.1080/713754334>

Rigal, R. (2012). Bases teóricas de la psicomotricidad. Universidad de Quebec. Canadá.

Vicencio, E. (2014). Preparación física para el tenis. Dirección Nacional de Tenis. Documento Técnico nº 5. Federación Mexicana de Tenis.

Zierof, P. & Porta, J. (2006). La lateralidad, un factor biológico más, Revista Slice, año 3, nº 14.

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