



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

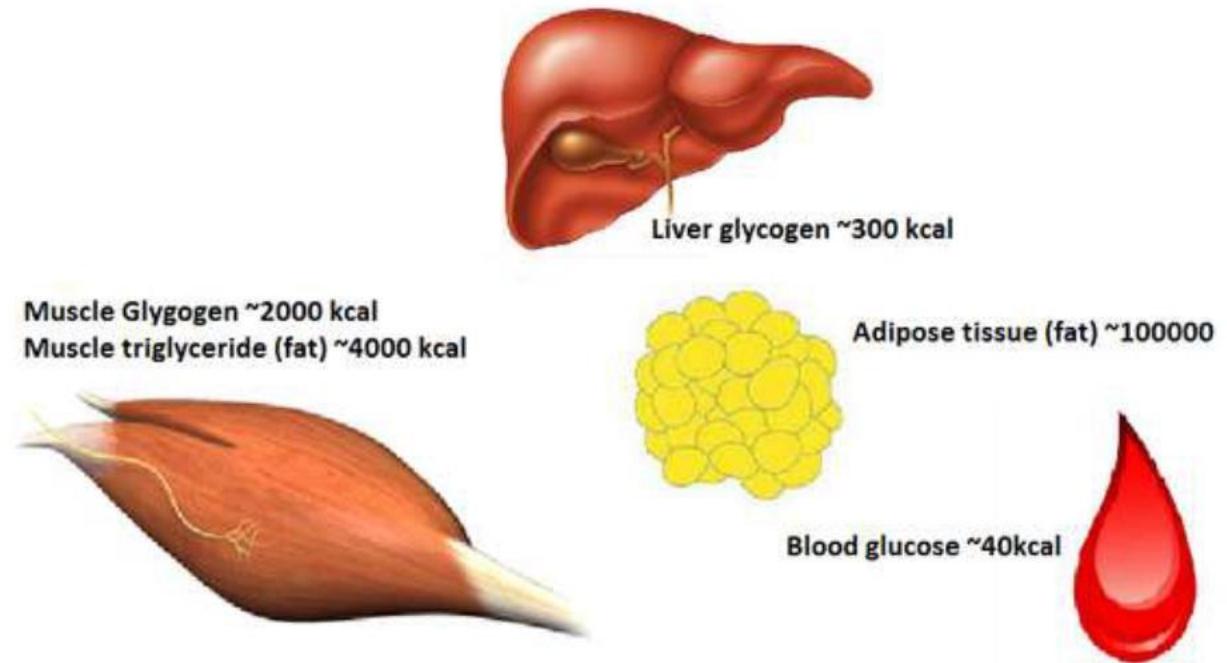


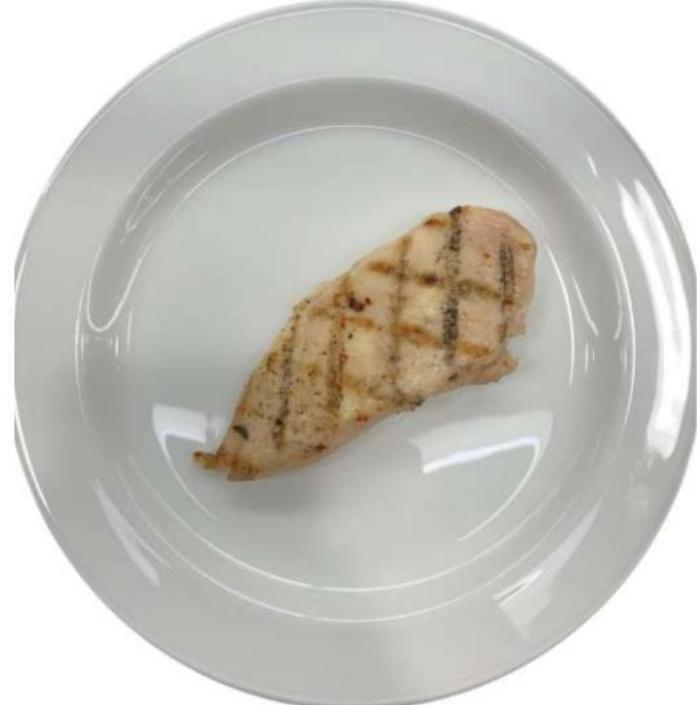
Fuel for
Performance

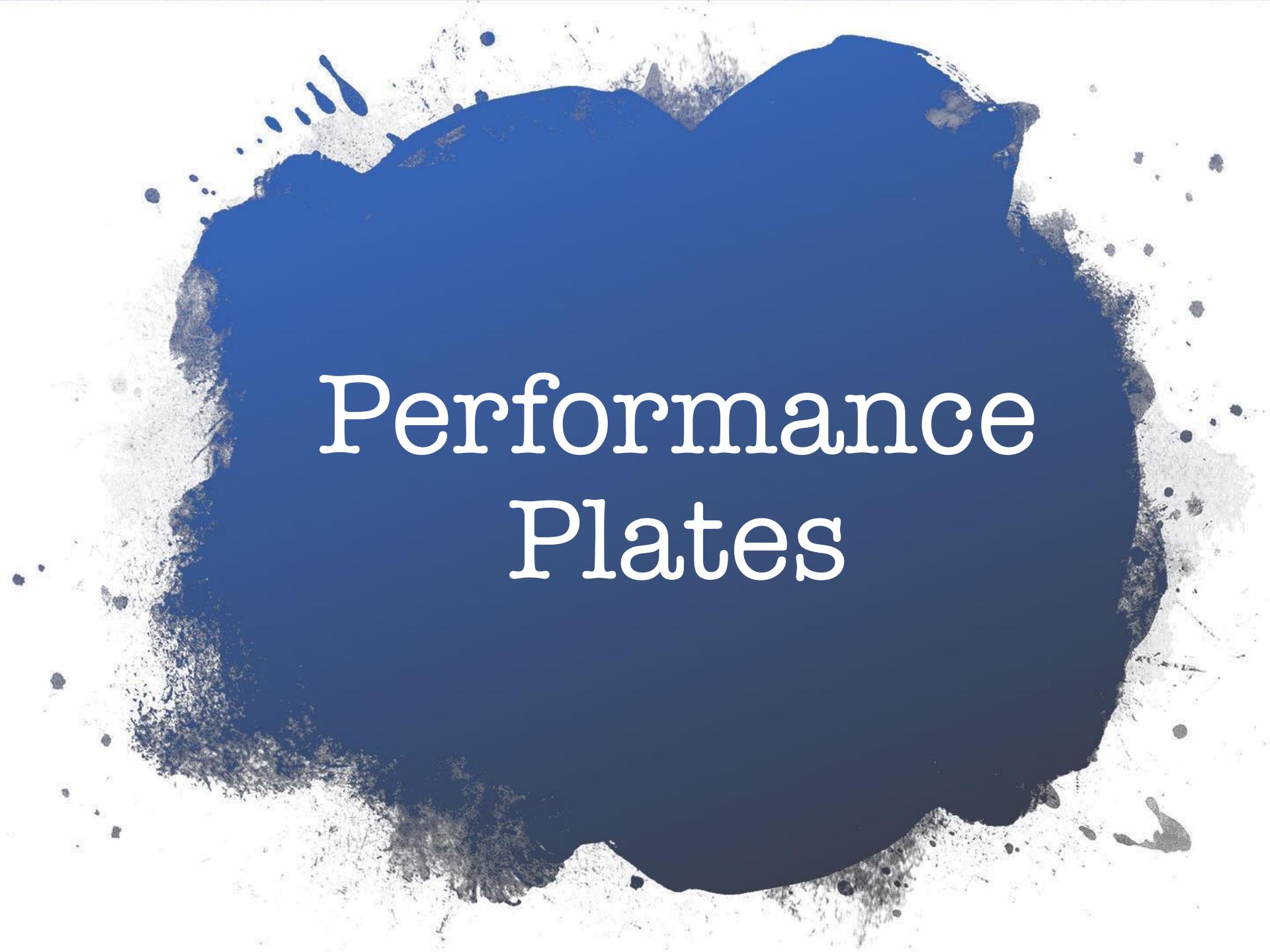
Sources of Fuel

- **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

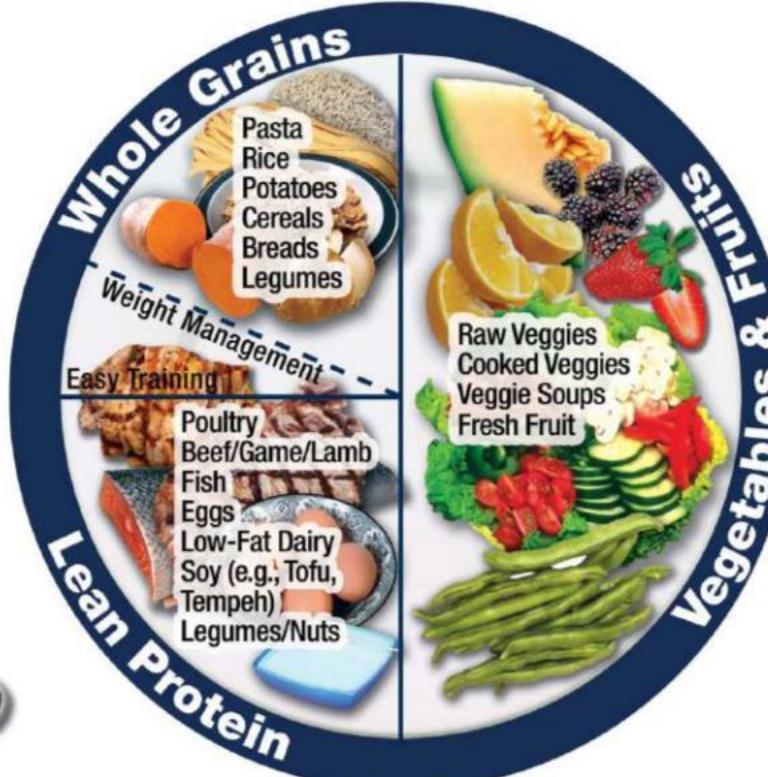
EASY TRAINING / WEIGHT MANAGEMENT:

FATS

1 Teaspoon



Avocado
Oils
Nuts
Seeds
Cheese
Butter



FLAVORS

Water
Dairy/Nondairy
Beverages
Diluted Juice
Flavored
Beverages

Coffee
Tea

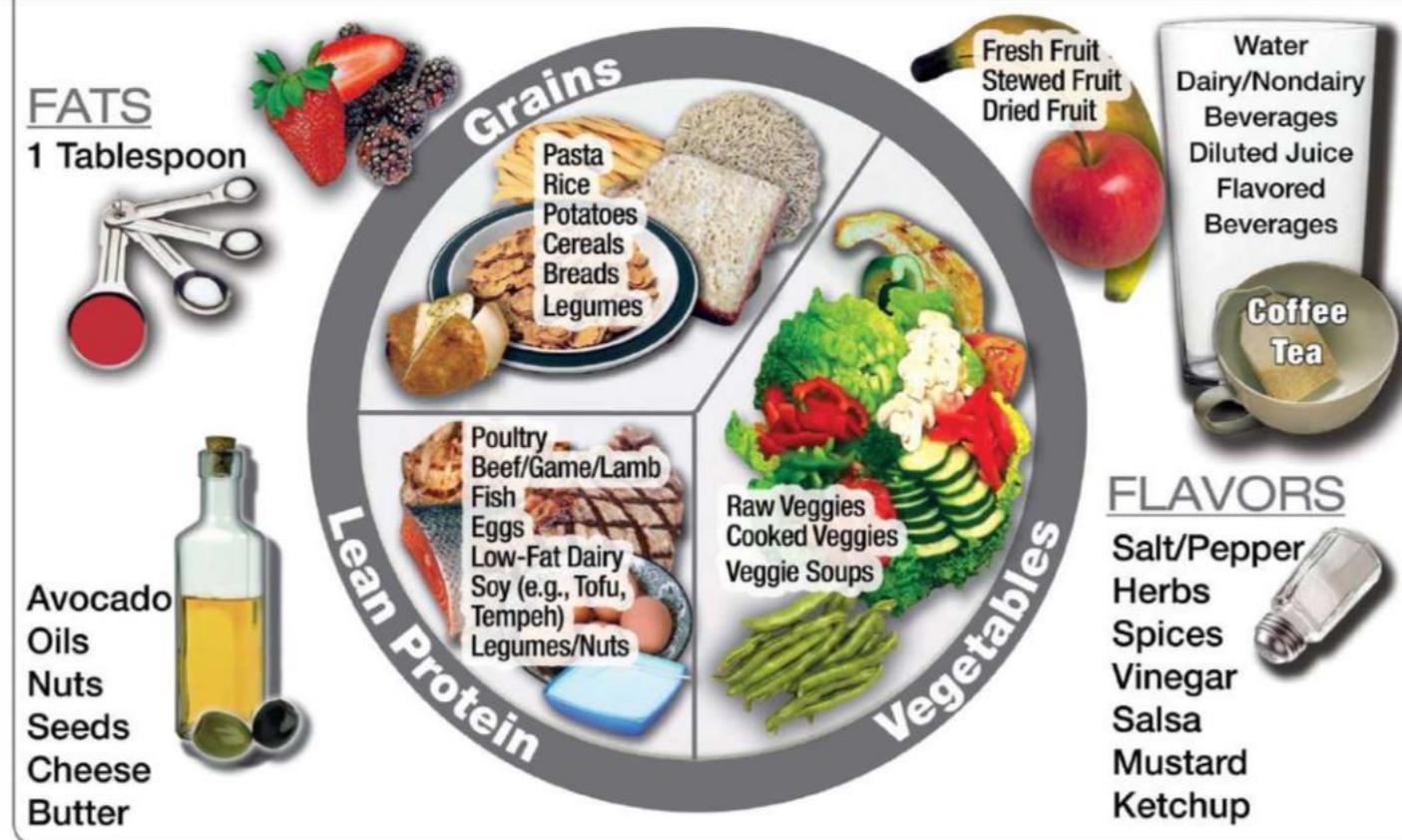
Salt/Pepper
Herbs
Spices
Vinegar
Salsa
Mustard
Ketchup



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

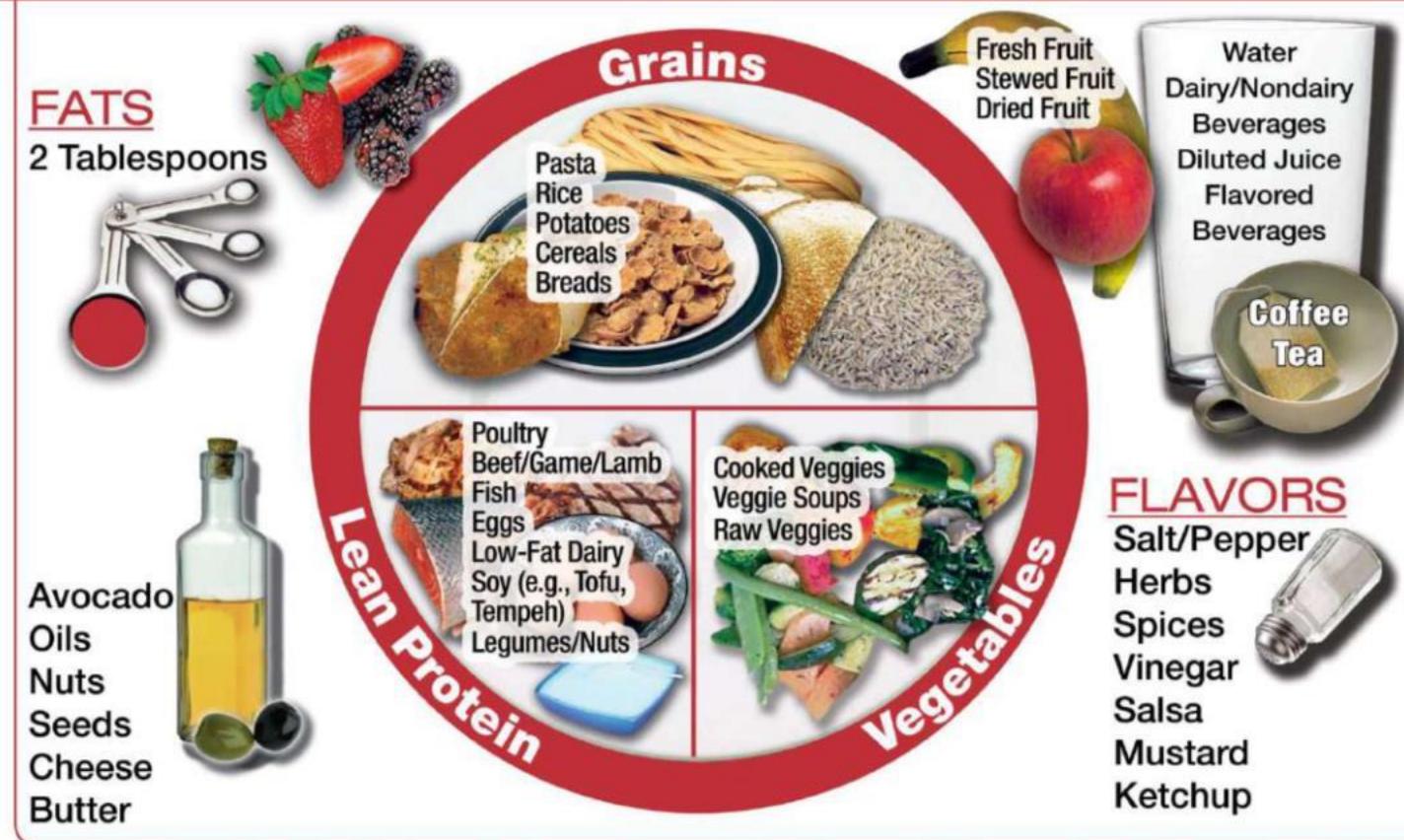
MODERATE TRAINING:



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ATHLETE'S PLATE

HARD TRAINING / RACE DAY:



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Easy Training Plate Examples

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

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

- 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