



Welcome to the ITF Coaches Review !

This issue features articles from Holland, Russia, Germany, Australia, USA and Britain. A wide range of important tennis-related matters are covered including Matchplay Analysis, Modern Complex Training, The Biomechanics of the Single-handed Backhand and some tennis-specific fitness training practices.

We were delighted to receive our first contribution from Russia. The topics covered by Anna Skorodumova and by Richard Schonborn contain some interesting ideas which will no doubt generate some discussion amongst our readers. Perhaps some of you may wish to comment on the subjects in the next issue.

You may also be interested in the statistics which appear on page three. These figures on the number of men's professional matches played during 1993 illustrate the continued growth in the game of tennis.

You will note that the game has seen a huge increase in the number of weeks of Men's Satellite and Women's Futures events during the last decade. The ITF Junior World Ranking Circuit also continues to grow. In 1993 there were 116 ITF Junior World Ranking events.

The increase in the number of events has made it more difficult for coaches working with top ranked national junior players between the age of 14 and 18 to decide on a tournament schedule for their players. In deciding on the level of tournament to play (i.e., professional or junior events) the coach should take note of the fact that unlike the Satellites and Futures events, a vast majority of these ITF junior tournaments provide accommodation and full hospitality for all main draw players and coaches. This reduces greatly the cost of participation in the tournaments. Coaches therefore should try to take advantage

of this growth in junior ITF events to help their players gain competitive experience.

Another area of growth has been the number of nations that are affiliated to the ITF. There are now over 180 affiliated National Associations each of which is striving to develop tennis on a national level. The ITF recognises that the training of coaches is vital to the worldwide development of tennis. However, despite the obvious importance of having well educated coaches, the vast majority of ITF member nations presently have no system of ongoing coaches' education in place.

In an effort to remedy this situation the ITF Development Department, with the assistance of the ITF Coaches Commission and the Coaching Departments of some of the world's most successful tennis nations, has compiled a Level I syllabus, which we hope will assist ITF member nations with the education and certification of their own tennis coaches.

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 future issues, please forward them to us for consideration.

We hope that you enjoy this issue.



Doug MacCurdy
Director of Development



David Miley
Development Administrator

Modern Complex Training in Tennis

by Richard Schonborn, Chief Coach, DTB, German Tennis Federation

It is high time to review tennis training methods from the perspective of state-of-the-art training knowledge.

In trying to develop young players, technique is still taught separately. Even worse: it is taught independently, in a completely isolated fashion from other motor-related factors.

Unfortunately, people are often still unaware that the human body has to be seen as a single homogeneous unit made up of different mental and physical skills and abilities that determine performance. These skills can influence one another positively (in case of an optimal development), or negatively (if development is inadequate).

The content of training should respond to the complex requirements of competitive play. From the very beginning, training must be adapted to the special characteristics of competitive match-play.

The tactical goal in competitive match-play is to create situations or problems that are extremely difficult for the opponent to resolve and for which he either has no reply or at very best, a technically weak one.

The reasons for a lack of adequate solutions to a given situation include:

1. Technical flaws in certain strokes or types of strokes.
2. Insufficient tactical capabilities.
3. Inadequate perception and anticipation skills.
4. Co-ordination problems.
5. Conditioning problems in connection with speed, power and stamina.
6. Lack of concentration, poor fighting spirit, fear, risk aversion and other psychological problems.

Often only those causes that are apparent or evident, such as a weak backhand or slow foot-work, nerves, etc. are diagnosed by the coach.

The problem is that what is at first apparent and obvious is usually only the tip of the iceberg. What lies under the surface, often goes unnoticed and, consequently, is not registered. (see Fig. 1)

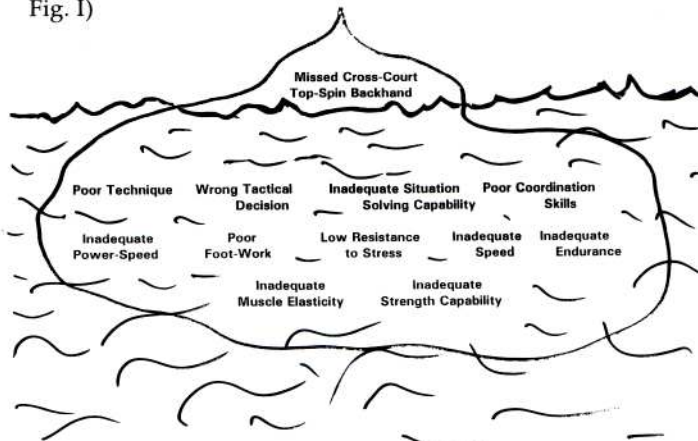


Figure 1

A faulty solution to a given special situation is usually the result of a flawed complex motor action, whose quality has been determined by psychological and physical pre-conditions.

For example, a backhand error can, indeed, be the result of a generally poor stroke. But it could also be due to:-

1. Poor co-ordination.
2. Lack of strength.
3. Poor muscle elasticity.
4. Wrong learning methods.
5. Poor footwork.
6. Insufficient power-speed.
7. Other reasons.

More often than not, it is due to a combination of several factors.

On the other hand, from the stroke production point of view, that missed backhand could have been a very good shot. In spite of the quality of the stroke a backhand error was committed in this particular play situation. Consequently, what is inadequate is not the backhand technique as such, but rather the suitability of that technique in that situation. Therefore, both in the case of inadequate technique, and in the case of inadequate problem solving capacity in connection with the play situation, we are dealing with the part of the iceberg that lies beneath the surface.

Stroke production can only be considered complete, or capable of performing perfectly in all kinds of situations, when all factors involved function in an optimum fashion. In order for that to happen they should be systematically developed over time and, above all, must fit and match each other like clockwork. There lies the main problem. We coaches need to change our way of thinking.

We need to introduce competition-specific complex training across the board. We should try to achieve the best possible systematic, simultaneous and comprehensive development of all factors that limit or determine performance. At the same time, performance should be adapted to the specific conditions of tournament match-play. Even at the initial stage, we should make sure that all motor and psychological areas are developed simultaneously. (see Fig.2).

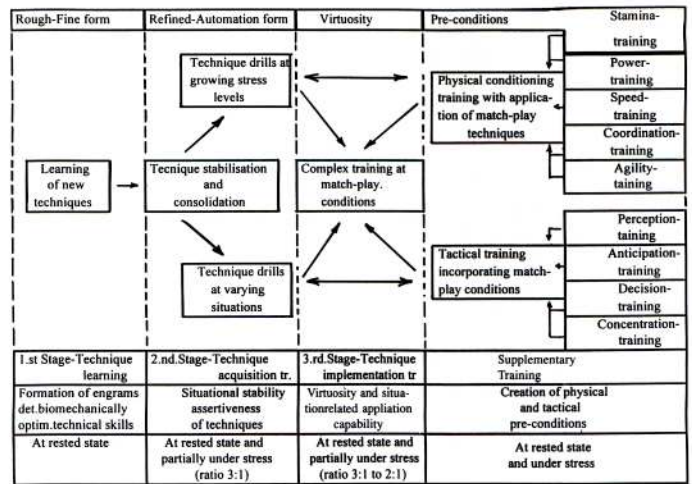


Figure 2

In today's tennis, however, this is by no means enough for the long term development of the player. Instead, in a second stage, we must continuously incorporate the gradually improving capabilities of the performance determining factors into our technical and tactical training, in a specific and systematic fashion.

We must ensure that modern training is seen as a single process, encompassing the development of technical, tactical and special physical skills, with the primary goal of providing all the conditions required for complex match-play performance. Such comprehensive play performance must incorporate and take into account everything that happens in, and is necessary for tournament match-play.

The closer we can weld together all these factors into a proper functioning single unit, the higher will be the playing capability of our players.

Of course, we should also adhere to physiological principles, such as, for instance, the inclusion of breaks in combination with stress or load periods, the duration of stress periods, etc., in order to simulate match conditions.

Match-play specific training, through which technique is not developed as a goal in itself but as a means to an end, should find its way even to the smallest club.

The teaching sessions and the ensuing practice and training periods can no longer be solely motion-oriented. Above everything else, they should be goal and task oriented.

Technique should be learned and developed by solving individual tasks. It can be motion-oriented only when dealing with difficult detailed corrections.

This can be primarily achieved by emphasising the player-coach or player-player inter-action during training. Emphasis should be put not only on the action, but also on the reaction, not only on the reply, but on the reply to the previous reply and so on (i.e., on a complex move as part of a whole sequence). In other words, the solving of particular situations is the main content of training.

Hardly any progression in the player's performance can be achieved through endless feeding from the basket where the stroking motion is tampered with and practically no attention is paid to the result (height, speed, direction etc). Instead the entire training should be oriented according to the characteristics of the complex match-play requirements.

Let us try to make it clearer with an example:

A teacher feeds balls from the basket to a player's forehand. He hits the balls cross-court and the teacher corrects, for

example, his elbow position, his racket preparation, his shoulder turn, etc. In the process, almost no attention is paid to what happens to the balls being hit. After a while the technical stroke production becomes almost perfect. However that does not mean that this shot can be successfully used in a specific match situation, as it has been drilled in a relatively static situation.

That picture-perfect stroke production technique grooved from a static position will break down the moment the player is forced to run to the right corner, make a split second decision, play the ball cross-court and immediately recover after the shot. The reason is that in order to master the situation successfully, several factors must occur together in a rather complex interaction.

Here are some of the elements involved in the solutions to a particular situation:

1. Perception and anticipation of the situation.
2. Quickness and explosive-speed to get off the mark.
3. Power-speed to dash to the corner.
4. Eccentric breaking at the end of the sprint.
5. Elasticity for the contraction-extension of the muscles involved.
6. Control of balance by using the appropriate footwork and keeping the head and the upper body in the right position, while executing the stroking motion and rotating the shoulders.
7. The right "mix" of swing and spin to achieve the required ball height and depth.
8. Concentric muscle work to push-off, in order to recover to the middle of the court.

All of these things, and more, happen sometimes in the course of a second. Many of them take place at the same time. If there are any weak spots somewhere within that complex conglomerate, the result may be a missed shot.

For that reason, the entire range of factors involved should constantly be developed simultaneously. Moreover, the various factors should be connected with each other time and again, when developing a particular shot.

Precision and accuracy at high body and racquet speed can only be achieved through dynamic and not through static technique training. For this reason, we should strongly encourage a goal and task oriented training approach, which guarantees optimum play performance through the complex development of all performance-determining factors.

Needless to say, there will still be some room in the future for the type of training that is geared towards the polishing of specific technical details (stroking motion-oriented drills). However, this should not become the main emphasis of training, and should be carried out in a situation-related manner, according to the player's level and playing ability. In all types of exercises and training, we should give top priority to quality. We should make sure that the physiological stress generated in training replicates, to the greatest possible extent, that occurring in a match. Only then will it be possible to guarantee that the internal controls involved in the acquisition of a given technique coincide with those that regulate the use of that same technique in a match situation.

The number one factor, which plays a predominant role, not only in today's competitive tennis but also in modern training and sport science, is speed in all its forms.

1. Acyclic speed, in the form of action-speed.
2. Cyclic speed, mainly as speed-co-ordination and movement frequency.
3. Start- or take-off power and acceleration power (power-speed) are of paramount importance for the development of technical skills, as well as for their optimum application.

Therefore the development of tennis-specific speed has to be seen as part and parcel of tennis technique training.

As we can see, tennis training is both a complex and a complicated process.

Without the appropriate knowledge of the inter-connection between all different details, it is impossible to teach a completely functional technique to a player. Modern tennis training is indeed a complex process!

1993 Mens Professional Tennis Matches played (including walkovers)

by J. Treleven - ITF Computer Department

	Main Draw		Qualifying		Totals
	Singles	Doubles	Single	Doubles	
Grand Slams & Grand Slam Cup	523	250	492	34	1,299
Walkovers		2		1	
Championship Series	1,070	528	851	94	2,543
Walkovers	6	5	10		
World Series	1,956	939	1,666	180	4,741
Walkovers	6	11	6	1	
Challengers	2,993	1,402	2,355	219	6,969
Walkovers	8	32	23	6	
Satellites	9,962	4,296	12,227	1,146	27,631
Walkovers	37	138	215	39	
Davis Cup	477	163	640		
World Team Cup	26	13			39
Totals	17,007	7,591	17,591	1,673	43,862
Walkovers Totals	57	188	254	47	546

	1983	1993
Weeks of Men's Satellite Tournaments	160	332
Weeks of Women's Futures Events	43	208
Junior ITF Events	82	116

Match Play Analysis

by Anna Skorodumova, Russia

Our programme for analysing matchplay is based on specific charting of the following:

1. Types of strokes - service, backhand, forehand and so on.
2. Area of the court from which the stroke was hit - from the base line or near the net.
3. Direction of the ball flight - cross court, down the line, return cross court, return down the line.
4. Characteristics of the stroke execution - attacking stroke, defensive stroke, counter-attack or neutral stroke.
5. Result of a point - clear winner, the point won as a result of a forced error and so on.

As well as charting the performance, a time study of the match and rest breaks between the points is carried out. It allows us to obtain the following:

1. The total time of the game, set and match. (TT)
2. Playing time of the point, game and match. (CT)
3. Motor density of the point and match. (M.D. = $\frac{CT}{TT} 100\%$)
4. Playing tempo and its changes during all stages of the match.

To evaluate technical actions it is necessary to measure:

1. The volume of technical actions. For tennis players this is the quantity of strokes performed per hour during a competitive match or training.
2. The variety of the player's actions. By this we mean the quantity of technical actions which a player uses in his play. By accepting that the total strokes hit by the player is 100%, we then measure the volume of strokes (in %) for service, backhand, forehand etc.
3. The effectivity of the technique. We mean the ratio of aces, strokes, that led to a "clean" winner as a percentage of total strokes. Effectivity is measured for all strokes.
4. The stability of the technique. By this we mean the ratio of the quantity of strokes performed without any errors to the total quantity of strokes performed. To quantify the stability of the backhand, we take the total of correctly hit backhand strokes and divide by the total quantity of backhand strokes performed during the match. Stability of the other strokes is measured in the same way.

The variety of Emilio Sanchez's technique in the match against John McEnroe (US Open 1990) is illustrated in Table 1.

Michael Chang's stability and effectivity throughout the entire match and in the 4th set against Andrei Chesnokov is illustrated in Table 2.

This programme gives us the opportunity to measure stability and effectivity of the player's strokes relative to the time of the point and the tempo of the point.

Changes of stability and effectivity of Chesnokov's strokes, when the tempo was 25/26 strokes/minute but duration was different is illustrated below in Table 3.

Table 3

Duration	3"	5"	10"	15"
Stability %	100	100	92.9	80.0
Effectivity %	0.0	0.0	7.1	0.0

And vice versa stability and effectivity of Chesnokov's strokes when duration was stable, but the tempo was different is as follows (Table 4):

(The example is for duration between 5 and 10 seconds)

Table 4

Tempo stroke / min	16-20	21-24	25-26	27-28
Stability %	87.5	83.3	92.9	83.3
Effectivity %	0	3.3	7.1	0

The results of our analysis give us the opportunity to:

1. Perfect strong sides of the play and improve weak ones.
2. To get to know the specifics of an opponent's play in points of varying tempo and duration.
3. To devise a tactical plan to use against the opponent which can be practiced and then used in the match.

Table 1 THE VARIETY OF EMILIO SANCHEZ'S TECHNIQUE AGAINST JOHN McENROE

Tempo Strokes Min	Total Strokes	VARIETY								
		Service %	Return %		Volley %			Base Line %		Lob. Other
			Forehand	Backhand	Forehand	Backhand	Smash	Forehand	Backhand	
26.2	429	32.4	14.7	5.8	2.3	1.4	0.7	15.6	23.1	3.9

Table 2 MICHAEL CHANG'S STABILITY AND EFFECTIVITY AGAINST ANDREI CHESNOKOV

Type of Strokes	Service		Return		Backhand		Forehand		Volley				Smash	Other
	I	II	I	II	Cross Court	Down the Line	Cross Court	Down the Line	Backhand		Forehand			
									Cross Court	Down the Line	Cross Court	Down the Line		
Stability Match %	54.8	97.1	91.0	94.0	92.4	91.0	92.1	93.4	88.9	80.0	50.0	66.7	100	93.9
4 Set %	69.0	100	88.2	100	92.0	90.0	96.8	82.8	100	-	40.0	100	100	100
Effectivity Match %	12.3	0.0	4.1	0.0	10.5	17.1	14.6	14.6	44.4	20.0	40.0	33.9	100	31.3
4 Set %	9.5	0.0	2.9	0.0	14.0	18.6	15.9	10.3	50.0	-	40.0	100	100	100

Improve Tennis Fitness with a Medicine Ball Workout

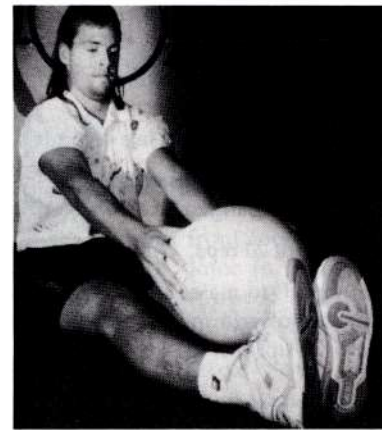
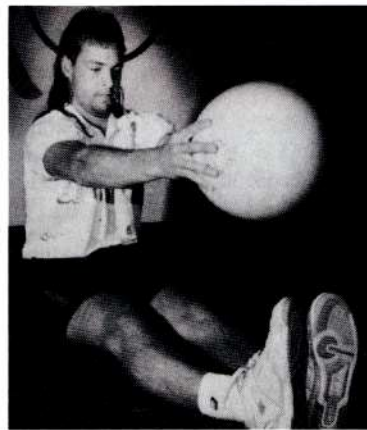
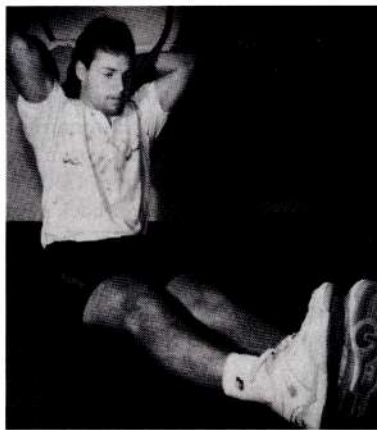
by Donald Chu, Ph.D.

(Donald Chu is a registered physical therapist, certified athletic trainer and certified strength coaching specialist. He is the director at the Athletic Therapy Sports Injury Clinic in Castro Valley, CA).

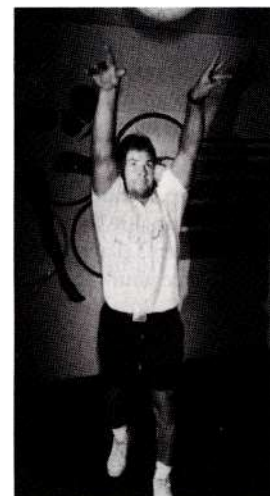
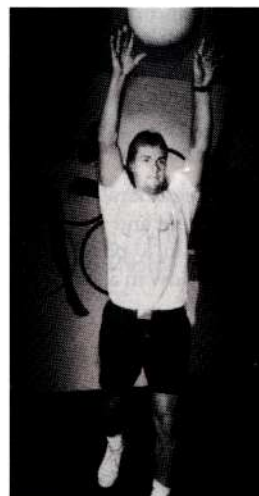
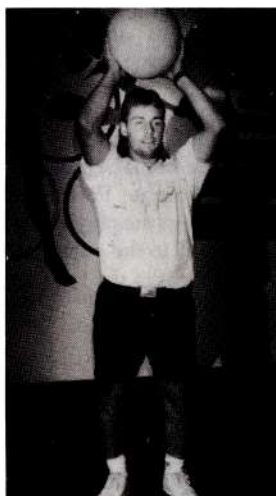
To reach peak performance, tennis players are training to improve their movement, quickness and cardiovascular fitness levels. The medicine ball provides an excellent opportunity to use a fairly light resistance to achieve a great deal of work. Below are several medicine ball drills which can help your players in their quest for excellence.



Begin with the ball behind the player. Player rotates his/her trunk to pick up the ball, carries it around his/her body and returns it to his/her back. Do 10 rotations in a clockwise direction, then reverse the direction for 10 rotations. Pick up the pace as the player warms up. This exercise allows the player to achieve full trunk rotation, which is very important in achieving maximum power in ground strokes.



Player begins sitting on the floor, legs extended, holding the ball behind his/her neck with elbows bent. Player slowly carries the ball over head and reaches for toes. Do 10 repetitions, trying to reach a little further each time. This exercise works the upper body and increases flexibility in the hamstrings. It helps a player increase the range of motion and develop strength in extreme positions.



Player stands holding medicine ball over head. He/she reaches back, then steps forward with one foot as the ball is tossed over head. Working with a partner, each player should pass the ball 10 times. This exercise works the upper arms, chest and upper back muscles. It is designed to develop service and overhead velocity.

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Abdominal Strengthening Exercises

by Babette Pluim, Medical Doctor for the Dutch Davis Cup Team
This article first appeared in the LTAs "Coaching Excellence" publication.

Abdominal muscle strength is important in tennis for different reasons.

1. Strong abdominal muscles may help to prevent abdominal strain during the service motion, especially the kick serve.
2. Strong abdominal muscles may help prevent low back pain due to a wrong posture: eg a lordosis of the spine with an exaggerated anterior tilt of the pelvis.
3. Strong musculature may help to build powerful groundstrokes, as a result of the more powerful trunk rotation.

The four abdominal muscles are the:

1. Rectus abdominus (this flexes the trunk and tilts the pelvis posteriorly)
2. External oblique (the external and internal obliques rotate the trunk).
3. Internal oblique.
4. Transversus abdominus (this plays a minor part in trunk movement).

The iliopsoas needs to be mentioned too, since this is a very strong hip flexor, which may tilt the pelvis anteriorly during abdominal exercises. With fixed legs, the iliopsoas will pull the lumbar spine forward.

For repetitions, either use **seconds**, i.e.,

20 seconds on, 40 seconds off, progressing to 30 seconds on, 30 seconds off, progressing to 40 seconds on, 20 seconds off

or 2 to 3 sets of 20 **reps**. On the final set, go to fatigue.

It is important to maintain proper technique throughout the repetitions and to perform each movement **slowly**, pausing at the top of each curl up, etc., for a half or full second.

CHOOSING THE CORRECT EXERCISES

So knowing all this, how do you decide which abdominal strengthening exercises are best for you or your pupil? Here are the pros and cons of 10 common exercises.

1. The sit-up. The good old sit-up is a standard exercise, known by almost every one. But, how good is this exercise really? If your abdominals are strong enough, a sit-up in the long-sitting position may be done without any problems. However, if your abdominals are not quite so strong, the pelvis initially flexes at the hip joint, bringing the lumbar spine into hyperextension, resulting in compression of the posterior vertebrae.
2. The curl-up. A much better exercise for beginners, therefore, is the curl up. Lie back with your knees bent and feet flat on the floor, arms placed across the chest in an 'X' position (see fig 1). Since your hip flexor muscles are now in a shortened

position, their contractile capabilities are reduced. In this manner, your body curls up without hyperextension of the lumbar vertebrae. Aim to keep the lower back on the floor. In addition, you do work specifically on your stomach muscles, not on your hip flexors. To make the exercise easier, the arms can be brought down to the sides.

3. The sit-up with feet fixed. If a regular sit-up is too difficult, you may want to use the 'feet-fixed' method? The problem is, that if the feet are fixed, the hip flexors can now pull even more powerfully without causing the legs to lift, which risks bringing the spine into hyperextension. Not a recommended exercise.
4. The curl up with twist (see fig 2). If, during the execution of the trunk curl exercise the trunk is rotated (for example by pulling the right shoulder towards the left leg) extra stress is imposed on the oblique abdominals. This is a good exercise for tennis players.
5. Curl up on an inclined board (see fig 3). Good exercise, but difficult. Try it, if you can.
6. Pelvic raise. This works on the lower part of the abdomen. Start by lying on a bench. Maintain 90 degree hip and knee flexion throughout the movement. Hold your arms by your sides for stability. Try lifting your buttocks from the bench, while keeping your legs relatively inactive. Good exercise, especially if you are suffering from lower back pain.
7. Leg lifts. You need strong abdominal muscles to be able to lift your legs straight up, without tilting your pelvis, while lying supine. If you cannot keep your back flat on the ground while performing this exercise, it is better to move to the next one, the leg lowering.
8. Leg lowering. For this exercise, lie supine with legs straight in the air. From this position, slowly lower your legs, to a point where the pelvis begins to tilt. When this occurs, bring your legs up and start again. Beginners can best start close to a wall, so their legs cannot be fully lowered.
9. Wall bar hanging. Hanging from a wall bar provides traction, which will help to relieve tension in the lower back. Try to prevent anterior tilt from the pelvis by pressing the small of the back into the wall. Then lift your bent knees to 90 degrees, keeping your back against the wall.
10. Medicine ball side to side catch (see fig 4 and 5). Sitting down to catch a medicine ball isolates the stomach muscles. Player sits on the floor, with legs out straight. Partner throw a medicine ball to the right hand side of the player. The player catches the ball and returns the ball to the partner (twisting the trunk) in one movement. Repeat to the left hand side.



Figure 1



Figure 2



Figure 3

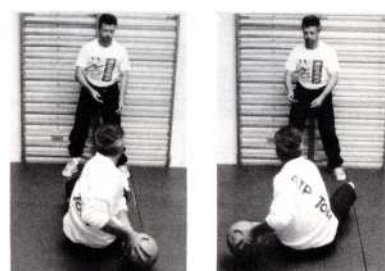


Figure 4 and 5

A Circuit Training Program for Tennis Players of All Ages

by Ronald L. Witchey, Ph.D

(Ron Witchey is a full professor in the Department of Health, Physical Education and Recreation at California State University, Fullerton and a member of the USTA Sport Science Committee.)

WHAT IS CIRCUIT TRAINING?

Circuit training consists of carefully selected exercises arranged in a specific sequence or circuit. The circuit is designed to alternate exercises in upper body strength, flexibility, muscle endurance, lower body strength and cardiovascular endurance. The idea is to progress through the workout as quickly as possible. Perform the first exercise, take a short rest, then proceed to the next station.

WHAT ARE THE ESSENTIAL ELEMENTS OF TENNIS ENHANCED BY CIRCUIT TRAINING?

Muscular strength
Muscular endurance
Cardiovascular endurance
Flexibility
Speed
Agility

WHAT BENEFITS MAY A CIRCUIT TRAINING PROGRAMME ADD?

- More power to one's game.
- Improved ability to move on the court.
- Protection against injuries, especially when hitting off-balance and/or late.
- Improved ability to hit and run time and time again.
- Improved self-image and confidence on the tennis court.
- Improved ability to recover between points, games and sets.
- Short time commitment to complete the circuit (approx. 30-60 minutes including the warm-up, cool-down and flexibility exercises).

ON-COURT CIRCUIT TRAINING

A circuit may be modified to fit individual training needs. This circuit, set up on a tennis court, is designed as a fast efficient mode of training specifically for tennis players. Work through the circuit by performing each exercise for 30 seconds followed by a 15-second period of rest. Complete the circuit three times. Warm-up, circuit workout, and cool-down, should take 30-45 minutes to complete.

Before starting any exercise programme please consult your physician.

Station 1 - Push-Ups....Keep hands shoulder-width apart. Start with arms extended. Lower body until upper arms are parallel to ground. Maintain straight body alignment.

Station 2 - Split Step....Perform series of split steps in place as if preparing to return a shot (with or without racket).

Station 3 - Half Squat....From standing position bend both knees 45 degrees to half-squat position then return to standing. Keep back straight.

Station 4 - Side Shuffle....Shuffle side-to-side along the service line. Keep facing forward (with or without racket).

Station 5 - Arm Curls....Flex arms at elbows and return to extended position. Use light weight.

Station 6 - Sit Ups....Place hands on side of head. Curl forward and return to starting position. Keep knees bent at a 90-degree angle and feet flat on the ground.

Station 7 - Dumbbell Serve....Serve using a light weight. Arm speed is 75 percent of actual speed of service.

Station 8 - Front Lunges....Take a long step forward. Keep front knee level with front foot while touching back knee to ground. Repeat with opposite leg (with or without weights).

Station 9 - Side Crunches....Sit-ups, alternate touching elbow to opposite knee.

Station 10 - Side Lunges....Same technique as front lunges. Player turns shoulders and pivots while turning to either side (with or without racket).

Station 11 - Dumbbell Groundstrokes....Imitate forehand and backhand ground strokes with light weight at 75

percent of actual speed of swing.

Station 12 - Toe Raises....Start with feet flat on ground. Raise weight on tiptoes. Return to starting position. Hold onto the net for balance.

FINAL NOTE

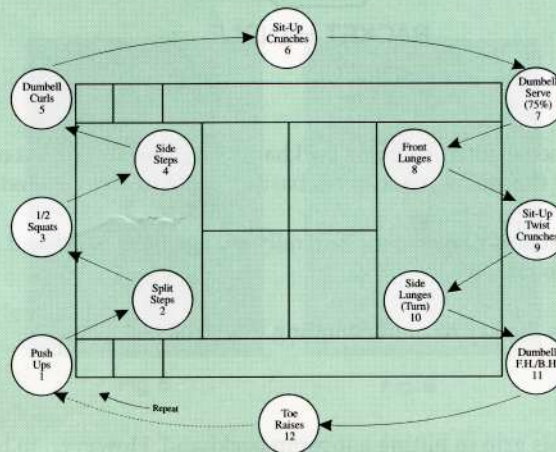
Use upbeat music during the workout to make it fun!

Emphasise doing exercises through complete range of motion. After completing each circuit, take pulse rate for six seconds and add a zero to the count to estimate pulse. A simple training pulse rate target....(70-85%) of maximum heart rate (220 minus age).

During cool-down include flexibility exercises.

Circuit train three times a week with a day of rest between workouts.

ON COURT CIRCUIT TRAINING PROGRAM



The Topspin Backhand Drive

by Tennis Australia

Introduction

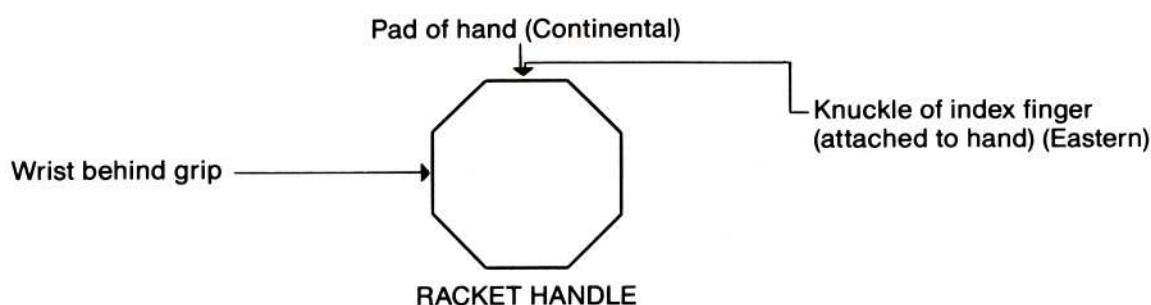
The topspin backhand has become a weapon in the modern game. It can be used to:

- hit a heavy topspin causing it to rear up high on the opponent during the rally
- increase power, with consistency, during a rally
- pass the opponent who is attacking the net by either:
 - ★ power passing shots down the line
 - ★ excessive cross court angles created by the topspin
- disguise a topspin lob.

Because tennis tournaments are now being played on clay and hardcourt synthetic surfaces, the topspin backhand should be an integral part of an advanced player's arsenal of weapons.

Like a number of aspects of the modern game, the topspin backhand is quite different to the typical Eastern grip (brushed) backhand.

The Grip(s)



There are three grips which can be used to hit the topspin backhand. The most important concept to understand is that the **racket face is vertical on impact**, (Fig. 9), and the swing trajectory is basically that of an extended U.

Also keep in mind that the modern tennis players will generally change their backhand grips relative to the height of the ball, and thus the types of shots they wish to hit.

The **vertical racket face** on impact is the key to understanding this stroke.

The Continental Grip

Lendl is an exponent of the use of this grip in hitting a topspin backhand. However, to have the racket face vertical on impact **and** follow the recommended swing pattern, the wrist must lead the racket.

The Eastern Grip

The Eastern grip is used because the racket face is vertical on impact.

The Wrist Behind The Handle Grip

With the wrist behind the handle (Figs. 2 and 10), the racket face will be vertical to the ground. As well, there is a firmer grip on the racket.

Advantages of having the wrist behind the grip include being able to:

- hit a ball chest high or above (Fig. 17)
- hit the ball on the rise, and
- hit a ball bouncing at the normal height. (Fig.4.)

The Backswing

The unit turn, in which the shoulders and the hand (and racket) move as one unit as the ball approaches, is used from the ready position.

In reaching the final stage of the backswing there are two methods in which the racket hand is lifted to approximately shoulder height, with the racket being head height or above. (Figs. 1, and 2.)




Fig. 1



Fig. 2

Method 1

Turn the shoulder, take the hand backwards and then lift into position (similar to a **half U**, ).

Method 2

Turn the shoulder and immediately lift the hand into position to have a **loop** in the backswing.

The Forward Swing And Impact Position

The basic forward swing trajectory results when the player steps with the right foot towards the ball, and the racket drops down below the height of the oncoming ball (and below the wrist). (Figs. 4, 5, 6 and 7).

The bent knees (flexed) assist the racket head to come from below the ball without the need to drop the racket head excessively.



Fig. 4



Fig. 5



Fig. 6



Fig. 7

The racket comes on to the ball at 19° .

Just prior to impact the racket trajectory increases to 44° , which imparts forward rotation of the ball (topspin). The hip is extended, raising the hitting shoulder which aids the upward swing pattern of the racket. (Fig. 11)

At **impact** the ball is hit in front of the front foot (e.g. 20cm for down the line). The **racket face is vertical** and the racket will be parallel to the ground (Fig. 9). A dropped racket head on impact will weaken the grip because of the anatomy of the wrist.

Note also that the elbow joint is extended (thus increasing velocity), so that the arm is almost straight on impact. As well, the upper arm is at a comfortable distance from the body on impact.

Studies by Groppell and Elliott have shown that balls are hit off-centre, which would result in racket twisting. The implication for coaching is to stress a firm grip on impact.

The Follow Through

The racket has already moved on a 44° path prior to impact. It is important for player to keep his/her head (and thus the body) still immediately after impact. (Figs 10 and 11.)



Fig. 9



Fig. 10



Fig. 11



Fig. 12

Note that the racket continues to stay on the **left** of the hitting hand as the racket continues on its upward path. (Fig. 12)

The follow through finishes with the racket well out in front of the body whilst the racket head finishes above the wrist. (Fig. 12)

Only 10% of pre-impact racket velocity is lost. That is, 90% of the forward swing velocity of the racket is retained after impact. Thus the body and racket need to decelerate slowly so as to prevent injury. In most cases this can be done by the back foot coming round after the initial parts of the follow through. (Figs. 14 and 15.)



Fig. 14



Fig. 15

High bouncing balls can also be hit with heavy topspin. The follow through is somewhat different because it is difficult to keep the trunk still during the swing which is similar to that of the normal topspin backhand drive described above.

The ball is hit from below in a similar fashion (Fig. 16), but the racket swings upward and across the ball (and hence the body), requiring the upper trunk to rotate. (Figs. 17 and 18.)



Fig. 16



Fig. 17



Fig. 18

Summary

The topspin backhand drive requires forward transfer of linear momentum and efficient trunk rotation.

Just before stepping forward towards the ball (and thus swinging), the hips and trunk rotate backwards. Thus, as the front steps into position the hips and trunk “explode”, bringing the racket on a path of 19° onto the ball.

The front shoulder stays firmly in position whilst the racket continues on its path to the ball from below. The hip extends, lifting the hitting shoulder and just prior to impact the racket moves on a 44° path.

At all times the racket head is accelerating.

The body stays in position as the weight is transferred and the racket path goes “out through the ball”.

Power is generated from the footwork, hips and trunk and not just by swinging the racket quickly.

References

Elliott B., Marsh T., Overhen P. — “A Teaching Primer for Tennis Stroke Production”.

ACHPER National Journal, September 1988, pp 29-33 — “The Topspin Backhand Drive in Tennis: A Coach’s Perspective”.

Elliott B., Marsh T., Overhen P. — “The Mechanics of the Lendl and Conventional Tennis Forehands: A Coach’s Perspective”. National Sports Research Program (Second Report), August 1986 —June 1988, Australian Sports Commission, pp 23-27.

Groppe J. (1984) — “Tennis for Advanced Players”, Champaign Ill., Human Kinetics.

Napping: A Refresher

from the University of California at Berkeley Wellness Letter, Oct. 92, Vol. 9, Issue 1

About half the people in the world, mostly in warm climates, take an afternoon siesta each day. Sleep researchers have learned napping is not a sign of laziness or merely a cultural artifact. They’ve discovered the urge to nap in the afternoon is nearly universal even in people who have had a full night’s sleep. Not everyone has the free-floating schedule to nap, but when you get the chance, bear in mind:

- The ideal nap time for most people is about eight hours after waking and eight hours before nighttime sleep. That’s when body temperature reaches its low point—usually between 2.00 and 3.00pm.
- Naps are not miniature versions of a full night’s sleep. A mid-afternoon nap is primarily deep sleep, which is most refreshing.
- Naps help reduce fatigue, increase alertness and improve certain aspects of job performance.
- It may not be necessary to sleep during your nap: a study at Texas A&M University found that merely lying down and resting could be as restorative as napping.
- Your nap should be under an hour: longer won’t increase the benefits and is more likely to result in the intense grogginess known as “sleep inertia.”
- Don’t forget another energizer - exercise. It not only has a stimulating effect but is also conducive to a good night’s sleep.

Pre-Match Routines

by Jim Taylor, Ph.D

Routines are one of the best ways for tennis players to prepare themselves for competition. Pre-match routines are valuable for several reasons:

1. They insure completion of every important aspect of match preparation.
2. Routines increase the familiarity of situations and decrease the likelihood of unexpected things occurring.
3. They build consistency of thought, feeling, and action.
4. Routines increase feelings of control and self-confidence, and reduce anxiety.
5. Regardless of the importance of a match, by using a well-practiced routine, you will condition your mind and body into feeling that this is just another match.

A pre-match routine should be composed of everything you need to do to be totally prepared for competition. This includes meal preparation, early morning physical warm-up and stretching, tournament site inspection, and finally mental preparation.

There is no ideal pre-match routine to follow. Rather, routines are personal so you should develop one that suits your particular needs. To do this, make a list of what you need to do before a match. Then create the routine by deciding when is the best time to complete each part of the routine. Finally, follow this routine before every match. Within a few months it will become second nature and it will ensure that you are totally prepared to play your best tennis.

Jim Taylor is a Sport Psychologist in Aspen, Colorado

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9th ITF Worldwide Coaches Workshop - 1995



The 8th ITF Worldwide Coaches Workshop, held at Key Biscayne, Florida from October 31 - November 6, 1993 attracted 270 coaches from 83 nations making it the biggest international gathering of nations at any tennis event ever held in the USA.

Following the success of the 1993 Workshop, the ITF wishes to begin preparations for the 9th ITF Worldwide Coaches Workshop which will be held around the time of October/November 1995, and we invite member nations interested in hosting this unique educational event to submit their proposed bid to the ITF Development Department before July 31, 1994.

In submitting their proposal to act as host for the Workshop, National Associations should consider the following:

1. The venue for the Workshop should be located close to an airport with good international connections.
2. The venue should have a court with seating for approximately 300 people for the on-court presentations. An indoor court may be necessary for the on-court presentations if the weather at that time of the year requires it.
3. The venue should have an indoor lecture room which will seat up to 300 people.
4. Hotel accommodation should be reasonably priced and within walking distance of the venue. Ideally all of the participants should be accommodated in one hotel.
5. The host nation would be expected to provide appropriate staff members to organise a conference of this size.
6. Proposals should include any items which the host nation would be able to provide such as meals, audio visual equipment, notebooks etc.

ALL PROPOSALS FOR HOSTING THIS EVENT MUST BE SUBMITTED DIRECTLY IN WRITING BY THE NATIONAL ASSOCIATION OF THE COUNTRY CONCERNED TO THE ITF DEVELOPMENT DEPARTMENT, BEFORE 31ST JULY 1994.

ITF Regional Coaches Workshops 1994

During 1994 the ITF will hold two Regional Coaches' Workshops, both of which are bi-annual events.

The 7th ITF East Asian Regional Coaches' Workshop will be held in the Philippines from 18 - 24 September 1994. The speakers tentatively include Louis Cayer (Canada), Dave Miley (ITF), Frank Zlesak (Czech Republic) and Doug MacCurdy. Full information on this Workshop is available through the National Associations of the East Asian Region.

The 5th ITF South American Regional Coaches Workshop will commence on 16th November with one week in Peru, followed by a further week in Uruguay commencing 23rd November. The speakers will include Frank Zlesak (Czech Republic), Miguel Crespo (Spain), Doug MacCurdy and others to be announced later. Further information regarding this Workshop will be available from the National Associations of South America by 1st August.

Summaries of 8th ITF Worldwide Coaches Workshop

During the 8th ITF Worldwide Coaches Workshop held in Florida in October 1993, Tennis Canada prepared summaries of the Presentations which took place there. The summaries were made by Ari Novak, Pierre Lamarche, Debbie Kirkwood, Janet Petras, Wendy Pattenden and Louis Cayer.

The ITF is grateful that Tennis Canada has agreed to make this booklet of summaries available to the ITF for the use of other nations. One copy of the Report is now being sent by the ITF Development Department to each member nation. Coaches wishing to obtain copies of the summaries should therefore contact their National Association direct.



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