



PERFORMANCE NUTRITION

WHAT YOU EAT FACILATES



THE SHAPE OF YOUR BODY IS



THREE KEYS TO HEALTHFUL EATING

- **MODERATION:**

- Nothing is off limits!
- Just make wiser choices 90 % of the time

- **BALANCE and VARIETY:**

- Must have variety of different foods
- Minimum of 10 different types of foods per day



Tips to Achieving Balance

- Consume 3 different food groups at each meal
- Be sure to get both Carbohydrate and Protein with meals and snacks
- Make a colorful plate
- Consume foods from each food group every day
→ DON'T miss out on important nutrients



Calories (1)

A gram of carbohydrate or protein provides 4 calories of energy

- A gram of fat provides 9 calories

- A gram of alcohol provides 7 calories, but is not an essential nutrient



Calories (2)

- At least 60% of the diet should be in the form of carbohydrates; a minimum of 45% of these should be complex carbohydrates
- No more than 15-20% of calories should come from fat
- Approximately 20% should come from protein



• Daily energy Recommendations (normally active person):

— Male total calories*

— 16-20 yrs. 2500-2900

— 23-50 2300-2700

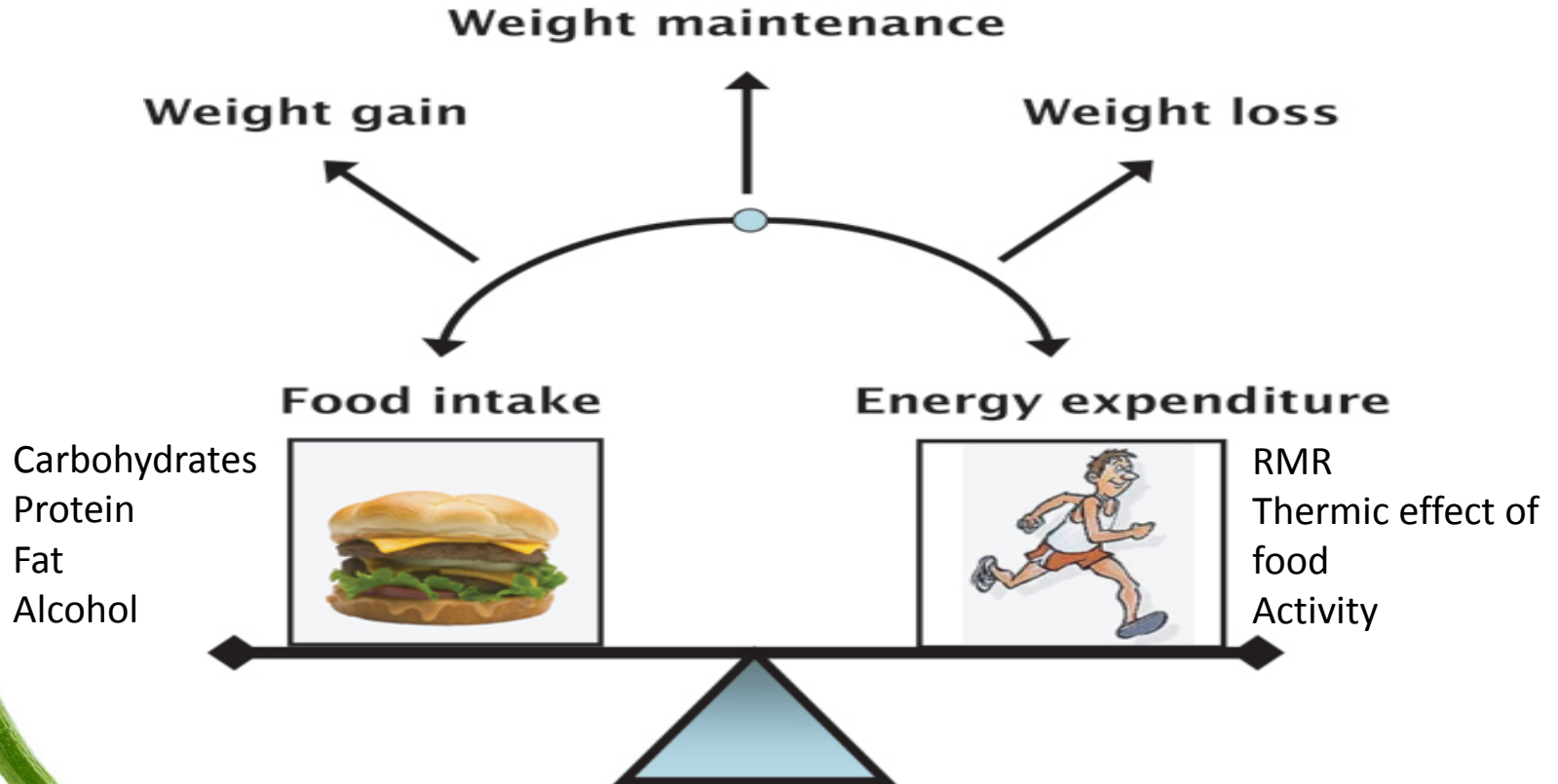
— Female total calories*

16-20 yrs. 2100-2300

23-50 2000-2200

- *If you do intense training or are very active, the above estimates may need to be increased

BALANCING ENERGY NEEDS



Energy IN = Energy OUT (weight maintenance)

Energy IN > Energy OUT (weight gain)

Energy IN < Energy OUT (weight loss)



Rule #1 Eat a Rainbow Often

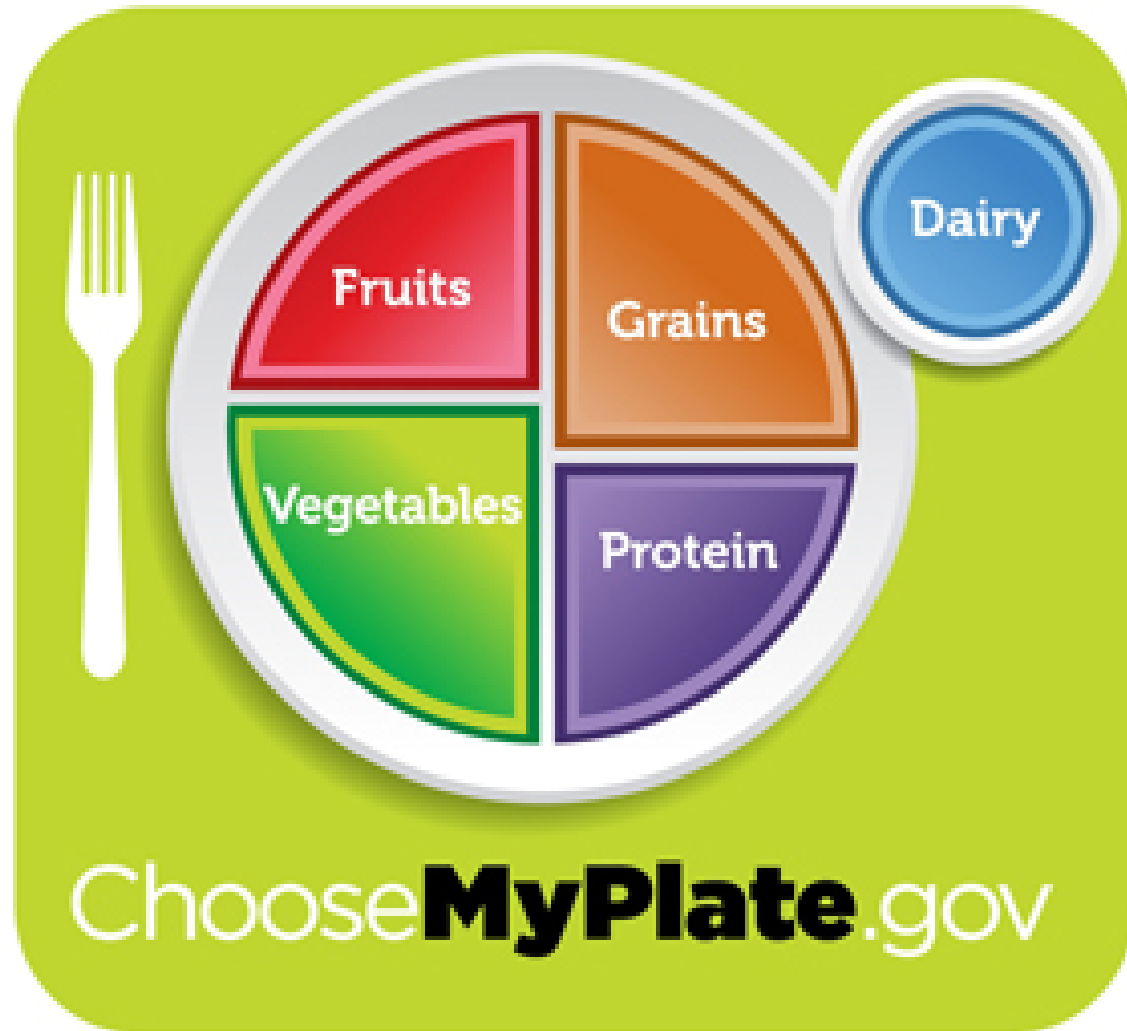
- Eating a variety of fruits and vegetables in a multitude of colors will help to ensure that you are getting the variety of nutrients that you need.
- Go for color. Check you are eating a variety of colorful fruit and vegetables – think **yellow**, **red**, **green** and **orange**.

- Best fruits based on their total anti-oxidant per size, blueberries, blackberries,, raspberries, strawberries, granny smith apples, sweet cherries, and black plums.

- Best vegetables stewed tomatoes, dark leafy greens, anything that is rich in yellow, orange, an red color.



INCLUDE – Include Top Performance Foods From All Food Groups





Get a Good Balance

Consume foods from different food groups to meet your energy and nutrient needs

Grains (especially whole grains)

- Primarily carbohydrate, some protein and fat
- B-Vitamins, antioxidants, iron



Fruits (look for color)

- Primarily carbohydrate
- Antioxidants



Vegetables (look for color)

- Primarily carbohydrate, some protein
- Antioxidants



Dairy (aim for low-fat)

- Carbohydrate and protein, fat amount varies
- Calcium, Vitamin D



Meat/Beans (think lean)

- Primarily protein, some fat and carbohydrate (varies)
- Iron, Zinc



INCLUDE – Include Performance Foods From All Food Groups



CARBOHYDRATES

- Whole grain breads
- Potatoes
- Pasta
- Brown rice
- Fruits
- Cereal
- Oats
- Beans
- Some vegetables (corn, carrots, peas)



PROTEIN

- Eggs
- Lean Meats
- Low-fat Cheese
- Low-fat Milk (dairy products)
- Yogurt
- Nuts
- Beans
- Peanut butter
- Meat alternatives (soy products)



FAT

- Include Good Fats In:
 - Nuts
 - Oils (olive oil, canola oil)
 - Peanut butter
 - Seeds
 - Fish
 - Avocado
- Limit:
 - Fast food, some restaurant food
 - Fried food
 - Condiments and toppings high in fat



RULE #2 COME BACK TO EARTH

- Choose the least processed forms of foods, specifically carbohydrates, when building the majority of your meals
- An easy way to do this on the carbohydrate side of things look at the label and amount of fiber it has. If it does not have at least 3 gram of fiber, put it back and find something that does.



Carbohydrates

- The main source of immediate energy for the body.
- Carbohydrates are the primary source when you're exercising hard.
- Carbohydrates are sugars and starches from plants

- **TWO TYPES OF CARBOHYDRATES**

- **Simple carbohydrates, or Simple sugars**

- E.G. Fruit Juice, Sweetened Beverages, Soda, Candy, Syrup
- **Should have these in Moderation**

- **Complex carbohydrates, or starches**

- Complex (starches) E.G. Cereal, Bread products, rice, pasta, beans, fruit, vegetables.

- Whole grain, high-fiber starches are the preferred source of carbohydrates

- **Most nutritional value**

- **45-55 % of your carbohydrates should be from complex carb**

- Starches help the body maintain normal blood-sugar levels

- <http://www.livestrong.com/video/2426-healthy-food-choices-grains/>

- <http://www.livestrong.com/video/2424-healthy-food-choices-breads/>



Carbohydrate Needs

	Recommendation (g/kg/day)	Calculated range for 65kg (143 lb)
Average population	3-5 g/kg (1.4-2.3 g/lb)	260-325 grams (1040-1300 calories)
Strength Athlete	5-7 g/kg (2.3-3.2 g/lb)	325-455 grams (1300-1820 calories)
Endurance Athlete	7-10 g/kg (3.2-4.5 g/lb)	455-650 grams (1820-2600 calories)
Ultra-endurance Athlete	\geq 10-12 g/kg (\geq 4.5-5.5 g/lb)	\geq 650 grams At least 2600 calories



Carbohydrates In Food

Food	Amount	Carbs (g)
<i>Grains, Pasta, Starches</i>		
Bagel	1 small	31
Biscuit	Small (2-in.)	15
Bread, sliced	1 slice	15
English Muffin	1	25
Pita	1 small	21
Waffle	1	15
Pancake	3-to 4-inch	35
Popcorn	3 c. popped	15
Graham Crackers	2 squares	10
Saltines	5	10
Baked Potato	1 large	50
Spaghetti, cooked	1 cup	40
Rice, cooked	1 cup	45
Ramen Noodles	½ package	25
Tortilla, corn or flour	5-6 inch	15
<i>Breakfast Cereals</i>		
Raisin Bran	¾ cup	30
Granola, low-fat	½ cup	45
Oatmeal, instant	1 packet	30
<i>Dairy</i>		
Fruit Yogurt	1 cup	50
Milk, 2%	8 ounces	12

Food	Amount	Carbs (g)
<i>Fruit</i>		
Apple	1 medium	20
Orange	1 medium	15
Banana	1 medium	25
Fruit, dried	1/3 to ½ cup	60
<i>Vegetable</i>		
Beans, Peas, Lentils	1 cup	30-45
Corn	½ cup	15
Carrot	1 medium	10
Green Beans, Broccoli	½ cup	5
Salad Greens	2 cups raw	5-10
<i>Beverages</i>		
Fruit Juice	8 ounces	25-30
Gatorade	8 ounces	14
Gatorade shakes	1 shake	30-50
<i>Condiments, Desserts</i>		
Honey, Jam, Maple Syrup	1 tablespoon	15
Frozen Yogurt	1 cup	44
Sport Bar	1 bar	40-60

Rule #3 The Less Legs the Better

- Typically the less legs the animal has before you actually consume it, the better source.
- Best source fish, turkey, and chicken rank high
- You need to be more selective with dairy, red meat, and pork products. Low-fat dairy, lean cuts of pork and beef, and grass fed legged animals are best.



Protein (1)

- Essential for building and repairing muscles, red blood cells, hair, and other tissues.
- Approximately 20% of calories should come from protein
- Proteins generally supply little of the energy the body uses, except during prolonged exercise.
- Proteins are composed of amino acids



Protein (2)

- **Complete proteins** (usually found in meat and dairy foods)
 - contain all essential amino acids
 - <http://www.livestrong.com/video/1398-healthy-food-choices-meat/>
- **Incomplete proteins** do not contain amino acids in proportions needed (plant foods)

- Excess protein is stored as fat
- High protein intake strains the kidneys
- Surplus protein will not increase strength or muscle size
- A high intake of protein, also requires a high intake of water



Athlete's Protein Needs

	Recommendation (g/kg/day)	Calculated range for 65kg (143 lb)
Average population	.8 g/kg (0.36 g/lb)	52 grams (208 calories)
Strength Athlete	1.6-1.7 g/kg (0.73 – 0.77 g/lb)	104-110grams (416-440 calories)
Endurance Athlete	1.2-1.4 g/kg (0.55 – 0.64 g/lb)	78-91 grams (312-364 calories)



Simple calculation for quick assessment:

Weight in pounds x .6 or .7

Estimated Needs: 86-100 gr Protein

(I will go up to 1 gram Protein/pound body weight)

Protein In Food

Food	Serving Size	Protein (g)
Meat, Fish, Poultry	4 ounces cooked	30
Egg (2 egg whites)	1 large	7
Tuna (canned)	1 can (6 oz)	40
Beans, Legumes, split peas	½ cup	7
Peanut butter	2 tablespoons	8
Almonds (most nuts)	¼ cup	7
Tofu (firm)	4 ounces	10
Milk or yogurt	1 cup (8 oz)	8
Cottage cheese	½ cup	14
American cheese	1 slice (.75 oz)	6
Hard cheese	1 oz	7
Rice, noodles, pasta	½ cup	2
Bread	1 slice	2
Cold cereal	1 cup	2
Peas, corn, carrots (most vegetables)	½ cup	2
Fruits	1 piece	<1

Rule #4 Eat Fats That Give Something Back

- The best types of fats to include are raw nuts, seeds, olive oil, and fat fish
- The forgotten fats in the US are the essential fatty acids, specifically omega-3 fatty acids
- Consume fish high in omega 3 two to three times per week



Fat (1)

- A source of stored energy (calories) that we burn primarily during low-level activity.
- Saturated Fats (Animal fats)
 - Contribute to heart disease and some cancers
 - E.G: butter, lard, fat in meats
- Unsaturated Fats (Vegetable Fats)
 - Less Harmful
 - E.G: corn oil, olive oil, peanut oil



Athlete's Fat Needs

- Aim for 20-30% of total calories coming from fat
- Remember 1 gram of fat = 9 calories
- Based on 2700 calories

$$2700 \times .20 = 540 \text{ cal} / 9 = 60 \text{ grams}$$

$$2700 \times .30 = 810 \text{ cal} / 9 = 90 \text{ grams}$$

- Estimated Needs: 60-90 grams of fat



Rule #5 Three for Three

- Companioning the three main nutrients (carbs, protein, fat) every three hours will keep you fueled
- Eating consistently maintains energy levels (blood glucose), keeps the body in a fed state and prevents mood swings and binging



SCHEDULE – Schedule a Fueling Plan To Maximize Training

Focus on these Key Points to Timing It Right

- ✓ Eat frequently to maintain a full tank (4-8 times per day)
- ✓ Constant fuel, every 2-4 hours
- ✓ Eat Breakfast DAILY
- ✓ 3-4 meals/day with snacks
- ✓ Special focus on **fueling and refueling** for activity



Scheduled Eating Examples



6am-7am	Snack/pre-workout		8am-9am	breakfast
7am-9am	workout		10:30am	snack
9am	post-workout recovery		1pm	lunch
10am	breakfast		2:30pm	snack/pre-workout
12-1pm	lunch		3-5pm	practice
3pm	snack (possible pre-workout)		5pm	post-workout recovery
6pm	dinner		6pm	dinner
9pm	snack		9pm	snack



Rule # 6 Eat Breakfast

- Most important meal of the day
- Sample meal:
 - Whole wheat bagel or toast or English Muffin
 - 2 scrambled eggs or egg whites
 - 1 piece of fruit
 - Milk or yogurt



Rule #7 Don't waste your workout

- In order to optimize the benefits of a training session and jumpstart recovery for maximal gains, it is critical to consume a post workout recovery meal that blends both carbohydrate and protein within 45 minutes after training
- <http://www.coreperformance.com/daily/nutrition/fuel-for-your-workout.html>



Planning for Practice

- Never start a workout with an empty tank
- Remember, you should be eating every 3-4 hrs.
- Pre-workout meal
 - 2-4 hrs ahead of time
 - High carbohydrate, moderate protein, low, fat
- Pre-workout snack
 - Within 1-2 hrs
 - Mainly carbohydrate, some protein and fat
 - Determine what you can tolerate
 - Fruit and yogurt, Gatorade and granola bar, cereal with skim milk

• <http://www.coreperformance.com/daily/nutrition/fuel-for-your-workout.html>



Fueling During Training

- Especially important for activity lasting greater than 60-90 minutes
- 100-250 calories (30-60 grams CHO) every hour
 - Sports drinks
 - Sports bars
 - Granola bars
 - Fruit (can be dried or fresh)
- Hydrate to minimize water loss
(Typically 4-8 oz every 15 minutes)



RECOVERY -- Recovery Nutrition For Daily Training

You're body will not run on an empty gas tank, you must replenish and refill the gas regularly!!

1. Recovery **begins** with proper fueling prior to training
2. Recovery **continues** with maintaining fuel levels during activity
3. Recovery's **claim to fame time** is within 30 minutes after a workout
4. Recovery should **continue** as you prepare for the next training

Back to back training requires heavy focus on recovery nutrition...



Ideal Recovery Foods/Snacks

- Chocolate milk
- Yogurt and fruit
- Trail mix (nuts, seeds, dried fruit, cereal, etc)
- String cheese and wheat crackers
- Sports bar/shake
- Peanut butter and jelly sandwich
- Cereal with skim milk

Include at least 2 cups water/Gatorade



RULE # 8 HYDRATE – Hydrate To Keep The Body Cool and Running Efficiently

- **Focus on hydration ALL DAY long, not only when training**
- **Significant decreases in performance are seen with 2% body water loss**
 - **for a 160 pound athlete, this would be a 3.2 # loss, weighing 156-157 or less after workout**



Daily Fluids Intake

- Sedentary person needs weight in pounds x.50
- Active person needs weight in pounds x.67
- **Example: 200 lb male**

» $200 \times .67 = 134 \text{ oz}$

» You can get from drinks, soups, eating fruit and vegetables

» Don't count liquid that contain caffeine or alcohol



FLUIDS REPLACEMENT FOR PHYSICAL ACTIVITY

- *Drink plenty of water even if you do not feel thirsty.
- *Drink 16-20 oz cups of plain, cool water 15 minutes before physical activity
- *Drink 7- oz cup of water every 10-15 minutes during physical activity
- *Drink 2 cups of water after physical activity for every pound lost during physical activity
- *Sports drinks have a high amount of salt and sugar, these two ingredients can negatively affect performance
 - During times of intense activity, extreme temperatures, and long duration a carbohydrate electrolyte beverage is optimal

*Urine color is an indication of hydration, if it's yellow you are probably dehydrated.



Rule # 9

Supplement Wisely

- Supplements should “compliment” the diet and a mentality of food first supplement second should be employed
- Basic supplementation protocol



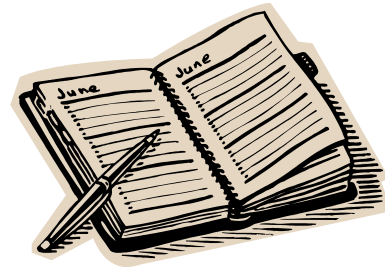
Vitamins and Minerals

- Won't provide energy, but necessary for energy production, bone health, immune system and muscle function
 - B-Vitamins
 - Iron
 - Calcium and Vitamin D
 - Antioxidants
 - Vitamins C, E, and A
 - Iron, Zinc, Copper and Selenium
 - Electrolytes (Sodium and Potassium)



Rule # 10 Keep Record

- Track nutrition intake along with training



- Identify what works and what doesn't
- Individualize nutrition routines



Dietary Supplements

Definition: “a vitamin, mineral, herb, botanical, amino acid, metabolite, constituent, extract or a combination of any of these ingredients.”

- **Why they are used**

- **Help meet nutritional goals**

- Vitamins/minerals
- Bars/shakes

- **Enhanced Performance**

- **Direct and/or psychological**
 - Examples: creatine, caffeine, hormones, amino acids, anabolic steroids, HGH, etc...

- **Questions/Concerns**

- **Efficacy**

- **Safety**

- **Contamination**

- **Legal/Permissable**

- **Expense**

- **Side effects**

- **Distraction from real performance enhancing practices**



Legality... Safety... Efficacy

- On the shelf or on the internet doesn't make it safe!
(US Dietary Supplement Health and Education Act)
 - DO NOT need to be proven effective
 - DO NOT need to be proven safe
 - FDA must prove it to be harmful before it can be regulated
- False Claims:
 - Marketing may only include part of the story
 - Labeling not regulated
 - Medical Commission of the IOC (2002)
 - Of 634 supplements analyzed, 94 (15%) contained substances that could lead to a positive doping test



Drug Free Sport Resource: www.drugfreesport.com/rec

Passcode for Division 1: ncaa1

Be Aware -- Top 10 Freshman Mistakes

1. **Skipping Meals**
2. **Trying Popular Diets/ Nutrition Fads**
3. **Irresponsibly Using Nutrition Supplements**
4. **Misusing Sports Foods**
5. **Making Poor Choices at All-You-Can-Eat Dining Halls**
6. **Making Poor Drinking Decisions**
7. **Doing a Poor Job Hydrating**
8. **The Jeans Phenomenon... not accepting body changing**
9. **Paying Too Much Attention to the Scale**
10. **Late Night Junk Food**



Related Sports Nutrition Links

- [Nutrition | Core Daily | Core Performance](#)
- <http://fnic.nal.usda.gov/lifecycle-nutrition/fitness-and-sports-nutrition>
- <http://orthoinfo.aaos.org/topic.cfm?topic=a00370>
- <http://urbanext.illinois.edu/hsnut/>
- <http://beta.active.com/nutrition/sports-nutrition-guide>

