

Overview of Major Points:

Introduction:

- Nutrition can be manipulated in order to enhance performance in the pool – **therefore eat like you care.**
- Learn the basics of nutrition and nutrient timing – **then apply your knowledge**
- Use training sessions to practice different dietary approaches so you have a race day diet that works for YOU.

Swimmer's Metabolism

- As an elite athlete you have an enhanced metabolism and thus altered metabolic requirements compared to the general population.
 - (i.e) General population should not engage in excessive carbohydrate consumption – obesity, diabetes etc. However, as a swimmer – carbohydrates are your “best friend” as they are your number one fuel source (~60% of dietary intake)
- Often energy expenditure of swimmers is greater than energy consumption (females especially) Pay attention to weight as an indication of energy balance and make changes as required.

Carbohydrates (CHO)

- Substrate for muscle metabolism and CNS functioning
- Main fuel source for intermittent high intensity exercise (i.e. swimming)
- Carbohydrate stored in the body as glycogen (muscle and liver) and as glucose in the blood
- Muscle glycogen + blood glucose → available for ATP production during exercise
- Increase exercise intensity (100-400m races)
 - Increased dependence on carbohydrates as fuel
 - Leads to quick depletion of muscle glycogen stores
- Athletic performance will FAIL as a result of low CHO - “hitting the wall”
- To avoid “hitting the wall” want to maximize muscle glycogen content and blood glucose levels – CHO NUTRIENT TIMING!

Nutrient Timing- CHO

3-5 hours prior

- Fairly substantial meal → increase exogenous fuel, prevent low blood glucose, sustain cognitive functioning
- Want to focus on carbohydrates (simple or complex) and protein
- Protein will aid in carbohydrate absorption and glycogen storage

30-60 minutes prior

- Want to consume a “snack” – lighter meal – high in carbohydrates
- Simple sugars or complex sugars are acceptable – whatever works for you!

- This is especially important when swimming early in the morning. You **NEED** to consume some sort of carbohydrate before entering the pool to prevent a caloric deficit throughout the day (esp. when you have school after morning practice)

During exercise

- CHO ingestion important if exercise is lasting longer than 90 minutes (a lot of your practices)
- Gatorade, glucose added to water, gels etc

Post exercise (recovery)

- Immediate consumption is imperative if <8 hours between workouts
- Simple sugars often best → easily absorbed and up taken within the muscle
- Carbohydrate + Protein (20g) → increased glycogen resynthesis

Carbohydrate Additional Facts

- Carbohydrate consumption should match fuel needs...should not be static!
- Simple sugars:
 - Glucose, lactose, galactose – easily absorbed
 - Quick increase in blood sugar
- Complex sugar:
 - Starches, whole grains – slower absorption
 - Moderate increase in blood sugar
- Practice what works for you during training – it would be naïve to believe that one size fits all for carbohydrate consumption and exercise
- Different blends of carbohydrates → improved absorption (don't just consume glucose solely)

Hydration

- Swimmers often don't recognize hydration status
 1. In a pool surrounded by water
 2. Can't feel overheating
 3. Don't recognize sweating
- Need to bring a water bottle with you on deck EVERYTIME!
- Squirt Bottles: Much easier to drink from when in the pool – why make drinking water any hard than it has to be!