

High Performance Sports Nutrition



Allen Tran
University of Utah

Game Plan for Today



- What does food do for your body?
- What does a healthy athlete's diet look like?
- How can you fuel your body for your sport?



Why should you care about food?



Food....

1. Gives your body energy
2. Helps delay your fatigue
3. Enhances your recovery
4. Helps prevent injuries
5. Maintains (or increases) your muscle mass
6. Can set you apart from other athletes!!

What does your body run on?

Calories!!!

- Like a car, your body needs fuel
- Fuel comes from :
 1. Carbohydrates (CHO)= 4 gm/kcal
 2. Fat = 9 gm/kcal
 3. Protein (Pro) = 4gm/kcal



How many calories do you
need to fuel your body?

It varies for every athlete!

*What do you think it
depends on???*

On *average*, athletes need

**16-18 calories per pound of
body weight**



Optimal Eating Plan for Athletes

- Carbohydrates
- Fat
- Protein
- Fluids



Carbohydrates

- Main source of fuel for the body
 - Stored in liver - used as fuel for brain (totally dependent on CHO)
 - Stored in muscle - used only by muscle tissue
 - Exercise depletes
- Maintains normal blood sugar levels
- Spares body protein



Carbohydrates Sources

- Fruits
- Vegetables
- Grains
- Rice
- Pasta
- Tortillas
- Cereal
- Bagels
- Beans
- Milk
- Yogurt
- Sports bars
- Sports drinks
- Sports gels
- Candy
- Sweets



Which types of carbs are better...

1. Pre competition/training?
2. During competition/training?
3. For recovery?



270.
Canisters



New!
CLIF SHOT
Drinks served hot



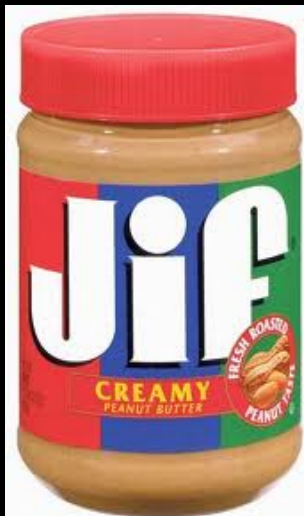
Why athletes need fat

- Good energy source
- Provides essential fatty acids - must get from diet
- Carries fat soluble vitamins
- Helps regulate hormone levels
- Makes up cell membranes
- Adds smoothness and flavor to food
- Helps satisfy hunger



Sources of Fat

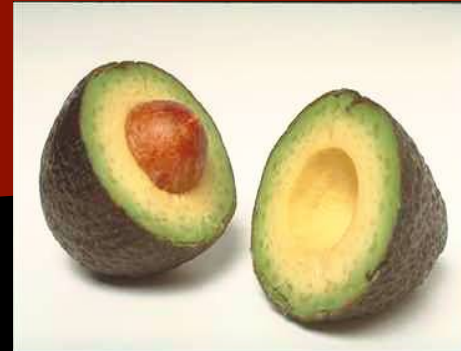
- Nuts
- Seeds
- Olives
- Avocados
- Meats/seafood
- Butter
- Margarine
- Oils
- Some dairy products
- Some processed foods
- Some baked goods



Types of fat

- Unsaturated – *best option*

- Plant products
- Monounsaturated – peanut oil, canola & olive oil
- Polyunsaturated – safflower, sunflower & soybean oil



- Saturated – *in smaller amounts*

- Animal products



- Hydrogenated (trans) – *in smaller amounts*

- Hydrogen added back into chemical structure
- Margarine, processed baked goods, crackers, etc



Athletes and protein

- Builds & repairs body tissues
- Assists in recovery after workouts & illnesses
- Makes enzymes and hormones
- Keeps immune system strong
- Used as energy source only when diet is low in carbohydrates & calories
- Maintains blood pH balance



Sources of Protein

- Red meat
- Chicken/turkey
- Seafood/fish
- Milk
- Cheese
- Yogurt
- Beans
- Eggs
- Nuts
- Nut butters
- Veggie burgers
- Soy products
- Tofu
- Sports bars



What if you are a
vegetarian athlete?

*Can you get all the
protein you need?*



Yes....

You just have to be smart!

Vegan?

- Nuts
- Seeds
- Tofu
- Soy products
- Nut butters
- Dairy alternatives

Vegetarian?

- Everything in the 1st column plus...
- Cheese
- Milk
- Yogurt

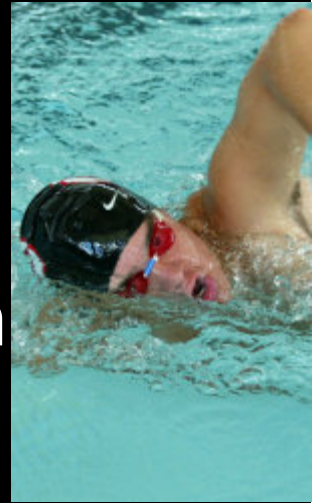
Can you eat too much protein?

Yes!

- Common in athletes trying to gain weight/mass
- Protein by itself does not help you gain weight/mass
 - You need to include the proper amount of training and overall calories
 - Or the protein will be stored as body fat

Your Hydration Needs

- Above and beyond the average person
- Varies from sport to sport
- Dehydration affects so many things in your body!
 - Muscle contractions
 - Heart rate
 - Blood pressure
 - Mental acuity
 - Thermoregulation
 - Overall performance!!



Fluid Guidelines



■ Before activity

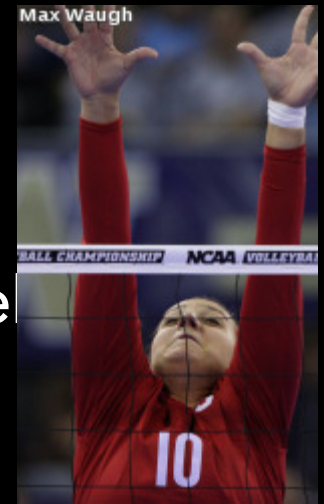
- 2-3 hours before activity
 - 20 oz water or sports drink
- 10-20 minutes before activity
 - 10 oz water or sports drink

■ During activity

- Drink before you are thirsty
- 8 oz water or sports drink every 15 minutes
- Sports drinks will also provide necessary carbohydrates

■ After activity

- 16-24 oz water or sports drink for every pound of body weight loss
- Replace fluids within 2 hours
 - Water
 - Sports drinks
 - No sugar added flavored waters (like Propel)
 - Fruit juice
 - Smoothies
 - Milk
 - Ice tea or iced coffee
 - Lemonade
- Increase intake of watery foods (soup, watermelon, vegetables, fruit juice bars, etc).



Dehydration is bad news!

■ Warning signs!

- Muscle cramping
- Unsteadiness
- Vomiting
- Irritability
- Confusion
- Decreased performance

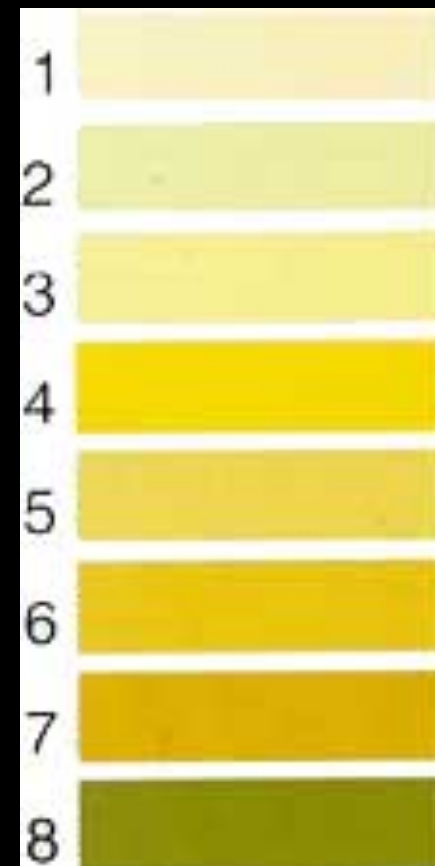
■ Report these symptoms!

- Weakness
- Nausea
- Headaches
- Cramps
- Dizziness
- Unusual fatigue
- Sweating has stopped

And overall decreased
performance!!!

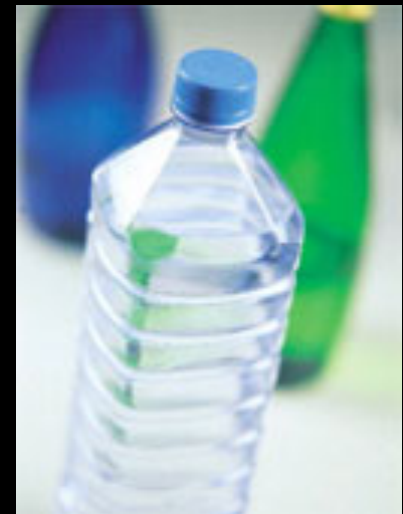
How can you tell if you are getting enough water??

- Check the color of your urine
- It should be pale yellow and clear' ish (1-3)
- If it is dark and concentrated (4+) – you are dehydrated



Hyponatremia - too much of a good thing...

- Sodium imbalance
- Occurs more often in people who
 - Exercise for 4+ hours
 - Are in the heat
 - Drink water only – not sports drinks
- Symptoms
 - GI distress
 - Nausea/vomiting
 - Headache
 - Restlessness
 - Confusion
 - Lethargy
 - Seizures



What about alcohol
and athletic
performance?



*Alcohol can have a HUGE
impact on training and
performance!!!*

It may even negate all your
hard work and dedication!



Here are some challenges with alcohol, it....

- Acts as a diuretic
- Puts you at risk for dehydration, heat illness, and muscle cramping
- Suppresses fat use as a fuel during exercise
- Interferes with post-exercise recovery
- Increases the risk for nutrient deficiencies
- Adds calories and acts as an appetite stimulant
 - Has 7 calories per gram
- Can interfere with sleep patterns

So what's an athlete to do about alcohol?

- Rehydrate and re-fuel post-exercise before considering consuming alcohol.
- If you choose to drink alcoholic beverages, use these guidelines:
 - 1-2 drinks per day for men
 - 1 drink per day for women
 - One “drink” equals 12 oz of regular beer (150 calories), 5 oz wine (100 calories), or 1.5 oz of 80-proof liquor (100 calories).

How to fuel with purpose!

- Plan ahead
 - Stock your dorm room with healthy snacks
 - Bring snacks with you on long days
- Eat every 3-4 hours
 - Time meals & snacks around practice and games
 - Eat at least 3 items at each meal
 1. A starch
 2. Some protein
 3. A fruit or vegetable

- Fuel your body early so you can train hard in the afternoon

- This means....don't skip breakfast!

- It does not have to be a sit down, cooked meal

- Even a “snack” is better than nothing at all

- Get the majority of your calories during the day

- Try not to over do it right before you go to bed!

- Eat more whole foods – less processed foods

- Don't restrict calories or go on crazy diets!

They don't work for athletes.

And lastly...

*Include carbohydrates, fat and protein
at each meal/snack*

Although all athlete's needs are
different...everyone should still have
balance of these nutrients!



Milk
(Fat-free or Low-fat)



Fruits



Nonstarchy Vegetables
(Raw or Cooked)



Grains, Beans, and
Starchy Vegetables



Meat and
Meat Substitutes



Added Fats



eat right. American Dietetic Association

Quiz time!

1. It is possible to get all the protein your body needs if you are a vegetarian

True False

2. Protein is the best energy source for athletes

True False

3. Fat is not really essential to athletes and should be eliminated from their diet

True False

4. Diluting sports drinks is a good way to reduce your calorie intake

True False

5. If you are trying to gain weight, it doesn't matter what you eat

True False

- For a quick and easy breakfast, which of the following is the most balanced?
 - Granola bar and box of juice
 - Yogurt with dry cereal mixed in
 - Bagel and banana
 - Protein shake with a spoonful of peanut butter

- Which of the following would be the best snack 60 minutes before a game or practice?
 - Low fat cookies and milk
 - Pretzels and an apple
 - Trail mix with nuts and M & M' s
 - Bowl of oatmeal with raisins

- If you were hungry during a game or practice, which of the following would be the best snack?
 - Fiber One bar
 - Chewy granola bar
 - An orange slice
 - Nothing – it will decrease your performance if you eat

- Which of the following would be the best snack immediately after a game or practice?
 - Quaker chewy bar and Power Ade
 - Honey stinger bar and water
 - Clif bar and water
 - Nutri-Grain cereal bar and Gatorade shake

What about supplements?

- Remember the word “supplement”
 - Supplements your current healthy diet
- Watch out where you get your supplements
 - NOT regulated by the government/FDA
- Mythbuster: Most supplements don't do anything
- You can get all you need from diet **ALONE!**

Supplement Facts

Serving Size: 1 Tablet

Servings Per Container: 30

	Amount Per Serving	% Daily Value
Proprietary Probiotic Blend* (In a microcrystalline cellulose carrier) L. acidophilus, L. plantarum, L. rhamnosus, L. fermentum, L. reuteri, B. infantis, B. bifidum	10 billion CFU	†

† Daily Value not established

Other ingredients: Microcrystalline cellulose, hydroxypropyl methylcellulose, pectin, sodium carbonate, stearic acid, guar gum, turmeric (color)

Contains Milk*

*‡ Trace amounts < 2.5/ppm of milk protein remain from the probiotic fermentation process. Contains no lactose.

*This statement has not been evaluated by the Food and Drug Administration (FDA). This product is not intended to diagnose, treat, cure or prevent any disease.