



NUTRITION *GOALS*: ENHANCING ATHLETIC PERFORMANCE

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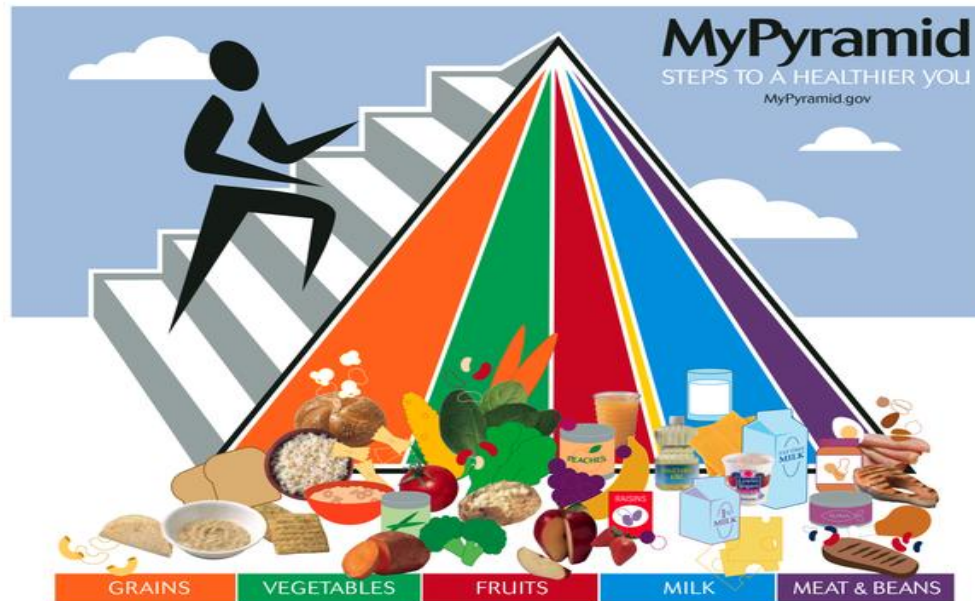
NUTRITION **GOALS**: OVERVIEW

- Understand the role of macronutrients and fueling for optimal performance
- Appreciate importance of hydration
- Use nutrient timing to your advantage
- Real food ideas and benefits



NUTRITION **GOALS**: THE DAILY PLATE

- Calorie Balance
- 90:10 Rule
- REAL food



NUTRITION **GOALS**: PROTEIN

- For muscle growth
- Make red blood cells - ↑ oxygen supply to muscles
- Make white blood cells
- Make hormones and enzymes – regulate metabolism
- Repairs lean tissue

- Endurance athletes, dieters, growing teen athletes, untrained people starting to exercise have higher needs
- Athletes need ***slightly*** more protein to repair small amounts of muscle damage



NUTRITION **GOALS**: PROTEIN

- Protein RDA: 0.8 gm/kg/day (0.4 gm/lbs/day)
- Research → excess of 0.9 gm/lbs (2.0 gm/kg)= no added advantage
- Excess protein intake= burned as calories; stored as fat or glycogen



- Food sources: lean meats, low-fat dairy, beans, nuts, eggs, peanut butter



NUTRITION **GOALS**: PROTEIN

- Does increased protein intake result in bigger muscles? NO
 - Physical work, adequate calories/CHO-rich diet
- Will protein powders bulk up my son? NO
 - Extra calories, resistance exercise
- Will extra protein make my son grown taller? NO
 - Boys peak growth 13-14 years, after girls.
- Muscle formation is a result of hard work...EXERCISE...and *Great Nutrition*



NUTRITION **GOALS**: CARBOHYDRATE

- The foundation of a sports diet

- Provides fuel for working muscles
- Promotes glycogen storage
- Simple sources: table sugar, fructose, lactose
- Complex sources: Starchy plant foods, grains
- All carbohydrate gets broken down to glucose which provides energy for brain and muscles



NUTRITION **GOALS**: CARBOHYDRATE

- Is carbohydrate fattening? **NO!**
 - 15 gm CHO = 60 calories (1/2 c. pasta, rice, 1 slice bread, 1 c. cereal)
 - Extra calories, added fat
- Food Sources: whole grain breads, crackers, cereal, fruit, vegetables, pasta, milk
 - Aim for **whole grain** 50% of the time
 - Fiber=fuller, ↓ cholesterol
 - Weight management



NUTRITION **GOALS**: CARBOHYDRATE

Real soda

- Sweetened with HFCS
 - Weight gain research (soda doesn't compute as a calorie source)
 - Trigger increased desire/cravings → drink more
 - Caffeine (leach calcium from bones)
 - Cavities

Diet soda

- Sweetened with artificial sweeteners/caffeine
 - Drive hunger → eat more
- ADI (acceptable daily intake)
 - Aspartame (Equal) 50 mg/kg/day (12 oz can= 200mg)
 - Saccharin (Sweet & Low) 5 mg/kg/day (12 oz can=140 mg)
 - Sucralose (Splenda) 5 mg/kg/day (12 oz can= 70mg)



NUTRITION **GOALS**: FAT

- Fat is needed for energy
 - Calorie source
 - Utilize vitamins
 - Prevent heart disease (omega-3 and omega-6 fatty acids)
 - Saturated/ trans fats contribute to heart disease, etc.
- 25-30% fat calories from daily diet; focus on mono-unsaturated fats (MUFAs) and polyunsaturated fats (PUFAs)
- Food sources: butter, fatty meats, full fat dairy, nuts, fish, peanut butter, avocado, plant-based oils



NUTRITION **GOALS**: HYDRATION

- Dehydrated muscles do not perform well
 - 1% body weight loss can negatively impact performance
 - 2% body weight loss= dehydration
 - 7% body weight loss= IV fluids/medical care
- Pre-, during, and post-workout or game



2-4 hours Pre-: drink 1-2 cups of fluid (2-3 ml/pound)

Warm ups: drink 1 cup

Halftime: drink 2 cups

Post-game: drink 1-2 cups for every pound lost



NUTRITION *GOALS*: HYDRATION

- Sports drinks:

- good during a game
- encourages drinking
- presence of CHO, Na, Cl, and K



- Select drinks with 12-24 gm CHO, 110-165 mg Na/8 oz, 20-50 mg K/8oz (Gatorade, Power-Ade)
- During: Add a carbohydrate source if exercising > 1 hour (30-60 gm or 120-240 cals)



NUTRITION **GOALS**: NUTRIENT TIMING

- Rhythmic eating benefits everyone
 - Every 3-4 hours
 - Adults- 1 snack/day or 4 small meals
 - Children- 1-3 snacks/day
- Structured, scheduled, and predictable
 - enhances food security
 - reduces extreme hunger
 - prevents over-eating
- Fuels your body



NUTRITION **GOALS**: NUTRIENT TIMING

- Maintain blood sugar levels (CHO)
- Stay on top of hydration
- Enhance recovery (PRO)

- Pre-Event: ↑ CHO, PRO, ↓ fat diet

- During: if > 1 hour, fuel with 150-250 cals from CHO

- Post-Event: within 45 min.



NUTRITION **GOALS**: PRE-EVENT

○ Functions:

- Prevent low blood sugar
- Settles your stomach; absorbs gastric juices
- Fuels muscles (glycogen stores; glucose w/i 1 hr)
- Peace of mind (you have gassed up your engine!)

○ What:

- predominantly CHO (quickly empties from stomach)
- Limited fat and protein (slows digestion)
- Example: banana, oatmeal, low-fat milk

Tolerance is individual!



NUTRITION *GOALS*: DURING EVENT



- Less than an hour
- Greater than an hour
 - Match sweat losses
 - Maintain blood sugar levels (100-250 cal/hr of CHO)
 - Variety of CHO (use different CHO and enhance absorption)
 - Sports drink + banana
 - ½ energy bar + water
 - Form and type
 - Liquid/solid-experiment to define tolerance
 - CHO sources use different absorption pathways—variety can enhance overall absorption
 - Amount—oversupply can lead to GI distress, inhibit fluid absorption



NUTRITION **GOALS**: POST-EVENT

- Recreational athlete (3-4 workouts/week)
 - Healthy daily diet; replace fluids
 - Ample time to replace glycogen stores
- Competitive athlete (2 or more workouts/day)
 - Within 45 minutes post-workout
 - CHO stimulates insulin → promotes muscle building, transports CHO into the muscle
 - CHO + protein (10-20 g) → better muscle re-fueling/building, reduces cortisol which breaks down muscle
- 100 calories makes a difference!
 - 10 oz. chocolate milk, 2 eggs, 2 T. peanut butter on banana, 1 c. yogurt w/ granola



NUTRITION **GOALS**: SNACKS IDEAS

○ REAL FOOD Snacks

- Dry cereal + juice
- Peanut butter crackers + raisins
- Gogurt stick + apple
- Pretzels + cheese stick
- Whole grain crackers + cheese/peanut butter
- Nuts + dried fruit
- Mini-bagels + cream cheese/nut butter
- Fresh fruit (oranges, bananas, apples, grapes, etc)
- Homemade muffins/low-fat store muffins
- Trail mix (granola, nuts, dried fruit)
- Frozen fruit bars
- Breakfast bars, low-fat granola bars
- Mini-sandwiches (lean meat, peanut butter, hummus, etc)



NUTRITION **GOALS**: SUMMARY

- **What** you eat and **when** can make a difference in your athletic performance, your physique, and your overall health and energy levels.
- **What** you eat and **when** can help you attain and maintain a healthy weight.
- **Physical activity** always helps strike calorie balance.
- Tennessee Soccer Association Challenge
 - Optimize nutrition for players:
 - Hydration awareness and guidelines
 - Snack policy for children and families
 - Nutrition guidance for elite players





Specializing In Pediatric Nutrition

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