

PCST Stroke Clinic 2007 (Day Three)

Total Energy Expenditure

- Resting Energy Expenditure (REE)- how much energy is needed for basic functions (accounts for 60% of your daily expenditure)
- Thermic Effect of Food (TEF)-energy required to digest, absorb, transport, store and metabolize food (accounts for 10% of your daily expenditure)
- Thermic Effect of Exercise (TEE)-the increase of a person's metabolism due to moderate to strenuous physical activity
- All three together total the energy needed to function
- To determine your needs, go to the Nutrition Tracker online at:
 - <http://www.usaswimming.org/USASWeb/DesktopDefault.aspx?TabId=675&Alias=Rainbow&Lang=en>

New Food Pyramid

- Grains (need 3 ounces of grain, at least ½ of which is whole grain)
- Vegetables (choose a variety of dark green, orange veggies, dry beans, peas)
- Fruits (choose a variety of fresh, canned, frozen and dried fruits; take it easy with fruit juices)
- Oils/Fats (get fat from fish, nuts, vegetable oils; limit solid fats like butter, margarine sticks, shortening and lard)
- Milk (low fat or fat-free as a great source of calcium)
- Meats & Beans (low fat or lean meats, poultry, fish, beans, peas, nuts and seeds)

How much of each energy source?

- Carbohydrates should make up at least 60% of a swimmer's diet (used to maintain blood-glucose levels during exercise and replace muscle glycogen)
- Fat should make up about 20-25% of the diet (less than 15% fat is not beneficial; fat provides energy, fat-soluble vitamins and essential fatty acids)
- Protein should be about 12-15% of the diet (excess protein is not beneficial; protein provides the amino acids necessary for muscle development)

When to eat?

- Spread carbo intake throughout the day (this keeps the blood sugar levels adequate and stable; some carbs in the morning, carbs with electrolytes during workouts lasting longer than 90 minutes)
- Eat carbs and protein within the first 30 minutes after practice (this enables the body to replenish glycogen stores and repair muscle tissue) THIS IS THE MOST IMPORTANT TIME TO EAT!
- To maximize recovery, eat a real meal again within 2 hours of a workout
- Incorporate fat into the day at times that are not close to the workout (although fat is necessary, it contributes little to a workout or post-workout recovery period)
- Why?.....
 - Body uses what you give it
 - Body is sensitive to insulin after a workout
 - Insulin rises as the blood sugar rises (when you eat)
 - Insulin removes sugar from the bloodstream by facilitating its storage as glycogen
 - Glycogen is what the body taps into for fuel when exercise is very intense, therefore you must replenish the glycogen stores!

Importance of Hydration

- Hydration throughout the day is important to help the body function and not become dehydrated before the workout even starts (mix up what you drink between water, juices and Gatoraide style drinks)
- Water is the best and quickest source of hydration during a workout because it is easily absorbed into the body (sipping water every 10-15 minutes is ideal).
- During a workout, your body uses carbohydrates as its first source of energy. For workouts lasting longer than 90 minutes, the body benefits from a supplemental source of fuel (like Gatoraide). This also helps prevent unnecessary tissue breakdown.
- It is important to have enough carbs to make it through the workout so your body does not start dipping into protein storage which actually takes away from your muscle development
- Energy drinks that are too concentrated actually inhibit the body's ability to absorb fluids which leads to cramping (Gatoraide and Poweraide are an ideal mixture)

Tips for Hydration

- Keep a bottle of water or water/Gatoraide solution with you to sip at practice
- Avoid carbonated and caffeine filled drinks (they cause stomach bloating and reduce fluid intake and even create fluid loss)
- Check the color of your urine as a test to your level of hydration (dark or bright colored urine is a sign of dehydration)
- Drinks at least a cup of water or Gatoraide immediately following a workout to replenish glycogen storage until you can get a meal

Remember

- Food will not make you swim fast, but will rather provide the ability to have quality training that leads to fast swimming
- Workouts are designed to be hard, but improvement actually comes during the rest period when proper nutrition is of the utmost importance

Do-s and Don't-s of Optimal Off-Season Nutrition*

Do... Focus on healthful eating and lifestyle habits.
Do... Use performance and energy level variables to monitor success.
Do... Decrease normal energy intake according to decreases in training.
Do... Substitute lower-fat foods for whole-fat foods.
Do... Reduce the intake of energy-dense snacks.
Do... Eat more whole grains, cereals, beans and legumes.
Do... Get at least 5 servings of fruits and 5 servings of vegetables each day.
Do... Eat low-fat dairy products and lean cuts of meat, fish and poultry often.
Do... Drink a variety of fluids to maintain hydration.
Do... Keep snacks on hand for times when hunger might set in.
Do... Find a place for "favorite foods" to fit in moderation.
Do... Continue to exercise, even if it's not as much as the in-season.

Don't... Focus on the scale.
Don't... Eat low-energy diets (i.e. less than REE).
Don't... Reduce energy intake by more than TEE.
Don't... Reduce fat intake to less than 15% of total calories.
Don't... Skimp on protein or calcium.
Don't... Skip meals.
Don't... Allow hunger to set in.
Don't... Deprive yourself of favorite foods.