

SquareONE Rehabilitation

Hydration,

Nutrition

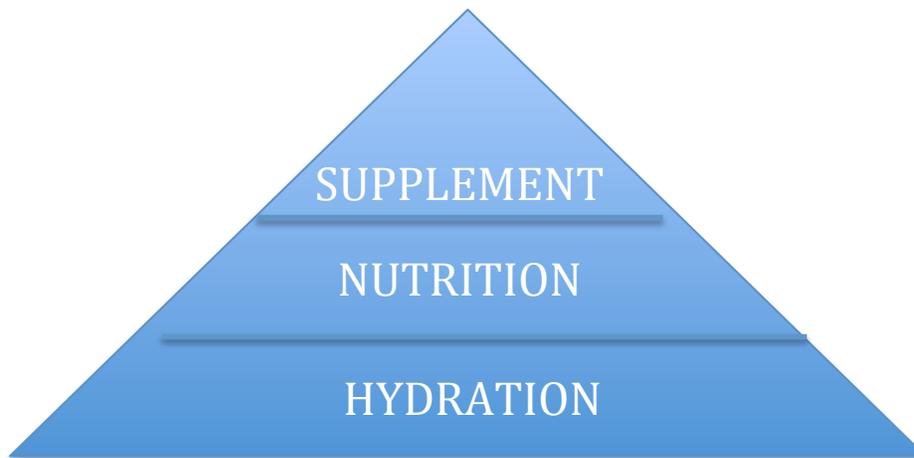
AND

Supplementation

GUIDE

April 5, 2020

There are three Tiers to nutrition.



The bottom tier is hydration, which makes up the foundation for the food pyramid. So you want to make sure hydration is up to par to create that foundation for performance and recovery. Lets talk about the food pyramid starting with hydration.

1. Hydration

“Stay hydrated” is a common phrase that we have all heard when playing sports. But, why is it important to hydrate? The brain is made up of eighty five percent water and takes top priority when it comes to blood flow. The human body is composed of sixty- seventy percent water. The benefits are tremendous when it comes to optimal hydration.

We’ve all been told to drink eight glasses of water daily. That rule is too generic and doesn’t address the needs of an individual. Every player weighs different therefore will need a specific amount of water.

A simple formula can be used to determine the amount of water for each person. For example, if you are a two hundred pound male, you would drink one hundred ounces of water per day. If you are a female that weighs one hundred twenty pounds, you would drink sixty ounces per day. As you can see, water intake varies widely between individuals.

Timing of water intake is important. In the morning when you wake, your body is in a dehydrated state. It’s very critical to drink water immediately upon rising. This begins the hydration process for the day. I recommend twenty five percent of your total intake of water first thing in the morning. This will help you with you energy levels and you’re detoxification process meaning it will help you with you bowel movements and removing toxins. Fifty percent of the total intake should be consumed during training. The remaining 25% should be consumed in and around meals. Sometimes if you drink to much water during your meals you may compromise you digestions. So the timing of fluid intake is important.

A great research study was performed on strength training and what they found was that when the athlete was dehydrated by 2% before their training session, their strength performance decreased. When they rehydrated back to their 2% their strength returned back to the pre-existing strength levels. What that showed is dehydration will decrease your maximal strength, and thus your power will decrease.

When you sweat, you lose water electrolytes. There is an old saying that we all have an "inner ocean". This "inner ocean" is comprised of electrolytes and the main component of these electrolytes is salt. But the right kind of salt. Celtic Sea Salt is an unrefined sea salt that has over eighty trace minerals that will help replenish the body with electrolytes. It is a natural electrolyte. Adding salt to your water is a great way to prevent muscle cramps. Another benefit is the reduction of allergies. Being on the soccer field or golf course exposed to grass and pollen daily can create an allergic response. Adding Celtic Sea Salt and increasing your water intake can act as a natural anti-histamine.

The Benefits of Water

1. Increase mental focus and concentration
2. Hydrates spinal discs that can minimize low back pain
3. Lubricates joints
4. Reduce oxidative stress
5. Maintains strength and power
 - 1/2 your bodyweight in ounces per day

Sport & Energy Drinks

Be very careful with sports drinks. Yes they have electrolytes but they also contain many ingredients that are detrimental to your performance. The first ingredient that is listed on the bottle is a major problem; sugar. Many sport drinks have a tremendous amount of sugar that can destabilize blood sugar during a round of golf. On average, one twelve ounce bottle of sports drink contains fourteen grams of sugar. Besides the sugar, all sports drinks contain other additives such as colour dyes that can be detrimental to performance.

Be aware of all energy drinks. They will give you energy but it comes at a cost. Most energy drinks contain sugar and caffeine. Caffeine is so ubiquitous in our society that we forget that it is a drug! Every drug has a side effect whether it is prescribed or over-the-counter. Caffeine can make a player feel jittery, anxious and make the mind race, which is not ideal during a round. Be careful of hidden forms of caffeine. Caffeine can come in many forms such as guarana, kola nut and yerba mate.

2. Nutrition (whole foods)

A. Proteins

A description of the main macronutrients will give you a better understanding of the impact of these macronutrients when eaten as whole foods. The three basic macronutrients are: proteins, fats and carbohydrates.

Proteins are the major building blocks for skin, organs, ligaments, tendons, and muscles. They are intimately involved in the regulation of:

- Hemoglobin in blood
- Hormones
- Enzymes
- Water balance
- Immune system

Your body has a pool of amino acids that it uses to repair itself. There are currently twenty amino acids that are identified. Eight of these amino acids are considered essential amino acids. “Essential” means that these amino acids need to be consumed from food to obtain them. In order for a person to regenerate ligaments, tendon’s, and muscles complete proteins must be eaten on a daily basis.

B. Fats

Fats have been wrongly accused of being the cause of disease and obesity. Fats are very important for our health and performance. Fat has important functions such as:

- Carrier for fat soluble vitamins A, D, E and K
- Manufactures hormones and bile salts
- Pivotal role in satiation
- Cell membrane health

There are three main types of fats: **Saturated, Monounsaturated, and Polyunsaturated.**

Saturated fats have gotten a bad rap. They have been wrongly accused of being the cause of diseases such as heart disease, hypertension, diabetes and obesity. These fats are solid at room temperature and when used in cooking are very stable at high heat. Saturated fats such as butter, coconut oil, lard and eggs have long been considered taboo fats.

Research has proven that these types of fats have health promoting properties. Butter has been shown to have heart protective properties. Coconut oil helps aid in weight loss. Lard has been shown to be anti-microbial; meaning it helps fight infections! Eggs have been shown to have no detrimental effects on hypertension and cholesterol.

Monounsaturated fats are most talked about in the Mediterranean diet. These fats are liquid at room temperature and are stable for cooking at moderate temperatures. The foods highest in monounsaturated fats are: **olive oil, Avocados, Almonds, and Egg yolks.**

Polyunsaturated fats are liquid at room temperature but are very unstable. Once a polyunsaturated fat is heated or exposed to light the fat can go rancid. Heat and light can change the chemical structure of the fat, creating a fat can do damage to the body. Since polyunsaturated fats are highly unstable, they should not be using for cooking.

The most often talked about polyunsaturated fats are the essential fatty acids (EFA's). "Essential" means that the body is not able to manufacture these fatty acids and must be obtained from the diet. The essential fatty acids are omega-6 and omega-3 fatty acids.

Omega-6 fatty acids compared to omega-3 fatty acids. Research has shown that the omega 6/3 ratio in the Standard American Diet (SAD) is as high as 25:1.

When the omega 6/3 ratio is skewed, there are many problems that occur in the body. The overconsumption of omega 6 fatty acids and the underconsumption of omega-3 fatty acids has contributed to increasing rates of cancer, depression, obesity, insulin resistance, allergies, autoimmune disease, and diabetes. In contrast, consuming the right amount of omega-3 fatty acids have been shown to have beneficial effects:

- Secondary prevention of cardiovascular disease
- Reduced rectal cell proliferation in cancer patients
- Decreased risk of breast cancer in women
- Suppressed inflammation in rheumatoid arthritis patients
- Beneficial effects on asthma patients

Avoid All Trans Fatty Acids. Avoid all margarines, fried foods and the use of vegetable oils. Cooking vegetable oils is chemically damaging the oils creating trans fatty acids. Instead choose stable oils such as butter, coconut oil, lard, ghee, palm oil and olive oil.

C. Carbohydrates

Glucose is the key energy source used by the brain and central nervous system. Glucose is the broken down form of carbohydrates. For this reason, carbohydrates have been emphasized for energy and performance. Carbohydrates can be classified as vegetables, fruit and grains. All carbohydrate sources eventually become converted to glucose. It depends on the rate at which the carbohydrate is broken down into glucose. The faster a carbohydrate breaks down during digestion, the more rapidly blood sugar will rise.

Think of rapidly elevating blood sugar like riding a roller coaster. The steeper the climb, the steeper the drop. In the same way as blood sugar rapidly rises, blood sugar will rapidly crash leaving a player with symptoms of low blood sugar.

A numerical system was developed by Dr. David Jenkins in 1981, called the glycemic index (GI). The GI ranks carbohydrates (50g) to the rate of glucose conversion in the body. Foods were compared to a reference food of white bread or glucose equaling 100. The higher the GI, the faster the carbohydrate would digest and elevate blood sugar rapidly.

The following is an example of high, medium and low GI foods.

- High GI foods are 70 and up. Examples include: instant white rice, white bread, and boiled potatoes.

- Medium GI foods are 56 to 69. Examples include pastas, bananas, pineapple, sweet corn, and raisins.
- Low GI foods are 55 and under. Examples include raw carrots, raw apple, grapefruit, most berries and beans.

Picking low GI foods will maintain level blood sugars and avoid the roller coaster effect. As you can see all carbohydrates are **NOT** created equal!

Blood Sugar Control

The key to performance on the course is the ability to control blood sugar. Blood sugar control is of primary importance to the body. The body will do anything to maintain blood sugar. If you don't maintain blood sugar, you can experience symptoms such as:

- Fatigue
- Anxiety
- Mood swings
- Headaches
- Nausea
- Trembling
- Loss of strength
- Lack of concentration
- Loss of power

There are four basic principles to controlling blood sugar.

- Break the Fast
- Eat protein
- Eat fat
- Eat slow digesting carbohydrates

Blood Sugar is key to your health as well as your performance. Blood sugar controls your hormones, mood and strength. In order to help stabilize your blood sugar you must have a good breakfast. It has been shown that eating a proper breakfast will regulate your blood sugar throughout the day regardless of what you eat at lunch. What should you eat for breakfast? You must consume proteins for the foundation to set you up for blood glucose control over the day. You also want to add fats like avocado, nuts and vegetables. You should avoid eating cereal, as this is processed food causing your blood sugar to skyrocket. This is a bad way to start the day. Try to avoid processed carbohydrates.

3. Supplements

I would recommend high quality supplements. The reason why you would want to use it is because we don't eat well enough. Research shows that it does prevent chronic disease.

I would also recommend fish oils. They are in all of our cells. Research shows that it helps control blood sugar, helps with brain function, heart, and its anti-inflammatory.

I would also recommend a vitamin D. Especially living in Manitoba. There are many people with Vitamin D deficiency. Our ability to manufacture vitamin D decreases, as we get older. But also with the use of sunscreen causing a significant decrease of vitamin D.

The last supplements I would suggest are anti-inflammatory herbs especially if you have chronic joint pain or other chronic types pain. Such herbs as rosemary and boswellia are very helpful to deal with inflammation.

Pre and Post Workout Nutrition

This is where you can take advantage of the workout environment and prepare someone to facilitate the exercise and recovery. With pre-workout nutrition you can increase focus and concentration with some of the supplementations as well as recruit fast twitch fibers.

There is one of two ways to increase power and that's with speed, with lifting heavier loads or both. With the proper supplementations you can stimulate heavier loads because they have the energy stores. Supplementations will also decrease soreness. This is very important. Another reason is for joint recovery. Not only are you degrading muscle tissue you are degrading joint tissue. The last advantage to supplementations is to maximize the hormone response during and after exercise. One of the hormones that get's increased with exercise is cortisol. The higher we allow cortisol to be elevated after a workout the longer it will take the body to recover.

A great supplement to use pre and post workout is L-glutamine. **Glutamine** is an important amino acid with many functions in the body. It is a building block of protein and critical part of the immune system. What's more, **glutamine** has a special role in intestinal health and stress. Anytime you are under stress or you have a GI issue glutamine will be used to help heal the gut and feed the mucosal cells. The more stress you have the more your body will draw glutamine from your muscles and thus affect your recovery. Your body naturally produces this amino acid, and it is also found in many foods. Glutamine is a raw ingredient for your joints and thus helps with connective tissue. Glutamine also can be converted to glucose and used as energy. The dosage would be .15 grams per kilogram of body weight pre and post workout.

The next supplements are the branch chain amino acids. **Branched-chain amino acids** (BCAAs) are a group of three essential **amino acids**: leucine, isoleucine and valine. BCAA supplements are commonly taken in order to boost muscle growth (by increasing testosterone and decrease you cortisol level), and enhance exercise performance. They may also help with weight loss and reduce fatigue after exercise. The dosage recommended is .15 grams per kilogram of body weight pre and post workout.

Whey protein is the next supplement recommended 30 minutes post workout. This is a high amount of branched amino acid that helps with protein synthesis and recovery. This is a great protein to enhance glutathione, which helps reduce anti-oxidant in the body. Recommendation is one scoop per 100lbs of body weight.

The final supplement is **creatine monohydrate**. There are lots of forms of creatine but this is the one most studied. You should take 5 grams per day before or after the training sessions. You should drink 12 to 16 ounces of water. The only contraindication is if you are taking anti-inflammatory drugs such as Aleve or Aspirin because it could overtax the

kidney. Creatine not only helps with recovery but there is a lot of research about helping with brain function and heart health.