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ITF coaching & sport science review

The official coaching and sports science publication of the International Tennis Federation

editorial

Welcome to issue 23 of the *ITF Coaching & Sport Science Review* – the first issue of 2001.

During the last few years, the Tennis Development Department of the ITF has been producing educational materials for tennis coaches in different languages: primarily English, French and Spanish. Our objective in doing so was to make it easier for our ITF Member Nations to educate and certify the coaches in their country. The ITF Syllabi for coaches (Level One and Two) are now being used by over 90 countries worldwide and the ITF coaching materials have now been translated into Chinese, Russian, Portuguese, Italian, Czech Arabic, Japanese, Thai, and Parsi among others.

The Coaching Departments of several of the top tennis nations also produce high quality materials that comprehensively cover many aspects of coaching and sports science. We have also tried to utilise this excellent material from our more developed tennis nations by informing coaches through our Recommended Books and Video section of *ITF Coaching & Sport Science Review*. In some cases we have encouraged the translation of books and videos to make them accessible to more coaches. For example, we are currently in the process of assisting financially with the translation of the French Tennis Federation's mini tennis and technique videos into English.

In the eight years since starting to take a more proactive role in coach education, we believe that coach education worldwide has developed a great deal. However, this would not have been possible had it not been for the cooperation of the people responsible for coach education in the most developed tennis nations who have shared, and in many cases allowed, the ITF to use their material. We would like again to highlight the excellent work of our Coaches Commission members who continue to assist us with our coach education programme. For your information the members of this commission for the period 1999-2001 are: Ismail El Shafei (Egypt-Chairman), Louis Cayer (Canada), Alejandro Hernández (Mexico), Carlos Kirmayr (Brazil), Doug MacCurdy (USA), Nick Saviano (USA), Amine Ghissassi (Morocco), Frank van Fraayenhoven (Netherlands), Bernard Pestre (France), Ivo van Aken (Belgium), Anne Pankhurst (Great Britain), Ann Quinn (Australia), and Toru Yonezawa (Japan).

The highlight of our coach education programme is the 12th ITF Worldwide Coaches Workshop that is due to be held later this year in Bangkok, Thailand. It will be the first time that this educational forum is held in Asia and the dates for this event are Saturday, October 27 to Friday, November 2. We will include a programme of the workshop in the August issue of *ITF Coaching & Sport Science Review*.

You may also be interested to learn that the ITF has created a new website for junior tennis. It is being officially launched during the Australian Open and those of you involved with the coaching of junior players should try to view this dynamic new website on www.itfjuniors.com

Within this issue, you will also see that we are beginning to charge coaches for *ITF Coaching & Sport Science Review*. The number of coaches worldwide requesting to be placed on the mailing list has grown so appreciably over the past 2 years that we have had no other option. Details of the new system for subscribing to the magazine appear inside.

We would like to remind you that our review is available in the "Coaches News" section of the ITF website, www.itftennis.com. A final thanks to all the coaches and experts who have contributed articles for this issue.

We hope you enjoy the 23rd issue of *ITF Coaching & Sport Science Review*.

Dave Miley
Executive Director, Tennis Development

Miguel Crespo
Research Officer, Development

Delegates at the ETA Coaches Symposium in Otocec, September 2000.

contents

it's about time

By Howard Brody, Professor, Physics Department, University of Pennsylvania

TIME is the crucial element in a tennis match and most players do not seem to realize it. Almost everything you do when you are trying to win a point is based on an attempt to control TIME. You always try to reduce the TIME your opponent has to get to a ball or hit a ball. You usually attempt to give yourself as much TIME as you need when you are going to hit the ball. In each of the cases listed below, you will see how your attempt to control TIME has determined your choice of what strategy to use and how you play. You do these things to win points, without ever realizing that what you are doing is attempting to control TIME.

Q) Why do you try to hit the ball hard in tennis in order to win more points?

A) You know that the harder you hit the ball, the smaller are your chances of that shot landing in the court. This is because of two distinct reasons. When you swing harder, you have less control over your racket and when the ball speed off of your racket is increased, your "window" for the shot being good is reduced. But hitting the ball harder also reduces the TIME your opponent has to get to your shot and to return the ball. If your opponent does not have enough TIME to get to your shot, the result is a winner for you. The less TIME your opponent has to prepare for a shot, the more likely it is to result in an error or a weak shot. On a groundstroke, if the ball leaves your racket at 50 mph, your opponent has almost 1½ seconds to get to it and return it. If the ball leaves your racket at 70 mph, your opponent has about a full second to get to it. This difference of half a second is quite significant and it may not allow your opponent TIME to set up and hit a good shot.

Q) Why do you pounce on short shots your opponent has hit? Why would you come in and hit a ball on the rise, even though it is a much tougher shot to hit and it does not produce an appreciably higher ball speed off of your own racket?

A) Moving in and taking the ball early reduces the TIME your opponent has - both the ball round-trip TIME between his/her swing and the return and also the TIME between your hit and the ball getting to the other baseline. The total TIME is important, because if it is too short, your opponent may not have had TIME to get back into position. Remember, when you hit a winner, it means your opponent did not have sufficient TIME to get to it. If the ball leaves your racket at 60 mph, just moving your hitting point from 5 feet behind the baseline to 5 feet inside the baseline will reduce the TIME your opponent has from 1.28 seconds to 1.04 seconds. This is a quarter of a second less that your opponent has to play the shot.

Q) Why do you try to get to net to win points?

A) Getting to the net allows you a larger angular range for your returns and it greatly reduces the amount of TIME your opponent has to get to your return. Those are the reasons why you can hit so many more winners when you volley from inside the service line, as compared to hitting groundstrokes from the baseline. When you are at net, it essentially reduces the TIME your opponent has by half, compared to the TIME your opponent has for a groundstroke hit from the baseline.

Q) Why do you try to hit your shots deep in the court (bounce near the baseline on ground strokes, the service line on serves), when doing so increases your chances of making an error (your ball going long)?

A) Hitting shots deep reduces the TIME your opponent has to hit the ball, since the ball slows down when it bounces. When a ball bounces short, it takes that ball an extra 0.1 seconds to get to the baseline, compared to a ball that has bounced near the baseline. When your shot bounces near the baseline, unless your opponent retreats, it gives your opponent less TIME to hit the ball after the bounce. As an example, if the ball leaves your racket at 60 mph, for every 4½ feet closer to the baseline it bounces, your opponent has ⅒ of a second less TIME after the bounce to react. If your opponent does retreat well behind the baseline to obtain more TIME, you then receive much more TIME to get to his/her return. It is very difficult to hit a winner from well behind the baseline - the ball just takes too much TIME in its flight. Hitting the ball deep also gives you more TIME to get to and to react to your opponent's return of that shot.

Q) Why don't drop shots work well when you hit them from behind the baseline?

A) Drop shots don't work well when you are hitting from the baseline region because your opponent has more TIME to get to them, compared to the TIME your opponent has when you hit a drop volley or a drop shot from well inside the baseline. When hitting from behind the baseline, it is also harder to try to keep your ball's trajectory short, because when you are hitting from that position, you must give the ball

more forward velocity to make it go over the net.

Q) Why should your approach shot (and volley) be deep?

A) Approach shots and volleys should always be hit deep because it forces your opponent to hit from behind the baseline, which gives you more TIME to react and cover more of the net. If you can force your opponent well behind the baseline, you will be able to crowd the net and not be passed - you will have TIME to cover both down-the-line and crosscourt shots. If your opponent lobs, it gives you more TIME to get back under the ball.

Q) Why is a topspin lob more effective than a backspin or flat lob?

A) You can hit a topspin lob with much more forward speed (and still have it go in) compared to a flat or backspin lob. This gives your opponent at net less TIME to get back and cover it. On the bounce, a topspin lob tends to not lose much speed, where a normal lob will lose 40% of its forward speed on the bounce. Your opponent will not have the TIME to run down a topspin lob after the bounce if it gets over his/her head.

Stefan Edberg

Q) Why is there a premium on getting the first serve in when playing doubles?

A) Many people have a weak second serve that allows the receiver to move well inside the baseline when returning it. This can turn the server's partner, who is at net, into a "sitting duck". Hitting, even a mediocre shot, at the net player when you are well inside the baseline gives that player so little TIME to react that he/she is handcuffed and will often return it with a weak volley, if at all. To counter this, the net player can retreat closer to the service line to regain some TIME, but then most of the advantage of being at the net is lost.

the use of laterality in tennis training

By Catherine Garipuy, Psychologist and Certified Tennis Coach

WHAT more can you do that you are not already doing? Discover the notion of laterality. This concept, still relatively unknown, can have many practical applications and is worth being examined.

We typically refer to the side of the dominant hand to distinguish right-handers from left-handers. But, like the hand, other body parts such as the eyes, the shoulders, the pelvis and the feet are characterised by a right or left preference. The study that we conducted in 1997 on 665 male and female tennis players showed that the lateralisation process plays an obvious role on the technical aspects of the game. The data analysis showed that there are **many connections between a player's laterality patterns and his strengths and weaknesses.** For instance, a strong forehand or backhand is not acquired only through well-planned training, but depends also very much on the player's laterality patterns. Similarly, these patterns can be the reason why the player experiences problems on the serve.

To better understand the influence of laterality patterns on your players' game, you will find within a laterality test and a short questionnaire on their strong and weak shots. You should then compare the results. Given that when you want something done it's better to do it yourself, why not start by taking the test and answering the questionnaire yourself. Chances are that you will quickly notice the relevance of this type of approach.

1 – THE ROLE PLAYED BY LATERALITY IN TENNIS

In order to assess it, you should first know your laterality patterns (revealed by using the test within) and then evaluate your strengths and weaknesses.

1 – a. The laterality test

The aim of this test is to discover the dominant side for each body part. This can be interesting as the dominant side is more skilful, stronger and more efficient than the other one, which has a definite impact on how we execute our strokes.

As can be seen, lateral dominance is not always acquired on the same side. One can have a right preference for the hand, a left preference for the eye and feet, a right preference for the pelvis, and so on.

- *The hand*

3.6% of male and female tennis players (including very good

LATERALITY TEST

	R-H	L-H
THE HAND		
- which hand do you use to write		
- to draw		
- to punch		
- to throw a ball		
- to catch a ball		
- to hold the racket		
THE EYE		
- Arms extended, hold a sheet of paper with a 1.5 cm hole in the middle. Aim at an object in front of you through the hole. Bring the sheet closer to your face while aiming at the object. Which eye do you use to aim?		
THE LEG		
Which leg do you raise first when performing a scissors jump?		
THE FOOT		
Which foot do you use to kick a ball?		
THE SHOULDERS **	Rotation to the left	Rotation to the right
Face a wall, hands positioned flat on the wall and feet about 2.5 feet away from the wall. Turn around suddenly without jumping. In what direction?		
THE PELVIS **	Rotation to the left	Rotation to the right
Standing position. Turn around jumping. In what direction?		

** *For shoulders and pelvis, the preferred direction of rotation is chosen instead of laterality*

players) hold their racket with a different hand than their writing hand.

Whatever the dominant hand is, **we take into consideration the hand that holds the racket.**

- *The eye*

About 30% have a left dominant eye, although they are right-handed (and vice versa).

- *The preferred direction of rotation of the pelvis*

The pelvis, through its rotary movements, plays an important role in the execution of tennis strokes. It is thus interesting to know one's preferred direction of rotation, that is to say the direction in which one rotates more often and naturally. More than half of male and female tennis players have a preferred direction to the left (counter-clockwise direction).

- *The preferred direction of rotation of the shoulders*

This aspect plays a significant role in the execution of the two-handed backhand. As with the pelvis, more than half of male and female tennis players have a preferred direction of rotation to the left.

- *The 'dynamic' leg* (R. Chanon)

It is worth detecting your dynamic leg for the serve, the two-handed backhand and the backhand volley. Two-thirds of male and female tennis players have a right dynamic leg, while the remaining one third has a left dynamic leg.

- *The foot*

80% of male and female tennis players kick a ball with their right foot, 16% with their left foot and 4% with one or the other.

1 – b. Strong and weak shots

The purpose here is to mark your strong and weak shots.

Strong shots

FH BH S SM FHV BHV

Weak shots

FH BH S SM FHV BHV

1 – c. Connections between laterality patterns and strong/weak shots

Some laterality patterns are favourable to certain shots, while others are unfavourable.

Given that the purpose of this paper is not to enumerate all of these laterality patterns, we will only give a few examples:

- *Example 1:* **LATERALITY PATTERN THAT PROVIDES FOR A STRONG FOREHAND**

Not surprisingly, this pattern is often observed in elite male and female players:

This laterality pattern is as follows:

*** right hand / left dominant eye**

*** left hand / right dominant eye**

The reason could be biomechanical: with an 'average' hitting plane, a left ocular dominance causes on the forehand side a greater rotation of the head and neck than a right ocular dominance. This in turn allows for a greater range of motion when preparing the shot (vice versa for left-handers).

This pattern type can sometimes be difficult to handle (the stiffness in the neck can hinder the rotation of the head), which is the reason why some players do not benefit from the advantages it can bring.

- *Example 2:* **LATERALITY PATTERN THAT PROVIDES FOR A STRONG (ESPECIALLY TWO-HANDED) BACKHAND**

This laterality pattern is as follows:

*** right hand / preferred direction**

Monica Seles

of rotation of the pelvis to the left (backhand side)
*** left hand / preferred direction of rotation of the pelvis to the right (backhand side)**
Here too, biomechanics offers an explanation. The backswing on the backhand, especially on the two-handed backhand, requires an important rotation of the pelvis.
Thus, players who have a preferred direction of rotation of the pelvis on the backhand side have an advantage on the backhand, which often is one of their strong shots.

- *Example 3:* **LATERALITY PATTERN IN PRINCIPLE, FAVOURABLE TO THE FOREHAND**

This laterality pattern is as follows:
*** right hand / preferred direction of rotation of the pelvis to the right**
*** left hand / preferred direction of rotation of the pelvis to the left**
This pattern favours the forehand (offers a greater range of motion for the backswing), but the players need to have good pelvis mobility.

- *Example 4:* **LATERALITY PATTERN THAT LEADS TO DIFFICULTIES ON THE SERVE**

Usually, there are many reasons behind a weak serve, even in advanced players. But let us not forget the laterality pattern, which can also play a role.
In fact, one pattern is particularly unfavourable to the serve. This pattern is as follows:
*** right hand / left eye / preferred direction of rotation of the pelvis to the left**
*** left hand / right eye / preferred direction of rotation of the pelvis to the right**
Here too, the reasons are biomechanical: this type of direction can prevent the body from rotating sufficiently for a good dominant eye / hitting plane co-ordination.

2 HOW CAN LATERALITY BE USED?

2 – a. By using laterality patterns to better understand the strengths and weaknesses of your players, you can act more efficiently to improve their games.

Let us go back to the previous examples:

- *Example 1:* **LATERALITY PATTERN THAT PROVIDES FOR A STRONG FOREHAND**

* As can be expected with this type of laterality pattern, your player possesses a strong forehand. That is a good thing. But in order to maintain this strength in his game, training instructions must take into account his laterality pattern. For example, if you ask your player to use an open stance, make sure that he maintains his upper body in a correct position.
* In spite of his favourable laterality pattern, your player does not have a strong forehand. It is your responsibility to help him play in accordance with his laterality pattern so that he can develop the strong forehand that he 'deserves'! Observe how he organises himself, particularly with regard to how his dominant eye stares at the ball: focus on the upper/lower body dissociation and make him work on that aspect if necessary.

- *Example 2:* **LATERALITY PATTERN THAT PROVIDES FOR A STRONG BACKHAND**

As explained above, this is when the preferred direction of rotation of the pelvis is to the backhand side.
But what can be done when the preferred direction of rotation is to the forehand side?
* Either the player has found a solution to this drawback and now possesses a strong backhand
* Or he has not, in which case he needs to perform exercises aimed at rotating the pelvis to the backhand side.

- *Example 3:* **LATERALITY PATTERN IN PRINCIPLE, FAVOURABLE TO THE FOREHAND**

In order for your player to fully benefit from this laterality pattern without experiencing the associated disadvantages, make sure that the important rotation of the pelvis during the backswing does not hinder the rest of the swing.

- *Example 4:* **LATERALITY PATTERN UNFAVOURABLE TO THE SERVE**

The biomechanically complex motion of the serve is particularly dependent on the laterality pattern of the player (especially on the eye/hand laterality pattern).
If your player's laterality pattern is not favourable to the serve motion, this does not mean that he cannot have a great serve. Focus first on his dominant eye / hitting plane co-ordination (the dominant eye must be able to stare at the ball in the best biomechanical conditions possible) and make changes to the ball toss if necessary. You can also ask the player to modify the positioning of his feet, work on the rotation of the pelvis, etc.

2 – b. Understanding laterality to better read the opponent's game

A trained eye can easily decipher the laterality patterns of an opponent, which allows for the planning of efficient tactical schemes.

Conclusion

The aim of this paper was to make you familiar with the laterality concept and expose the scope of its many practical applications. We hope that we have contributed new ideas to teaching methods, which permanently need to adapt to technical evolutions and the demands of modern tennis.

several issues in tennis teaching

By Miguel Miranda, ITF COSAT Development Officer

SINCE the beginning of 1996 the ITF Development Department has been implementing in South America the Coaches Certification Programme through the Level 1 and Level 2 Coaching courses.

In this article we are going to cover several aspects addressed in the Level 1 course. Central to the course is the application of a game based teaching methodology. The first two days of the course are devoted solely to mini-tennis, which in turn is then related to regular teaching practices. In the course, we also emphasise that children (and adults too) come to the tennis lesson to learn to **PLAY** tennis. We continually refer to the infamous question asked of the children: "Why do you come to tennis?" And the equally infamous reply: "I come to play tennis. I want to play a tennis match".

Then, we ask the candidates of the Level 1 Course, why we continue to use an old teaching system based solely on the teaching of technique. The answers provided are essentially as follows:

Tradition

"We have been teaching with this system for so many years that it is very difficult to change it". But what has been the impetus for this tradition?

Historically, coaches have almost exclusively used an analytical teaching method with an authoritarian attitude. What the coach said was what was to be done, without question. As former students of this type of coach became coaches themselves, they developed a similar teaching philosophy and used the same teaching methods during their first coaching lessons.

Who was brave enough to question these coaches "who had produced the champions of the past?" Initially, very few but gradually some concern mounted over these teaching methods for, among others, the following reasons:

- Lack of results and lack of children that participate in our sport.
- Many tennis schools start with plenty of **enthusiastic** children and quickly end up with a few that are not particularly motivated.

Once again the same question presents itself: *"Why are we not changing now?"* Often, the answer is spontaneous and quick: *"If I change these methods I can lose my job"*. And the answer to the obvious question that follows; *Why?*, is typically *"many of those who learnt with the old methods are parents or officials from clubs or associations and they are the ones who hire my services"*. In effect, these people want their children and the club members to learn to play the tennis they learnt to play. They are often the ones who evaluate the programmes and appraise effective coaching to solely involve "children learning a good technique and how to hit the ball properly". Clearly they are not concerned with whether or not the children (and in some cases themselves) are enjoying what they are doing.

A quick solution may be gleaned by providing for **an education of parents and officials**. While this can be a job for the National Associations, in our opinion, everything should start with us, the coaches.

There are therefore three very important "coach education" issues that should be emphasised:

1. ***Planning*** in a simple and concise way. What our goals are and how we want to achieve them are two principles that should be explained to the parents and officials in advance. It is not appropriate to wait until they ask "Coach, how are you helping my son learn to play tennis?"
2. ***Asking*** ourselves continuously if what we are doing fits the goals we have set. Are the students enjoying tennis? Are they learning some tennis? Am I facilitating this learning process? Are they always active during the lesson?

3. ***Being constantly updated.*** Many of our National Associations do not have a regular or permanent coaches certification system. It is thus our responsibility to seek information from a variety of different sources. This can be quite simple: try to organise meetings with colleagues from the clubs of your area every second week (this may also help you to have a little bit of time off). And just speak about a topic related to teaching methodology; for instance, how to more effectively cater for a larger number of students. By doing this you are updating yourself and your colleagues.

Coaches education

I dare say that it is almost impossible to implement this new games based teaching methodology without a regular and systematic process of coach education.

The reason for this is quite simple. This process requires the continuous analysis of many factors by the coach and obviously requires that the coach have a comprehensive understanding of methodology, pedagogy, motor development, biomechanical principles, tactical analysis, psychological analysis and development, etc.

Up until now, **Coaches Education** in many countries of the world has only consisted of sporadic courses. Some people have even posed the question: "For me to become a certified tennis coach, isn't it enough that I have a basket of balls and know how to stay on the other side of the net feeding them?"

Clearly we must try to break this type of mindset.

Using only results and technique as a means of evaluation

And this is even worse when only the results of champions with "perfect techniques" are considered. By doing this, the student will then be required "to play like him or her…" Coaches will often ask: "Do you notice how well she hits the ball?" instead of directing the students' attention to the type of patterns that the player is using.

We should, once again, stress the importance of fixing the evaluation criteria. "Look how you are able to put the ball in play", "Now you can change direction. Have you noticed how much more effectively you can move your opponent around the court?" "You could have approached the net 'this many' times that you had the chance", "Tell me, what new patterns have you used in today's match that you hadn't used in earlier matches?" These are some of the remarks and questions that we, as coaches, should use with our students in order to allow them to better achieve according to their own capabilities and limitations. And of even greater importance is that this will help to increase the enjoyment of both the children and adults when they participate in this beautiful sport.

working upper body strength and flexibility with the Swiss ball

By Machar Reid, ITF Tennis Assistant Research Officer

INTRODUCTION

HAVING identified the value and presented the fundamentals of using the swiss ball as a training aid in the previous issue, it is the intention of this article to provide some examples of specific exercises to strengthen and improve the flexibility of the musculature of your player's upper body.

While the muscles of the upper-body play an important role in generating the force to produce both powerful groundstrokes and serves, it is important to note that given the repetitive nature of tennis, player's tend to develop disproportionate levels of strength in the anterior muscles of the chest and shoulder when compared to those of the posterior shoulder and upper back.

For example, the majority of strokes (tennis serve and forehand) generate considerable force from internal rotation, as a result, a muscular imbalance often exists between the internal (strong) and external (weak) rotators of the upper arm. This selective strengthening of certain muscle groups is typical of sports performance and further reinforces the need to implement a specialized conditioning program to optimise performance and minimise injury risk.

The adaptation of the principles conveyed in some of the exercises to follow may help you develop such a program: functional, specific and sufficiently prehabilitative, to optimise your player's performance capabilities.

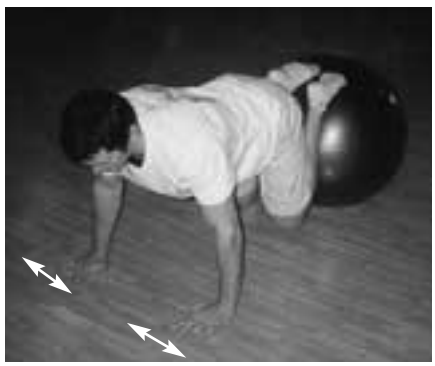
As proposed in Issue 22, the use of a swiss ball as a multi-purpose platform forces athletes to train in an unstable environment that potentially provides for increased stabilizer strength, a reduced incidence of injuries due to repetitive stress, and improved nervous system function that can lead to more functional strength gains. Once again, the training principles outlined in Issue 22 apply, and central to the performance of these exercises is the notion that players will learn to provide greater stability to the trunk and pelvic region, such that this will be transferred, to improve stroke mechanics.

THE EXERCISES

While 2-3 sets of each exercise

should be performed, worth noting is that a reasonable strategy to employ to begin correcting a muscular imbalance, such as the one highlighted earlier, is to perform 2 sets of exercises in the weaker muscle groups of the upper back for every set performed on the anterior muscle groups[1].

1. *(Intermediate)* Adopt a push-up position on the swiss ball but flex about the hip and knees to bring the ball forwards, while maintaining a neutral spine. With hands about shoulder width apart, move your racquet hand 5-8cm to



the left and then repeat the movement with the non-racquet hand. Continue this back to the right to complete one repetition, and also in front when your strength improves. Perform between 6-10 reps.

2. *(Intermediate)* Start with ball resting under your stomach. Keep your head in a neutral position and both arms supported on the floor. Begin by lifting one arm, flexing at the shoulder and

placing it a further distance from the ball and then do the same with the other. Continue this crawling motion until only your feet are left on the ball. Then, extending about the shoulder, crawl back toward the ball. Repeat 4-6 times.

3. *(Intermediate)* In an arabesque position (as is often seen when lunging for groundstrokes or a volley) with weight in one hand

and contralateral leg extended out to 90°, perform a single-arm bent over row. That is, extend at the shoulder and flex at the elbow such that the weight can be brought up toward your chest. To help maintain balance, the player can hold the swiss ball with their non-active hand/arm. Repeat 8-10 times on each pair of limbs.

4. *(Advanced)* Kneeling on the swiss ball, perform side-arm medicine ball throws. It is important for your partner to position his throw

to the appropriate side and you should alternate the side to which you rotate and throw. This exercise will also serve to strengthen the stabilisers of the hip. Perform between 4-8 reps each side.

5. *(Advanced)* Lying with your back on the ball and both feet on the ground, have your elbows bent to 90° and arms out to your side. In a pressing motion, extend one

arm while simultaneously flexing at the hip of your opposite (contralateral) leg to lift it from the ground. Then lower both limbs back to the starting position and repeat on the other side. Repeat this in a cyclic fashion such that between 6-8 reps are performed on both sides.
Variation: As this requires considerable abdominal strength and very good coordination, players may initially only alternate the pressing movement with just the arms before employing the legs as well.

6. *(Advanced)* Assume a push-up position (monitoring spinal and scapular posture), with both feet balanced on top of the ball and both hands on a box

approximately 20cm high. Lower your chest to within 5cm of the box and then explosively drive out of this position. Perform this 6-10 times or until your technique breaks down.

Variation: If players are having difficulty they can reposition the swiss ball closer to their hips (ie. under their knees).

7. *(Simple)* As alluded to earlier, specific stretching can also be performed with the aid of the swiss ball. To improve the flexibility of your muscles of the chest and upper arm, you can kneel a comfortable distance away from the ball, place your hands atop the ball, with your head in a neutral position and then lower your chest toward the floor. Hold for 15 seconds and then relax.

8. *(Simple)* With your back on the ball, your partner stands behind you holding onto your outstretched arms (palms facing upward). Your partner will gently pull your arms inwards while your attempt to push outward. Hold for 6-8 seconds and then relax.

SUMMARY

In summary, an appropriate prescription of exercises for a tennis players' upper-body demands that there be considerable emphasis placed on strengthening the muscles of the scapula and upper-back such that optimal shoulder and arm function can be maintained. It is essential that these type of exercises, along with those that promote improved flexibility of the upper body, be integrated into a tennis-specific conditioning program to maximise its functionality and prehabilitative potential. The flexibility and variety of training that the swiss ball can provide, may allow you to more comprehensively achieve these aims.

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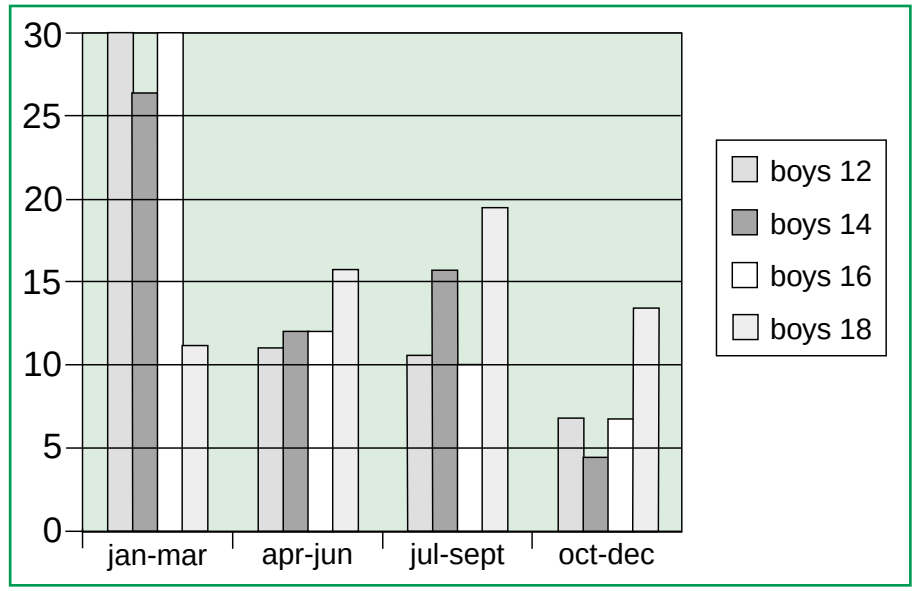
birth date and success in tennis

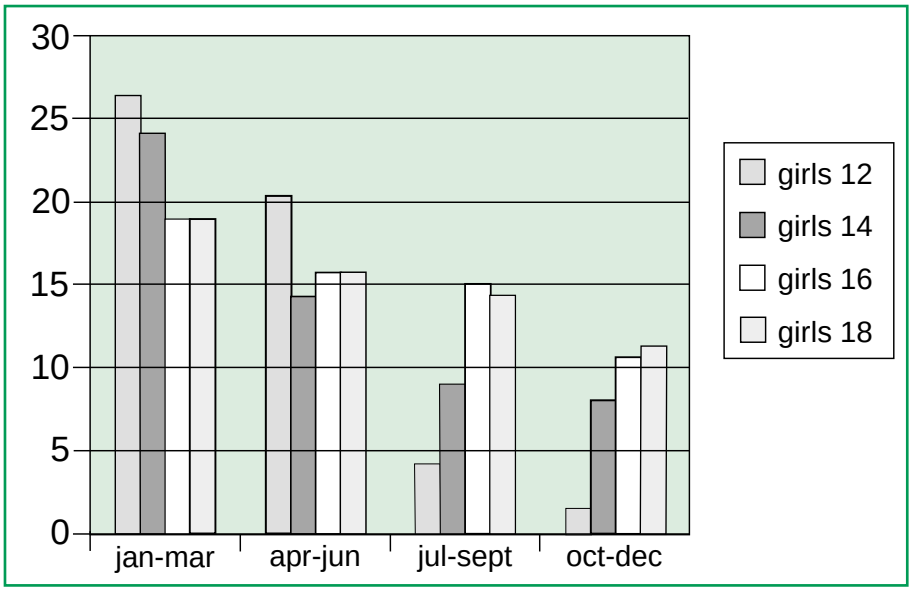
By Dr. Aleš Filipcic, Professor, Faculty of Physical Education, University of Ljubiana

1. Introduction

WHEN a choice and/or selection of young athletes is pursued, in this case male and female tennis players, particular psychological and physical characteristics associated with the age of the players are often over-looked. Junior tennis players from 12 to 18 years of age are in the period of their most intensive growth and development. Growth refers to increases in the size of the body or its parts, and development to the tempo and timing of this progress towards the mature adult state (Baxter-Jones, 1995). An individual's maturation status is referred to as their biological age. The biological age among children of the same chronological age can be



Graph 1: Number of male players in each birth quarter.



Graph 2: Number of female players in each birth quarter.

significantly different, and can in turn affect the level of their achievement. Variation in the physical maturation of junior tennis players and its subsequent effect on outstanding tournament achievements, especially between the ages of 12 and 16, has been a topic of considerable scientific interest (Wieneck, J., 1994; Unierzyski, P., 1994; Zmajiæ,H., 1996). The findings confirm that the biologically more mature players among the younger age categories (e.g. 12 and 14 years) are usually top ranked (Baxter-Jones, 1995).

2. The purpose of the study

From four different samples of male and female tennis players the purpose of the present study was to find whether there is a correlation between chronological age (date of birth) and successfulness in tennis (place on the national ranking list).

3. Method

The sample comprised of the 60 highest ranked Slovenian male and female tennis players in each age category. Tennis players were divided into four age categories; under 12, 14, 16 and 18 years of age. Players were further placed in one of four groups (quarters) based on their date of birth; 1st quarter: players born in the period from 01.01.-31.03, 2nd quarter: from 01.04.-30.06, 3rd quarter: from 01.07.- 30.09, and 4th quarter: from 01.10.-31.12. For the study, two variables from each player were of importance: their date of birth and their ranking position.

4. Results

The distribution of the number of players born in each birth quarter is presented in Graphs 1 and 2.

5. Conclusions

From the results obtained in the present research the following can be concluded. In the under 12, 14 and 16 age categories, the differences in the number of male tennis players born in each birth quarter was significant. More specifically, most tennis players were born in the first quarter and the least in the 4th quarter. Worth noting is that this was not the case in the under 18 years of age category. Similar results were noted when analysing the results of the female tennis players. That is, in the under 12 and 14 age categories the number of female tennis players in each quarter was significantly different, while in the under 16 and 18 age categories no such relationship was revealed.

When we grouped male and female tennis players together (all age categories), it was found that 60% of players were born in first half of the year and that among certain quarters there was a statistical difference. Here arises the question: 'what are the causes for these differences found among the number of male and female players born in a particular quarter?'

Firstly, differences in chronological age should be considered. That is, players born in the first quarter can be up to 11 months older than players born at the end of the year. This 'older' chronological age of players born in first quarter of the year can have implications on:

- physical development (higher developed skills as: strength, speed, endurance)
- intellectual-emotional-social development (more mature tactical thinking, higher self confidence, better emotional and stress control, personal behaviour in society).

It is interesting to compare results among male and female tennis players. It has long been recognised that the girls experience periods of rapid growth earlier than do boys. In addition, the period of puberty starts and ends earlier. This can be displayed in Graphs 1 and 2 which show that the number of female players born in each quarter was relatively even in the under 16 category. The same can only be said of male players in the under 18 category. It can therefore be concluded that differences (caused by chronological age) are reduced at an earlier age in female players when compared to male players.

6. Discussion

It is worth noting at this point, that chronological age is correlated with the biological age of male and female tennis players. That is, players who experience more rapid growth at an earlier age have an advantage as far as competing is concerned. It has been commonly assumed that the difference between the chronological and biological ages in the period from the 11th to the 15th year can be very large, even, ± 2 years.

Furthermore, the chronological and biological age of players should be considered when team and squad

selection is pursued. To assist this process, the following characteristics can be used to predict the chronological and biological ages of tennis players from 11 to 15 years of age: height, weight, palm and foot size, level of muscular development and appearance of secondary sex signs. The subjective evaluation of biological age can be further pursued by analysing the skeleton and teeth. When the chronological age is taken into consideration and the biological age is known, the following procedures can be performed more effectively:

- the objective selection of top players.
- the potential ability of the player can be evaluated more accurately
- the abilities of the player can be more specifically catered for when planning and executing training. This process has to be adapted to his/her abilities (quantity, intensity and content of training, selection of the competition level and tournaments).

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what type of intelligence does the successful player have?

By Gustavo Granitto, ITF Development Officer Central America & Caribbean

THE development of an appropriate intelligence is an important feature within the preparation and evolution of a tennis player. Nowadays, nobody doubts that successful players are quite intelligent. But, what type of intelligence is it that these players have?

Being intelligent is typically associated with achieving good marks at school, but few elite tennis players are noted academics or renowned scholars.

Successful players possess, whether it be innate or learnt, an excellent ability to firstly recognize and then adapt to their specific capabilities and limitations. They have been able to define a game style based on their strengths that not only compensates for their weaknesses but is also flexible enough to be adjusted if the situation demands it.

According to several studies this efficient and effective intelligence is comprised of 3 well defined capacities that maintain a balance among themselves. They are the Analytical capacity, Creative capacity and Practical capacity.

The Analytical capacity diagnoses the situation and the magnitude of the problem. The Creative capacity provides the resourceful ideas to confront these problems, while the Practical capacity, having considered the diagnosis and prior experiences encountered during matches, implements the strategy. The studies have further shown that the effectiveness with which players' can control their emotions to help maintain this balance can be the catalyst for the better function of each of the three capacities.

Strengthening this type of intelligence in tennis players is one of the main goals of a coach. The sole use of analytical thinking from the coach is often very common when working with players. Often a player will have identified a problem and the coach will attempt to solve it. *But can the player solve it? Does she have the ability to come up with solutions when confronted with difficult circumstances?*

Psychologist Robert Stemberg, in his book Successful Intelligence, defines analytical intelligence as an inert quality because it does not drive the person to perform actions directed towards goals.

On the other hand, theorists have shown that many people who possess a high coefficient of intelligence do not achieve an analogous level of success because they rely too much on rational thinking.

How can we, as coaches, work the different types of intelligence with tennis players? This, along with those that follow, is an example of a question we should be able to answer.

If a player habitually asks what she is doing wrong, and the coach responds by immediately telling her what she has to do, is it likely that the player will develop her analytical skills and capacity to create practical solutions?

We mentioned above that emotions can be the catalyst for decision making processes. But, how do they influence the problem solving process? How, when a player is unable to control her emotions, can she expect to analyze what is going on during a match?

What does a player think of when she asks her coach about a given situation and the coach indicates that she needs to take her time and try to find alternatives to overcome it?

How do rituals – pre-match, between point, between game and post-match – serve to change the momentum of a match and/or contribute to the positive development of a player during practice and the tennis season? If being emotionally intelligent allows player to discern what is convenient, how can this drive the player to achieve more success?

Here within lies the importance of the preparation, practice and goal-directed learning. On the other hand, it is also important to create a challenging and problem-solving environment in a progressive way.

Successful players continue to show that they can negotiate very difficult situations during a match using effective problem solving and decision-making strategies.

When a player recognizes that she has the ability to analyze and solve different situations, she will remain composed throughout which will in turn increase her sense of self-esteem - the first step to achieving self-confidence. Gradually she will become mentally strong, independent and at the same time, thrive on the thrill of the challenge.

Lets remember that the art of tennis is being able to predict the unpredictable. Each ball and point demands the application of this concept. It is therefore important to note that the way in which a child is stimulated to discover their abilities of analysis, creativity and practical problem solving during their early tennis practices, can have a significant impact on the adaptability of their game and their personal development as a player.

There are several very efficient exercises and methods that can be used to help a player achieve the type of emotional intelligence required. To name them would not be consistent with the goal of this article. Rather it is important for us as coaches to note that irrespective of the exercises used, their creation and application should be specific to each situation and allow the coach to discover those that more effectively suit the needs of the player.

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ten ways to control exercise-induced Asthma

By Dr. Babette Pluim, M.D., Medical Director for the Royal Netherlands Lawn Tennis Association

EXERCISE-INDUCED asthma is very common in young athletes. Approximately 10% of adolescent tennis players are affected. Groups at high risk are those with asthma (90%) and allergies (40%).

Symptoms include wheezing, cough and/or shortness of breath during exercise.

The onset of symptoms seems to depend, at least partially, on the temperature and humidity. Rapid breathing during exercise tends to cool and dry the bronchial tubes. Cool, dry outside air also makes the mucus membrane of the tubes more sensitive. These two factors together – exercise, in cool and dry air - increase the risk of an asthma attack, particularly for those persons with hyper-irritable bronchial systems.

How can one reduce the risk of an exercise-induced asthma-attack?

1. **Take an "exercise-challenge" test.** The objective of such a test is to develop a clear diagnosis. Some players simply do not believe that their shortness of breath or post-exercise cough could be caused by asthma. A good test consists of measuring baseline values of the lung function at rest, then having the subject run for 5-8 minutes without crossing the anaerobic threshold, and finally spirometry performed 2,5,10, and 20 minutes after the completion of the exercise. A 10-15% decrease in lung function confirms the diagnosis. If positive, continual testing during treatment will result in an optimal treatment program containing the fewest medications with the fewest side-effects.

2. **Control chronic asthma.** As noted above, athletes with asthma have a high risk of

developing exercise-induced asthma. Symptoms are abnormal lung function at rest and/or repeated use of bronchodilators. Therapy usually focuses on decreasing bronchial hyper-activity with drugs such as cromolyn or steroids. The objective of such treatment is to create an airway that is more responsive to beta-adrenergic agents and more resistant to exercise-induced bronchospasms.

3. **Treat nasal obstructions.** Congestion in the upper airways may decrease nasal filtration, heating, and humidification. There are many potential causes, including allergic rhinitis, polyps, and sinusitis. The result may be exercise-induced bronchospasms.

4. **Take appropriate medication.** Some medicines; bronchodilators, can prevent exercise-induced asthma if inhaled 10-30 minutes before beginning exercise and even during exercise itself. In addition, longer-lasting drugs (e.g sodium cromoglycate) can be taken once or twice daily, independent of exercise-frequency. Some athletes believe that they should take as little medication as possible, but there is no clinical evidence to support this assertion. Regular medication helps diminish lung hyperactivity, thereby reducing the risks of asthmatic attacks.

5. **Avoid exercise when ill**. This "prescription" applies to everyone, not only those players with a tendency to exercise-induced asthma. Above all, avoid play when having a fever. Gradually resume play when free from fever for 2-3 days.

6. **Avoid tobacco smoke and other obvious forms of air-pollution.** Not surprisingly, tests have shown that "bad air" increases the risks of bronchospasms. Particular culprits include sulfur dioxide and ozone. Because smog is usually worse in the afternoon and early evening, players with a tendency to exercise-induced asthma may wish to avoid practising or competing during these times.

7. **Avoid sudden changes of temperature.** As noted above, cool and dry air tends to dry the bronchial tubes. Warmer and more humid air is better for the asthmatic player. Clinical observation has shown that athletes are particularly prone to exercise-induced asthma in the morning (when it may be cooler) and at dusk (following a drop in the temperature).

8. **Warm up thoroughly**. Also a "prescription" for everyone, but even more so for players prone to asthma attacks. A gradual but lengthy warm up prior to more strenuous exercise has been shown to make the airways more resistant to irritants and to decrease the incidence of bronchospasms.

9. **Wear a face mask**. If an asthma-prone athlete must exercise or compete in cold weather, an effective prophylactic may be a face mask or scarf. The effect of such a covering will be to warm and humidify the outside air before it reaches the lungs. Breathing through the nose also helps.

10. **Achieve and maintain a high level of fitness.** The more rigorous the exercise, the more severe the attacks of exercise-induced asthma. But not surprisingly, fitter athletes tend to have fewer and milder attacks. So keep in shape! Use interval training to build up stamina as this has been shown to provoke less asthma.

what tennis research tells us about . . . strategy and tactics

Compiled and summarised by Miguel Crespo & Machar Reid, ITF Development Department

A series of articles on the strategy and tactics of the game that have appeared in sport science publications are summarised below. Coaches interested in obtaining more information from these articles can find them using the relevant references.

Match charting

The paper states that good charting can provide nearly all the answers about the points played during the match. It can pinpoint the strengths and weaknesses of the player's game. Charting can thus lend itself to an in-depth analysis of statistics. It is recommended that two subdivisions be used – serving and receiving – to enable the player to record the entire match. At the conclusion of the match, the player and the coach may want to review the chart. The information gleaned can be applied to the next practice. The paper

includes an accompanying chart both for serving and receiving players.

Goldstein, B.J. (1976). Chart your tennis matches. *Scholastic Coach*, 50-56.

Winning singles strategy

One of the principles outlined within the paper is that the winner of a tennis match is not always the player with the better strokes. Players should be intelligent enough to use a game plan that capitalizes on their strengths and the opponent's weaknesses. The paper also states that the game strategy should be initiated during the warm up before the match. It is also said that the best strategists are completely objective: they don't underrate the opponents nor overrate their own abilities. Several aspects are highlighted to help counter attack the opponent's strategy: 1. Develop a well-rounded game that will enable you to adjust to the opponent's strategy, 2. Exercise your intelligence and constantly analyse the situation, and 3. Assume good court position at all times. Playing percentage tennis is another tactical option that can be very effective. The paper further includes several comments on variables such as court surface, weather, sun, and competitive attitude and their influence on singles tennis strategy.

Austin, D.A. (1980). Developing an winning singles strategy, *Scholastic Coach*, February, 96-101.

Surface and strategy

The aim of this study was to provide a quantitative comparison of elite players on two vastly different surfaces, at Wimbledon (grass) and at the Australian Open (synthetic). Results showed the following: 1. The serve was more effective on grass although placement was found to be independent of surface, 2. It was found that a greater proportion of returns were made on the synthetic surface. 3. The direction of the returns was found to be generally down the middle with the aim of keeping the ball in play, 4. More winners were made on grass and more errors on the synthetic surface, 5. Playing on grass produced shorter rallies, both in terms of number and duration, 6. On grass, play was skewed towards the net whereas on synthetic it was towards the baseline and the left of the court.

Hughes, M. & Clarke, S. (1995). Surface effect on elite tennis strategy. In T. Reilly, M. Hughes & A. Lees. *Science and Racket Sports*. E & FN Spon. London (272-277).

Attacking strategies in women's tennis

The aggressive margin is a measure defined by the number of winners less errors, as a percentage of the total number of rallies. The intention of this study was to develop and validate a system that would provide for the analysis of critical points and the aggressive margin, and to also examine whether attacking or defensive styles of play were more successful at different stages of the game. Results showed: 1. Elite players analysed, displayed greater attacking strategies at the beginning and end of the games, 2. Their play became more attacking as each match progressed, and 3. There are definite tactical patterns adopted by these players at critical points in each game and each set.

Hughes, M.D. & Tillin, P. (1995). An analysis of the attacking strategies in female elite tennis players at Wimbledon. *Journal of Sports Sciences*, 13, 86.

Time factors and surfaces

In the 1996 season, a slower ball was introduced at Wimbledon and a faster ball was introduced at Roland Garros. Stich, not a clay court specialist, was the runner up at the French Open and two non-seeded players played the Wimbledon men's final. The aim of the study was to determine if the introduction of the new balls had resulted in similar games for men's and women's singles at the two tournaments. Results showed that rallies at Wimbledon were longer with the slower balls and that the ball change at the French Open resulted in an increase in the serve and volley style.

O'Donoghue, P. & Liddle, D. (1998). A notational analysis of time factors of elite men's and ladie's singles tennis on clay and grass surfaces. In T. Reilly, M. Hughes & A. Lees. *Science and Racket Sports II*. E & FN Spon. London (241-246).

Surface and strategy in women's tennis

The purpose of this study was to investigate whether elite female players win a greater proportion of points on serve and at the net on grass than on clay surfaces. Results confirmed that elite female tennis involves more points being won on serve and at the net on grass than on clay and that there are more baseline rallies on clay. However, since the result of drawing a player into the net on grass is that the opponent has a greater chance of winning the point than at Roland Garros, players did not draw their opponents into the net as much at Wimbledon as they did at the French Open.

O'Donoghue, P. & Liddle, D. (1998). A match analysis of elite tennis strategy for ladies' singles on clay and grass surfaces. In T. Reilly, M. Hughes & A. Lees. *Science and Racket Sports II*. E & FN Spon. London (247-253).

Patterns of play of junior players

The aim of this research was to analyse how the top under 18 British juniors play in terms of winning and losing major international matches. Results showed that: 1. British players made more unforced errors from the baseline, 2. European players played more aggressively and won more points from the baseline, 3. British players played more defensive shots from the baseline and won most points from the net, and 4. British players had a lower percentage of passing shots than players from other countries.

Taylor, M. & Hughes, M. (1998). A comparison of patterns of play between the top under 18 junior tennis players in Britain and in the rest of the world. In T. Reilly, M. Hughes & A. Lees. *Science and Racket Sports II*. E & FN Spon. London (260-264).

Unforced errors and error reduction

The paper states that unforced lateral (side-to-side) errors can be reduced by returning the ball to the location that it is coming from and by following through your stroke in the direction you want the ball to go. Unforced vertical (depth) errors can be reduced by not hitting the ball as

hard, striking the ball when it is higher, going crosscourt rather than down the line, and possibly adding topspin. Rackets with wider heads and tighter strings will reduce errors as will some of the newer rackets with their maximum power region moved up in the head.

Brody, H. (2000). Unforced errors and error reduction in tennis. In S.J. Haake & A.O. Coe (Eds.). *Tennis Science & Technology*. Blackwell Science. Oxford. (305-311).

recommended books and videos

books

The World of Tennis. By Vladimir A. Golenko. Year: 1997. Level: Advanced. Pages: 69. Language: Russian and/or English. This book explains in detail the analysis and fundamentals of modern tennis techniques using the "modular training system". Its contents include the following: Teaching the game based on special types of sports training, Mastery of technical play, Racquet grips, Selection of the type of stroke depending on playing conditions and the conditions affecting the stroke: the player's position on the court during the opponent's shot and the complexity of the opponent's shot, Approach to the ball, The player's position on the court prior to the opponent's shot, Open and closed stances, The transfer of kinetic energy, Point of contact, and The follow through. The book also includes diagrams and a CD with photos and video clips of sequences of the strokes explained. The book is endorsed by the All Russia Tennis Federation and the Russian Tennis Development Foundation. For more information contact: Tel. 70 957 254 695, Fax. 70 952 010 362.

Guideline for the Club Official. (Le Guide du dirigeant de club) By The French Tennis Federation. Year: 2000. Pages: 161. Language: French. This book is a guide for the officials working in clubs. The French Tennis Federation has produced a very useful tool that will help all people involved in the management of a club. Contents include: Federal organisation, Club management, Accounts and financial management, Grants for clubs in France, Tennis teaching at club level, Competition, Umpiring and Ranking procedures, Development and communication, General annexes and Bibliography. For more information contact: Fédération Française de Tennis, 2, Avenue Gordon Bennett, 75016 Paris, France. Tel: 331 474 34 800. Fax: 33 147 430 494.

Tennis Course: vols. I and II. By The German Tennis Association. Year: 2000. Pages: 179 and 252. Language: English. These books are the translated English versions of two coaching manuals produced the German Tennis Association. Both volumes comprise of detailed textual instruction, complemented by full-colour action photos, drawings, diagrams, and charts. Contents include the following: Volume I: Techniques and Tactics: Basic theory of movement, The ball in flight and bounce, Tactics and Technique. Volume II: Lessons and training, Basics of tennis instruction, General basics of training, Training co-ordination, Training technique, Training tactics. Training conditioning, Psychological basics, Planning for training and competition, Competitive coaching, Sports medical aspects and The pedagogical responsibility of a coach. For more information contact: Barrons Educational Series Inc. 250 Wireless Boulevard, Hauppauge, New York 11788. www.baronseduc.com. Price: 16.95 USD and 18.95 USD.

Mini-Tennis. By The Italian Tennis Federation. Year: 2000. Pages: 141. Language: Italian. Authors: Panatta, Risi, Coni, Santini, Dell'Edera, Madella and Gatti. This book contains the guidelines for mini-tennis practice as set by the Italian Tennis Federation. Contents include the following: Modern teaching orientations, Goals and methodological aspects in mini-tennis, Programme of mini-tennis lessons, The profile of the mini-tennis teacher, Winning by playing, Guidelines on basic technique and References. For more information contact: Italian Tennis Federation. Tel. 390 636 858 210. Fax: 390 363 868 606. e-mail: fit_segr@gisa.net

videos

Fit Kids. Lawn Tennis Association Coaching Department Video. Author: Steve Green. Year: 2000. Colour. Approx. 40 min. Available in English. The author, a former international athlete, guides you through 4 weeks of fitness sessions using a variety of co-ordination and balance exercises, strength and power workouts and endurance activities. For more information contact: The LTA Coaching Department, The Queens Club, London W14 9EG. Great Britain. Tel. 442 073 817 055. Fax. 442 073 810 033.

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ITF Worldwide Coaches Workshop

Luis Bruguera presenting at the 11th ITF Worldwide Coaches Workshop in Morocco, November 1999

12th ITF WORLDWIDE COACHES WORKSHOP - OCTOBER 2001

The ITF is happy to confirm that the ***12th ITF Worldwide Coaches Workshop*** will take place at the Siam Intercontinental in Bangkok, Thailand from 27 October - 2 November 2001. The event will be organised by the ITF in conjunction with the Lawn Tennis Association of Thailand (LTAT) and the support of the Asian Tennis Federation (ATF).

The theme of the Workshop will be "Progressive Development of High Level Players from Junior to Professional" and speakers will include some of the world's top coaches. The Workshop programme will be available in June.

The five-star Siam Intercontinental is situated in the centre of downtown Bangkok and offers the following facilities:

- very spacious, excellently-equipped conference rooms for indoor presentations
- tennis courts with covered spectator seating, for exclusive use for on-court presentations, and for participants' use during leisure time
- magnificent hotel accommodation in low-rise Thai-style buildings, with buffet meals in one of the hotel's many restaurants
- use of hotel swimming pool and gymnasium, as well as jogging trail, golf driving range and volleyball area
- the hotel site boasts a "Thai village" and large expanse of tropical gardens, despite being in downtown Bangkok, very close to excellent shopping and a wide variety of restaurants

The ITF looks forward to working with LTAT to arrange another successful ITF Worldwide Coaches Workshop in 2001

Further details of the Workshop and application procedure will be available through all National Associations by June 2001, but coaches interested in attending may wish to put the October / November date in their diaries immediately. As in the past, all entries must be approved and submitted to the ITF by the relevant National Association.

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Mini-Tennis

Mini-Tennis Planning (first of two parts)

By The French Tennis Federation

Introduction

In previous reference material we have talked about motor learning, the skills of children, their capabilities at this young age, the affective sphere, and a number of other things. Now we would like to see if we can structure the mini-tennis activity and consider working in the long term. Rather than thinking 'the child comes for a lesson', our thought processes should encompass 4 or 5 sessions.

This means that the mini-tennis teacher has to plan the exact number of sessions that will take place, what will happen in the sessions, the period over which they will be spread and so on.

But the child's experience of mini-tennis cannot be assessed in months. Thus, we are not going to say there are so many months, so many sessions, so many weeks and so on... Our goal is to get the child to acquire skills.

Sometimes, coaches ask if the statement "the more exercises a child performs, the more competent she becomes" is true. Typically, we answer with "not necessarily". For it's not the number of exercises that matters, it is the quality of the exercises and how we introduce them to the children. In this respect, it is important to go from the most simple exercise to the most complex one. This means that exercises can be classified and organised. And that is precisely the purpose of mini-tennis planning. And within that planning, we can even try to reclassify the exercises into learning modules.

Learning Modules

A learning module is a module that groups together exercises on a given theme or with similar goals. While we have yet to specify its duration, this will become progressively clearer. To be more precise, we have exercises that are set. These exercises are put together in a learning module and the learning module results in a reference situation. And it is all these elements that make up mini-tennis planning.

The 'reference situation', is a sort of test or assessment. It is something that allows the teacher to determine if children, at the end of a learning module, can move up to the next module or if on the contrary they still need to work on what they've learnt for one or two more sessions.

A module can last for 4-5 sessions if the goals that are to be realized are simple. If there are several goals that are not so easy, it may last for up to 10-12 weeks. The teacher is the one who decides the length of each module for a simple reason: in principle, a child starts walking when she's about 12 months old, but some children walk when they're 10 months old and others when they're 16 months old. This means that parents should adapt themselves to the child. And the teacher, given that not all children assimilate things the same way, will also need to adapt himself. He will have to take notice of the children and what they've acquired and, depending on that, elaborate a plan that will cater for their individual rates' of learning.

There are 3 modules and each one climaxes with the reference situation alluded to above. And in each module, we find the same two themes to be we worked on. One is putting the ball in play and the other, the rally. For each of these modules, we start by explaining the reference situation and then describing the exercises that will help the children accomplish these reference situations successfully.

MODULE 1 – The rally

The reference situation represents a landmark for

the teacher. This first situation comprises two parts. The first part takes place on a 12m x 6m court. The net is 0.5 metres high. The children use a foam ball, one of the players uses a racket and the other one his hand. The goal is to achieve the longest rally possible with a minimum of twelve consecutive strokes.

In the second part, the foam ball is replaced by a mini-tennis ball and the children are required to play a rally with a minimum of eight consecutive shots to succeed. To facilitate the execution of these reference situations, it is essential to beforehand organise a series of exercises. Here are some examples.

From the very beginning of the learning process, the teacher is faced with two very important tasks: assisting the child to discover the nature of the game and helping her to familiarise herself with the environment and the equipment that she's going to use: the court, the net, the balls, the bats and the rackets. For the exercises that he will organise, the teacher will have to make sure as often as possible that the fundamentals of the game are respected: a zone to defend and a zone to attack separated by an obstacle to avoid, the net.

It is the teacher's responsibility to simplify the situations by adapting them to the level of play of the children. The time will then come to introduce hitting drills in close or distant zones towards a partner or deliberately out of her reach.

MODULE 2 – Putting the ball in play

The goal of this reference situation is to perform an overarm throw with force and precision. This situation comprises two parts. In the first one, the server is positioned 2.5m away from the net and throws 5 foam balls diagonally into the opposite half-court. To win the point, the ball must cross the goal line while the opposite player tries to intercept it.

In the second part, the foam ball is replaced with the mini-tennis ball and the server positions himself 4 metres away from the net. In both cases, the server should successfully throw three balls out of five.

To start a rally, it is necessary to put the ball in play. For a beginner child, the action of putting the ball in play should be simplified as much as possible. In order to do so, the child will need to learn how to throw the ball upwards, as in the service action, and how to recognize different forms of a ball toss as far as rhythm, amplitude and direction are concerned.

Performing the action of an overarm throw (i.e. with one's arm bent), as natural as it may seem, requires very good co-ordination from the child. To optimise the learning of this action, it is essential to plan a lot of repetitions while ensuring that the exercises are as diverse as possible. This will help develop force and precision in the throw: two prerequisites for the technique of the serve.

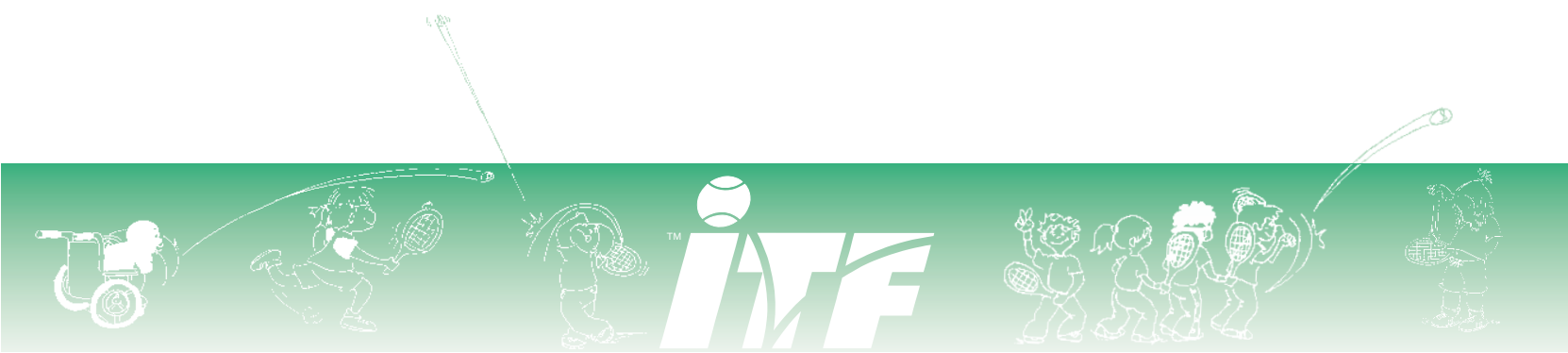
While the first module saw the child 'have a go' at the activity, during this module she will want to make progress. And making progress for her means hitting harder, running faster, throwing further and being able to play the game in that way. Gradually, we are going to try to give her some technique. At this stage however, it is too soon to speak about technique and we are not going to use this term with the children. But for the teachers, we can begin to introduce technique in a pedagogic way.

For example, a child will naturally throw a ball towards a target or his partner by standing face on and tossing the ball in front of her. If I suggest that she toss the ball not in front of her but beside her, I am trying to encourage a shoulder rotation. And that is what we are looking for. But all of these small things will be discussed in the next article that will summarise the remaining modules.

Conclusion

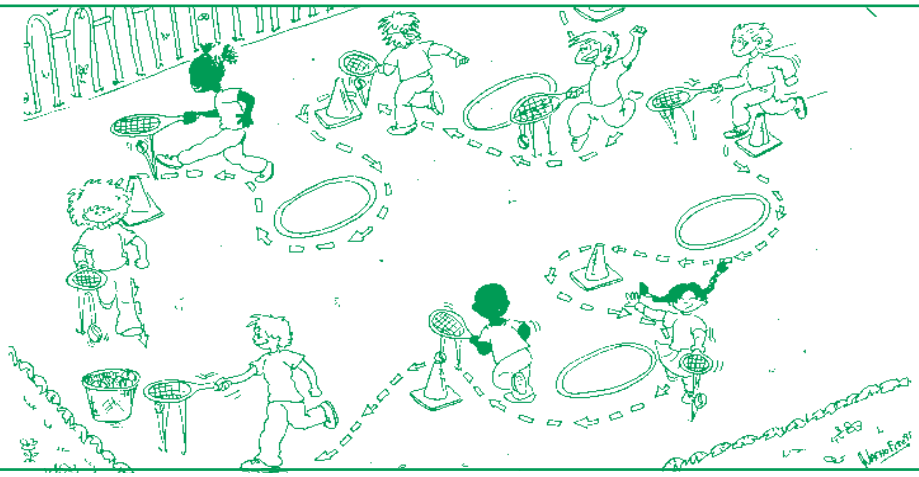
The advantage of planning is that it provides us with landmarks, thanks to the reference situations. For example, if we give the child an exercise that is too easy, she will get tired of it. In the same way, an exercise that is too difficult is likely to discourage him.

This does not leave too much room to manoeuvre. And for the teacher, although it isn't easy to be constantly working in the grey area between the 'not too simple' and the 'not too difficult', that is precisely his role. Through both his education and sensitivity, he will know when to best adjust or reorganise a situation.

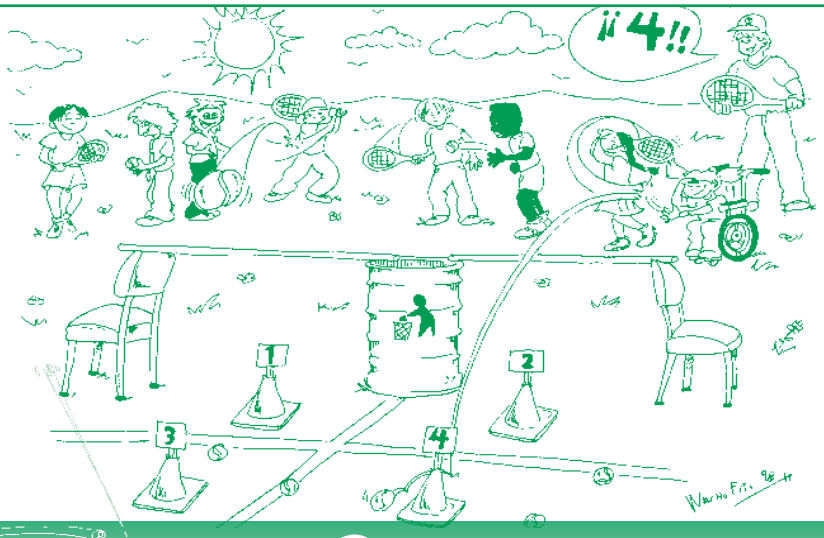


2 ONE HOUR LESSONS FOR CHILDREN 5 - 8 YRS OLD

LESSON 13	Theme: PROPELLING AND MOBILITY
Objective	To bounce the ball with the racket.
Warm Up	Go fish: 2 teams are seated facing one another at opposite ends of the court. Rackets and balls for each student are placed in hoops located on a line crossing the middle of the play area. On the signal, one student from each team runs to pick up one racket or one ball and returns to his place. Then the next team-mate sets off. First team to complete task wins.
Games/ Exercises	Bouncing and dribbling relay: Students are divided into teams. On the signal, the first student of each team starts running and bouncing the ball with the racket through the circuit of cones and hoops. When he gets back to the start, the next team-member sets off. First team to compiete the circuit wins.
Variations	Holding the racket with one or both hands, changing racket position, varying the height of the bounces, changing the palm (grip) position, whiie going forward, etc.

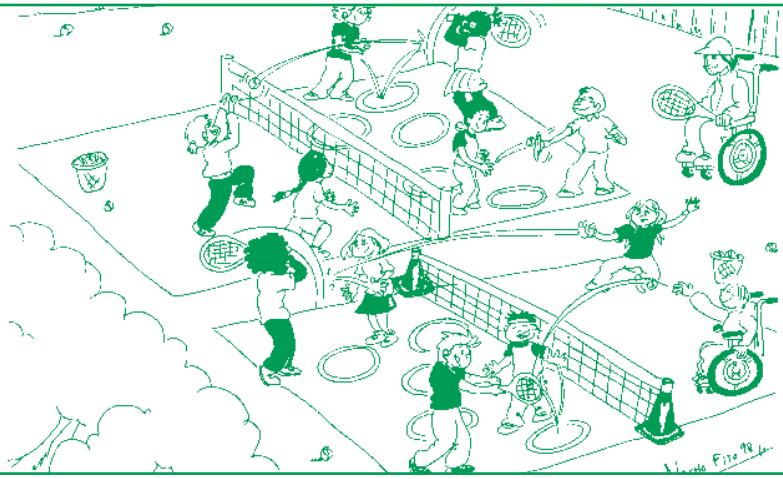


LESSON 14	Theme: PROPELLING THE BALL WITH THE RACKET
Objective	To hit the ball a specified distance.
Warm Up	Racket and ball relay: Teams of same number of students. They start from the same line. On the signal a student from each team runs to a line with a ball balanced on his racket, leaves the racket and ball on the ground and runs back. Another team-mate runs. The team who has the most rackets and balls on the finish line wins.
Games/ Exercises	Toss-hit: Students form pairs, one feeder and one hitter. They are positioned on one side of the net while the other side is divided into areas. Teacher says 1, 2, 3, or 4, feeders toss with the hand and hitters have to hit with the racket to these specific areas. Pair with most hits to the correct area wins.
Variations	Hitting the ball so it lands in a precise spot, varying the power of the stroke, etc.



2 ONE HOUR LESSONS FOR CHILDREN 8 – 10 YRS OLD

LESSON 13	Theme: RECEIVING FOREHANDS AND BACKHANDS, PROPELLING AND CO-OPERATING
Objective	To improve reception skills of the students receiving balls to their right or to their left.
Warm up	Moving around: Students move around class area avoiding contact with others at different speeds (slow, fast), different levels (on their toes, low).
Games/ Exercises	The hunter: Students are in 3's (one feeder, one hitter and one catcher). Hoops are placed around the court. Each team has several balls. The feeder has to let the ball fall in the hoop or toss it directly to the hitter who has to hit it (each time with a different shot eg. Forehand, backhand, forehand volley, backhand volley, etc.) towards the catcher who has to catch the ball before the bounce. First team to complete the hoops circuit wins. Students rotate positions.
Variations	Right - left on groundstrokes and on volleys. One feeder and one hitter, etc.



LESSON 14	Theme: RECEIVING SHORT AND LONG BALLS, PROPELLING AND CO-OPERATING
Objective	To develop forward and backward movement required when hitting short or deep balls.
Warm up	Follow the leader: Students in 3's or 4'S. One student is the leader. Students walk, run, skip, hop, jump, leap, gallop, etc following the leader. Teacher changes leader.
Games/ Exercises	Close to fence, close to net: Students are in 4's (one feeder, one hitter, one net catcher and one fence catcher). The feeder feeds short and long balls to the hitter who has to hit them where the catchers call "short, to the net catcher" and "long, to the fence catcher". First team to finish the balls wins. Students rotate positions.
Variations	Short - deep on groundstrokes and on volleys. One feeder and one hitter, etc.