

Keys to Performance

Movement - Recovery - Mindset -

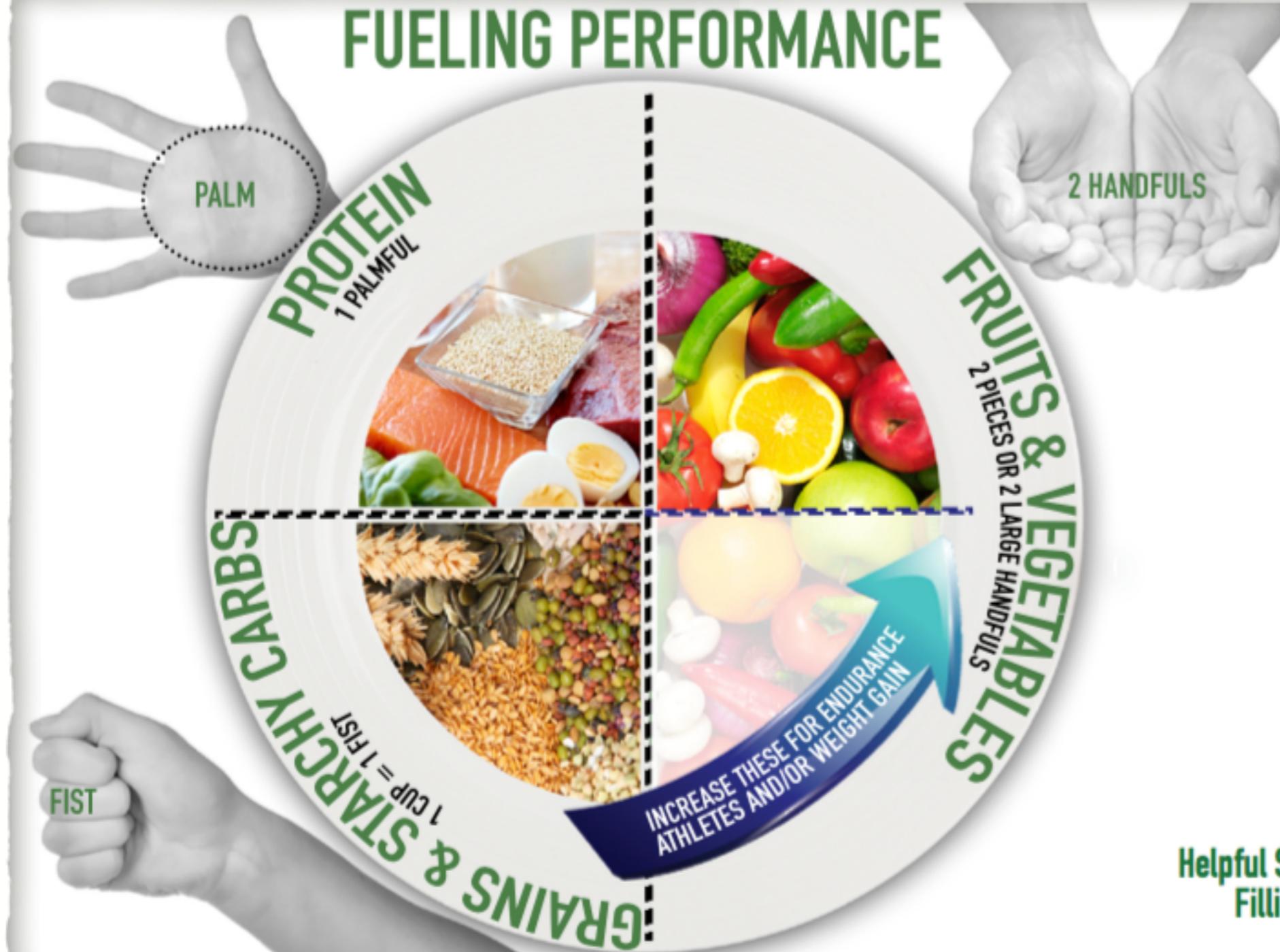
Nutrition

Eating for Optimal Performance

Considerations

- Food is the **fuel** for our bodies
- Nutrition plays a role in **recovery/regeneration**
- Swimmers need to make the choice **on their own** to commit to their nutritional needs as an athlete
- Give them the **tools** and then the **choices**
- **Talk** about nutrition

FUELING PERFORMANCE



NOTE: THIS PLATE IS SUGGESTED FOR MEALS (BREAKFAST, LUNCH, DINNER). SNACKS SHOULD BE INCLUDED AS NECESSARY.

Figure 2.2
Helpful Strategies for
Filling your Plate

Carbohydrates

The fuel that runs the engine

- The bodies primary source of energy (Provide 4 calories per gram)
 - Sugars
 - Starches
 - Fiber





Simple Carbs

Known as the building blocks of
Carbohydrates

Different names for "sugar"

- Monosaccharides (glucose, fructose,
galactose)
- Disaccharides (maltose, lactose,
sucrose)

Soda
Sports drinks
Fruit
Diary Products
Pastries

Complex Carbs

Formed when 3 or more glucose molecules combine
(Polysaccharides)

Rice

Potatoes

Whole grains

Beans



Functions of Carbohydrates

- Primary Function is for **ENERGY**
- **Brain**, red blood cells, parts of the eye rely on carbs
- Carbs provide the majority of **energy production** during **rest** and **exercise** (particularly higher intensity exercise)

Using Stored Carbs

- Carbs are stored in the muscles and liver as **GLYCOGEN**
- Glycogen is the stored form of glucose
- There is about 2,000 calories of stored energy in the muscles and liver
- Body quickly uses **GLUCOSE** for energy and then reverts to breaking down **GLYCOGEN** into glucose for sustained performance
- Eat quality carbs consistently to maintain glycogen stores

Making Carb Choices

- Nutrient Density - Most nutrients for least amount of calories is best
- Digestion Time - How long will food take to digest pre, during, post activity?
- Athletes need to understand their bodies.

How Much Carbohydrate?

- Athletes should consume 45-65% of calories from Carbs
- More specific: 2.7-4.5 grams of carb per pound of body weight
- Swimmers are at the higher end of this
- About 2 handfuls per meal

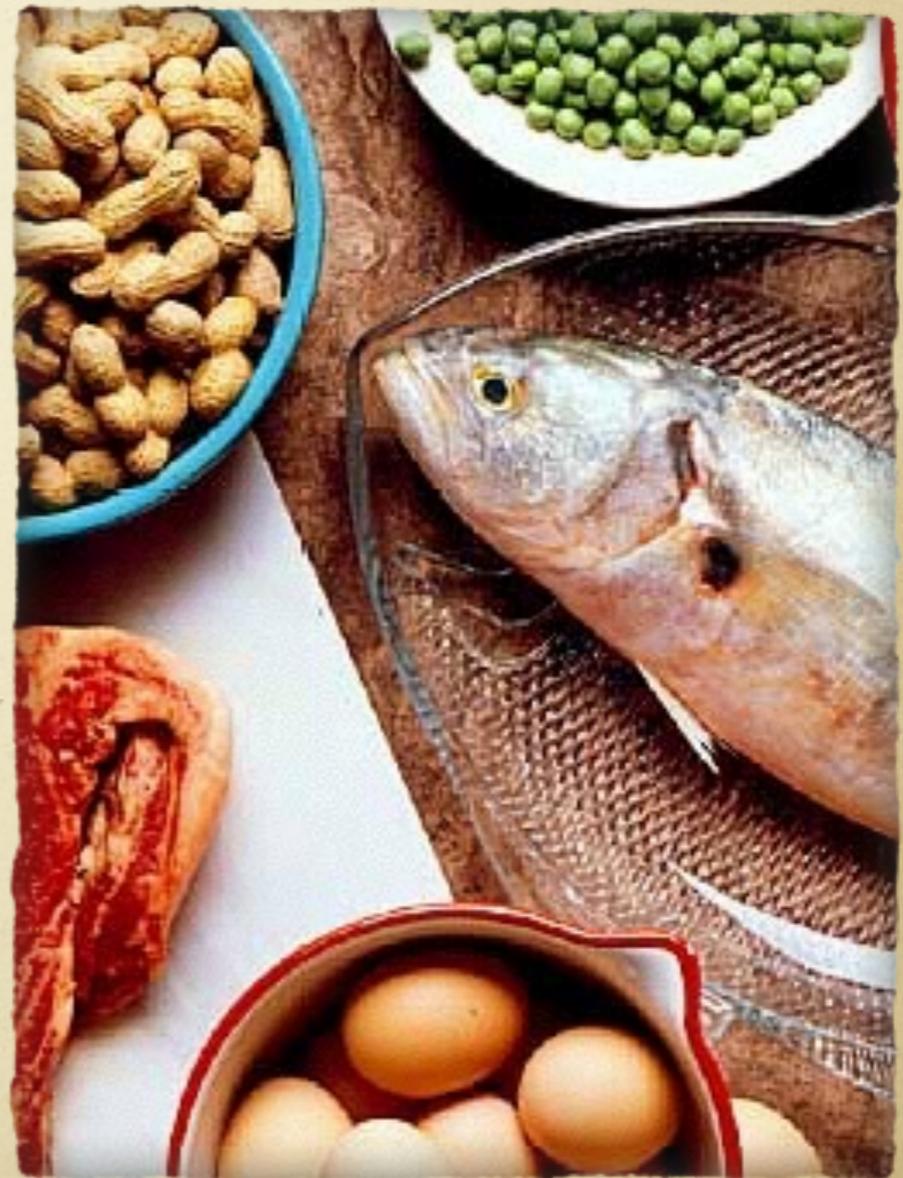


Nutrient Timing

- **1-2 hours pre workout:** Meal higher in carbs. Lower in protein and fat.
- **During workout:** Under 60 minutes does not require special fueling. Over 60 minutes requires some carb refueling (sports drink)
- **After workout:** Glycogen needs to be replenished
 - 0.5-0.7 grams per pound of body weight + some protein
 - Should be simple carbs for quicker storage

Protein

- Primary job is to build and maintain muscle mass
- Improves fullness and can help with fat loss
- Not a good source of energy



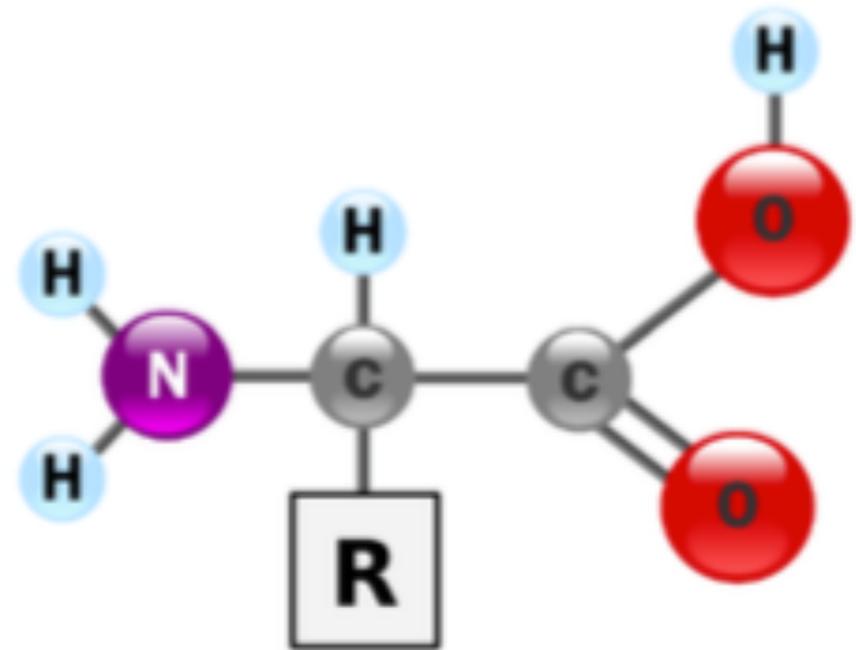
Protein Basics

- Amino Acids (AA's) are the building blocks of protein
- There are 20 unique Amino Acids
 - 9 are essential - Cannot be made by the body and must come from the food we eat
 - 3 of which are **Branch-Chain Amino Acids**
 - 11 are non essential - Are made by the body

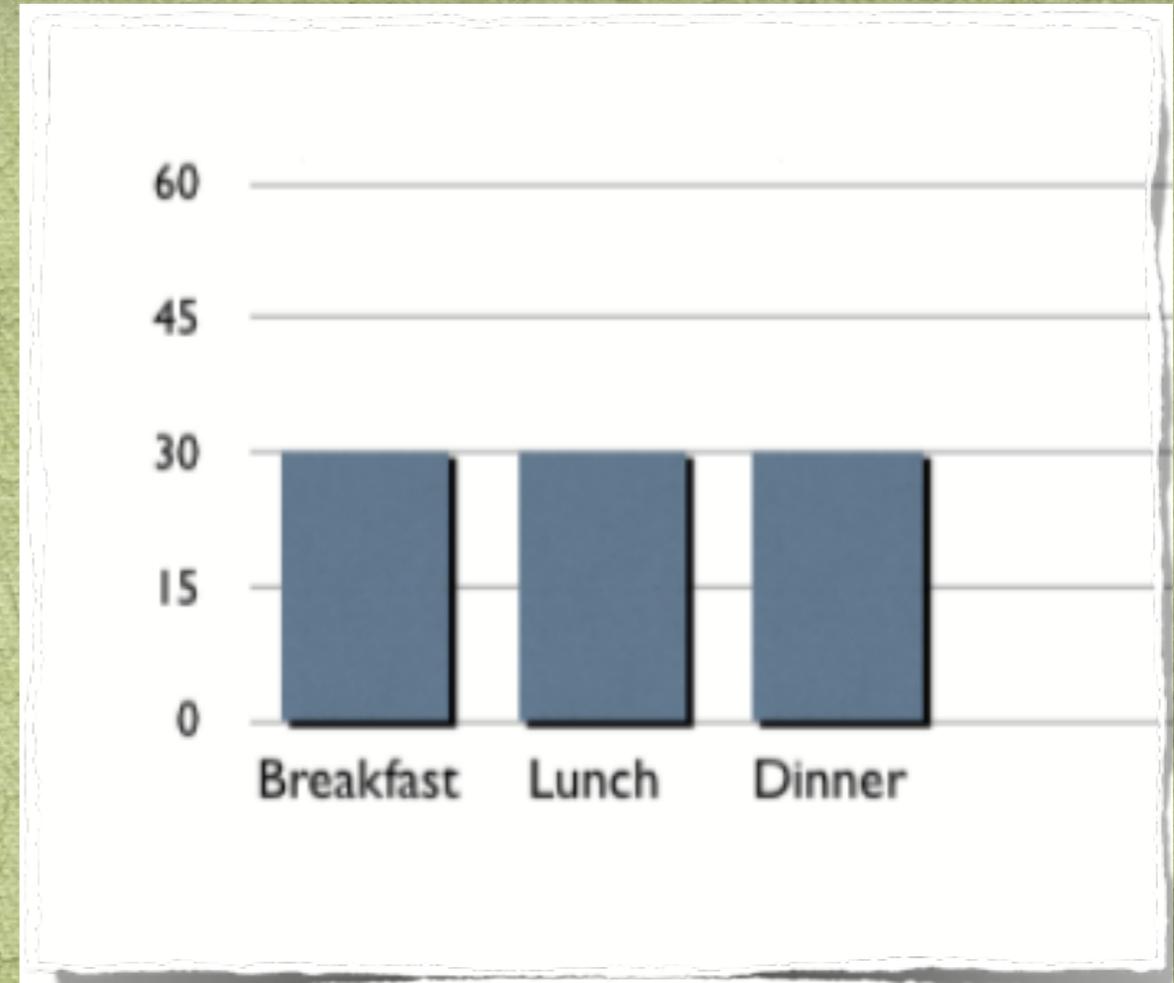
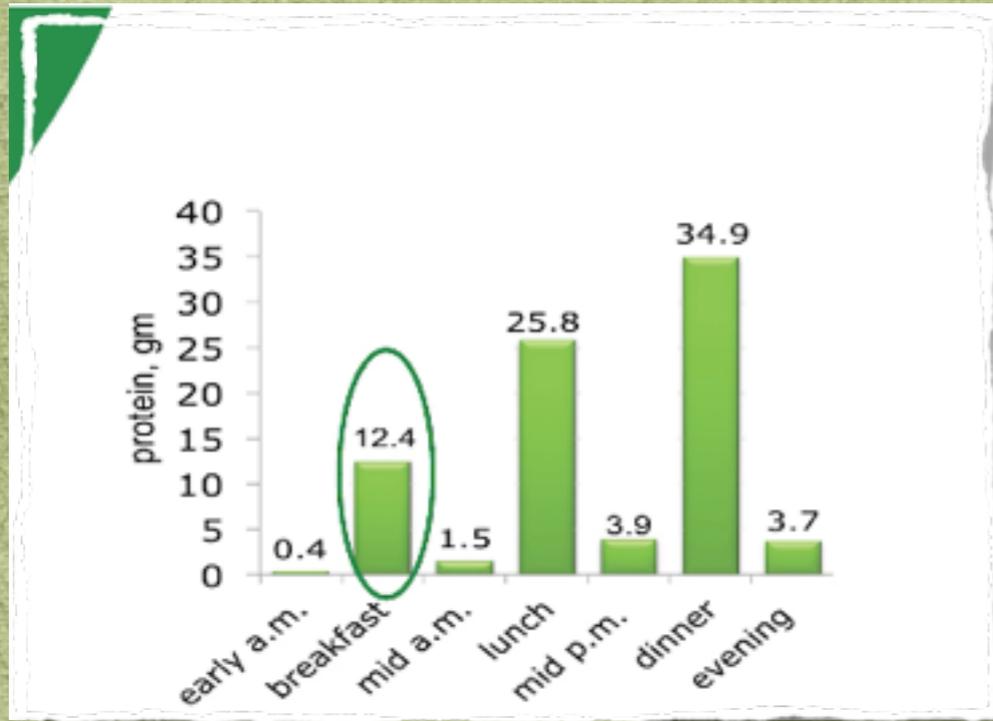
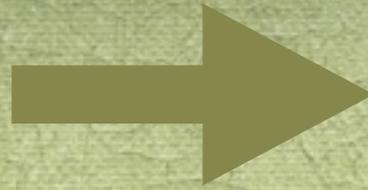
BCAA's

“Special Aminos”

- Leucine - A Key Player in Protein Synthesis
- Isoleucine
- Valine



Strive for Balance



Our Protein Consumption is Typically Out of Balance

Muscle Protein Synthesis

- Protein is **not stored** (like carbs and fat)
 - More is not always better
- Maximum benefit, around **20-35 grams** per meal
 - Females typically on the lower side
 - Males typically on the higher side
- **20g** of protein is a **serving size** about the size and thickness of your palm

Recovery Snack Ideas

- Chocolate Milk
- Greek Yogurt w/Fruit
- Cottage Cheese & Fruit
- Energy Bar
- Apple & Peanut Butter



Fat

A vital energy source

Contribution to energy changes
with exercise intensity and duration

Made up of fatty acids

9 calories per gram of fat
(4 cal/gram of protein and 4 cal/gram of carbs)

20-35% of diet should come from FAT

Fatty Acids

- **Saturated Fat:** Butter, coconut oil, animal fat, etc.
- **Monounsaturated Fat:** Olive oil, canola oil, eggs, nuts, etc.
- **Polyunsaturated Fat:** Fish, fish oil, olive oil, etc.
- All fats contain a unique combination of all fatty acids

Roll of Fat

- Provides fat soluble vitamins (A,D,E,K)
- Provides energy to the body
- Helps with cognitive function
- May play a role in brain protection



Eat More of These

- Olive Oil
- Canola Oil
- Nuts
- Nut Butters
- Egg Yolk
- Fish & Fish Oil
- Flax Seed & Flax Oil
- Hemp Seed & Hemp Oil

Eat Less of These

- Coconut Oil
- Butter
- Animal Fat
- Palm Oil
- Corn Oil
- Mayonnaise
- Baked Goods (muffins, pastries, scones, etc.)
- Steer Clear of **TRANS FAT**

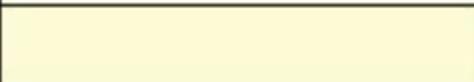
Hydration

Dehydration

- Can impair physical and mental function
- Negatively effect performance
- Lead to heat illness
- It takes just 1-2% BW loss to hinder performance

Measuring Hydration Status

- USE URINE COLOR AS A GUIDE

1		<i>If your urine matches the colors 1, 2, or 3, you are properly hydrated. Continue to consume fluids at the recommended amounts.</i>
2		
3		
4		<i>If your urine color is below the BLUE line, you are DEHYDRATED and at risk for cramping / a heat illness!</i>
5		
6		YOU NEED TO DRINK MORE WATER / SPORTS DRINK!
7		
8		



Tips for Staying Hydrated



➤ Fluids should be cooled and flavored to enhance flavor and increase voluntary intake

➤ Fluids should contain Carbs to enhance performance

➤ Fluids should include sodium to stimulate thirst and fluid retention

How Much & When

Before & During

- Drink 2 cups of fluids 2 hours before practice
- Drink 1 cup of fluids 10-20 minutes before practice
- Drink 2-3 large gulps of sports drink every 10-15 minutes during practice

After

- Drink 20-24 oz of sports drink or other fluids for every 1 pound of weight lost during training

Overall Considerations

Food vs. Beverage

Carb & Protein Combo

Convenience & Affordability

Taste & Tolerance

Intensity and duration of workout

Recovery time

1 "Handful" Carbohydrate
Brown rice
Sweet potato
Whole grain tortilla
Whole grain bread
Beans

1 "Handful" Protein
Fish
Pork
2 Eggs
Beef
Chicken
Turkey

Fruits/Veggies
Apples
Bananas
Oranges
Berries
Spinach
Collards
Kale

CSNC
COACH