

WELCOME TO COACHES REVIEW !

Welcome to this issue of Coaches Review which features articles from Holland, U.S.A., Great Britain, Canada and Ireland. The subjects covered include Fitness, Nutrition, A Biomechanical Analysis of the Sampras Serve, Concentration in Tennis and Creating Efficient on-Court Training Sessions for Tennis.

Coaches working closely with elite junior players will be interested in the recent report to the Women's Tennis Council by the Age Eligibility Commission. The recommendations, which will ensure that girls as young as 14 will no longer be allowed to compete in top level professional tennis events, appear on page 11.

Many of our readers will have attended the 8th ITF Worldwide Coaches Workshop which was held at Key Biscayne, Florida from October 31 - November 6 1993. The Workshop attracted 270 coaches from 83 nations making it the biggest international gathering of nations at any tennis event ever held in the U.S.A.

We are delighted to announce that the 9th ITF Worldwide Coaches' Workshop will be held in conjunction with the

European Tennis Association and the Real Federación Española de Tenis from 8 - 14 October 1995. The venue will be the National High Performance Training Centre, near Barcelona, Spain.

Make sure that you mark this important date in your diary now!

Once again our thanks to all the coaches who have contributed articles for this issue of ITF Coaches Review. If you have any material that you deem relevant and worthy of inclusion in a future issue, please forward it to us for consideration.

We do hope you all enjoy this, our 5th issue of Coaches Review, and we wish you a happy and successful 1995.



Doug MacCurdy
Director of Development



David Miley
Development Administrator

CREATING EFFICIENT TRAINING SESSIONS

By Josef Brabenec (Canada)

As a humble student of the game of tennis for the past fifty years I consider myself a very practical tennis coach. I believe that in order for a coach to prepare efficient training for elite players they must understand the importance of the following:

1. The five game situations.
2. A stroke's frequency versus a stroke's efficiency in a match.
3. Simplified decision-making based on the depth of the opponent's shot (3 zones).
4. Time distribution, and physical versus mental fatigue in a match i.e. the importance of taking time between points in matches and between drills in practice, to ensure quality.
5. Correct playing habits being implemented at all times in training sessions.

In the last issue of Coaches Review I dealt with points 4 and 5. In this issue I will deal with the first three important principles:

1. THE FIVE GAME SITUATIONS

There are only five possible playing situations:

1. The Player serves - 100% of all points in any match start with SERVICE.
2. The Player RECEIVES and hopefully RETURNS - 70-85% of

all points in a match start with a return in play (aces, missed returns, double faults make up the rest).

3. The Players have a rally from the back court - minimum 2 shots by each player. (Women usually have a higher percentage of back court rallies than men.)
4. The Player attacks using approach shots, volleys, smashes or attempts a put away shot.
5. The Player defends himself/herself using passing shots or lobs.

This is all that any player can expect in a match. Therefore, THIS IS ALL THAT A PLAYER SHOULD PRACTISE. THE MOST OFTEN REPEATED SITUATIONS IN ANY MATCH are SERVING and RETURNING and therefore, they should be practised accordingly (minimum 30% of any training time).

2. FREQUENCY VERSUS EFFICIENCY

During the past 5 years I have been compiling information from hundreds of high level matches to demonstrate the difference between FREQUENCY and EFFICIENCY of individual strokes in a match. Here are some of the results in self-explanatory tables:

Table A shows the percentage use (frequency) of individual strokes in a match, compared to successful results of the stroke in percentages during a match (efficiency):

STROKE (In a Rally)	HARD COURTS		CLAY COURTS	
	Frequency	Efficiency Point Finished	Frequency	Efficiency Point Finished
Service	100%	27% (2% double faults)	100%	17% (2% double faults)
Return	73%	10%	83%	13%
Volley 3rd Shot FH/BH	63%	17%	70%	11%
4th Shot	46%	11%	59%	6%
5th Shot	35%	9%	53%	7%
6th Shot	26%	5%	46%	8%
TOTAL		79%		62%
CONCLUSION:				
After the 6th Shot, 79% of all points finished, 21% undecided (Hard Courts)				
After the 6th Shot, 62% of all points finished, 38% undecided (Clay Courts)				

From this research we see that on hard courts, after each player has hit 3 shots there are 21% of points undecided and 79% decided. On clay courts, after 3 shots each, 38% of points are undecided and 62% of points decided. Use of all strokes is more evenly distributed on clay courts. This fact is very important for a coach in selecting drills for preparation of his player either on hard or clay courts. The most evenly spread use of all strokes is in women's matches on clay courts.

I followed and charted hundreds of matches and in the table below, I have selected a dozen, played between top players in 3 different Grand Slams, the French, US and Australian Open in 1992, '93 and '94, plus a match at Amelia Island.

HOW DO TOP WORLD PLAYERS PLAY?

Match Between	No of Games charted	No of Points charted	Total No of Rally	Ave Rally per Point	POINT FINISHED			Errors v	
					U.5 Sec	U.10 Sec	10Sec+		
					Max 4shots	5-8shots	9 shots +	Wins	
Courier/ Edberg 6/3 3/6 6/4 6/2	36	241	721	3x	179p 74%	41p 17%	21p 9%	140E 101W	Australian Open 92 (rebound ace)
Edberg/ Sampras 7/6 6/4 7/6	13	98	148	2.53	85p 86%	12p 13%	1p 1%	59E 32W	Australian Open 93 (rebound ace)

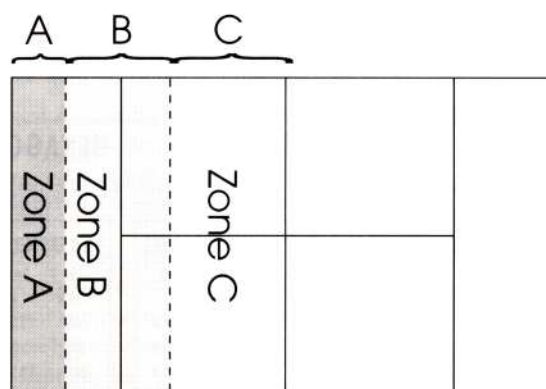
Graf/ Sanchez 7/5 6/4	7	42	192	4.58	28p 66%	5p 12%	9p 22%	30E 12W	Australian Open 93 (rebound ace)
Agassi/ Costa 6/3	9	51	233	4.56	30p 58%	11p 21.5	10p 20.5	31E 20W	US Open 92 (Hard Courts)
Courier/ Agassi 6/3	9	70	316	4.51	39p 56%	17p 24%	14p 20%	44E 26W	US Open 92 (Hard Courts)
Lendl/ Becker 7/6	13	80	253	3.16	55p 68%	15p 18%	10p 13%	48E 32W	US Open 92 (Hard Courts)
Pioline/ Medvedev 6/3 6/1 3/6/6/2	11	69	257	3.7	46p 66%	13p 18%	10p 16%	47E 22W	US Open 93
Sabatini/ Graf 6/2 1/6 6/3	24	151	790	5.23	78p 52%	42p 27%	31p 21%	101E 50W	Amelia Isl 92 Clay
Graf/ Capriatti 6/3 7/5	10	60	326	5.45	31p 51%	14p 23%	15p 25%	36E 24W	French Open 93 Clay
Muster/ Agassi 3/2 sets	18	111	583	5.23	65% 58%	24p 22%	22p 20%	78E 33W	French Open 94 Clay
Gaudenzi/ Boetsch 6/1 1/2 ret	10	72	381	5.28	37p 51%	20p 27%	15p 22%	55E 17W	French Open 94 Clay

What does the above table tell us?

1. THE MOST REPEATED SITUATIONS in any match are SERVING and RETURNING (each point has to start like this) - therefore PRACTISE THEM THE MOST.
2. ON ANY SURFACE 50 - 80% of all points in a match are finished after both players HIT THE BALL ONLY TWICE (4-stroke rally) - therefore the following combinations should be practised:
 - a) Service followed by a forcing ground stroke (preferably forehand)
 - b) Service and solid first volley
 - c) Return and solid passing shot (or lob)
 - d) Offensive return and solid volley (or smash)
3. On hard courts more than 70% of all points are finished after each player has hit 3 shots (6-stroke rally) and 55-60% of all points are finished like this on clay courts - therefore drills should be prepared according to the surface. THEORETICALLY, if a coach could develop a player who can always hit 3 shots in the court during each point, he would have a world champion.
4. Look at the ratio between errors and winning shots. Top players commit 1.5 to 2.5 errors for one winner. (The spread between errors and winners tends to be higher in women's tennis) - therefore, PLAY AGGRESSIVELY by all means, BUT WITH CONTROL and try to force the opponent to make an error, instead of trying to win each point with a spectacular shot.

3. SIMPLIFIED DECISION MAKING PROCESS.

To simplify the basic decision-making ability for a young player, I divide the court into 3 zones:



ZONE A - Backcourt zone - when the opponent's stroke lands there (deep shot) the right decision is to hit the same deep shot back

ZONE B - Zone of options

- i) The first option when the opponent's shot lands there is to HIT AN APPROACH SHOT
- ii) The second option is to try a put-away shot
- iii) The third option is to attempt a drop shot (particularly effective on slow clay courts)

ZONE C - Net game zone - when a player intercepts the opponent's shot in this zone, he/she should try to win the point with a decisive volley or smash.

The most important and the most difficult place in which to make correct decisions and carry them out is in ZONE B. Therefore, coaches should ensure that their players practise playing in this zone.

FITNESS AND TESTING

By Dr. Paul Roetert - U.S.T.A.

In the next two issues of ITF Coaches review we will be highlighting various Fitness Tests from the U.S.T.A.'s Sports Science Testing Protocol. In this issue we will be showing the procedures for Testing:

- 1) **Agility**
- 2) **Flexibility**
- 3) **Lower body power**
- 4) **Abdominal strength**

We will also be presenting percentile scores of athletes tested by the U.S.T.A. in their Area Training Programme. The scores are for boys and girls 12 & under, 14 & under and 16 & under. Coaches can use these scores to compare the performance of their players with those of their peers in the USA.

AGILITY

Agility and quickness are very important components of a good tennis player. How can you test agility? Try the hexagon test. You'll need:

- * a stopwatch
- * a ruler
- * masking tape
- * a friend

Procedures:

1. On the floor, use masking tape to create a hexagon (6 sides with angles of 120 degrees). Make sure each side is 24 inches long.
2. Stand in the middle of the hexagon and remain facing in the same direction throughout the test.
3. Begin jumping forward over the tape with both feet and immediately back into the hexagon when the command

'Ready-Go' is given by your friend. (Your friend should be timing you with the stopwatch.)

4. Then, continuing to face forward, jump over the next side and back to the middle. Repeat for each side.
5. Continue this pattern by jumping over all six sides and back to the middle each time for three full revolutions of the hexagon.
6. When the feet enter the hexagon after three full revolutions, your friend should stop the clock and record your time.
7. Give yourself one practice trial.
8. Test yourself twice, recording both times with the stopwatch, and then make a note of your best time.
9. One thing, though. Give yourself a half second penalty each time you touch a line and a full one second penalty if you don't jump in the proper sequence.

HEXAGON TEST PERCENTILES

To read this chart below, find your hexagon score within the appropriate chart. The corresponding "%" represents your hexagon score as a percentile rank relative to other junior tennis players in that age group.

12 & UNDER GIRLS		14 & UNDER GIRLS		16 & UNDER GIRLS		12 & UNDER BOYS		14 & UNDER BOYS		16 & UNDER BOYS	
%	Seconds	%	Seconds	%	Seconds	%	Seconds	%	Seconds	%	Seconds
< 10%	16.0	< 10%	14.7	< 10%	14.2	< 10%	14.2	< 10%	15.5	< 10%	15.1
10%	15.0 - 15.9	10%	14.0 - 14.6	10%	13.3 - 14.1	10%	13.3 - 14.1	10%	14.7 - 15.4	10%	14.3 - 15.0
20%	13.8 - 14.9	20%	13.5 - 13.9	20%	12.7 - 13.2	20%	12.7 - 13.2	20%	13.8 - 14.6	20%	13.1 - 14.2
30%	13.5 - 13.7	30%	13.0 - 13.4	30%	12.3 - 12.6	30%	12.3 - 12.6	30%	13.2 - 13.7	30%	12.7 - 13.0
40%	13.0 - 13.4	40%	12.5 - 12.9	40%	12.0 - 12.2	40%	12.0 - 12.2	40%	12.9 - 13.1	40%	12.1 - 12.6
50%	12.7 - 12.9	50%	12.0 - 12.4	50%	11.7 - 11.9	50%	11.7 - 11.9	50%	12.5 - 12.8	50%	11.8 - 12.0
60%	12.0 - 12.6	60%	11.6 - 11.9	60%	11.4 - 11.6	60%	11.4 - 11.6	60%	12.0 - 12.4	60%	11.4 - 11.7
70%	11.4 - 11.9	70%	11.2 - 11.5	70%	10.8 - 11.3	70%	10.8 - 11.3	70%	11.6 - 11.9	70%	11.1 - 11.3
80%	10.9 - 11.3	80%	10.7 - 11.1	80%	10.5 - 10.7	80%	10.5 - 10.7	80%	11.1 - 11.5	80%	10.5 - 11.0
90%	10.5 - 10.8	90%	10.1 - 10.6	90%	10.0 - 10.4	90%	10.0 - 10.4	90%	10.4 - 11.0	90%	10.1 - 10.4
>90%	10.4	>90%	10.0	>90%	9.9	>90%	9.9	>90%	10.3	>90%	10.0

FLEXIBILITY

Are you able to touch your toes while keeping your knees straight? If not, you are like many tennis players who have poor lower back flexibility. Research has shown that, on the men's professional tennis tour, 38 % of players have missed at least one tournament because of lower back problems. Hitting tennis balls not only involves a lot of flexing and extending of the body, but also a lot of twisting. The key to having good flexibility is to stretch your muscles on a regular basis (at least three to four times a week). This will help you, not only in

preventing injuries but also in reaching the really wide shots that you could never get to before.

How do you know if you are flexible enough? Take a sit-and-reach test and see if you can reach past your toes. This test measures the flexibility of the lower back and hamstrings (back of the upper legs). You'll need:

- * a ruler
- * a friend

Procedures:

1. Sit with your knees extended and legs flat on the floor. Have your friend hold your knees to make sure they do not come off the floor.
2. Lean forward with your arms extended and have your friend measure the distance from your fingertips to your toes. Your hands should be placed next to each other with your index fingers touching.
3. Record your score. If you do not reach your toes, the number is recorded negatively in inches. If you reach past your toes, the number is recorded positively in inches.

Now compare your score with the scores below to see in which percentile you fall.

SIT AND REACH PERCENTILES

Find your sit and reach score within the appropriate charts below. The corresponding “%” represents your sit and reach score as a percentile rank relative to other junior tennis players in that age group.

12 & UNDER GIRLS		14 & UNDER GIRLS		16 & UNDER GIRLS		12 & UNDER BOYS		14 & UNDER BOYS		16 & UNDER BOYS	
%	Seconds	%	Seconds	%	Seconds	%	Seconds	%	Seconds	%	Seconds
<10%	16.0	<10%	14.7	<10%	14.2	<10%	14.2	<10%	15.5	<10%	15.1
10%	15.0-15.9	10%	14.0-14.6	10%	13.3-14.1	10%	13.3-14.1	10%	14.7-15.4	10%	14.3-15.0
20%	13.8-14.9	20%	13.5-13.9	20%	12.7-13.2	20%	12.7-13.2	20%	13.8-14.6	20%	13.1-14.2
30%	13.5-13.7	30%	13.0-13.4	30%	12.3-12.6	30%	12.3-12.6	30%	13.2-13.7	30%	12.7-13.0
40%	13.0-13.4	40%	12.5-12.9	40%	12.0-12.2	40%	12.0-12.2	40%	12.9-13.1	40%	12.1-12.6
50%	12.7-12.9	50%	12.0-12.4	50%	11.7-11.9	50%	11.7-11.9	50%	12.5-12.8	50%	11.8-12.0
60%	12.0-12.6	60%	11.6-11.9	60%	11.4-11.6	60%	11.4-11.6	60%	12.0-12.4	60%	11.4-11.7
70%	11.4-11.9	70%	11.2-11.5	70%	10.8-11.3	70%	10.8-11.3	70%	11.6-11.9	70%	11.1-11.3
80%	10.9-11.3	80%	10.7-11.1	80%	10.5-10.7	80%	10.5-10.7	80%	11.1-11.5	80%	10.5-11.0
90%	10.5-10.8	90%	10.1-10.6	90%	10.0-10.4	90%	10.0-10.4	90%	10.4-11.0	90%	10.1-10.4
>90%	10.4	>90%	10.0	>90%	9.9	>90%	9.9	>90%	10.3	>90%	10.0

LOWER BODY POWER

Everybody is born with a certain amount of athletic ability; however, you can improve your vertical jump and lower body power. Power is a combination of muscular strength and movement speed. Greater power allows a person to respond quicker and produce forceful movements with less effort.

Training the lower body means developing an explosive first step. Players with explosive first steps are able to get into position quickly, set up well and hit effective shots. In addition, an explosive first step will give you the speed necessary to get to balls hit farther away. Research shows that during an average five second point in a tennis match, a player will change direction about four times. Therefore, it is important to develop powerful legs.

The vertical jump is a measure of lower body power. It is the height you can jump from a standing position minus the height you can reach when standing. To test how powerful your legs are, try the following test. You'll need:

- * A tape measure
- * Chalk
- * A yard stick
- * A friend

Procedures:

1. Stand facing a wall and touch as high as possible. Both arms should be extended with your hands next to each other and index fingers touching.
2. Mark the spot.
3. Extend and attach a yardstick up the wall from the highest reach of your fingertips.
4. Put chalk on your fingers before you jump.
5. Turn sideways and jump with both feet together (do not take a step) reaching as high as you can on the yardstick.
6. The difference between your standing reach and the highest point of your jump is your score.

Running stairs, sprinting on a track or tennis court and doing jumping exercises can improve your lower body power. Power may not replace having skilled placement and execution. But it can help you change directions quicker and prepare for your next shot earlier.

Now compare your score with the scores below to see in which percentile you fall.

VERTICAL JUMP PERCENTILES

Find your vertical jump score (in inches) within the appropriate age chart below. The Corresponding “%” represents your score as a percentile rank relative to other junior tennis players in that age group.

12 & UNDER GIRLS		14 & UNDER GIRLS		16 & UNDER GIRLS		12 & UNDER BOYS		14 & UNDER GIRLS		16 & UNDER GIRLS	
%	Vertical Jump	%	Vertical Jump	%	Vertical Jump	%	Vertical Jump	%	Vertical Jump	%	Vertical Jump
>90%	16.5	>90%	18.6	>90%	19	>90%	17.3	>90%	20.7	>90%	25.1
90%	15.3-16.4	90%	17.1-18.5	90%	18.1-18.9	90%	16.6-17.2	90%	19.6-20.6	90%	24.1-25.0
80%	14.4-15.2	80%	16.1-17.0	80%	17.1-18.0	80%	16.1-16.5	80%	18.1-19.5	80%	22.1-24.0
70%	13.9-14.3	70%	15.1-16.0	70%	16.1-17.0	70%	15.1-16.0	70%	17.6-18.0	70%	20.8-22.0
60%	13.4-13.8	60%	14.6-15.0	60%	15.1-16.0	60%	14.1-15.0	60%	16.8-17.5	60%	20.1-20.7
50%	12.6-13.3	50%	14.1-14.5	50%	14.6-15.0	50%	13.4-14.0	50%	16.1-16.7	50%	19.1-20.0
40%	11.9-12.5	40%	13.3-14.0	40%	14.1-14.5	40%	13.1-13.3	40%	15.1-16.0	40%	18.6-19.0
30%	11.5-11.8	30%	12.9-13.2	30%	13.1-14.0	30%	12.3-13.0	30%	14.6-15.0	30%	17.4-18.5
20%	10.4-11.4	20%	12.1-12.8	20%	12.1-13.0	20%	11.6-12.2	20%	13.6-14.5	20%	15.6-17.3
10%	9.1-10.3	10%	10.6-12.0	10%	11.1-12.0	10%	10.8-11.5	10%	12.1-13.5	10%	13.1-15.5
<10%	9	<10%	10.5	<10%	11	<10%	10.7	<10%	12	<10%	13

ABDOMINAL STRENGTH

Abdominal strength is important to reduce the risk of lower back pain and generates powerful shots. Abdominal strength is the connection of power between your legs and your arms.

Sit-ups

The athlete is positioned on the back with hips flexed to 45 degrees and knees flexed to 90 degrees. The feet are held stationary by one of the examiners. The examiner should place a knee between the person's feet. The hands are placed across the body, against the body. The athlete performs as many sit-ups as possible in a 60-second period or to failure. To count as

a complete sit-up, the elbows must touch the thighs, the shoulder blades must touch the mat, and the hips are not allowed to leave the mat.

Hint:

Abdominal strength can be increased by doing a number of different sit-up type exercises (e.g. bicycle and crunch twist). Try also doing the test sit-ups without holding or stabilizing the feet. This increases the amount of work the abdominal muscles are doing and reduces the strain on the hip flexors.

SIT-UP PERCENTILES

12 & UNDER GIRLS

%	SIT-UPS
< 10%	27
10%	28-34
20%	35-36
30%	37-38
40%	39-40
50%	41-42
60%	43-44
70%	45-47
80%	48-50
90%	51-54
> 90%	55
	in one min.

14 & UNDER GIRLS

%	SIT-UPS
< 10%	30
10%	31-34
20%	35-37
30%	38-40
40%	41-42
50%	43-44
60%	45-46
70%	47-49
80%	50-52
90%	53-56
> 90%	57
	in one min.

16 & UNDER GIRLS

%	SIT-UPS
< 10%	35
10%	36-39
20%	40-42
30%	43-44
40%	45-46
50%	47-49
60%	50-51
70%	52-54
80%	55-57
90%	58-60
> 90%	61
	in one min.

12 & UNDER BOYS

%	SIT-UPS
< 10%	27
10%	28-33
20%	34-36
30%	37-39
40%	40-42
50%	43
60%	44-45
70%	46-48
80%	49-51
90%	52-56
> 90%	57
	in one min.

14 & UNDER BOYS

%	SIT-UPS
< 10%	33
10%	34-38
20%	39-41
30%	42-43
40%	44-45
50%	46-47
60%	48-50
70%	51-53
80%	54-57
90%	58-60
> 90%	61
	in one min.

16 & UNDER BOYS

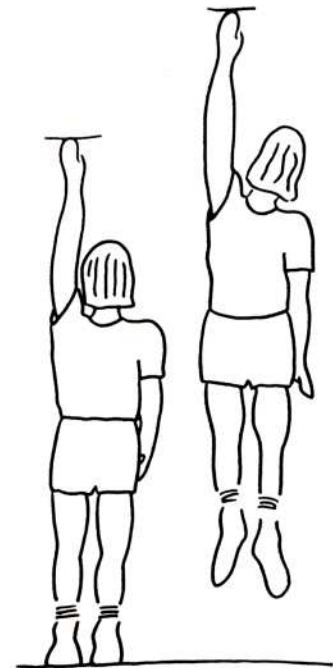
%	SIT-UPS
< 10%	34
10%	35-39
20%	40-44
30%	45-47
40%	48-49
50%	50-52
60%	53-54
70%	55-58
80%	59-62
90%	62-64
> 90%	65
	in one min.



HEXAGON TEST



SIT & REACH TEST



VERTICAL JUMP TEST

PROFESSIONAL TENNIS COACHES' ASSOCIATION OF GREAT BRITAIN

is hosting an International Conference on 24/25 June 1995
at the Forum Hotel, Kensington, London SW7.

The theme of the Conference is "Elitism". Speakers will include Jack Groppe, Nick Saviano, Charles Applewhaite and other internationally renowned speakers. Conference Delegates will receive accreditation to "The Championships" at Wimbledon allowing complimentary admission for the first five days.

For further information, contact:

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THE PSYCHOLOGY OF CONCENTRATION IN TENNIS

By Dr Aidan Moran (Ireland)

"It was three-all in the first set, and I had break points in every game. It should have been 4-2 at the least. I wasn't focused, my mind was all over the place".

(Martina Navratilova, after her defeat by Helena Sukova in the 4th round of the US Open at Flushing Meadow, 6 September '93)

CONCENTRATION - A VITAL SKILL

Concentration, or the ability to focus on the task at hand while ignoring distractions, is probably the most important mental skill required for success in competitive tennis. To illustrate, consider what can happen when we 'lose' it, even momentarily in a match.

In the 1993 French Open, Gabriela Sabatini lost a quarter-final match to Mary Joe Fernandez (10-8 in the third set) despite the fact that, at one stage, she needed just **one point** for victory. What happened? The most plausible explanation is that when Sabatini served for the match at 6-1, 5-1, anxiety caused her mind to think too far ahead (i.e. about the **result** of the match) rather than to focus only on what she could **control** and **do** at **that moment** (i.e. the nature and placement of her serve). In other words, tension made her 'result-conscious' rather than 'task-conscious'. Although this attentional switch is understandable (as it is caused by our emotions), it is a serious mental mistake because psychology shows that whenever what we are **thinking** is different from what we are **doing**, our performance will deteriorate. Sabatini acknowledged this error later when she admitted '**I had the match in my hands and I was just playing great tennis. I think probably... I lost my concentration**'.

This example raises several interesting questions. What exactly is '**concentration**'? Why do we '**lose**' it so easily in tennis? And how can we improve our ability to '**focus**' in matches? In this article, I shall sketch some brief answers to these questions.



CONCENTRATION IN TENNIS

'Concentration' is the ability to focus mental effort on what is most important in a given situation. It resembles a 'spotlight' which we shine at things in which we are interested.

In general, two types of attentional targets exist:

1. external objects or events (e.g. the ball, a loud noise)
2. internal experiences (e.g. telling oneself silently to 'step forward' on returning serve)

Accordingly, we 'lose' our concentration in tennis when we pay attention to an inappropriate target - something which is irrelevant to the execution of the shot we are currently playing. Sometimes, we distract ourselves through anxiety (e.g. asking yourself 'What if I miss?' before serving). On other occasions, our focus is disrupted by gamesmanship. For example, Michael Chang surprised Ivan Lendl in the French Open in 1989, when he served underarm to him at a key point.

Less dramatically, but just as effectively, our concentration can be upset by compliments from our opponent. For example, if he says 'your forehand is working really well today' or 'you haven't lost your serve yet', then you may find that you begin to over-analyse a part of your game that was previously automatic!

The secret of improving our concentration, therefore, is to ensure that our thoughts and actions in tennis are specific and relevant to the point we are currently playing (e.g. 'Okay, slice serve to the backhand'). We must develop a total 'performance focus' at all times, directing our 'spotlight' at what we are doing - not at some future result. All the concentration strategies used by world-class players are based on this principle.

Unfortunately, for at least two reasons, it is difficult to concentrate for long periods in tennis:

1. as tennis is an un-timed game, the momentum of a match can swing around at any stage. Psychologically, each point is a separate 'battle' and hence, the leader is never really 'safe'
2. the relatively low proportion of time for which the ball is in play creates a mental vacuum which makes the mind vulnerable to distractions. To illustrate the amount of 'down time' in tennis, note that in the 1992 Wimbledon Men's Singles Final between Andre Agassi and Goran Ivanisevic, the ball was in play for only 33 minutes and 40 seconds out of a total match duration of 170 minutes

In other words, 80% of the match was spent in activities (e.g. preparing, worrying, regretting, becoming angry) other than hitting the ball!! Without proper control, these activities can become distractions.

To summarise, concentration comes from controlled preparation before, and effective use of 'down time' within matches. Therefore, if players learn to focus before points and to re-focus when they become distracted, they can improve their concentration and consistency. Here are some psychological techniques for this purpose:

FOCUSING: PRACTICAL CONCENTRATION TECHNIQUES

In order to improve your concentration, you should experiment with the following techniques. They are based on the principle that since the mind can think of only one thing at a time, what we focus on must be:

1. under our playing control
2. specifically helpful to the point/shot we are currently playing. This principle ensures an optimal 'performance focus'

GOAL SETTING: HAVE A SPECIFIC 'PROJECT' ON EACH POINT

Top class players control their concentration by setting specific goals or 'projects' for themselves every time they go out on court. Psychologically, what makes these goals valuable is that they are performance related as distinct from result related. For example, instead of saying 'I cannot afford to lose this match' (a negatively phrased and fear-inducing objective based on something you want to avoid), it is better to say 'I'm going to work on my first serve today and try to get 80% accuracy' (a specific, positively phrased action over which you have complete control). Therefore, good players practise concentration skills every day because they are always working on some aspect of their game or performance.

Mentally, 'winners are workers'. They make goals - not excuses!

Tips:

- set specific goals for yourself before you go out on court (e.g. 'I will give 100% effort on each point')
- have a project for each point (e.g. 'deep approach then come to the net')
- after the match, review your performance relative to the goals you set for yourself. Write down one goal achieved and one goal you have to work harder on in practice
- when you get nervous, give yourself a specific action to perform (e.g. 'cross-court return'). Action goals make your nervous energy work for you but result-goals make it work against you.

DEVELOP ROUTINES

Concentration improves with preparation. Therefore, most tennis stars have developed distinctive 'pre-performance routines' in order to train themselves to focus only on actions that they can control. These routines are short sequences of behaviour that allow you to prepare consistently for a particular shot. For example, a pre-serve routine might involve standing at the line, deciding on a specific serve, bouncing the ball, visualizing the action, glancing at the target again and then serving.



Tips:

- develop a pre-serve routine and a serve routine
- after a mistake, it is helpful to follow a routine of acknowledging this error, rehearsing what you should have done, turning your back on the mistake (leaving it 'behind you', literally) and preparing to face the next point ('Okay, this one now')

PRACTISE PHYSICAL RELAXATION

Anxiety consumes mental energy. Therefore, you will concentrate better if you are physically relaxed. So between points and at change-overs, it is very helpful to lower your shoulders, 'flap out' tension from your hands and breathe deeply. These active relaxation techniques ensure that your physical tension does not impair the rhythm or fluency of your strokes (which normally happens when you begin to think

about the danger of losing the match - another result of a harmful 'result focus').

Tip:

- before serving check that your shoulders are lowered and that your breathing is slow and regular

VISUALISE WHAT YOU WANT TO DO NEXT

Mental imagery (or 'visualisation') is a powerful concentration strategy because it makes our skills automatic and helps us to focus on what to do next. By 'seeing' and 'feeling' yourself performing specific shots successfully in your mind's eye, you are 'grooving' your shots and practising in your head. Imagery should be combined with goal-setting to help us to visualise our game plans.

Tip:

- before matches, between points and at 'change-overs', you should visualise what you want to do on the point you are about to play

USE TRIGGER WORDS

Encouraging yourself is extremely important in tennis because well-chosen words can help to re-focus your mind at any stage and to retain the momentum of the match. Self-criticism is damaging and distracting because it makes you angry and self-conscious.

Tip:

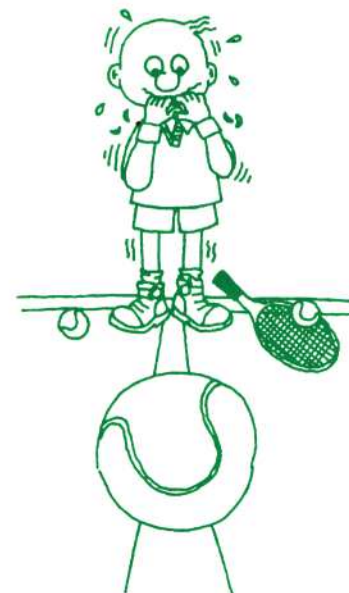
- use phrases like 'this point now, let's go' or 'Okay, try again, just one point'

PRACTISE UNDER ADVERSITY

Many players lose concentration because they become distracted by the adverse conditions in which they are competing. For example, they may say 'I just can't play well in the wind' or 'I hate playing near a noisy court'. The best way to counteract this mental weakness is to practise under adversity whenever possible. This habit will help you to develop an immunity to distractions.

SUMMARY

Concentration is a vital mental skill which can be improved by learning to control what you do and think about while playing tennis. Try some of the concentration techniques that I have mentioned above. They should help players to become more consistent in their game. **So, anyone for mental tennis?!**



“LOAD UP” FOR THE SERVE

By Paul Dent and Pete Jones (Great Britain)

This article first appeared in the LTA's "Coaching Excellence" publication.

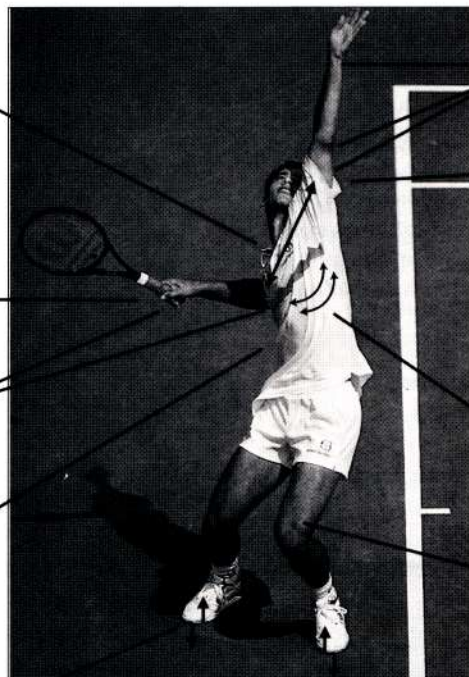
We have selected a 'freeze-frame' of Sampras in the classic 'load-up' position on his serve and analyzed the biomechanical principles involved to deliver what many refer to as one of the most effective serves in the game.

Hitting shoulder is dropped to provide a greater angle over which the arm may accelerate about the shoulder, therefore reducing the required muscular force

Sampras keeps his palm down on the take-back to reduce the muscle tension in his upper arm and shoulder

Unlocked arm segments to put more links into the coordination chain to develop greater power

Sampras' trunk (shoulders) and hips are rotated to pre-stretch the big muscles in the body (the chest, back and abdomen) to deliver the power into the hit



Photograph: Allsport

Sampras pushes into the ground and with the same force as he exerts downwards into the court, the court replies with an equivalent upward force

Sampras places the ball in the air using only the shoulder segment i.e. locked arm segments for greater control

The raise of the non-playing shoulder is both a natural result of the spine flexion and ball placement action

(The dropping of the non-playing shoulder in the 'hitting' section of the stroke facilitates the rotation about the waist. The deceleration of this shoulder transfers angular momentum to the playing shoulder via the shoulder girdle couple)

Elastic energy produced as a result of twisting the upper half of the body against the lower half

Pete's active knee-bend involves the stretching of his quadriceps. This pre-stretch encourages the storage of elastic energy which produces faster extension of the legs, culminating in greater racket head speed

NUTRITION FOR COMPETITION

by Alice Linderman PhD.RD. (USA)

Following a proper diet on a daily basis will prepare players for competition. But getting all the way to the day of the first match won't get them through the tournament. Teach your players that eating properly before, during and after competition is essential if they want to **play** the final instead of just watch it.

* Before the match

Before a workout or match players should eat SOMETHING. The meal should be small and light, low in fat and fibre and rich in carbohydrates and fluids. If it's a morning match, juice and toast are good breakfast choices, making sure that the meal is less than 400 calories in total. If they've got an afternoon match or a hard practice coming up after school, a bagel and juice box will do as a snack. Such options keep the blood sugar levels steady, preventing the fatigue, poor performance and frustration that can set in when these levels drop.

A good rule of thumb is to stop consuming solid foods two hours before a match and liquid meals - with the exception of water - one hour before a match. If a match is delayed, players should try to gauge how much time they'll have before it begins. If it's less than two hours, juice or a sport drink should be sufficient.

* During the match

For the most part, water is all players need to get through the match or workout. Juice and soda have higher concentrations of carbohydrate and therefore take longer to digest, so athletes may want to avoid them.

If the workout is over an hour and under especially hot and humid conditions, a sport drink won't hurt. Sport drinks with a

five to eight percent solution - which translates to 13 to 20 grams of carbohydrate per eight-ounce serving if you're reading the label - are the best choices. Also, athletes should learn to read the list of ingredients in their sport drinks. If fructose is second only to water on the list, the bottle goes back on the shelf. Fructose takes longer to absorb than other sugars, potentially leading to nausea, bloating and cramping.

Above all, tennis players should avoid caffeine. Not only is it a stimulant, but it can upset the stomach. Worst of all, caffeine is a diuretic so it robs the body of liquid. By drinking caffeine the fluids athletes think they are replacing may actually increase their chances of dehydration.

* After the match

Eating or drinking carbohydrate right after a hard workout or match can help speed recovery. Players should aim for 50 grams of carbohydrate (e.g., 1.5 cups of pasta or cold cereal, 1.5 bagels, 2 cups of orange juice or 10 squares of crackers) every two hours beginning within 15 minutes after the workout. Keeping food and fluids high in carbohydrates for the next six hours and making sure that all solid foods are low in fat and fibre and easy to digest will also help. Athletes should still watch out for caffeine, as the feeling of fullness that it leaves may prevent them from getting the right amount of food for their recovery.

Eat, drink and be smart...the finals may be tomorrow!

(Alice Linderman is associate professor of applied health science and director of the dietetics program at Indiana University).

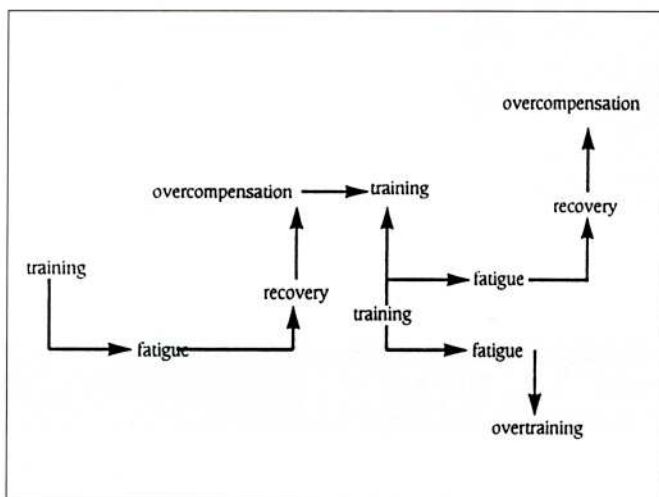
OVERTRAINING AND BURNOUT

By Babette Pluim, Medical Doctor for the Dutch Davis Cup Team
This article first appeared in the LTA's "Coaching Excellence" publication.

Long term development of a tennis player requires that the coach provides the correct 'training mix' of **overload** and **rest**. The precise balance of these two training principles provides the coach's main dilemma - maximising performance increases, yet preventing overtraining or even 'burnout'.

The goal of training is to increase the performance of the tennis player through systematic, repeated, tennis-specific activity. Training overload will disturb homeostasis, which is a stimulus for regeneration. This regeneration does not stop at its former level, but will over-compensate to a **higher level**. By this mechanism, the performance capacity of the player technically, tactically, physically and mentally, will gradually increase.

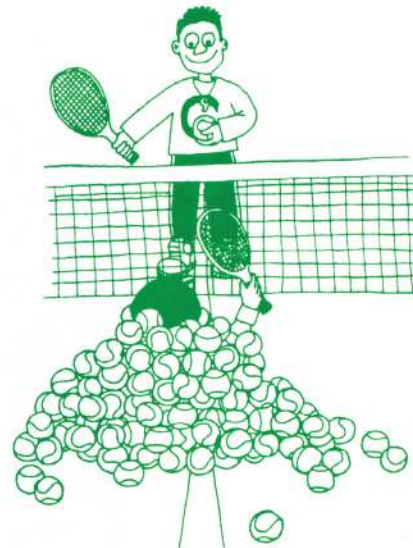
Overcompensation and overtraining



However, when the player is exposed to **inadequate rest and/or too great an increment in training** she may experience a state of failing adaptation, which is **recognisable by general fatigue and inadequate rest from training sessions**. When the player is again exercised to a maximum when still in this state, a decline in performance, even overtraining may occur.

Three different forms of overtraining can be recognised:

1. **overreaching** is a form of overtraining which follows a short period of over-intensive training. The symptoms of overreaching can be reversed by a larger than normal rest period. Recovery is then achieved within days
2. **overtraining** is a state of chronically depressed performance, accompanied by one or more of the serious symptoms listed below. Recovery from the overtraining syndrome requires significantly longer time than required in overreaching
3. **burnout** is used to denote the phenomenon seen in young players, who joined the professional tour at a very early age, and retire from the game injured or mentally exhausted within a comparatively short period. Recovery may take years, if they recover at all. Symptoms of overtraining are:



- increased morning pulse rate (by approximately 5-10 beats)
- increased incidence of injuries
- decreased maximal performance
- muscle soreness
- decreased appetite
- weight loss
- slower recovery after exercise
- increased oxygen consumption at submaximal work loads
- sleep disturbances
- increased irritability and emotional instability
- apathetic/sluggish behaviour
- fear of competition
- loss of training and competitive desire
- difficulty in concentrating at work and training
- increased incidence of infections

PSYCHOLOGICAL. The most common sign here is a change in the player's ability to handle adverse situations on the court:

- she becomes frustrated more easily
- she has a shorter concentration span

Unfortunately, a typical coaching response in such circumstances is to work the player harder - which is usually the wrong thing to do.

PHYSICAL. A second common characteristic of overtraining and 'burnout' is an increase in physical problems. Such problems may be real, or they may be at least a bit 'made up'. The player seems to have an incidence or a series of small injuries. She misses practices because of colds and flu, which occur more often than they used to. If the coach has been able to measure it before and after, the player will usually have an increased 'resting pulse rate'.

COMPETITION-RELATED. Finally, 'burnout' appears in changed attitudes toward and during matches. Instead of looking forward to competition, the player starts to avoid it; and when she does compete her performance is lower than usual. 'Tanking' is one symptom.

So what can a coach do to prevent and treat overtraining and burnout? Answers fall into three general categories, divided into eight specific actions:

GETTING STARTED

1. An initial physical examination.

- i. to screen for medical conditions which might affect tennis performance
 - ii. to establish baseline measures of heart rate, strength, and endurance against which future progress (or regression) can be compared. When a player is 'burning out' or overtraining, she will usually show higher heart rates, decreased strength and lower endurance than before.
2. **Diet.** All coaches know that a player should have a proper diet, but one of the usual characteristics of 'burnout' is a lapse into poor eating habits. Irregular meals and too much junk-food are the most common symptoms.

TRAINING ROUTINES

3. **On the court.** Alternate hard sessions with easy ones. Coaches of track-and-field athletes have known for years that best results are obtained when training is very consciously 'paced'.
4. **Off the court.** Encourage the player to take time off. Tennis training should never be a 7-days-a-week business. A good training plan will include hard days, easier days and days with no tennis at all. Plan for this!
- It is important to balance the intensity and volume of stress with the intensity and volume of recovery.
5. **Attention to non-tennis activities.** One of the most common causes of 'burnout' is the pressure which a player feels from parents, school and peers. The best coaches not only understand that such non-tennis pressures exist, but are also flexible in responding to them. If a young player wants to

participate in other sports, for example, the coach has to make the case (primarily to the player's parents) as to why the idea is a good one.

TRAINING AND COMPETITION PLANNING

6. **A training plan.** Related to points 3-4 above, many of the best coaches keep a training 'log book' for each player in which both plans and accomplishments are detailed. There are at least two benefits from such a practice:
- i. the player can feel that she participates in the development of her own training schedule.
 - ii. she knows what to expect on any given day or week
7. **A competition plan.** Similarly, good coaches often put together a 3-month or 6-month tournament plan for each player. Such a plan is usually best developed in consultation both with the player and the parents. There are again at least two benefits:
- i. training can be carried out with specific competition targets in mind
 - ii. the perils of too much competition can be avoided
8. **Injury.** Whether an injury is major or minor, real or imagined, it is the player who has it and not the coach. Unfortunately, too many coaches have at least some degree of a 'play with pain' philosophy. There is no quicker way to provoke 'burnout' than to give a player an impression that her coach is not taking account of physical problems.

The best coaches are sensitive to the obvious but all too quickly forgotten fact that they are dealing with people, not tennis playing machines. They are continually on the look-out for the effects of injuries, puberty and stress, and modify plans accordingly.

AGE LIMITS SET BY COMMISSION REPORT

Girls as young as 14 years old will no longer be allowed to compete in top level professional tennis, beginning in 1995.

Players under 16 could also be excluded from the Grand Slam Championships as a result of the far-reaching research carried out by the Age Eligibility Commission set up by the Women's Tennis Council.

The Commission, under the chairmanship of Dr Carol Ottis, an expert in sports medicine with an emphasis on women athletes, has recommended that up to the age of 18 a player should be permitted only limited participation in the professional game.

The current rule, which permits girls of 14 to join the full WTA Tour, is "inappropriate", according to the Commission's report.

Under the proposed new regulations, which have to be approved by the Council and implemented into the 1995 WTA Tour Rules, players would not be allowed to compete on an unrestricted basis until they reach 18.

Players between 15 and 17 will be allowed to play a limited schedule that will permit a gradual 'phase-in' to the WTA Tour. The number of tournaments and the level of competition will be restricted.

At 15 a player will be allowed to play in four Tier III and IV events and four ITF Future Tournaments.

At 14, players will not be allowed to play WTA Tour tournaments and will be able to compete in only four ITF Future events.

Thirteen-year-old players, who can currently play in three ITF Future events a year will no longer be allowed to compete at all.

In order to compete on the WTA Tour or three or more ITF Future tournaments with prize money of \$25,000 or more, players will also have to attend week-long player orientation courses, to learn the benefits of education, training, nutrition and the prevention of injuries.

Parents or guardians of young players and coaches and agents will also be required to attend courses of instruction.

Exceptions will be made for players already taking part in professional tournaments. Those already playing on the WTA Tour at age 14 will be treated as 15 year olds and 15 year olds treated as 16 year olds and so on during the phase-in period.

Anne Person Worcester, Managing Director of the Women's Tennis Council and the new CEO of the WTA Tour, said that the main purpose of the Commission's recommendations was to promote career longevity and fulfilment and minimise the physical, psychological and development risks of women professional tennis players.

The commission, which consisted of seven experts in psychology, sports training, sports injuries, sociology and nutrition, reviewed 3,000 pages of written evidence and testimony from 90 individuals, including former players such as Tracy Austin and Andrea Jaeger (the two most frequently named when so-called 'burn-out' is discussed) coaches, agents, parents, journalists and sports administrators.

The Council said the Commission's recommendations for annual medical examinations, for the completion of educational requirements in a player's country of residence, parental seminars and coach and agent registration reflected the view that the age at which young women can begin competing in professional tennis is not the only problem.

"The problems are complex and multi-faceted", said the Council.

"They require an equally multi-faceted response."

"Given the thorough, professional and independent review of the rules by an international panel of health and medical experts, we believe that the rules changes should stand the test of time."

An Advisory Panel is to be set up to monitor the implementation and effectiveness of the changes and the Council expects to establish a mechanism by which the health, development and career fulfilment of players is constantly reviewed.

9th ITF Worldwide Coaches Workshop - 1995

The ITF is happy to announce that in conjunction with the European Tennis Association and the Real Federación Española de Tennis the 9th ITF Worldwide Coaches Workshop will be held at the "Centro de Alto Rendimiento" (CAR) outside Barcelona, Spain from 8 - 14 October 1995.

- CAR is a multi-sport training centre built for the Barcelona Olympic Games
- The lecture hall is excellently equipped and accommodates up to 400 delegates comfortably
- The Centre has indoor and outdoor tennis courts
- A host of other sports facilities are available on-site
- The CAR itself has accommodation for up to 100 delegates at very reasonable rates and the nearby Novotel will provide alternative accommodation

Final details of the Workshop will be available by June 1995 from all National Associations, but we suggest that you put the dates of 8 - 14 October in your diary now!

The ITF looks forward to this being another successful Worldwide Workshop.



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