

BOARDMAN



SWIMMING

Welcome to the Grind

“After exercise, the dietary goal is to provide adequate energy and carbohydrates to replace muscle glycogen and to ensure rapid recovery. If an athlete is glycogen-depleted after exercise, a carbohydrate intake of 1.5 g/kg body weight during the first 30 min and again every 2h for 4 to 6h will be adequate to replace glycogen stores.

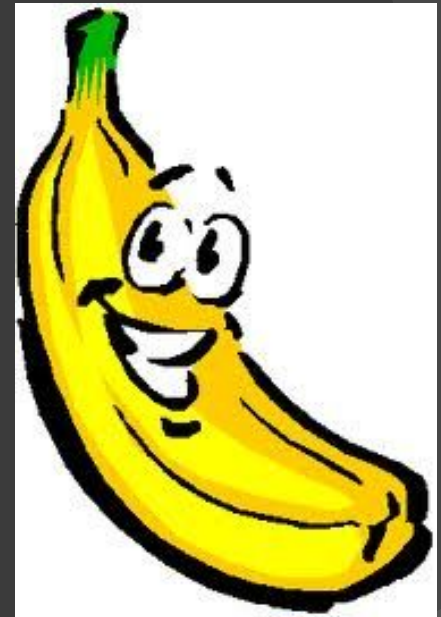
Protein consumed after exercise will provide amino acids for the building and repair of muscle tissue.

Therefore, athletes should consume a mixed meal providing carbohydrates, protein, and fat soon after a strenuous competition or training session.”

(ACSM, ADA, Dietitians of Canada Joint Position Statement on Nutrition and Athletic Performance, 2000, p 2131)

Nutrition

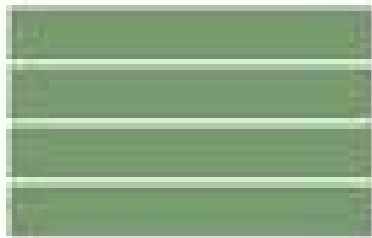
- Practicing good nutritional habits throughout the swim season will be extremely important to your success!
- How well a swimmer recovers from a workout can affect the quality of their next practice!



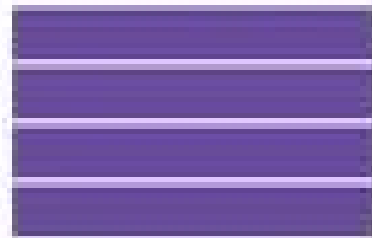
Energy Scale for Food

Calories = Energy

Carbohydrates:
4 Calories per gram

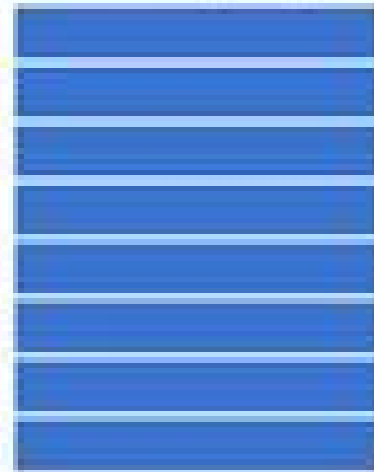


Protein:
4 Calories per gram



Fats:

9 Calories per gram



Nutrition

- ⦿ Carbohydrates become the primary contributor to the total amount of energy required as training sets toughen.
- ⦿ For us, this means that swimmers rely heavily on carbohydrates as their primary fuel source during most workouts. Much of this carbohydrate comes from the storage form, **glycogen**.

The Effect of Diet on Physical Endurance

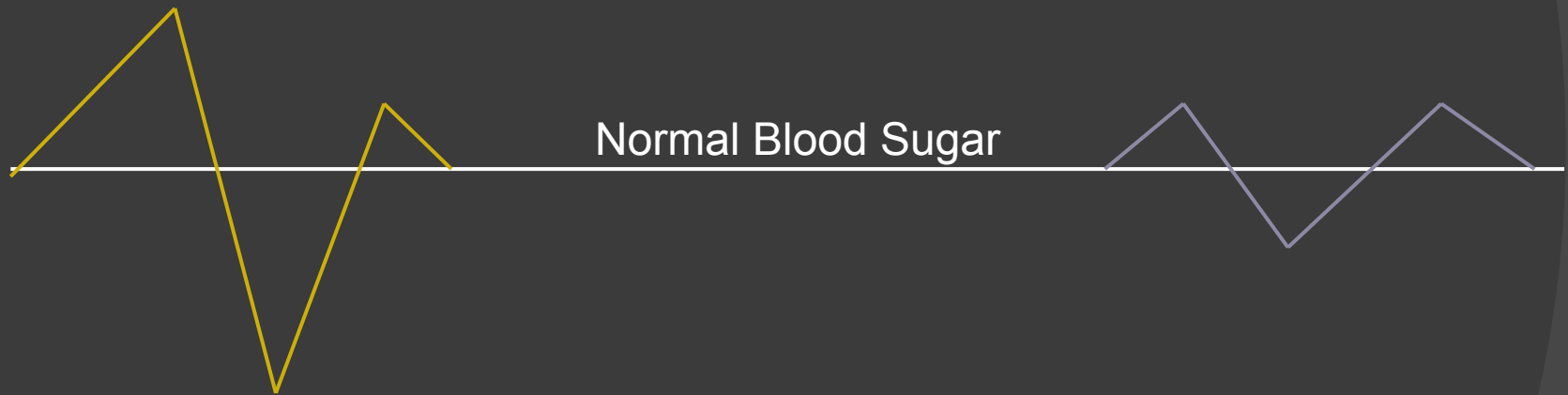


Nutrition

- ⦿ Over time, if the **glycogen** spent during one workout is not replenished prior to the next, the net effect is a reduction in the amount of **glycogen** available to fuel the tough sets.
- ⦿ **The first half hour of post-workout is the most critical!!!**

Eat Early, Eat Often!

- Carbs → Blood Sugar → Insulin



Bigger Meals
3 times a day
Insulin Spikes
OK Post-Workout

Smaller Meals
5-6 times a day
Insulin Steady
Preferable Throughout Day

- ⦿ **Training**

- ⦿ Start the replenishment process **IMMEDIATELY!** The “window of opportunity” for maximizing glycogen repletion starts to close as soon as exercise stops (30 minutes!)

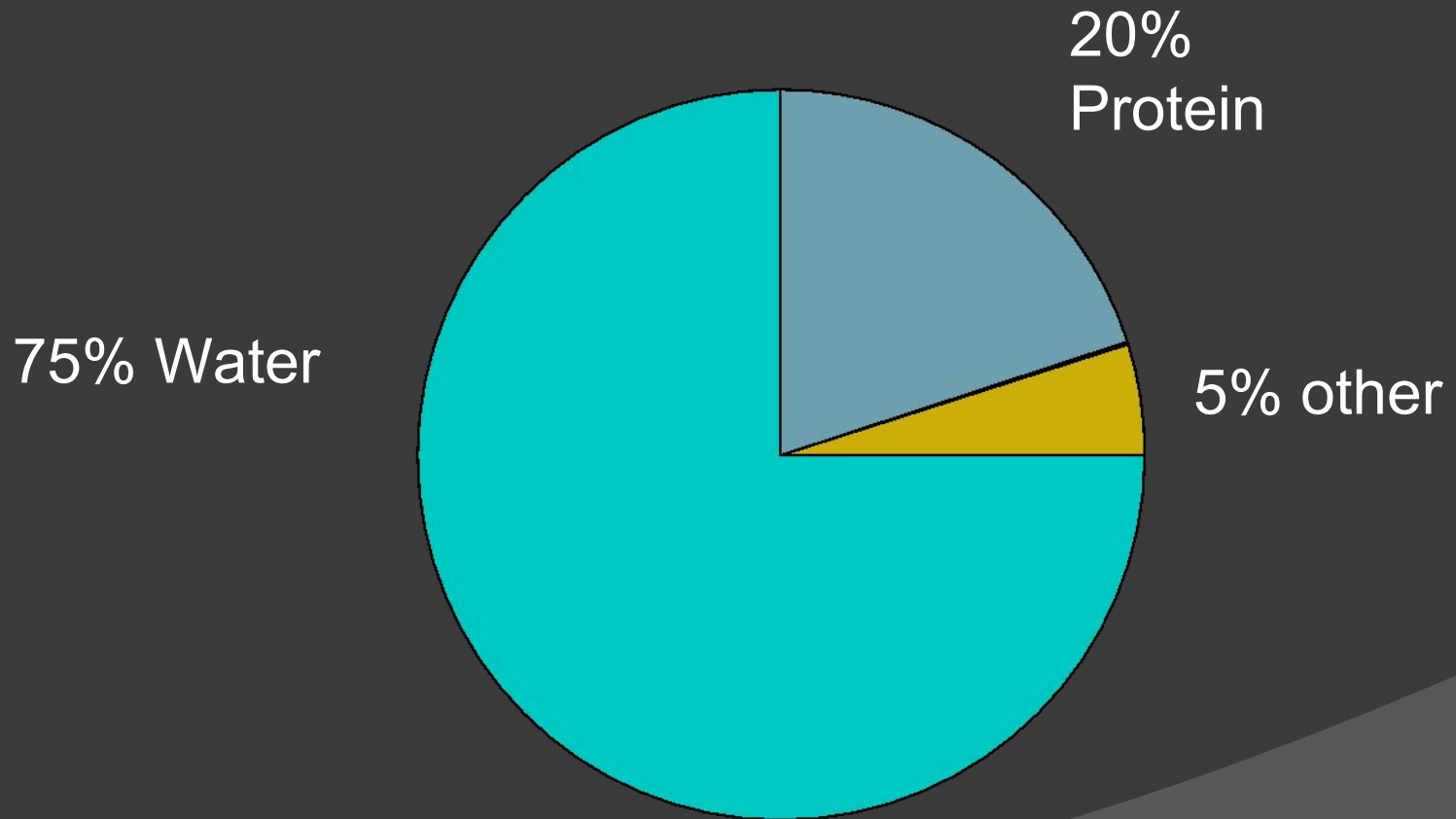
- ⦿ **Racing**

- ⦿ Eat a high-carb/moderate- protein snack **IMMEDIATELY** after your PRELIMS race and immediately after your FINALS race, then again after warm-down.

Hydration



Components of Muscle



Fluids & Hydration



Males - 60% body wt.
Females - 50% body wt.

- Cardiovascular function
- Thermoregulation
- Injury prevention
- Performance
- Recovery

Sweat losses during 2 hours of
exercise can = 2 liters or more

Physiological Effects of Dehydration

⦿ ↑ sweat rate → ↓ blood volume & ↑ heart rate

⦿ ↑ core body heat

⦿ ↓ cardiovascular function
-less O₂ and nutrient-rich blood to muscles
-more reliance on anaerobic system

⦿ Slower removal of wastes → cramping, fatigue

Impaired Performance!

- Muscle strength
- Speed
- Stamina
- Energy
- Cognitive Process
- Risk of Injury



95% of muscle cramps are due to dehydration!

Sweat Loss and Fatigue

Sweat loss in athletes 1-12 quarts/day!

Sweat Rate Equation:

2 hour workout..... Pre weight 180.0#

Post weight 178#

Fluid Intake: 32oz of water and sports drink

$180 - 148 = 32$ ounces of fluid lost + 32 ounces consumed = 64 ounces of sweat loss per 2 hours or 32 ounces loss per hour!

This is an example to drink at least 8 ounces of fluid every 15 minutes or double current intake

When Should You Drink?

WHEN TO DRINK

AMOUNT OF FLUID

2 hr before exercise

2-3+ cups

15 minutes before

1-2+ cups

Every 15 minutes DURING

1-1.5 cups

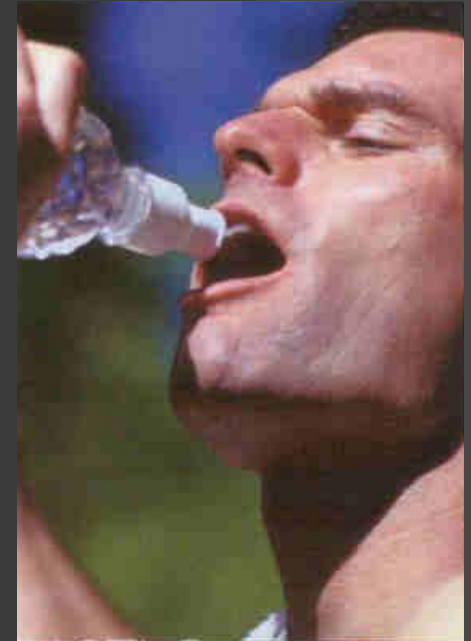
After Activity

2-3 cups
for every lb lost

**ACSM Position Paper, 2006*

What you already know...

- ⦿ *Don't rely on thirst*
 - Already 1-2% dehydrated
- ⦿ *Drink before, during & after*
 - 2 hrs before 14-24 oz
 - 20-36 oz/hr or 5-12 oz every 15 mins.
 - drink ~150% or 24oz / # lost



“Water is the most neglected nutrient in your diet, but one of the most vital” ~ Julia Child

“Your body is a temple, but only if you treat it as one.” ~ Astrid Alauda