Sports Nutrition for Children & Teen Athletes

Presented by
Shannon Muhs
Registered Dietitian
What affects Athletic Ability?

• Genetics
• Training
• Nutrition
• Dedication
• Will
Influences to grow up with...

1. Eat when you’re hungry, stop when you’re full
2. No foods are “bad”
3. Have healthy choices available at home
4. Cook at home, eat meals together
5. Develop a habit of packing healthy foods for school and sporting events
6. Model moderation when enjoying not-so-healthy foods
7. Parents, lead by example with eating & exercise
8. Don’t be a control freak
Pre-teens & Teens, you need to know

• What you eat & drink every day directly affects how well you train

• How well you train affects how well you perform at your event
Key Nutrition Principles

• Eat enough calories
  – Depends on age, gender, height, weight, training
  – Common for teens: 3,000-4,000 calories/day

• Eat the carbohydrate you need
  – Around 60% of your calories
  – If you don’t eat enough carbohydrate... body burns proteins from muscles for energy... muscle loss
Nutrition Principles

• Vary your diet
  – Minerals and vitamins needed

• Time & Combine your food & nutrients
  – 3 meals per day + 3 snacks per day
  – Combine carbs with protein & fat
  – Small, frequent meals throughout the day = best fat-burning, muscle-building strategy

• Hydrate, hydrate, hydrate
What you eat Before...

• Impact how well you train immediately
  AND
• Impact how well you recover... so that you can grow and train hard the next day
• Critical during heavy training periods
What you eat During...

- Impact immediate performance
What you eat After...

• Impact how much you get out of the training
  – i.e. if you get bigger, faster, stronger

• Can maximize your training efforts
  – If you don’t fuel recovery, you’ll gain nothing and essentially waste your training time
What to eat right before

• Low fiber
• Not too much fat
• Goal: get nutrients to muscles quickly
• 30-90 minutes before game or training
• 200-300 calories
• Mostly Carbs + little protein + little fat (low fiber)
• Plenty of fluids – at least 8 oz.
Pre-Training Snacks

• Greek Yogurt (non-fat) + Fruit
• Cereal + Milk + Fruit (note: 2% milk has less lactose)
• Turkey Sandwich
• Crackers/Pretzels + Light String Cheese Stick + Apple
• PB & J + Milk (light on PB, heavy on J)
• Clif Bar or Power Bar or substantial granola bar (Nature Valley, Nutra-grain)
• For some... Protein-energy bar (MyoPlex, Clif Builder)
At half-time or between events

• Fluids, fluids, fluids...
• Light carbohydrate snack
  – Banana
  – Peeled cuties or Clementine or orange
  – Grapes
  – Watermelon or cantaloupe chunks
  – Low fiber cracker
  – Carbohydrate (or energy) gel... or 2 or 3
Hydration

• For athletic event less than 1 hour, water is best.

• If athlete drinks more when the beverage is flavored, then okay to use a sports drink.

• If very intense exercise or in the heat, (even if only 1 hour), sports drink is best.
Water – Key to Health!

• How much do you weigh?
• Take half your weight, that’s how many ounces you need each day... not including exercise water loss
  – Water
  – Unsweetened tea
  – Coffee
  – Fresh fruits & veggies
  – Non-calorie fluids
After

• Chocolate Milk (perfect ratio 4:1)
• Clif Bar (perfect ratio 4:1)
• Teens: Recovery Shake – Whey protein mixed with milk and fresh fruit

• Then shower AND EAT a balanced meal
  – Carbs, protein, vegetable &/or fruit, dairy, fat
Good Eating + Good Training = Optimal Performance

• No skipping meals
• No cutting out food groups
• No trying to lose weight

• YES to Eat More – Gain Energy – Train Harder – Build Muscle – Burn Fat
Daily Eating Tips:

• Eat about every 2-3 hours
• Combine Carbs, Protein & good Fats (except around exercise... fats slow digestion
• Fluids: 8-12 cups a day; at least 5 cups should be water
• If you’re feeling out of control with your diet, keep a food journal
  – Like any other learning... do it, say it, write it down
  – Create new habits... repetition
  – Make 1-2 changes at a time
My Plate Planner

Give children a small plate (or small portions on a big plate).

Split the plate into 3 parts, the largest for fruits and vegetables.

1/4 Protein
1/4 Fruits and Vegetables
1/4 Starch

7-inch plate size for children
9-inch plate size for teens and adults

Use your hand to measure the right amount of food to eat.
Use an adult hand for adult portions. Use a child’s hand for children’s portions.

Palm of Hand Amount of lean meat
A Fist Amount of rice, cooked pasta, or cereal
A Thumb Amount of cheese
Thumb Tip Amount of salad dressing

6 oz.
Fat-free or 1% milk

Water

Adapted with permission from the New York City Department of Health and Mental Hygiene.
Fruits = Carbohydrate

• Fruits provide that all-important carb, but also vitamins and minerals essential for proper recovery of trained muscles and prevention of illness.

• Have a fruit with meals.
Vegetables

- Vegetables provide only a small amount of carb, but – like fruit – are a great source of fiber as well as vitamins and minerals.
- Starchy vegetables = carbs (potatoes, corn, peas)
- Fiber provides “staying power” by providing sustained energy throughout the day.
- Have veggies at lunch & dinner.
Grains = carbohydrates

- Are a carbohydrate, which is the body’s main source of fuel during exercise, particularly as intensity increases.
- Skimping on carbs leads to a break-down of muscle for energy.
Dairy

Provides protein & carbs, calcium, potassium, phosphorous, and vitamins A, D, B12, riboflavin, and niacin.
You need 3 servings each day.
One serving = 1 cup skim, 1%, 2%
1 cup non-fat light yogurt or non-fat Greek yogurt
1 ½ ounce of cheese (about 1 slice)
Choose Non-Fat or Low-Fat and Lower Sugar unless you need to gain weight...
Good Carbohydrates for Fuel

• Whole Grains
• Fruits
• Legumes
• Starchy Vegetables
• Milk/Yogurt
Meat & Beans

• Provide protein, B vitamins, vitamin E, iron, zinc and magnesium

• Protein is imperative for muscle re-synthesis and re-building for athletes (but must be combined with carb for best results).

• Get 6-12 ounces each day (depends on your size, training & goals)

• Have protein at lunch, dinner for sure —Can add some protein to breakfast & snacks if needed
These count as a meat substitute - only 1 ounce

1 egg (higher fat) or 2 egg whites
2 Tablespoons of Peanut Butter (also high in fat)
¼ cup cottage cheese (choose low-fat)
¼ cup nuts or seeds (also high in fat)
½ cup cooked beans or lentils (also has carbs)
1 garden veggie burger (soy) (also will have carbs)
Choose both Meats and meat substitutes...

To get 6-12 ounces per day
Fats & Oils

Have a serving of fat at each meal and at most snacks

A good serving of fat can be:
• 1 tsp. olive oil, canola oil
• 1 Tbsp. whipped tub margarine
• 1 Tbsp. Miracle whip
• 1-2 Tbsp. Light Salad Dressing
• ¼ cup smashed avocado
• 1 Tbsp. light sour cream
• 1 slice reduced-fat cheese
• 1 Tbsp. reduced-fat cream cheese
Choose Good Fats
Limit saturated (bad) fats

Examples:
Bacon, sausage, bratwurst
Salami, bologna
Lard, butter
Coconut oil, palm oil
Cream cheese
Cheese
Sour cream, cream cheese
Limit Added Sugars

• Sugars increase inflammation
  – Gut – bacterial overgrowth
  – Skin - acne
  – Muscles – increased soreness
WHEN DOES AN ATHLETE NEED TO MODIFY THEIR EATING PLAN?
Prepping for a big race

• Keep all food groups, but increase grains and fruit in the days leading up to competition.

• One day before, omit fresh fruit and high-fiber grains (yep – choose white bread) to assure all foods fully digest by race day.
After a lift-heavy workout

• Keep all food groups, but slightly increase protein at the next meal following workout
• Don’t go overboard with protein (30 grams is limit)
• Key is really the combination of carb and protein
• Extra protein doesn’t automatically equal more muscle
Athlete recovering from injury

• Keep all food groups, but slightly increase protein and slightly decrease grains.

• Need more protein to repair what has been injured and likely they won’t be working out how they were, so they will need less energy from grains.
Athletes fighting illness

- Keep all food groups, but slightly increase fruits and vegetables.
- That is where they will get those antioxidants, which are the power-house for fighting illness in the body.
Review

• Small, frequent meals optimize fat-burning & muscle-building and peak performance... eat every 2-3 hours
• Make sure you’re getting enough carbs for energy and muscle building
• Combine carb, protein & fat at meals... balance
• Remember variety in your food choices
• Take a vitamin, mineral supplement during peak training & performance times
Why Carbs are Confusing...

• Fad diets books: Paleo, Grain Brain, Wheat Belly

• Athletes begin to think foods like bagels, pasta, juice, bananas, sugar are bad for them – even if they are not problematic for them...

• Hype is targeted toward OVER fat, Under fit general population
Carb Biochemistry 101

- Carbs include both sugars and starches.
- Carbs are in grains, fruits, veggies, dairy (lactose), sugars, sweets
- All of these carbs digest into simple sugar glucose
- Glucose travels into the blood, with the help of insulin, is taken up as fuel by the muscles.
- Athletes who restrict carbs pay the price of “hitting a wall” and the inability to perform at their best.
Carb Biochemistry 101

• All carbs – both sugars and starches – provide fuel for muscles, regardless if it’s a starchy potato or candy, the end product is the same... glucose

• Some glucose will fuel your brain, some to your muscles, some gets stored in muscles as glycogen – ready to be used as energy during long, hard exercise sessions.

• Sugars & Starches are biochemically similar... – Unripe banana is starchy, as it ripens the starch converts to sugar; peas or veggies are sweet and more sugar when young and convert to starch as mature...
Are Carbs Bad for you?

• Some carbs are “better” for you…PERSPECTIVE
  – Empty calories vs. some nutrients (sports drink vs. OJ)
  – Feeling of fullness (OJ vs. whole orange)
  – Messages are geared toward Over fat, under fit general population
  – Even though refined sugars add “junk calories”… an athlete’s healthy diet can usually handle these extra calories.
  – Key message: don’t replace good carbs from fruits, veg, grains with “empty calories”
What about High fructose corn syrup?

• 90% of the 567 media reports on HFCS since 2004 replaced science with opinion and are biased to opinion… the science to support the opinions simply aren’t there.

• HFCS is a double molecule compromised of 45% glucose, 55% fructose – the same as honey and similar to white sugar (50% glucose, 50% fructose)

• Negative hype about HFCS is for general population…

• While no one needs more empty-calorie sweets vs. healthy fruits, veg, grains…

• Does an athlete really need to fret about the HFCS in ketchup?... NO.
What about sugar “highs” and “lows”

- Highs and lows can easily occur in over fat, under fit individuals... general population
- Most athletes digest sugars without issue
- Exercise enhances the transport of sugar from your blood to your muscles with far less insulin than needed by the body of an unfit person...
- The unfit body contributes to the rise in blood sugar, which triggers the need for excess insulin and leads to the “crash”
Most common reason for “sugar crashes” in athletes (hypoglycemia)

• Relates to running out of fuel...
• If the athlete doesn’t eat enough carb to maintain normal glucose levels, the brain will demand sugar.
• One athlete thought the 100-cal gel he took at half-time caused the low blood sugar...
• More likely, he needed 200-300 calories to meet his energy needs due to consuming inadequate pre-game fuel.
RESOURCES:

Power Eating, Third Edition. Susan Kleiner, PhD. RD
Nancy Clark’s Sports Nutrition Guidebook, Fifth Edition. Nancy Clark, MS, RD
USDA myPlate
Shannon Muhs, MS, RD, LMNT
At Papillion Hy-Vee 402-597-5790
smuhs@hy-vee.com

QUESTIONS?