

Nutrition & Hydration For The Young Athlete



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Nutrition & Hydration

- Key Role In Physical and Mental Development of All Children
- Critical For The Young Athlete to Perform at a High Level
- Nearly 1 in 3 Children Are Obese



Changes Since 1980's

- Level Of Physical Activity
 - More Structured Sports Programs
 - More Supervision
 - More Sedentary Activities

- Poor Food Choices
 - Fast Food Options
 - Low Nutrition Options
 - Poor Food Attitudes





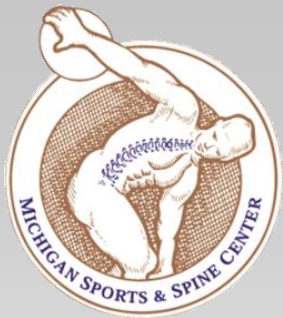
Quick Nutrition Facts

- Athletes achieve peak performance by training and eating a variety of foods.
- Athletes gain most from the amount of carbohydrates stored in the body.
- Fat also provides body fuel; use of fat as fuel depends on the duration of the exercise and the condition of the athlete.
- Exercise may increase the athlete's need for protein.
- Water is a critical nutrient for athletes. Dehydration can cause muscle cramping and fatigue.



Food Intake for an Athletic Event

- 2-3 Days prior for a High Impact Activity, lasting >90 Minutes (i.e. runners, hockey, soccer, lacrosse, etc.)
 - Complex Carbohydrates (pasta, potatoes, etc.)
- 24 Hours Prior Any Activity lasting >90 Minutes
 - Complex Carbohydrates (bagel, pasta, potatoes, etc.)
- 2-6 Hours Prior to Activity
 - Proteins (chicken, fish, tuna)
 - Protein Bar
- 30-60 Minutes Post Activity
 - Proteins, Carbohydrates & Fat
 - Drinkable Carbohydrates with Protein



Carbohydrates



- Complex carbohydrates - spaghetti, potatoes, lasagna, cereals and other grain products.
- Simple carbohydrates - fruits, milk, honey and sugar.
- During digestion, the body breaks down carbohydrates to **GLUCOSE** and stores it in the muscles as **GLYCOGEN**

****Glycogen is converted back to glucose and is used for energy.**



Fat Intake

- Fat also provides body fuel.
- For moderate exercise, about half of the total energy expenditure is derived from free fatty acid metabolism.
- Event lasts > 60 min, the body may use mostly fats for energy.
- Using fat as fuel depends on the event's duration and the athlete's condition.
- Trained athletes use fat for energy more quickly than untrained athletes.



Protein for Fuel

- After carbohydrates and fats, protein provides energy for the body.
- Exercise may increase an athlete's need for protein, depending on the type and frequency of exercise.
- Extra protein consumed is stored as fat.
- In the fully grown athlete, it is training that builds muscle, not protein per se. ⁵



Proper Caloric Intake

Proper Caloric Intake = Proper Development

- Meet Essential Nutrients Guidelines
- Achieve Peak Performance
- Build Muscles
- More Information www.mypyramid.gov



Caloric Intake

Age and sex	Not physically active*		Physically active**	
	Estimated total calorie need	Estimated discretionary calorie allowance	Estimated total calorie need	Estimated discretionary calorie allowance
Children 2-3 years old	1000 calories	165***	1000-1400 calories	165 to 170
Children 4-8 years old	1200-1400 calories	170***	1400-1800 calories	170 to 195
Girls 9-13 years old	1600 calories	130	1600-2200 calories	130 to 290
Boys 9-13 years old	1800 calories	195	1800-2600 calories	195 to 410
Girls 14-18 years old	1800 calories	195	2000-2400 calories	265 to 360
Boys 14-18 years old	2200 calories	290	2400-3200 calories	360 to 650



Discretionary Calories

- Quick Guide To Calories In Some Common Foods
- Easy to Exceed Discretionary Allowance
- Fats Are Concentrated Sources of Calories



Discretionary Calories Milk Group

- 1 Cup Milk
 - Fat Free Milk, 85 Calories, 0 Discretionary
 - Whole Milk, 145 Calories, 65 Discretionary
- 1 ½ Oz Mozzarella Cheese
 - Nonfat, 65 Calories, 0 Discretionary
 - Whole Milk, 130 Calories, 45 Discretionary



Discretionary Calories Meats And Beans Group

- 3 Oz. Chicken
 - Skinless Breast Roasted, 140 Calories, 0 Discretionary
 - Skin Thigh Roasted, 210 Calories, 70 Discretionary
 - Fried Batter Skin, 475 Calories, 335 Discretionary



Discretionary Calories

Meats And Beans Group

Food	Amount	Estimated Total Calories	Estimated Discretionary Calories
MEAT AND BEANS GROUP			
Extra lean ground beef, 95% lean	3 oz., cooked	165	0
Regular ground beef, 80% lean	3 oz., cooked	230	65
Turkey roll, light meat	3 slices (1 oz. each)	125	0
Roasted chicken breast (skinless)	3 oz.	140	0
Roasted chicken thigh with skin	3 oz.	210	70
Fried chicken with skin & batter	3 wings	475	335
Beef sausage, pre-cooked	3 oz., cooked	345	180
Pork sausage	3 oz., cooked	290	125
Beef bologna	3 slices (1 oz. each)	265	100



Discretionary Calories Vegetables Group

Food	Amount	Estimated Total Calories	Estimated Discretionary Calories
VEGETABLES			
French fries	1 medium order	460	325
Onion rings	1 order (8 to 9 rings)	275	160



Discretionary Calories Extras Group

- 12 Oz Soda
 - Regular, 155 Calories, 155 Discretionary
 - Diet, 5 Calories, 5 Discretionary



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Proper Hydration

- Reach Maximum Level Of Performance
- Avoid Heat Illness
- Mental Performance





Signs of Dehydration

- Thirst = Dehydration!
- Decreased frequency of urination
- Dark, yellow, strong smelling urine
- Rapid resting heart rate
- Prolonged muscle soreness
- Headaches



Drink Comparison

- Water
- Gatorade/Powerade
- Vitamin Water
- Propel
- Red Bull/5 Hour
- Monster
- Protein Shakes





How much Water?



- Days before activity – drink throughout day
- 2 to 3 hours - Drink 17 to 20 ounces of water before you start exercising
- 20 to 30 minutes - Drink 8 ounces of water before you start exercising or during your warm-up
- During exercise - Drink 7 to 10 ounces of water every 10 to 20 minutes
- Post Activity/Exercise - Drink 8 ounces of water no more than 30 minutes after you exercise²

*Drink 16 to 24 ounces of water for every pound of body weight you lost after you exercised.



Sports Drinks



Contain the Electrolytes, Sodium, Chloride & Potassium and Carbohydrates.

- Sodium helps maintain fluid balance and is lost in the greatest amount via sweat. (at least 15g of sodium)⁶
- Chloride and potassium intake helps replace losses during prolonged exercise.
- Carbohydrates fuel working muscles, fight fatigue and provide sweetness
 - 14g per 8-oz.serving is optimal to promote rapid absorption and supply energy.¹

**Look for drinks with lower sodium, calories and sugar. ⁴



Sports Drinks

- Can Be A Good Option For Athletes
ONLY WHEN
 - Exercising in High Temperatures
 - High Intensity Work Outs
 - Extended Exercising Periods (>60 Minutes)
- May Encourage More Regular Hydration



When To Hydrate



No One-Size-Fits-All Formula

- Day Before activity - Hydrate throughout the Day - Water
- 2-3 Hours Prior To Exercise – Water
 - For High Impact, Moderate Amounts of Sports Drinks 12-16 oz.
- During Exercise - Water/Sports Drink:
 - Alternate Every 10-20 Minutes Water and Sports Drink (high impact)
- Post Activity/Exercise - Water
 - For High Impact - Sports Drinks or Specialty Sports drink

*Check chart and hand outs for specifics on activity, timing etc.



How to Hydrate

Inactive (0 min)	Light Activity (30 min)	Moderate Activity (30 min)	Heavy Activity (60 min)	Prolonged Activity (90 min)
Sedentary	Walking, Gardening, Housework	Short runs, Aerobics, Low- Impact Sports	Long Runs, High-Impact Workouts or Sports	Endurance training or Competition, All- Day Tournaments, Two-A-Day practices
Water or Enhanced Water	Water or Enhanced Water	Water or Enhanced Water Water/Sports Drink (moderate)	Water, Sports Drink mixed (see chart)	Sports Drink or Specialized Sports Drink



Drinks To Avoid

- Carbonated Beverages
- Fruit Juices
- High Caffeine Energy Drinks
- High Sugar Drinks





Sports Supplements

- Green Light – Normal Use
 - Replenish electrolytes, protein powders, energy bars, multivitamins
- Yellow Light – Qualified use
 - Affect muscle function, recovery or contain stimulant ingredients
- Red Light – Not Appropriate
 - Steroid hormone precursors and products containing ephedrine



Nutrition And Hydration Summary

- Key Role In Physical and Mental Development of All Children
- Proper Nutrition = Proper Development
- Proper Hydration = Maximum Performance



Source slide

- 1- Shi, X. et. al *Med Sci Sports Exerc* 27:1607-1615, 1995.
- 2 - Below PR, et al. *Med Sci Sports Exerc* 27:200-210, 1995
- 3 - American Council on Fitness
- 4 - Written by familydoctor.org editorial staff. American Academy of Family Physicians
- 5 – American Dietary Association
- 6 - The Cutting-Edge Runner: How to Use the Latest Science and Technology to Run Longer, Stronger, and Faster (*Rodale*).

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For The Young Athlete

Thank You For Your Time



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