

Nutrition for Peak Performance

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Steps to Success

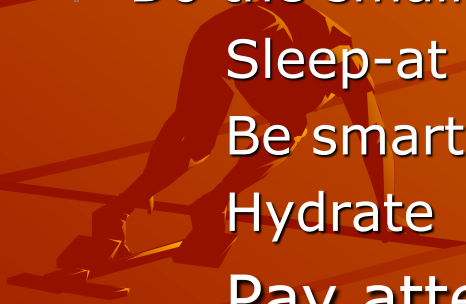
- ◆ Develop a strong mental attitude- Success is 80% mental!
- ◆ Have goals; they will guide you to where you want to be
- ◆ Focus during training sessions-Get the most you can out of each workout
- ◆ Be confident in your ability on competition day
- ◆ Do the small things- That means take care of yourself.

Sleep-at least 8 hrs, preferably 9-10 hrs

Be smart what you do outside of practice

Hydrate

Pay attention to Nutrition



Why is important to focus on eating right?

- ◆ It affects performance- you need energy to run fast
- ◆ Provides appropriate fuel- certain nutrients give you better forms of energy
- ◆ Aids in recovery-certain nutrients rebuild broken down tissue
- ◆ Facilitates strength-nutrients help build muscle
- ◆ Prevents illness- immune and inflammatory benefits
- ◆ Helps you sleep better
- ◆ Better for your long term health- prevents nutrition-related diseases (ex: heart disease and cancer)

Energy Needs

- ◆ Need a lot more calories than you think: **about 3,000**

- In school all day long
- Stress from school work, possible part-time jobs
- Running strenuous workouts, increased mileage
- Strength work
- High-school females are still growing

- ◆ Must get calories from good sources of food

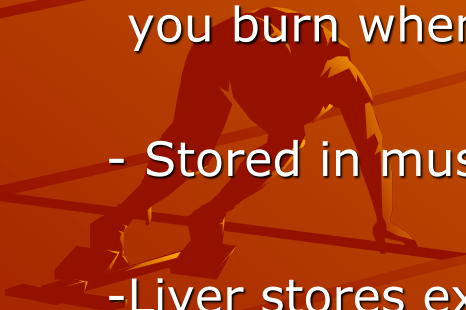
- Don't eat fast food all of the time, desserts, and junk food. Can still eat it, but it shouldn't be the main part of your diet.

- ◆ What happens if you don't get enough?

- Body will break down muscle= decreased strength
 - Not enough glucose to fuel muscles= poor performance or passing out
 - Metabolism affected=begin conserving fat while burning muscle still

Carbohydrates

- ◆ Main source of energy for an athlete
 - At least 60-65% of diet for quick and long sprints
70% for endurance runners
 - Carbs converted to glucose in metabolism- this is the molecule you burn when running, especially in all-out activity
 - Stored in muscles in the form of glycogen for immediate use
 - Liver stores extra glycogen and will be used; especially when running for a long time.



Good Carbs

- ◆ “Complex”- starches

Keeps blood sugars level because it isn't burned as quickly.

- ◆ Fiber-Keeps stomach full, good for the colon

Examples: Fruits, vegetables, whole grain breads, cereals, pasta, brown rice, oats, etc.

*Hint- Brown grains have more nutrients and fiber compared to white grains



Bad Carbs

- ◆ “Simple carbs”- Sugar
- ◆ Why is sugar bad if it is a carb?
 - The body will use it too quickly when exercising= hypoglycemia affect.
 - If not used right away it will be stored as body fat
 - Other nutrients aren't usually in high amounts in sugary foods.
- ◆ Not terrible if not main source of carbs- if you need quick energy (short sprints)

Exampes: Candy bars, pop, sweets, pastries, fruit snacks(sorry) etc.



[http://beautie/
blog/?tag=sugar-
cravings](http://beautie/blog/?tag=sugar-cravings)

Protein

◆ Protein is essential

Amino acids in protein are required for organs, muscles, and proteins in the body.

Slow digestion= helps with blood sugar and feeling full

• Important for recovery

Repairs tissue

Makes new protein for energy production

• How much do you need?

Endurance athletes need more than the average person. (60-80g per day)

Strength athletes need even more than endurance athlete. (70-120 g per day)

Healthy sources of protein



Eat Less often



Fat

◆ YOU MUST EAT FAT!

It is essential- need for hormone production, cell membrane structure and function, protection, temperature regulation.

- Good fats give you energy and needed calories. Prevents disease
ex: monounsaturated, polyunsaturated, omega 3, omega 6
- Bad fats are stored more easier as body fat. Accelerates disease
ex: saturated and trans fats

Are these Healthy Fats?



Are these Healthy Fats?



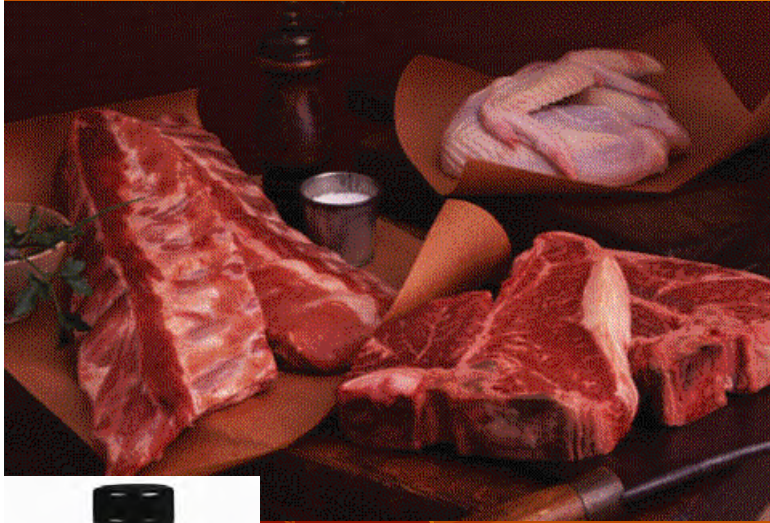
Vitamins and Minerals

- ◆ Play a role in energy metabolism, antioxidant activity, and other body processes.
- Supplements I recommend for runners:
 - Multivitamin with Iron
 - Calcium w/ vitamin D- (calcium carbonate form)

Iron

- ◆ Binds oxygen to blood cells for oxygen transport.
WE NEED O₂ to perform!
- ◆ Runners need to check ferritin levels (iron stores)
Average people can function when low, runners can't. Low for runners is below 50, below 20 can really affect performance.
- ◆ Why is it easy to for runners to have low ferritin?
Lose blood through menstrual cycle, when foot strikes blood cells break, lose through sweat and urine, don't consume enough iron-rich foods, GI bleeding.
- Take iron pill or food with vitamin C= increased absorption, meat is better form of iron
- Calcium, zinc, maganese, lead, tea inhibit iron absorption

Iron-Rich Foods



Calcium and Vitamin D

◆ Calcium

- Important in bone and teeth health, proper functioning of muscles, helps with blood clotting. Can prevent and heal stress fractures.
- Very important for adolescents because of growth.
- Important to prevent osteoporosis later in life.

• Vitamin D

- Helps with calcium absorption
- A lot of new research for prevention of diseases: cancer, diabetes, allergies, heart disease, etc.

Calcium-Rich Foods



Water and Electrolytes

◆ Functions

Cools the body, replaces fluid loss, prevents heat stroke, and dehydration.

• Consequences of Dehydration:

Impaired performance, speed is significantly impaired, no energy, muscle cramps, potential death.




How to Hydrate

◆ Never feel thirsty!

Constantly drink throughout the day even if you aren't thirsty.

Monitor color of urine- should be light yellow and odorless



Timing	Recommendation
2-3 hours before exercise	16-24 oz (2-3 cups)
30 minutes before exercise	5-10 oz (1/2 -1 cup)
During exercise	5-10 oz (1/2-1 cup) every 15 minutes
After exercise	≥20 oz (2 ½ cups) for every pound lost during exercise

How to Hydrate

- **Electrolytes**

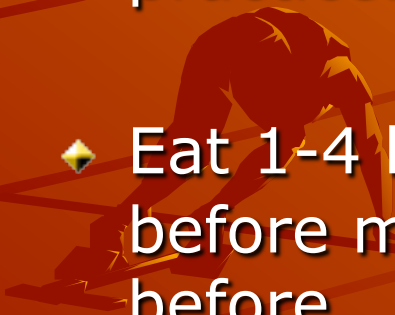
Important to replace electrolytes after exercise- important in metabolism of energy, chemical balance, and neuro-function.

- **Add electrolytes to water**

- There should be a little bit of electrolytes in your water throughout the day.
- They help to retain water in your body so you don't pee all of the time and become dehydrated.
- Go for low calorie sports drinks-all of that sugar is not necessary!

Eating Before Competition

- ◆ Goal- to provide adequate carbohydrates for fuel.
- ◆ There is great variability among runners- some take longer or faster to digest, experiment at practice.
- ◆ Eat 1-4 hours before event- if you eat 3- 4 hours before make sure to eat a small snack 1-2 hours before.



Eating Before Competition

◆ Carbs

Replenish glycogen stores, provide quick energy, digested and absorbed rapidly, decrease feeling of fullness.

- Protein- don't eat too much!

Harder to digest, can impair performance in the heat, can increase fluid needs

- Fats- don't eat too much!

Hard to digest, can stay in stomach for more than 4 hours

How I Eat Before an Afternoon Race

- ◆ **Night before-** pizza and electrolyte beverage- it works for me! Find out works for you, some girls on my team eat steak others like pasta.
- ◆ **Morning of-** Depends what is there, oatmeal, banana, and toast, or waffles with honey and a banana, maybe an egg, ELECTROLYTES
- ◆ **3 hours before-** peanut butter and jelly, some type of fruit, light and fit yogurt, pretzels, granola bar, water
- ◆ **1 hour-30 min-** quick carbs-maybe fruit snacks, granola bar, pretzels, depends how full I'am.

Post Competition

◆ RECOVERY is so important!

Can optimize performance level, work capacity, resistance to infection, injury, and disease.

Water and Electrolytes- Low-sugar sports drinks, electrolyte packets, foods with sodium: spaghetti sauce, pretzels, crackers and soup. Potassium: bananas, potatoes, OJ, other fruits and veggies.

Carbs- complex carbs=shorter recovery due to increased glycogen stores. Eat as soon as you can! 30 minutes-2 hours is your window.

Post Competition

Protein- muscle repair, especially strength athletes.
Yogurt, beans, lunchmeat, soy products, cheese and bagels.

Fat- Limit fat in post workout because it slows the absorption of carbs and proteins= slower recovery time.



Injury Healing and Prevention

- ◆ Stay well-nourished by eating enough and eating healthy.
- ◆ Pay attention to eating post-workout
- ◆ Nutrients for Injury healing

Calories- energy needed for healing

Protein- muscle repair

Vitamin C- joint repair and collagen synthesis

Zinc- same as vitamin C

Calcium, phosphorous and magnesium- skeletal repair

Omega 3- antiinflammatory



You Can Be a Champion!



<http://www.stepbystepwomen.com/images/runner-winning.jpg>

