Eat Sleep Win!

Complete Nutrition For the Competitive Tennis Player

Learn how top players are fueling!

Jeff Rothschild
MS, RD, CSCS

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Preface

Nutrition and fueling are widely recognized as having a large impact on athletic performance. Countless books and articles have been written on the subject, but few consider the unique needs and demands of a sport such as tennis. This book is an attempt to bridge the gap between the science of sports nutrition and the practical aspects and challenges that are faced by all levels of junior, collegiate, and professional tennis players trying to fuel for optimal performance. This book is aimed at players, parents, and coaches who want to gain a better understanding of the unique nutrition challenges that tennis players face, and learn practical ways to overcome them in order to maximize performance.

As the name implies, this book truly offers a complete nutrition overview for the competitive tennis player. Many people have seen blogs or tip sheets aimed at nutrition for tennis players, but a more in-depth study is required to really gain useful and practical information that can give you the edge on your competition. This book offers that for you.

The content provided in this book is intended as an information resource only, and is not to be used or relied upon for any diagnostic or treatment purposes. If you have any questions regarding your health or a medical condition, you should consult your physician or other healthcare provider.

Jeff Rothschild and EatSleep.Fit are not responsible for any conclusions drawn by the reader, injuries or illness that result from attempting to use the techniques presented throughout this book.

About the Author

Jeff Rothschild is a registered dietitian (RD) with a Master's degree in Nutritional Science, as well as an NSCA Certified Strength and Conditioning Specialist (CSCS). He works with a number of elite tennis players including Grand Slam winners and collegiate All-Americans, as well as up and coming pros and juniors. Jeff has also spent five years as an assistant tennis coach at CSU Los Angeles, a nationally ranked division-II program, teaches college sports nutrition, and actively stays involved in scientific research. Jeff started competing in junior tennis tournaments at age 8 and continues to play.

Find out more about Jeff at www.EatSleep.Fit

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Chapter One - Introduction

Every sport has its own set of challenges when it comes to nutrition and optimal fueling. One of the biggest factors that make fueling for tennis so unique is the unpredictable nature of the competition. You could be on the court for an hour with nearly every point lasting less than 4 shots, or you could be out there for 3+ hours grinding out long points. And unlike an indoor sport like basketball or hockey, weather can be a large factor in performance and the outcome of a match. Playing in extreme temperatures (most often in the heat but not always) has an impact on your fueling needs, and as you'll learn later in this book this goes far beyond simply drinking more water.

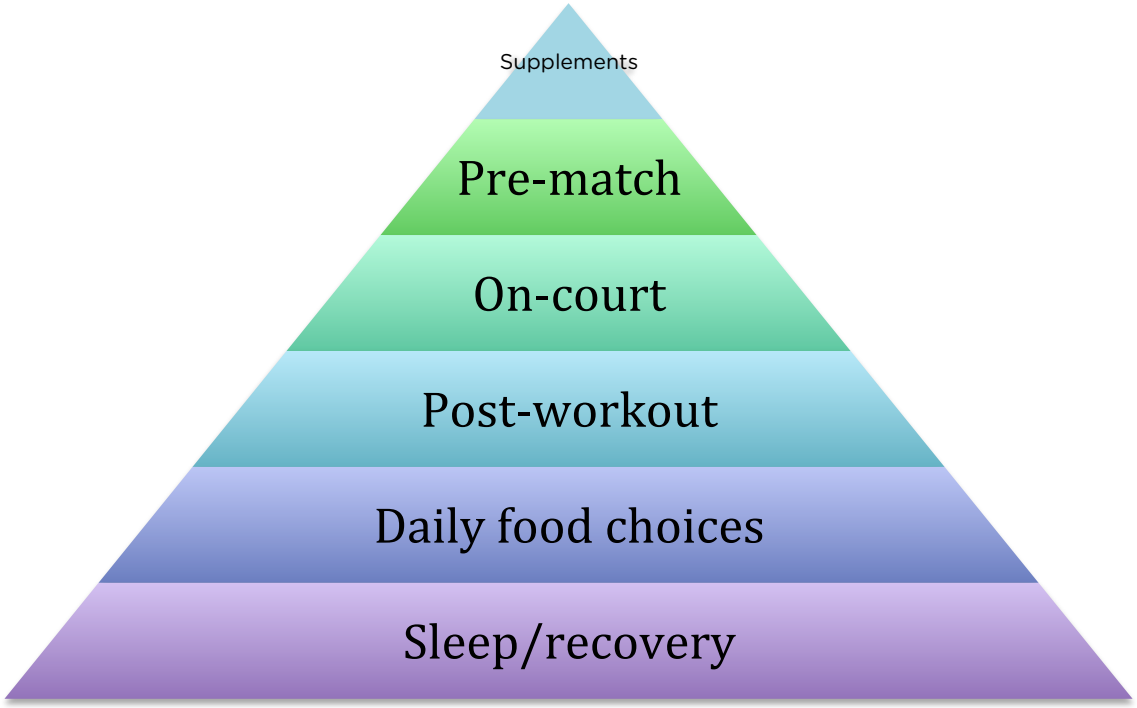
Now more than ever, successful preparation for a competitive tennis player goes far beyond simply hitting a lot of tennis balls. There is the off-court strength and conditioning aspect, which most people are aware of, and there is the nutrition and recovery aspect. People may acknowledge the importance of good nutrition, but very few people are using it to optimize their performance and recovery.

"Success is what happens when opportunity meets preparation"
Tom Coughlin[1]

Most importantly, this book is about learning how to prepare for success on the tennis court. I believe that understanding *why* things are important rather than just being told *what* to eat or drink, will lead to more meaningful and longer lasting positive changes. This way you can plan and adjust accordingly, rather than just following a list of things that I lay out for you. In this book we will break things down and consider sleep/recovery, daily food choices (what you're typically eating for breakfast/lunch/dinner), what you're eating after you practice or play, what to take in on the court, what to eat before you play, and we will also look at supplements that may benefit performance and/or recovery. In addition, we will consider playing in the heat, some of the unique needs of female athletes

including how to best train according to your monthly cycle, and how to best manage the challenges that come with frequent travel including how to adapt to new time zones more quickly.

Setting this up like a pyramid was not a coincidence. As you will see in the coming chapters, if you are not sleeping then the base of the pyramid is weak and worrying about the smaller details will not matter as much. If you are making poor daily food choices, then worrying about the 'best' thing to eat before you play will not matter as much as if you were eating healthy food on a regular basis. And the pattern continues all the way up to the top, where no amount of supplements can undo a bad diet and poor sleep. However, if you have the bottom tiers dialed in then a few smarts supplements can really take your physical performance up to the next level!



In addition, we will talk about how to best handle playing in the heat, some of the unique needs of female athletes including how to best train according to your

monthly cycle, and how to manage the challenges that come with frequent travel such as how to adapt to new time zones more quickly.

All can read this book, but most of the nutritional recommendations are aimed at the high-level competitive tennis player. There is a responsibility on you, the reader, to evaluate how this fits into your goals, lifestyle, and activity levels. As you read this book, always keep in mind the question of "who am I, and what are my goals?" Are you an athlete who trains 5-6 hours per day? Are you injured and not playing tennis for a few weeks? Are you fueling for general health or is it all about performance? Even among athletes, some are trying to gain weight while others are trying to lose weight. As you can see, everything needs to be considered within the context of this question.

References

1. Coughlin T, Fisher, D. *Earn the Right to Win: How Success in Any Field Starts with Superior Preparation*. Portfolio; 2014.

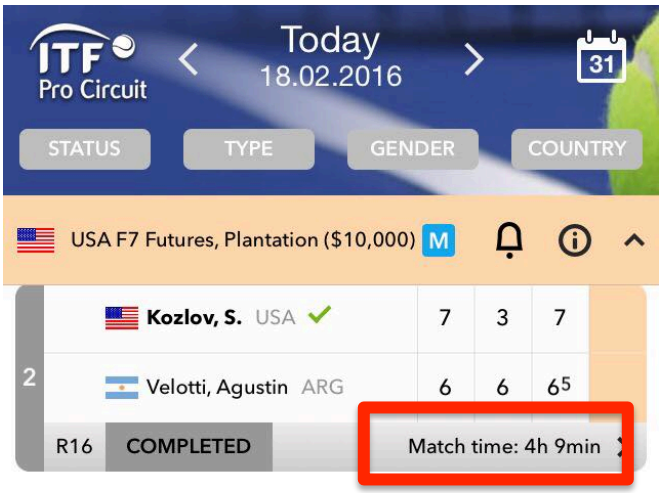
Chapter Five – On court

In this chapter you will learn:

- What is the best thing to drink on the court
- How much salt you might need to take in
- What you should eat on the court

Just like you need to refill the gas in your car during a long road trip, for optimal tennis performance you also need to refill your own gas tank during long practices or matches. This chapter will teach you what type of gas your body needs, and how to keep from running out of it!

I can't think of any other sport where the length of a competition can vary as much as tennis can. Best of three-set matches typically last 1-2 hours, but it is not uncommon to stretch to three hours, and on the rare occasion even to four hours and beyond. There can also be moments when the match may be seconds from being over, and all of a sudden you could have to be out there for another 90 minutes! Because of this variability it is very difficult to plan your fueling intake. This is in contrast with a sport like triathlon, where you can plan out very specific race timing and fueling plans. Nevertheless, it is important for the tennis player to understand how, why, and when to fuel out on the court. In order to do this, we will consider fluid, electrolyte, and calorie intake separately.



How much to drink?

Research has shown that a large number of high-level teenage athletes may be chronically under hydrated.[1] However, **be wary of anyone telling you exactly how much to drink in a day!** The reason is that your fluid needs will

change depending on the temperature, humidity, altitude, and intensity of your activity, as well as your individual sweat rate.

Rather than giving exact amounts of fluid to drink, a better approach is to drink according to how much you sweat. Current guidelines suggest that the goal of drinking during exercise should be to prevent *excessive* (>2%) loss of body weight and to prevent excessive changes in electrolyte balance.[2] That means if you weigh 150 lbs at the start of exercise, you don't want to weigh less than 147 lbs after your practice or match. In order to get a fairly accurate idea of how much you're sweating during exercise, you can weigh yourself (wearing minimal clothing and after drying off all sweat) before and after your workout. To determine sweat rate, add the amount of fluid consumed to the difference in bodyweight and that will give a rough estimate of fluid lost from sweat. Of course it's not very convenient to do this, but it may be worth doing once in a while.

As a rough guideline you can aim to drink at least about 6 oz. (~200 ml) on each changeover during matches in moderate weather, but that may need to increase in hot weather to 8-12 oz. and possibly even higher. Adult and older teenage athletes generally lose between 1-2.5 liters of sweat per hour, but sweat rates as high as 3.4 liters per hour have been reported.[3]

So this means you should just drink 3 liters of water per hour, right? Unfortunately not, and in fact that could actually become quite dangerous. Even though many tennis players sweat more than 2 liters per hour, it is difficult to comfortably drink more than about 1-1.5 liters per hour. This creates an obvious fluid deficit that will increase as a match or practice progresses. For the average person that takes part in recreational exercise lasting about an hour a day, our body is well designed to regulate fluids and drinking to thirst will generally be

okay. However, for the competitive tennis player who is often competing in hot temperatures, drinking slightly ahead of thirst is necessary to hydrate optimally. If it is extremely hot or you are a heavy sweater, then drinking *substantially* ahead of your thirst will be needed in order to minimize the fluid deficit that will be compounding each hour on the court.

In addition to fluid losses during exercise, we also lose sodium from our body. **Sodium losses are a great example of why nutrition advice given to the general public does not apply to the hard-training athlete.** The U.S. Recommended Daily Allowance (RDA) for sodium is 2.4 grams per day. In contrast, research studies in tennis players have reported sweat sodium losses of 1.3-4.8 grams *per hour*![4] The exact amount can vary among people and even within the same person depending on the time of year it is and how much time you've spent in the heat, but this means that the sodium needs for an active tennis player may be more than 5x the general population.

What to drink?

It's not a badge of honor to say that you only drink water on the court, and there are a few reasons for this. In the most basic sense, we sweat water and salt so why would we want to replace just water? Also, plain water isn't absorbed into our system as well as if the fluid contained carbohydrate and sodium.[5] Additionally, drinking plain water can enhance urine production and make you less thirsty to drink, while drinking flavored drinks (of any kind) will encourage you to drink more.

If your practice lasts about an hour or if it's a bit longer but lower intensity, then drinking plain water will be fine. For more intense practices and matches, however, you will feel and perform better by drinking something that includes both sodium and carbohydrate in it. I know that many players like to have one bottle of plain water and one bottle of sports drink to alternate between. That's

probably fine, though it really depends on what exactly is in the bottle of sports drink.

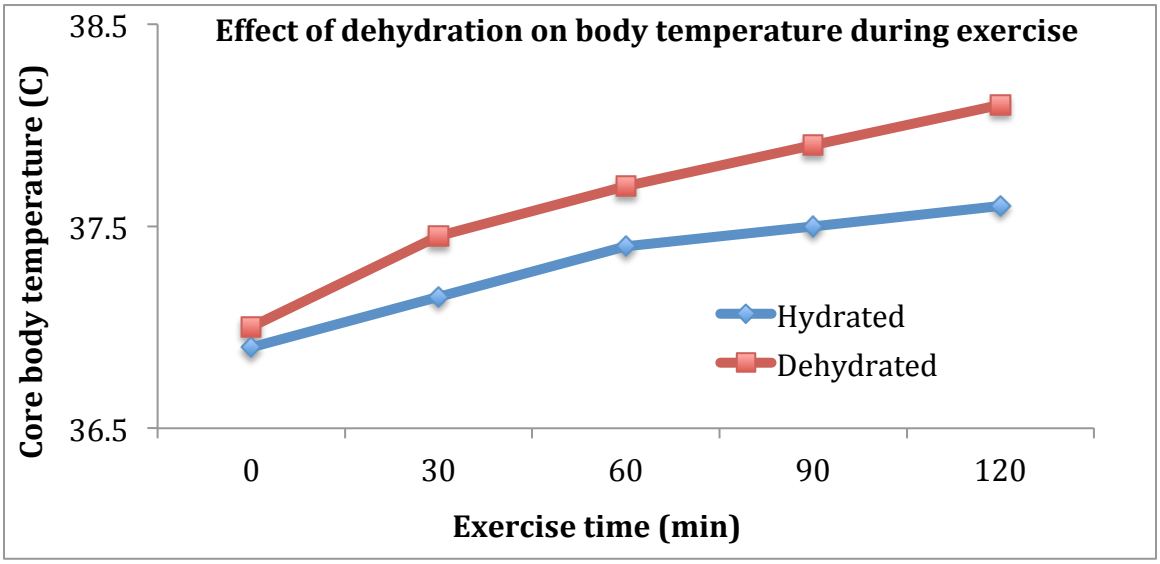
Gatorade is by far the most commonly consumed sports drink. While it often gets a bad rap from the media, when consumed during exercise I don't believe it is the devil than many people think it is. Many people are trying to make sound health decisions by avoiding or minimizing sugar intake, but when we consume sugar *during exercise* we burn about 80% of it directly as fuel.[6] This allows us to save gas from our tank and directly burn what we're taking in!

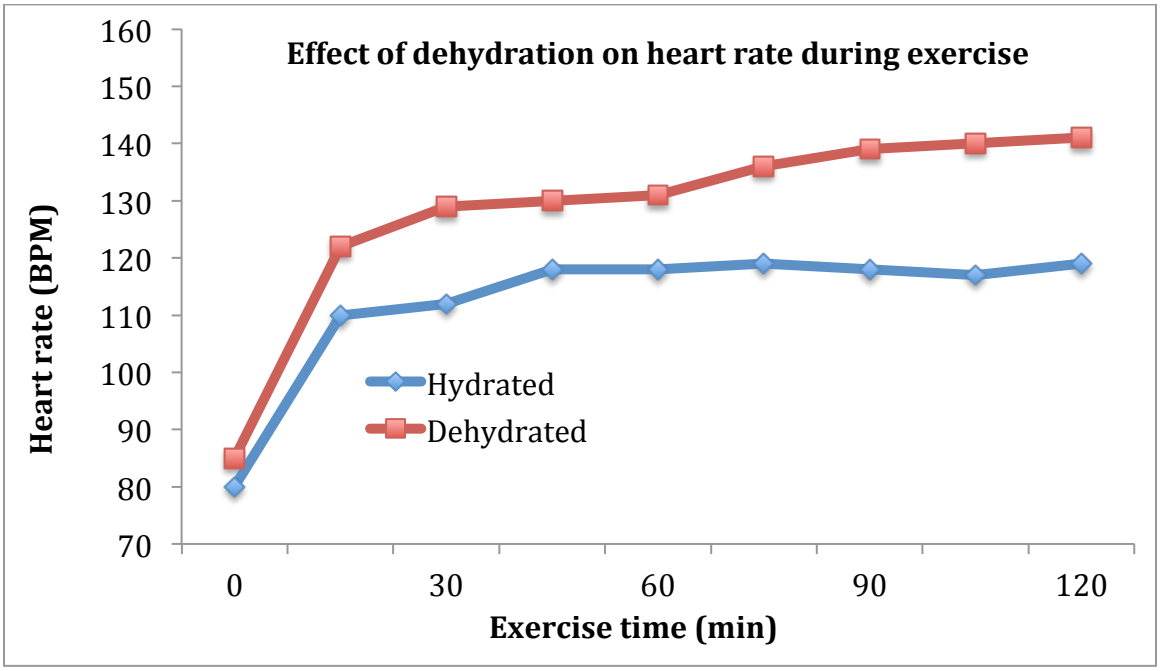
My problem with these drinks is not the sugar content, but rather the small amount of sodium they typically contain. For example, a 20 oz. bottle of Gatorade or Powerade will have about 250-270 mg of sodium in it, but as we just learned sodium losses could be well over 4,000 mg per hour! We don't need to completely replace sodium losses, but taking in a greater amount per hour would likely be of benefit from a hydration standpoint. This is particularly true when you're on the court for several hours per day, or having hard workouts or matches on back-to-back days. One simple solution is to add a pinch of salt to your water or sports drinks, but there are a number of other sports drinks that include greater amounts of sodium. I like my players to aim for at least ~300-600 mg of sodium per hour during exercise, but there are cases where people do better with even more. Here is a brief list of the many drinks available, and you can see there is a great deal of variation in carbohydrate and sodium content:

Sports Drink	Carbs (g)	Sodium (mg)
Cytomax (16 oz)	22	120
Gatorade (1 scoop - 12 oz)	21	160
Gatorade Endurance (12 oz)	21	290
Gu Hydration mix (12 oz)	17	500
Osmo active hydration (20 oz)	23	400
Powerade (12 oz)	21	150
Skratch labs exercise hydration (20 oz)	21	360
UCAN orange (20 oz)	20	130
Vega workout energizer (12 oz)	15	60
Vitamin Water orange (20 oz)	33	0

People often ask me about coconut water, and I think it is fine for off the court but suggest against it while on-court. The reason is because the main electrolyte in coconut water is potassium, and the sodium content is quite low. While that is generally a good thing in our daily lives, we lose mainly sodium in our sweat (and very little amounts of potassium). During exercise we want a drink that contains a lot of sodium, and consuming potassium seems to be of little benefit. This is yet another example where a piece of advice for one population (sedentary people) cannot be transferred to another population (athletes during exercise).

To see why hydration is so important, we can look at what happens to our body temperature as well our heart rate during exercise. These graphs are from a study in cyclists riding at 60% intensity, and although the circumstances are slightly different in tennis you can see the effect that adequate hydration has on helping you to perform your best (adapted from Jeukendrup and Gleeson 2010[7]).





Do I need to eat on the court?

Carbohydrate intake during exercise is able to delay the onset of fatigue and improve performance during extended exercise.[8] This is in part because our body has a limited amount of carbohydrate that we can store (a limited gas tank). If we're exercising for about 90 minutes or less, we won't run out of gas (assuming we've come in with a full tank). As the exercise session gets longer, it becomes important to take in more gas (carbohydrate) if we want to continue playing at a high intensity. The question of eating on the court depends on a number of factors including personal preference, type of foods and sports drink available, and length of your practice or match. As you can see below, the typical tennis player will burn through quite a few calories during the course of a match (and possibly even more during a practice session).

Average Energy Expenditure During Matches[1]		
	Women	Men
60 min match (kcal)	443	649
90 min match (kcal)	664	973
150 min match (kcal)	1107	1622
300 min match (kcal)	-	3244
[1]Adapted from Ranchordas et al. (2013)[9]		

With this large energy expenditure in mind, let's now look at some general guidelines for carbohydrate intake during exercise.[10]

< 75 mins	1-2 hrs	2-3 hrs	>3 hrs
• Small amounts or water	• 30 g/hr	• 50-60 g/hr	• 70-90 g/hr

As you can see, the longer you're exercising the more you need to take in. Note that this doesn't mean that the first hour you need a 30 g, the second hour 50 g, the third hour 70 g. Rather, if you'll be training for 2-3 hours you should aim for 50-60 grams of carbs per hour (each hour). Here is where it gets tricky for tennis matches, of course you don't know if you'll be out there for one hour or four hours! This is why you have to **know your body and be able to read the match**. It is often pretty obvious from fairly early on in a match if it's the type that will be short points/one-sided, or if it's going to be a long grind of a match. If you're wondering if these guidelines are the same for every body size, they actually are. This is because there is not any correlation between body mass (how much you weigh) and exogenous carbohydrate oxidation (the amount of ingested carbohydrate we can burn for fuel).[11] However, it does seem reasonable that a smaller person should consume carbohydrate at the lower end of the ranges and a larger person on the higher end of the ranges.

Regarding the type of carbohydrate you consume, it seems to come down simply to personal preference if you're taking your carbohydrate in via sports drinks,

gels, chews, or food.[12,13] Foods that can work well on-court are easily digestible carbs such as raisins, dates, and bananas. Here is a brief list of the calorie, carbohydrate, and sodium content of some commonly consumed foods and sports supplements:

Gels/chews/ foods	Kcals	Carbs (g)	Sodium (mg)
Banana	105	27	1
Dates (2 Medjool)	130	36	0
Raisins (small box)	129	34	5
Clif shot blocks	200	48	100
GU gel	100	23	55
Powerbar gel	107	27	205
Skratch chews	160	40	160
Vega gel	100	20	60
Vega energy bar apple cherry	200	26	30

"By failing to prepare, you are preparing to fail." Ben Franklin

So let's start putting this stuff together and see what a good on-court fueling strategy would be. One of the biggest errors I see is that people will fuel differently during matches than they do in practice. Why would someone do that? **To be a great player you need to give your best effort in practice each day, and proper fueling will allow you to do that by getting the most out of your practice sessions.**

Let's look at an example. John is a 16 year old nationally ranked junior player who has an intense 2-3 hour practice session in warm weather. My goal for him is to ingest enough fluids (~1 L or ~32 oz. per hour), sodium (~500 mg per hour), and carbohydrate (~50 g per hour) during his practice.

He prefers to have one bottle of Gatorade and one bottle of water. If he drinks 24 oz. of Gatorade and 12 oz. of water *each hour*, that will give him about 36 oz. of fluid, 42 g of carbohydrate, and 320 mg of sodium per hour. That is pretty close to our rough goal intake for fluids and carbohydrate, and should be able to fuel him through his workout. However, if he is in a high-intensity training block that

has him doing two sessions per day or he is a very heavy sweater, I might want to increase his sodium and carbohydrate intake. John could do this by switching to Gatorade Endurance powder (providing him 570 mg sodium per hour) or adding a pinch of salt to his regular Gatorade. He also may want to consider having a banana, some dates, or some other type of carbohydrate chews at some point during his practice. But what if after the first two bottles of Gatorade he decides to just drink water? In that case he should add some salt to his water along with taking in carbs from a banana, dates, raisins, or gels. Hopefully you're getting the idea that it's okay to mix and match according to your preferences, as long as you're hitting your goal intakes.

The last thing I want to mention here is that simply *tasting* some carbohydrate may benefit exercise lasting 30-75 minutes. What I mean is that you can put some carbohydrates in your mouth (as a liquid or solid food), hold it there for about 5-10 seconds and then spit it out, and still get some benefit in your performance.[10] This means that taking in some sports drink (or other carb-containing food) during short (30-75 minute) matches or practices that are of high-intensity *may* be of some benefit.

There is no single solution for everyone, but the key things to remember on-court are fluids, sodium, and carbohydrate intake. Stay on top of it, because **the longer you're playing, the more important it becomes.**

Summary

- Drink enough during exercise to prevent excess body weight loss (>2%). This usually means drinking slightly ahead of thirst for most people, and substantially ahead of thirst for heavy sweaters

- Beverages containing carbohydrate and sodium will rehydrate you better than drinking plain water

- Carbohydrate intake during exercise is able to delay fatigue and improve performance during extended exercise

- Recommended carb intakes vary with exercise duration and intensity:
    - Less than 75 minutes – small amounts or none
    - 1-2 hours – 30 g/hr
    - 2-3 hours – 50-60 g/hr
    - 3+ hours – 70-90 g/hr

- The longer the exercise duration, the more important fueling becomes – be prepared with 3+ hours of fuel every time you step on court for a match!

References

1. Arnaoutis G, Kavouras SA, Angelopoulou A, et al. Fluid balance during training in elite young athletes of different sports. *Journal of strength and conditioning research/National Strength & Conditioning Association*. 2015.
2. Sawka MN, Burke LM, Eichner ER, Maughan RJ, Montain SJ, Stachenfeld NS. American College of Sports Medicine position stand. Exercise and fluid replacement. *Med Sci Sports Exerc*. 2007;39(2):377-390.
3. Bergeron MF. Hydration and thermal strain during tennis in the heat. *Br J Sports Med*. 2014;48(Suppl 1):i12-i17.
4. Bergeron M. Heat cramps: fluid and electrolyte challenges during tennis in the heat. *Journal of science and medicine in sport*. 2003;6(1):19-27.
5. Kovacs MS. Hydration and temperature in tennis-a practical review. *Journal of sports science & medicine*. 2006;5(1):1.
6. Jentjens RL, Shaw C, Birtles T, Waring RH, Harding LK, Jeukendrup AE. Oxidation of combined ingestion of glucose and sucrose during exercise. *Metabolism*. 2005;54(5):610-618.
7. Jeukendrup A, Gleeson M. *Sport nutrition: an introduction to energy production and performance*. Human Kinetics; 2010.
8. Jeukendrup AE. Carbohydrate feeding during exercise. *European Journal of Sport Science*. 2008;8(2):77-86.
9. Ranchordas MK, Rogerson D, Ruddock A, Killer SC, Winter EM. Nutrition for Tennis: Practical Recommendations. *Journal of Sports Science and Medicine*. 2013;12:211-224.
10. Jeukendrup A. A step towards personalized sports nutrition: carbohydrate intake during exercise. *Sports Med*. 2014;44(1):25-33.
11. Jeukendrup AE. Carbohydrate and exercise performance: the role of multiple transportable carbohydrates. *Current Opinion in Clinical Nutrition & Metabolic Care*. 2010;13(4):452-457.
12. Pfeiffer B, Stellingwerff T, Zaltas E, Jeukendrup AE. Oxidation of solid versus liquid CHO sources during exercise. *Med Sci Sports Exerc*. 2010;42(11):2030-2037.
13. Pfeiffer B, Stellingwerff T, Zaltas E, Jeukendrup AE. CHO oxidation from a CHO gel compared with a drink during exercise. *Med Sci Sports Exerc*. 2010;42(11):2038-2045.

Chapter six – Pre match/practice

In this chapter you will learn:

- How to know if you're hydrated
- Why you may be able to eat a better breakfast than you're currently eating
- What to eat when playing multiple matches in a day

When the topic of sports nutrition comes up, the first question that people often ask is "what should I eat before I play?" Like pretty much everything else in nutrition (or life, for that matter), the answer is usually *it depends*. The short answer is that you want to have a full tank of gas without feeling overly full. The best pre-match or pre-practice food can vary depending on the time of day and how long you expect to be playing, the weather conditions, time between workouts or matches, available foods, and personal preference. Because there are so many variables, I will go over some of the major concepts that you can then apply to figure out what is right for you.

Hydration

Tennis players often sweat out more fluids than they're able to drink each hour, which means that it's even more important to start out your practice or match being adequately hydrated. We lose fluids overnight (from sweat and even just breathing), and so it is likely that many people wake up with some degree of dehydration. For a simple ways to assess your hydration status when you get up in the morning,[1] ask yourself three questions:

- Am I thirsty?
- Is my morning urine dark yellow?
- Has my body weight decreased by more than 1% from the previous morning? (For example, a 150 lb person would have lost more than 1.5 lbs)

If the answer is "yes" to any *one* of these, then

you *may* be dehydrated. If the answer is "yes" to any *two* of these, then it is *likely* that you are dehydrated, and if the answer is "yes" to all *three* of these questions then it's *very likely* that you are dehydrated. You can print out the blank table in the appendix section of this book in order to track your morning hydration status. Once you've established your morning hydration status, you can adjust your intake accordingly. Drink up to 1 liter of fluids per hour until you feel that you are sufficiently rehydrated. Trying to ingest excess fluids before exercise is generally not an effective strategy, as the kidneys will excrete excess body water.

Urine color is often suggested as a marker for hydration status, though it can be deceiving when used beyond the first morning stream (as indicated above). The reason is that there is an hourly limit to fluid absorption, beyond which you will pee out. If you are dehydrated and drink a gallon of water in the span of 10 minutes, your body will absorb some of that fluid but also get rid of much of it. Your urine will turn clear but that doesn't mean you are fully hydrated.

Food

Any discussion of pre-match/ pre-practice food is challenging, because daily practice and competition schedules can vary, as well as personal preferences, class times, travel times, etc. Regardless, before we start worrying about the timing of food, we should remember to think back to the chapter on daily food choices and focus on first choosing *quality* food.

Getting back to our gas tank analogy, you want to go on the court with your tank filled up (there are a couple of exceptions here, which we'll look at shortly). There is a high degree of individual variability with regard to how long before playing you need to finish eating, but your pre-match meal should include a balance of carbohydrate, fat, and protein. If you are prone to have stomach issues or have slow digestion in general, choosing foods that are lower in fiber and fat will be a good idea for your pre-match meal. Some people are fine eating right up until match time, while others don't want to have anything in their stomach while

they're on the court. This will require some personal experimentation to figure out works best for you, but I'm going to offer some guidelines and potential pitfalls for you to consider.

You may want to eat a large meal about 3 hours before playing, and then have a small snack closer to match time. This allows your body to digest and absorb the food without leaving you sluggish on the court. You can then have a small snack like a banana or a few dates as you're waiting to play. On tournament days this can be trickier, because another thing unique to tennis is the huge variation between *scheduled* and *actual* start times for matches. If you are waiting to go on after another match ends, there could be a two-hour window in potential start times.

To share an example that illustrates the importance of having snacks on hand as you're waiting to go on court, a player that I work with was recently in a tournament that had a number of rain delays. When the rain cleared around 5:30 pm he was told that his start time would be 7:30 pm. So that he didn't have too much food in his stomach, he ate a small sandwich (6" sub) around 6 pm. Because some of the other matches went long and not all of the courts could be dried, this player ended up going on court about 9:45 pm. He was smart and was snacking on dates while waiting to go on, though he probably would have been better off eating another half sandwich around 7 pm as it became clear that his match wasn't going to be on for a while. He won the first set fairly easily and ended up winning the match after a closer second set. The thing to remember is that some of the most important points of the match came at the end of the second set, which was around 11:15 pm and over 5 hours since his last substantial food intake. However, if a few key points didn't go his way he could have found himself in a third set. In that case the critical points in the match would have been happening around midnight, or over 6 hours since eating that sandwich! **The key point here is to have foods to snack on while you're waiting to go on!** He did a pretty good job of fueling on the court (with sports drink and dates) during that match though, and was able to take care of business.

Breakfast

Contrary to what the television commercials may suggest, breakfast does not need to be limited to "breakfast foods". This is important because people often don't get enough protein at breakfast, and this can affect you throughout your whole day. If your breakfast consists of some combination of oatmeal, cereal, toast, fruit, and juice, you're not getting enough protein. Adding some eggs will be helpful, but what might be better is to try adding a chicken breast (or beef or fish) or eating leftovers from the previous night's dinner. The reason I say that is because one egg contains about 6-7 grams of protein. Ideally you should include *at least* 20-30 grams of protein at breakfast, and 2 eggs would only give you 12-14 grams. Three eggs would be better, but many people would get too full if they were also taking in some carbohydrates. Experiment to see what works for you, but I'd be surprised if adding in some protein doesn't make you feel better throughout the day. Also, remember that we want to spread our protein intake evenly throughout the day. This means that at least ~20% of your total daily protein intake should be consumed at breakfast.

What if you have an early morning practice or workout? Some people like to skip breakfast, but for maximizing a high intensity practice session I would suggest eating breakfast, even if it is small. Some options could be:

- Leftover dinner (chicken/rice/avocado)
- Boiled eggs & avocado
- Oatmeal w/ protein powder
- Smoothie/shake (this can vary but including berries, protein powder, and avocado will be a tasty way to leave you feeling full and give you energy)

As I alluded to earlier, there *can* be times when working out before breakfast is beneficial. This could include waking up and going for an easy jog or lifting

weights early in the morning. This is a very contentious topic that people may get defensive about, but yes there are additional benefits to exercising in the fasted state. But again, please remember that when you need to perform your best and at high intensities, you will almost certainly perform better and last longer when you have eaten breakfast.

In-between matches

Finally, there is the consideration for having two (or more) matches or workouts in a day. Often this could be singles followed by a doubles match, or in college tennis it would be doubles followed by a singles match. Many junior and collegiate tournaments have two singles matches in one day, and during hard training blocks you may have two sessions per day on the court or perhaps one on court and one in the gym or track.

In all of these cases, eating a good breakfast that includes protein and carbohydrate will provide the nutritional foundation for your day. Hydration is also very important throughout the whole day. Remember that we often finish exercise in a fluid deficit so it is vital that we rehydrate properly in between sessions. Consuming protein and carbohydrate after the first session is also important. If there is enough time to eat then consume food, but if you don't have time for a meal then consuming a sports drink can be beneficial. I will give some more specific suggestions for a few of these scenarios, and see the end of this chapter for some examples of daily schedules and how to plan your nutrition around various practice times.

Singles match followed by a doubles match – this is often scheduled "after adequate rest", which could mean 15-30 minutes depending on the tournament director and the length of your previous match. If you had an easy match, drinking some sports drink along with a banana could work well to refill the gas tank a bit. I would also suggest adding salt to your water or sports drink if it's been hot and you've been sweating a lot. If you've had a hard match, consume

~50-70 grams of carbohydrate along with 20 grams of protein and a pinch of salt added to your beverage.

Doubles match followed by a singles match (in the collegiate setting) – if you're the last doubles match to finish you may only get 10 minutes before singles, but if you're the first match to finish you could have 30 minutes or longer before your next match. **This is a key time to refuel!** It is a mistake to think that just because you played a short doubles set you won't need to eat and drink before your singles match. Let's think about the schedule for a typical college tennis match day if there is a 1:30 pm match:

12 pm – players report to team area
12:15 pm –foam rolling, dynamic warm-up
12:30 pm – on-court warm-up
1:30 pm – line-up, introductions, etc.
1:45 pm – doubles matches start
3-3:15 pm - singles matches start
4:30-6 pm – critical time when close matches may be decided

Because the players have to be there at noon, they would have had to eat before then. Perhaps the dining hall isn't open for lunch until noon, they have a commute from home, or have to be in class until 11:45 am. The athlete may have eaten their last large meal at 9 or 10 am, or even 11 am in the best-case scenario. This means there could be easily be 6-8 hours between the last substantial meal and the most critical parts of the match! I don't care who you are**, if you aren't fueling strategically throughout the entire day then you won't be playing your best tennis when your teams needs you the most.**

Two singles matches in one day or two practice sessions (morning and afternoon) – Consuming a recovery drink that contains carbohydrate and protein (i.e. chocolate milk) immediately after the first match/practice is a good idea, particularly if you don't have an appetite right away. If you have a few hours in

between matches or practices, eat a large meal that includes carbohydrate and protein. This could be chicken and rice, salmon and potatoes, etc. Ideally you should consume 1.2-1.5 grams of carbohydrate per kg of body weight immediately after the first session and then repeat that every hour for up to four hours (remember, to get kg, divide your weight in lbs by 2.2). You can also drink some tart cherry juice in between matches to reduce inflammation. If the weather is hot and you are sweating a lot, this is an important time to load up on fluids and electrolytes. This can be from chocolate milk, sports drink, tart cherry juice, or adding salt to your water or sports drinks.

As we mentioned when talking about daily food choices, eating unprocessed, simple foods is the way to go. This approach to eating is exemplified by the U.S. Men's National Soccer team and their typical pre-game meals during the World Cup:[2]

"Three to four hours before the game they'll have simple, basic foods, like grilled chicken or fish, brown or white rice, baked potato, grilled vegetables, salad bar, yogurt, granola, nuts, dried fruit, fresh fruit."

Sample daily schedules

For a 1 pm competition or practice

8 am – Breakfast (protein/carbs)
11 am – Lunch (protein/carbs)
1 pm – Tennis
3 pm – Chocolate milk + banana
5 pm – Dinner (protein/carbs/veggies)
7-8 pm - Fruit, tuna sandwich, milk

For a 6 pm competition or practice

8 am – Breakfast (protein/carbs)

11 am – Snack (Nuts and hard boiled egg or fruit)

1 pm - Lunch (protein/carbs/veggies)

4-5 pm – Snack (fruit) or small meal

8 pm – Dinner (protein/carbs/veggies)

For a two-a-day practices (9-11 am, 3-5 pm)

7 am – large breakfast (protein/carbs)

Practice

11 am – Chocolate milk + banana

1:30 pm – Big lunch with protein/carbs (e.g. chicken/rice/avocado)

Practice

5 pm - Fruit or chocolate milk

6 pm – Dinner (more protein/carbs/veggies)

8 pm – Fruit/cheese/milk

Summary

- Check your hydration status in the morning by assessing your thirst, urine color, and change in body weight
- Include *at least* 20-30 grams of protein at breakfast
- Experiment with the size of your pre-match meal and amount of time needed between the meal and the start of your warm-up
- Have foods to snack on as you're waiting to start your match, particularly in the event of unforeseen delays
- Take advantage of your time in-between matches to top up the gas tank (this can be from food or sports drinks depending on the amount of time you have)

References

1. Cheuvront SN, Sawka MN. SSE# 97: Hydration Assessment of Athletes. *Sports Science Exchange*. 2005;18(2):1-12.
2. USMNT Pre-game meal. http://www.huffingtonpost.com/2014/07/01/what-us-soccer-team-eats-world-cup-dietitian_n_5547918.html.