



# Sports Nutrition For Swimmers

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Why is Nutrition  
Important for  
Performance?

# Factors Affected by Nutrition



Energy levels



Athletic performance



Recovery



Injury



Illness, chronic disease, respiratory infection



Cognitive function



Body composition



# Fuel for Performance



# Sources of Fuel

- **Carbohydrate**

- Found in blood, muscle and liver
- Main source of fuel
- Need: depends on weight and training intensity
  - 3-8g/kg/day. Ex: 60kg (132#) athletes
  - 180g/day = 3 CHO servings per meal (3) and 3 snacks
    - 1 cup pasta + 1 medium fruit/8 fl. oz milk
  - 480g/day = 6 CHO servings per meal (4) and 3 snacks
    - 2 cups pasta + 1 medium fruit + 8 fl. oz milk
- Ex: **starches/grains**, fruits, vegetables, **dairy**

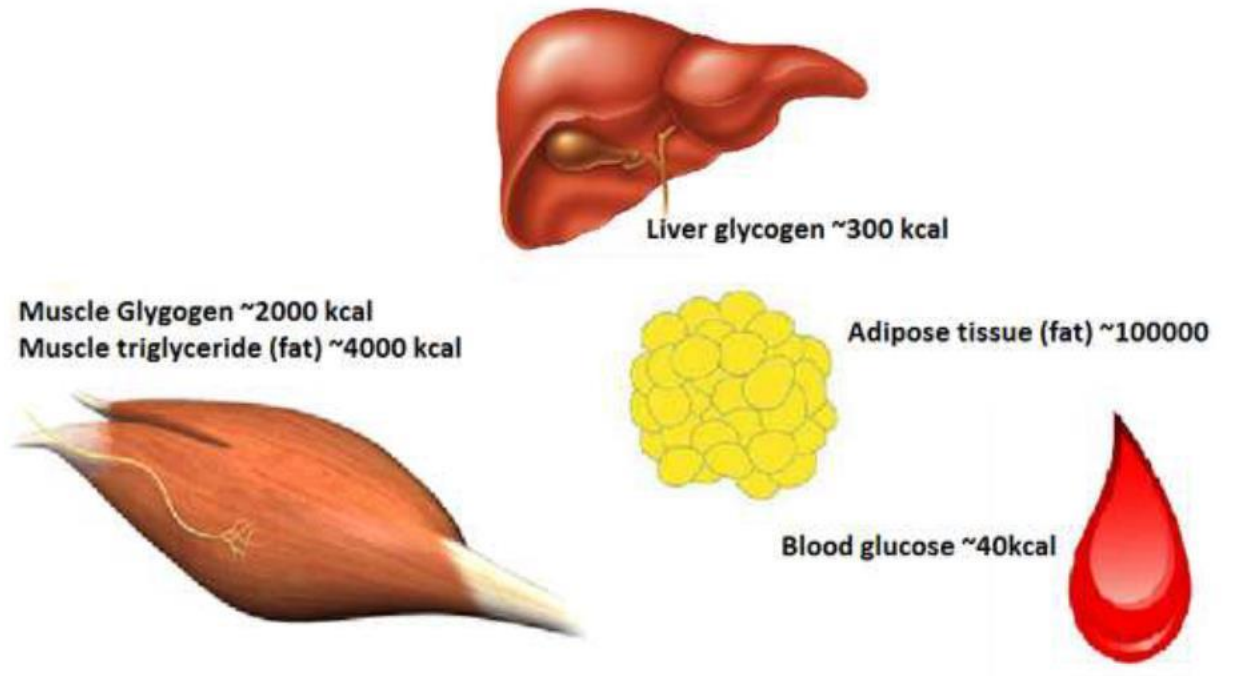
- **Protein**

- Structural component for muscles
- Small amount of fuel
- Need: depends on weight
  - 1.5-2.0g/kg/day
  - 90g/day = 30 grams per meal (3)
    - 1 average size chicken breast = 30g/meal
  - 120g/day = 40 grams per meal (3)
    - 1 average size chicken breast + 8 fl. oz milk
- Ex: poultry, fish, beef, eggs, tofu, nuts/seeds, dairy

- **Fat**

- Found in blood, muscle, organs
- Secondary source of fuel
- Need: 1 tsp. – 2 tbsp. ~ 25% of total calories
- Ex: oils, nuts/seeds, avocado, fish

## The body's 'fuel tanks'







# Performance Plates

Depends  
on:



TRAINING  
INTENSITY



DURATION



WEIGHT  
MANAGEMENT



GOALS

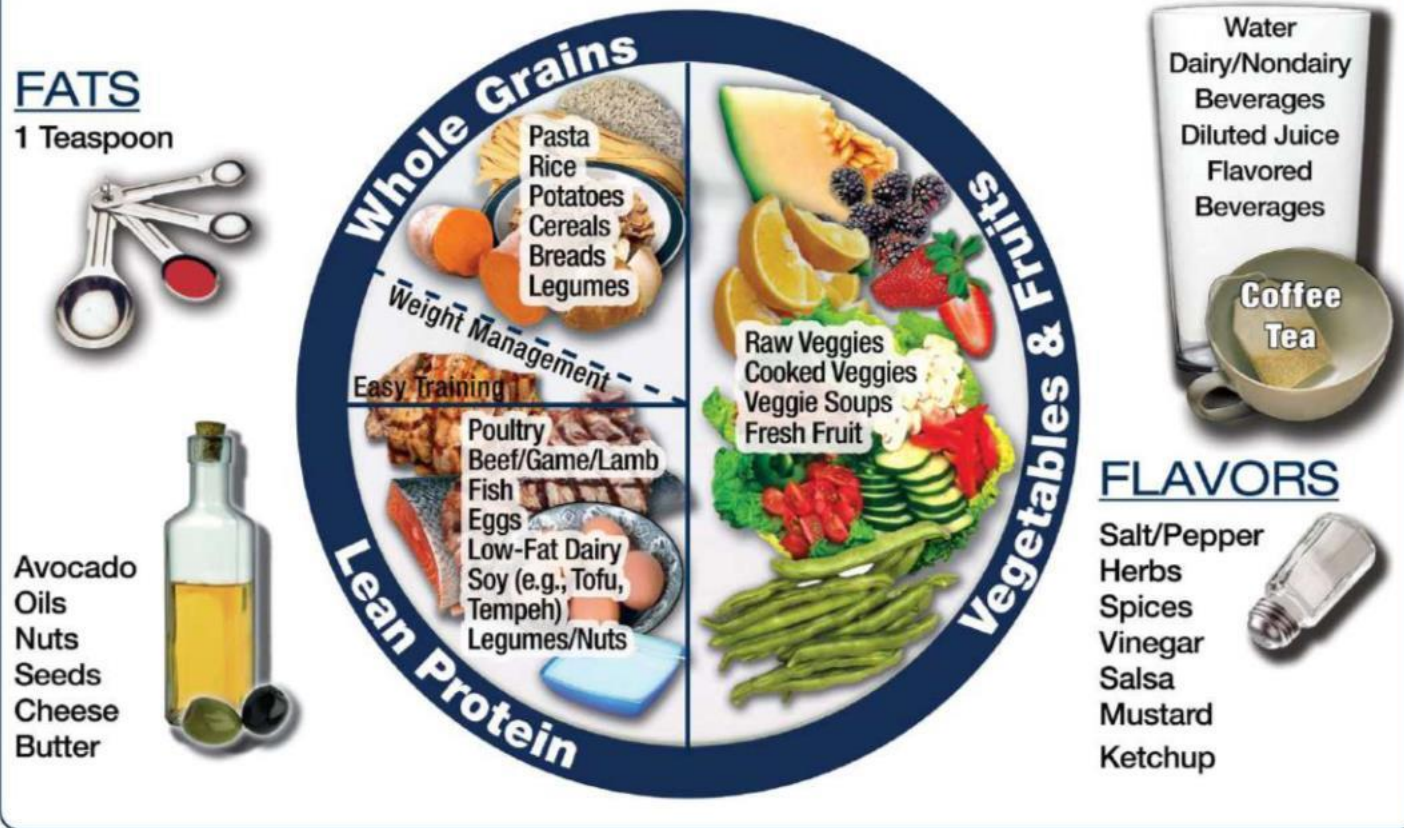


TIME OF TRAINING  
SEASON



# ATHLETE'S PLAT

## EASY TRAINING / WEIGHT MANAGEMENT:

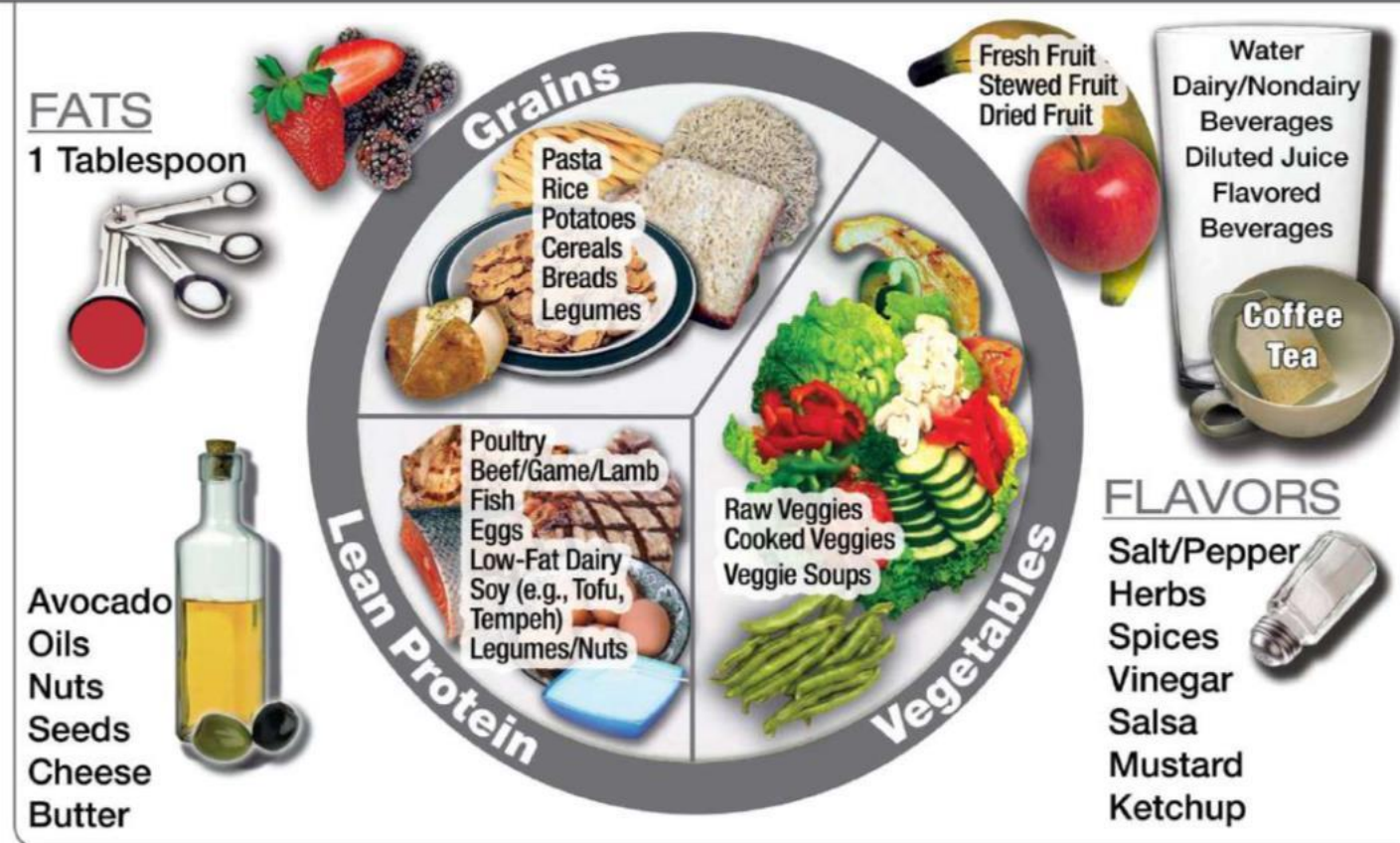


The Athlete's Plates are a collaboration between the United States Olympic Committee Sport Dietitians and the University of Colorado (UCCS) Sport Nutrition Graduate Program.

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# ATHLETE'S PLATE

## MODERATE TRAINING:



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# ATHLETE'S PLATE

## HARD TRAINING / RACE DAY:

### FATS

2 Tablespoons



Avocado  
Oils  
Nuts  
Seeds  
Cheese  
Butter



### Grains

Pasta  
Rice  
Potatoes  
Cereals  
Breads



Fresh Fruit  
Stewed Fruit  
Dried Fruit



Water  
Dairy/Nondairy  
Beverages  
Diluted Juice  
Flavored  
Beverages



Coffee  
Tea

### FLAVORS

Salt/Pepper  
Herbs  
Spices  
Vinegar  
Salsa  
Mustard  
Ketchup

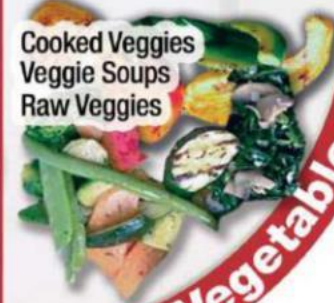


### Lean Protein

Poultry  
Beef/Game/Lamb  
Fish  
Eggs  
Low-Fat Dairy  
Soy (e.g., Tofu,  
Tempeh)  
Legumes/Nuts



Cooked Veggies  
Veggie Soups  
Raw Veggies



### Vegetables

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# Easy Training Plate Examples

	Breakfast/Snack	Lunch
Meal 1:	3 egg omelet + <b>1 banana + 1 slice toast</b>	<b>Turkey sandwich</b> + 1 cup salad
Meal 2:	6 oz. Greek yogurt + <b>½ cup fruit</b> <b>+ ¼ cup granola</b>	<b>¾ cup pesto pasta</b> + mixed vegetables + 3-4 oz. grilled chicken



# Example of Easy Training Plate

- This will vary depending on the number of carbohydrates or protein needed based on their weight



# Moderate Training Plate Examples

	Breakfast	Lunch
Meal 1:	<i>½ cup oatmeal + 1 cup berries + ¼ cup granola + 2 cup milk</i>	<i>Large turkey sandwich + granola bar + carrot sticks</i>
Meal 2:	<i>3 scrambled eggs + 2 slices sourdough toast + 1 fruit</i>	<i>3-4oz. Teriyaki chicken + 1 cup steamed carrots + 1 cup rice</i>



# Example of Moderate Training Plate

- This will vary depending on the number of carbohydrates or protein needed based on their weight



# Hard Training Plate Examples

	Breakfast	Lunch
Meal 1:	<b>1 cup oatmeal + banana</b> 3 Scrambled Eggs + mixed veggies + <b>2 slices of toast</b>	<b>1½ cups pasta</b> with ground beef + <b>tomato</b> <b>sauce</b> + ½ cup roasted veggies
Meal 2:	<b>3 medium pancakes +</b> <b>syrup</b> + 3 hard boiled eggs + <b>12</b> <b>oz. milk</b>	<b>1 Baked potato</b> + 3-4oz. meat/fish + <b>½ cup baked beans</b> + salad



# Example of Hard Training Plate

- This will vary depending on the number of carbohydrates or protein needed based on their weight





# Pre-Training Fueling

# Pre-Training Snack



## **Why:**

Optimize performance and minimize the use of muscle as an energy source



## **Types of macronutrients:**

Easy to digest  
carbohydrate – broken  
down to basic structures  
  
Low fat/low fiber  
  
Some salt



## **Timing:**

30 minutes to 1 hour  
before training



## **Examples:**

½ of a medium Banana,  
Clif Shot/Bloks, salted  
pretzels, applesauce,  
granola bar, ½ a bagel, or  
fruit snacks/leather





# Post-Training Fueling



# Post-Training Snack



## **Why:**

Replace the depleted energy stores found in the muscles (AKA Glycogen) and speed up the muscle recovery/regeneration process



## **Types of macronutrients:**

Easy to digest carbohydrates  
Protein (ideally 15-20g)



## **Timing:**

Within 30 minutes to an hour after completion of training



## **Examples:**

2-3 cups of Chocolate milk, protein bar, trail mix, beef jerky + applesauce, 1 whole PB&J sandwich (Harder days), protein energy bite



# Fueling on Competition Day

Encourage the athlete to eat/drink something small in the morning

- 30 minutes – 1 hour before competition
- Bar, banana + 1tbsp peanut butter, bagel, Gatorade, vanilla yogurt, etc.

Between swims/race

- If >3-4 hours: turkey sandwich or chicken + rice & starchy vegetable, or PB&J sandwich
- If ~ 30min-1hr: see left box

After competition:

- If multiple races or long duration race =  $\frac{1}{2}$  plate starches/grains
- If moderate day =  $\frac{1}{3}$  plate
- If easy =  $\frac{1}{4}$  plate

# Fueling on Competition Day



Hydration



**Well Hydrated**

Great job!

**Hydrated**

Continue drinking water throughout the day.

**Minimal Dehydration**

Drink a glass of water.

**Significant Dehydration**

Performance may be affected. Drink a few glasses of water as soon as possible.

**Severe Dehydration**

Seek hydration immediately.

# Hydration

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- Impacts performance
  - Dehydration
    - Cause of fatigue and poor performance
- Water:
  - Without it we start to cramp/seize up
  - Needed in order to transport nutrients to muscles
  - Helps with removing waste/toxins from the body through the urine

# Hydration Between Sets at Practice

- You are sweating, so you need to replenish the electrolytes and fluids lost
- Rehydrate with:
  - Water
  - Sports drink
  - Pedialyte
  - Drip-drop
  - Coconut water
- 16 – 24 fluid ounces (depends on intensity/duration)
  - 1 normal size Gatorade bottle (taking sips throughout practice)





# Travel Nutrition

# Travel Food Options

Carbohydrate	Protein
Pre-cooked/instant oatmeal/rice	Tuna pouch
Granola	Jerky
Bread	Roasted Edamame
Sports bars, gels, gummies	Peanut/nut butter
Crackers	Dried hummus mix
Trail mix/dried vegetables	Nuts & Seeds
	Protein powder (NSF certified) /bars