



Orthopaedic &
Neurosurgery
Specialists

The Healthy Athlete

*Sleep, Hydration, Nutrition, and the Mental Edge
in Youth Sports*



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SLEEP



How Much Sleep Do I Need?

- Adequate sleep is essential for peak performance

Recommendations for Sleep Duration	
Age	Duration
3 - 5 Years	10 - 13 hours
6 - 13 Years	9 - 11 hours
14 - 17 Years	8 - 10 hours
18 - 64 Years	7 - 9 hours



Sleep

- Sleep Hygiene
 - ✓ Consistent waking and bedtimes
 - ✓ Use the bed only for sleep
 - ✓ Avoid physical activity within 2-3 hrs of bedtime
 - ✓ Schedule one hour of relaxation prior to bedtime





HYDRATION



Dehydration

- Symptoms of dehydration
 - Thirst, irritability, fatigue, weakness, cramping, nausea, headache, decreased performance
- Objective assessment of hydration status
 - Pre- and post- participation weight
 - Urine color
 - Urine specific gravity
 - Thirst scale

Urine Color Chart

Urine Color	Possible Meaning
Clear	Good hydration, overhydration or mild dehydration
Pale Yellow	Good hydration or mild dehydration
Bright Yellow	Mild or moderate dehydration or taking vitamin supplements
Orange, Amber	Moderate or severe dehydration
Tea-Colored	Severe dehydration



Hydration

- **Pre-exercise (WATER)**
 - 1 - 2 hrs prior: 16 - 20 oz.
 - 15 - 30 min prior: 8 - 16 oz.
- **During exercise**
 - 4 - 8 oz. every 15 - 20 min
 - If > 60 min → dilute sports drink
- **Post-exercise (WATER)**
 - 16 oz. for each pound lost
- *Avoid over-hydration*



Are Sports Drinks A Good Idea?

- For exercise > 60 minutes
 - Replace sweat nutrients
 - Replenish carbohydrates





NUTRITION



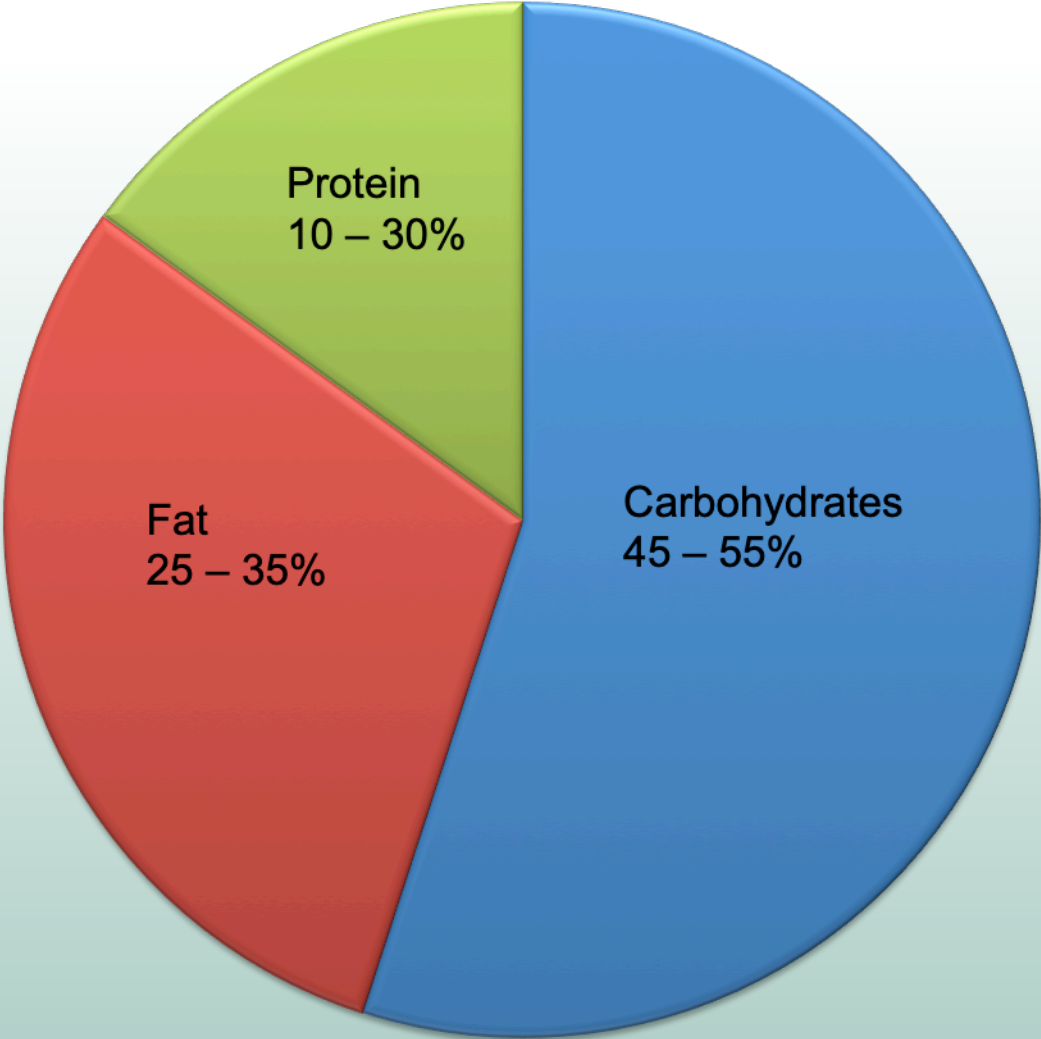
What Should I Eat Before Competition?

- Key Concepts
 - Adequate calories
 - Balanced nutrients
 - Consistent meals
 - Fuel timing





Calorie Count and Distribution



Caloric Requirements		
Age 14-18	♂	♀
Sedentary	2200	2000
Moderate	2800	2000
Active	3200	2400



Protein

10g of Protein are found in:

- 1/2 chicken breast
- 1 c breakfast cereal
- 2 small eggs
- 1¼ c cow's milk
- 1 c yogurt
- 2 cups cooked pasta
- 3 cups rice
- 2 c broccoli
- ½ c nuts or seeds
- ½ c legumes or lentils
- 2 c spinach
- ½ c quinoa

Fat

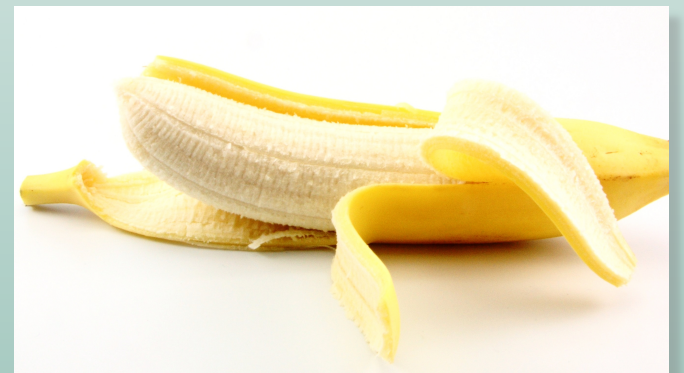
- 25 - 35% calories should come from fat
- Healthy fats
 - Plant oils
 - Soft margarines
- Unhealthy fats
 - Saturated fats
 - Trans fats





Meal Planning

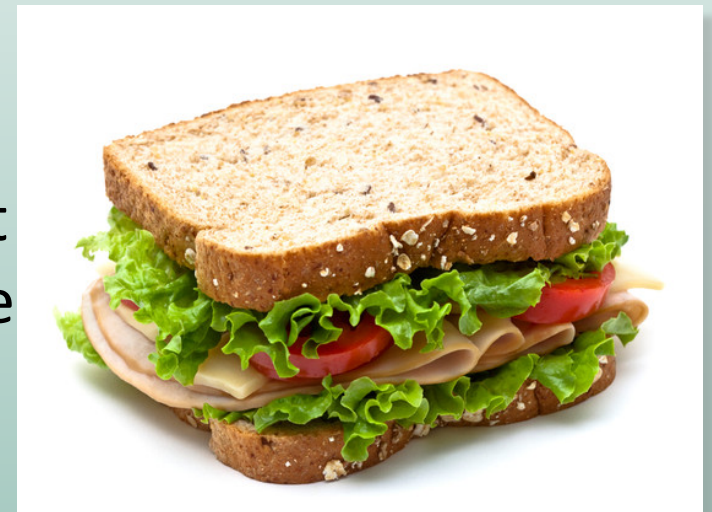
- Pre-exercise
 - 1 - 2 hours in advance
 - 200 - 500 kcal
 - Easily digestible carbohydrates
 - Avoid high fat, fiber
 - Familiar foods





What should I eat after competition?

- Within 30 minutes, and again within 1 – 2 hrs
- Content
 - High carbohydrate
 - Moderate protein
 - Nutrient Dense
- Examples
 - Yogurt, almonds and fruit
 - Banana with peanut butter
 - Sports bar + orange slices
 - Nut butter on whole grain toast
 - Sandwich (meat, cheese, veggie)



Are Energy Bars A Good Idea?

- Ingredients
 - Seeds
 - Nuts
 - Peanut butter
 - Whole grains
 - Dried fruit
- Content
 - Sugar < 10 - 12 g
 - Protein = 5 - 10 g

Better Choice		Go With the SNICKERS	
	KIND Healthy Grains Bar Dark Chocolate Chunk Calories: 150 Total Fat: 5g Saturated Fat: 1.5g Total Carb: 23g Fiber: 2.5g Sugars: 8g Protein: 2g ✓ Whole grains Low sugar No high fructose corn syrup		Clif Bar Chocolate Almond Fudge Calories: 250 Total Fat: 6g Saturated Fat: 1.5g Total Carb: 42g Fiber: 5g Sugars: 23g Protein: 10g ⚠ High sugar content Main ingredient: brown rice syrup Better Clif option: Mojo bars
	LUNA Chocolate Pecan Pie Calories: 180 Total Fat: 5g Saturated Fat: 3g Total Carb: 25g Fiber: 3g Sugars: 8g Protein: 10g ✓ High amount of protein High iron		PowerBar Performance Energy Bars Peanut Butter Calories: 240 Total Fat: 4g Saturated Fat: 1g Total Carb: 44g Fiber: 1g Sugars: 26g Protein: 9g ⚠ High sugar content
	Quest Coconut Cashew Calories: 170 Total Fat: 6g Saturated Fat: 1.5g Total Carb: 24g Fiber: 17g Sugars: 2g Protein: 20g ✓ Almonds, coconut and whey protein isolate Excellent source of fiber		PROBAR Peanut Butter Chocolate Calories: 390 Total Fat: 22g Saturated Fat: 1.5g Total Carb: 43g Fiber: 6g Sugars: 21g Protein: 11g ⚠ High calorie content Main ingredient: brown rice syrup
	Pure Ancient Grains Triple Berry Nut Calories: 160 Total Fat: 9g Saturated Fat: 1g Total Carb: 17g Fiber: 2g Sugars: 8g Protein: 5g ✓ Whole grains Low saturated fat		LARABAR ALT Chocolate Chip Macaroon Calories: 270 Total Fat: 13g Saturated Fat: 6g Total Carb: 30g Fiber: 4g Sugars: 20g Protein: 10g ⚠ High calorie content Added sugar High saturated fat
	thinkThin Lean Protein & Fiber Bar Chocolate Almond Brownie Calories: 150 Total Fat: 6g Saturated Fat: 2g Total Carb: 19g Fiber: 5g Sugars: 5g Protein: 10g ✓ Good source of protein and fiber		Snickers Marathon Energy Chewy Chocolatey Peanut Calories: 210 Total Fat: 8g Saturated Fat: 3g Total Carb: 26g Fiber: 3g Sugars: 15g Protein: 13g ⚠ Main ingredient: caramel High fructose corn syrup



STRESS MANAGEMENT



Ways to Reduce Stress of Competition and Sport

- Acknowledge your fear and anxiety!
- Focus on the present
 - Too much on future can make you anxious
 - Too much on past can make you depressed
- Focus on constant improvement NOT perfection!
- Relaxation methods
 - Music
 - Breathing techniques
 - Meditation
- Talk to others



INJURY PREVENTION

What are Overuse Injuries?

- Acute versus Overuse
 - Acute: single, traumatic event (sprain, dislocation etc)
 - Overuse: subtle, occur over time; repetitive trauma (tennis elbow, swimmer's shoulder, shin splints)





How can you tell?

- Can't bear weight on certain body part
- Limping
- Difficulty sleeping
- Shortness of breath during activity
- Headache during/after
- Joint/muscle stiffness
- Dizziness/lightheaded
- Irritated skin/blisters



How can you prevent overuse injuries?

- Pre-season health/wellness check
- Proper warm-up and cool-down
- Strength training and stretching program
- Hydrate adequately
- Wear sunscreen
- Don't play one sport year-round; play different positions/sports





Resources

- American Academy of Pediatrics
- American College of Sports Medicine
- American Orthopaedic Society for Sports Med
- American Dietetic Association
- NIH Office of Dietary Supplements



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STOP
SPORTS
INJURIES

PARTICIPATING
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ThinkFirst
National Injury Prevention Foundation

THANKS



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