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## Role of nutrition & diet and its impact on the playing ability of tennis

**N Sundar Raj and Dr. D Sathia kumar**

### Abstract

There are so many sports diets, and many of their inventors are making interpretation on their own by raising false hopes. Some diet will cause weight loss in the short run, but most lead to cravings and end up with weight gain- and some may even be harmful to our body. Tennis is a pan-global sport that is played across the globe throughout the year. This arises notable demands on the physical and psychological preparation of players and included in these demands are nutritional and fluid requirements both of training and tournament. Similarly, a uniform training schedule for players leads to variations in training load received by the players due to weight differences. The nutritional challenges facing elite-standard tennis players are unique. Continuous competitions with a heavy travel program and unpredictable time spent in competitive match-play make for a complicated nutrition strategy. It might be important to integrate training, and training nutrition, into a competition program if tournaments dominate the calendar. This requires a carefully planned strategy, allowing for periods of physical training, skill acquisition, competitive performance and sufficient time for recovery and adaptation. Independent of the time of year, adequate energy must be consumed to support the volume, intensity and duration of activity. Hence, diet and training schedules have to be designed separately for each player and their records must be maintained and monitoring. Effectively. This has led coaches to take an increasing interest in the field of nutrition. That interest will help the coaches to focus player's optimum performance. It is finally the player himself or herself should be able to regulate his or her nutrition and hydration. Therefore educating the player is extremely important.

**Keywords:** Nutrition, skill, volume and intensity

### Introduction

Nutrition is the study of foods and nutrients and their effect on health, growth, and development of the individual. Sports Nutrition applies nutrition principles to sport and game with the intent of maximizing performance. Success in sports depends more on nutrition factors. Specialized exercise training is the major means to improve the Tennis player's performance and proper nutrition is an important component of the total training program. When assessing one's nutritional intake, Diet history is a method of assessment that looks at what a person has been eating over a period of time. Beyond attempting to regularly consuming a healthy, varied and well-balanced diet, players should particularly focus their efforts on adequate and appropriate consumption of three primary nutrients – water, electrolytes, and carbohydrates. These nutrients have the immediate effect on performance.

### Water

- Many players begin matches or practice dehydrated to some degree.
- During training or competition, sweat losses can be more extensive
- Any water deficit can have a negative effect on a player's performance and well-being, and progressive water deficit (from sweating and inadequate fluid intake) can cause
  - Increased cardiovascular strain
  - Decreased temperature regulation capacity
  - Decreased strength, endurance and mental capacity

Many players do not rehydrate adequately after training or competition.

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### Recommendations

- Drink plenty of fluids (e.g., water, juice, milk, sport drinks) throughout the day and also
- Drink regularly during training and competition.

### Electrolytes

- Players lose far more sodium and chloride (salt) from sweating than any other electrolyte.
- Sodium and chloride losses are greater with higher sweating rates.
- Sodium deficits can lead to incomplete rehydration and muscle cramps.
- To completely rehydrate, a player must replace the sodium and chloride that was lost through sweating.

### Recommendations

When a player competes or trains in a hot environment, adding salt to the diet (or eating high-salt foods) can help to prevent a sodium deficit and maintain and restore hydration. Good sodium and chloride sources include:

- Tomato juice, Salted sport drinks Soup, cheese.

### Carbohydrates

- Adequate carbohydrate intake is crucial to optimal performance in tennis.
- Carbohydrate utilization is greater as intensity of play increases and when a player competes or trains in the heat.
- Even if a player eats well before competition, after 60 to 90 minutes of intense singles, carbohydrate stores will likely be significantly decreased and the ability to maintain blood glucose and meet the muscles' demand for energy may be seriously challenged, which could rapidly lead to fatigue.

### Recommendations

- Generally carbohydrate foods are appropriate for periods of intense training or competition.
- Players should consume about 30-60 grams of carbohydrate per hour during play and practice.
- Foods and sport drinks with a high glycemic index can be particularly effective for providing rapid carbohydrate energy or restoration during and after play or practice.

### Nutrition for Tennis

In short, what's good for health is also generally good for tennis. A player's overall dietary needs on and off the court are typically pretty straightforward. Unfortunately, some players will focus on trying the latest food in nutritional supplements, nutrition for tennis can become more than a little confusing. Dietary strategies should be adjusted for such factors as a player's age, fitness, level of competition, intensity of play, environment, time of competition, duration of play, amount of time between matches, as well as many others. From a nutritional standpoint, preparing for a tournament match is further challenged by the unpredictability of getting on the court; a match that is supposed to start at 11 a.m. may not actually begin until 1:30. This raises questions like, "Should that player now have lunch or not?" and "What types of foods should the player consume during the delay to remain 'peaked' for competition?"

### Balanced Diet

A balanced and varied diet should provide all the necessary

nutrients (carbohydrates, fats, protein, minerals, vitamins, etc.) to sufficiently support growth and development, regulate metabolism and bodily functions, maintain normal menstrual status, and provide adequate energy during training and competition. Given the widespread availability of varied and good nutrient-dense food choices, it is not difficult to maintain a well-balanced diet. Unfortunately, we all have our favorite foods, and habitual selection of these items may limit the intake of important key nutrients. Therefore, the guidelines can help players, coaches and parents to choose appropriate variety, proportions and balance in their daily dietary planning.

All tennis players should limit the known nutritional risk factors that are associated with health problems and emphasize those nutritional guidelines that have to promote good health. A diet that includes too many calories, too much saturated fat, alcohol, or chronic vitamin, mineral or caloric deficiencies should be avoided by anyone interested in good health or good tennis.

### Nutrition during Play

Carbohydrates and fats are the primary energy sources utilized during a tennis practice or match. However, carbohydrate and water are the only principal nutrients that need to be consumed while playing tennis. For some players, salt intake during play is important for maintaining fluid balance and preventing heat-related muscle cramps. Even if a player eats well the night before and has a good pre-match meal, after 60 to 90 minutes of intense singles, carbohydrate stores within the body will be significantly reduced. This will generally cause the player's blood sugar level to begin to drop off. This could prompt lower performance and accelerate feelings of fatigue. Therefore, ingesting carbohydrates during play becomes necessary. Carbohydrate-electrolyte sport drinks can have several distinct advantages over water alone: They

- a. Provide energy in the form of carbohydrate,
- b. Have been shown to delay the onset of fatigue and perception of effort,
- c. Increase voluntary fluid intake, and
- d. Provide electrolytes that help to maintain mineral and fluid balance.

All of these factors are important in maintaining performance, especially when playing in a hot environment (carbohydrates are used faster and a player loses more fluid through sweating).

### Nutrition before Match

A tennis player just before playing or training can have a significant impact on the outcome of a match or the quality of a practice session. Appropriate fat, protein, mineral, and vitamin intake are all important, but the primary pre-match nutritional concerns for all players are adequate carbohydrate and fluid intake. From a nutritional perspective, these nutrients (or the lack of these nutrients) will have the biggest and immediate impact on how a player feels and performs.

Before a tennis match begins, a player's carbohydrate stores should be full. To ensure this, the emphasis on consuming pre-match dietary carbohydrates ought to begin at least by the previous evening. Better still, a player should emphasize carbohydrate intake over the several days just before the start of an event, and at the same time progressively decrease overall training volume and session duration. This can better optimize a tennis player's internal carbohydrate stores and fluid/electrolyte balance before beginning a first-round match.

Before play, a player should eat a well-balanced meal with an emphasis on carbohydrate-rich foods and fluid intake (there can be a little protein and fat). Before the match, a player should drink fluids on a regular basis (beginning at least the night before). This can, of course, include water, but a variety of other drinks can and should be consumed as well – juice, milk, and sport drinks are good options in addition to water. In an effort to stay hydrated, some players drink too much fluid. In some cases, rapid or regular consumption of too much no- or low-sodium fluid (e.g., water) can reduce the sodium concentration the blood (hyponatremia). This can cause problems that range from headaches and nausea to cramps or even death in extreme instances.

### **The Coach's Role**

The role of the coach and trainer is that of support. Player alone cannot diagnose or treat eating disorders. Within the past decade the number of players afflicted with the disorder has greatly increased. This, in part, is due to both increased pressure in society for thinness and increased emphasis placed on the relationship between body weight and the performance. Coach should tactfully approach the player in private to offer assistance in contacting a physician or an eating disorder specialist. The problem may need to be handled utilizing a physician, psychologist and registered dietitian. If the individual denies having a problem and it appears evident that he or she does have a problem, you should contact a physician or trained specialist for assistance in determining the next step.

### **Suggestions for the Tennis Performance**

However, sound nutritional guidelines must be followed in planning and evaluating food intake of a player.

The level, which permits the Player to achieve the maximum possible physical performance should be the minimum level aimed in the sports nutrition.

It is important to maintain proper records of diets actually consumed by the players and changes in their body composition and physiological parameters in relation to performance.

The extra calories required for exercise can be obtained from a variety of nutritious foods of the player's choice.

### **Recommendations for Healthy Nutrition for Players**

The importance of nutrition in sports performance should be recognized and adequate facilities provided to ensure that athletes receive the right kind and amount of nutrition.

Body composition and body weight should be appropriate for the tennis player's has selected and these should be enhanced through training and nutrition.

There should be periodical medical checkup of players to assess changes in body weight, body composition, micronutrient balance, lipid profile, etc. in response to the diet and training. For this purpose each player should maintain his dietary history and training schedules.

Weight management in sports is critical. Excess weight can prevent peak performance. Hence weight has to be scientifically manipulated through exercise (energy expenditure) and diet (energy intake).

Performance enhancing substances (drugs) should be strictly prevented since they are injurious to health and have been banned by sports councils, and other sports organizations.

### **Conclusion**

The energy requirements were significantly influenced by

variations in training load. Therefore, periodical evaluation of energy needs is necessary to recommend energy allowances to monitor desirable weight, composition and peak performance levels.

Therefore, it is essential to select the players based on scientific evaluation with better physique, endowed with innate physiological efficiency and nurture them with proper scientific training and adequate nutritional inputs to achieve high level of performance in years to come.

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