

# Does Nutrition Really Make a Difference?

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## 2 Truths, 1 Lie

- ◆ 1. To have more energy, eat a diet high in carbohydrates
- ◆ 2. Hydrate with juice during a workout
- ◆ 3. Eating a Hot Dog 1/2 hr before an Event, will slow your times

# Energy Sources

<u>Intensity</u>	<u>Duration</u>	<u>Preferred Fuel</u>
◆ Extreme	8-10sec	ATP-CP
◆ Very High	20 sec-3min	ATP from <u>Carbs</u> (lactic acid)
◆ High	3-20min	ATP from <u>Carbs</u>
◆ Moderate	>20min	ATP from <u>Fat</u>

# Energy from Carbs, A Piece of the Pie

<u>Activity Level</u>	<u>Size of Carb Pie</u>
◆ Low	3/8
◆ Moderate	5/8
◆ High	6/8
◆ Max	The Whole Pie



# Carbohydrates

- ◆ DRI: 60% of Total Calories
- ◆ Foods: Grains, Fruits, Veggies, Dairy, Beans
- ◆ “Good” Carbs: Have Fiber + Other Nutrients
- ◆ “Bad” Carbs: Low Fiber, No other nutrients

# Plan

- ◆ Eat a VARIETY of “Good” Carbs throughout the day
- ◆ 1oz Grain = 1 slice bread or 1 c cereal
- ◆ Remember: Eat the Fruit, Skip the Juice  
Taste Veggies you don't like!

# “Bad” Carbs have a Purpose

- ◆ “Bad” Carbs help you replace muscle glycogen (stored energy)
- ◆ How to do it: Snack on a bagel and OJ after a workout.
- ◆ How to do it better: Build More Muscles

# FATS

- ◆ DRI: 25% of Total Calorie Intake
- ◆ Eat  $>$  25% = Swim SLOW
- ◆ Eat  $<$  25% = Swim SLOW



# Calorie Intake >25% Fat

- ◆ Love those Big Macs and Fries?
- ◆ Can't just eat 1 cookie?
- ◆ Love the taste of Chips and Chocolate?
- ◆ Then practice PORTION CONTROL

# Too Many Fat Calories

- ◆ Means Too Little Carb Calories
- ◆ What do you think your muscles think of that?

# Calorie Intake <25%

- ◆ Too Little Fat Calories Usually Means

Not Enough Nutrient Intake

**Body Can't Work if the Body is not Fed!**

# Fuel and Coach Rodger's Workouts

1. Swim at 75% and Burn Fat
2. Swim at 85% and Burn Carbs mixed with Fats
3. Swim All Out and Burn Carbs

# Protein

- ◆ DRI for Protein = 15% of Total Calories
- ◆ Protein is used for
  - ◆ Repair
  - ◆ Growth
  - ◆ Some Energy



# Foods

- ◆ Meat, Poultry, Fish, Eggs
- ◆ Cheese, Milk
- ◆ Peanut Butter
- ◆ Nuts, Beans, Tofu

# How Much Protein?

- ◆ Children Need More Protein per Pound of Body Weight than Adults
- ◆ Athletes Need More Protein
- ◆ Speed Swimmer needs about .65 grams protein/pound body weight

# 6 ounces, more or less

- ◆ 1 egg = 1 oz
- ◆ 2 T peanut butter = 1 oz
- ◆ 2 slices of cheese or 8 oz milk = 1 oz
- ◆ 1/2 c tofu or beans = 1 oz
  
- ◆ Meat, Fish, Poultry, the size of a deck of cards, = 3oz

# Plan

- ◆ Eat small amount of protein at each Meal and snack
- ◆ Read Nutrition Labels for Protein Content
- ◆ 7grams protein = 1 ounce

# Diet Type and Endurance

Fat and protein diet



Maximum  
endurance time:

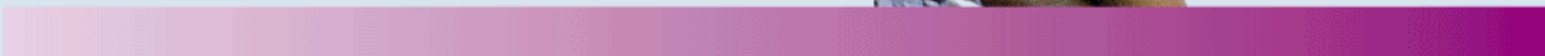
57 min

Normal mixed diet



114 min

High-carbohydrate diet



167 min





# Example of a 60% Carb Diet

	<u>2000 cal diet</u>	<u>3000 cal diet</u>
Milk	3	4
Fruit	3	4 1/2
Veg	2 1/2	2 1/2
Grains	11oz	18oz
Oil	Fat inherent in food + 1T	+2T
Meat/Beans	5oz	5oz

Note: Protein is coming from both Milk and Meat/Beans

# Pre-Race Foods

- ◆ Easy to digest carbohydrates with a small amount of protein
- ◆ Examples of Carbohydrates  
Pasta, Breads, Cereals, Bananas

# Pre-Race Meal, 4 hrs before

- ◆ Examples:
- ◆ Apple with 1.5 T low-fat peanut butter and 1 piece bread
- ◆ Bagel with 2 T jelly and 1.5 cups skim milk
- ◆ Yogurt and oatmeal

# Snacks Between Races

- ◆ Juice
- ◆ Banana
- ◆ Crackers
- ◆ Sports Drink
- ◆ Energy Bar

# Post Race Meal

## Goal: Store Glycogen

- ◆ Rehydrate first then:
- ◆ 60 grams of carbs within first 2 hours
- ◆ E.g. 8oz orange juice and a bagel



# Water

- ◆ Dehydration is the #1 Reason why you tire out
- ◆ Thirst is a poor indicator of hydration when you are working out!!
- ◆ You are hydrated if your urine is a very pale yellow

# What to Drink

- ◆ Best: Water, Sports Drinks or Diluted Orange Juice (1/1)
- ◆ Dehydrating Liquids:  
Caffeinated Beverages and Alcohol

# When to Drink and How Much

<u>When</u>	<u>How Much</u>
◆ 2 hrs before	2-3 c
◆ 15 mins before	1-2 c
◆ During	1c every 15 mins
◆ After	2c for each pound lost

# Vitamins

- ◆ Every Athlete needs Antioxidants:  
Vitamins A,C,E and beta carotene
- ◆ Get them from your food!  
Carrots, Oranges, Broccoli, Almonds

# Minerals/ Iron

- ◆ Low iron means Low Energy
- ◆ Good Sources: Meat, Egg yolk, Raisins, Peanut Butter, Fortified Cereals, Beans
- ◆ Limit Soda, Tea, Coffee and Kool Aid



# Minerals/Potassium, K<sup>+</sup>

- ◆ Losing Weight through Sweat?
- ◆ Replace the water, salt and potassium
- ◆ Good K<sup>+</sup>: Sports Drinks, Diluted OJ, Orange, Banana, Tomatoes, Potatoes

# Supplements

- ◆ Creatine:
- ◆ Does creatine really work?
- ◆ What are the long term affects from taking creatine?
- ◆ Data from studies is mixed

# Energy Drinks

- ◆ High in sugar and caffeine
- ◆ Excessively high in Vitamins B6 and B12
- ◆ No FDA control
- ◆ May contain ephedrine

# Eat Well/Swim Better

- ◆ Meals: Mostly Carbs with Some Protein and a Little Fat
- ◆ Eat a Variety of Food in Moderation
- ◆ Stay Hydrated
- ◆ Don't Count Calories