NUTRITION 101: THE POWER OF PROTEIN

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PROTEIN

- Builds muscle and aids in recovery
- Nitrogen balance
- Energy

HOW MUCH DO YOU NEED?

- Recommended Daily Allowance: .8g/kg
- Athletes: 1-2 g/kg
  - 1.2-1.4g/kg endurance athletes
  - 1.2-1.7 g/kg strength/power athletes
- Pregnancy: 1.1g/kg
- Elderly: .8g/kg*
EXCESSIVE INTAKE

- Protein is an essential nutrient
- Excess protein, above your needs can be used to provide your body with energy or turned into fat for storage
- Protein to carbohydrate ratio important for athletes
- High protein diets
  - Renal function
  - Protein and calcium interaction
  - Liver function
- Exercise, not extra protein is the key to developing bigger muscles
SOURCES OF PROTEIN

- Salmon 4 oz.: 29 g
- Lentils 1 cup: 18 g
- Greek Yogurt 5 oz.: 14g
- Milk 8 oz.: 8g
- Tofu, firm, 3.5oz.: 7g
- Egg: 6g
VEGETARIAN & VEGAN PROTEIN SOURCES

- Complete proteins
  - Grains + Legumes
  - Grains + Nuts/Seeds
- Eggs, chia, quinoa, soy
- Hummus + pita
- Peanut butter sandwich
- Rice + beans
<table>
<thead>
<tr>
<th>Protein Source</th>
<th>Cost</th>
<th>Protein (g)</th>
<th>Cost/g protein</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muscle Milk 14 oz. shake</td>
<td>$3.50 (Festival Foods)</td>
<td>25 g</td>
<td>.14¢</td>
</tr>
<tr>
<td>EAS Advanced Edge 11 oz. shake</td>
<td>$1.25 (Festival Foods)</td>
<td>17 g</td>
<td>.07¢</td>
</tr>
<tr>
<td>GNC Pro Performance AMP Amplified Mass XXX {6lb. container, 13 servings per container}</td>
<td>$76.99 (GNC La Crosse)</td>
<td>50 g/serving</td>
<td>.12¢</td>
</tr>
<tr>
<td>Cliff Builder Bar (2.4oz bar)</td>
<td>$1.97 (Festival Foods)</td>
<td>20g</td>
<td>.10¢</td>
</tr>
<tr>
<td>Chobani Greek Yogurt (32 oz. container)</td>
<td>$5.57 (Festival Foods)</td>
<td>22g/serving</td>
<td>.06¢</td>
</tr>
<tr>
<td>Jiff Peanut Butter (28 oz. jar)</td>
<td>$4.77 (Festival Foods)</td>
<td>7g/serving</td>
<td>.03¢</td>
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<tr>
<td>Kemps Cottage Cheese (22oz. container)</td>
<td>$3.19 (Festival Foods)</td>
<td>13g/serving</td>
<td>.05¢</td>
</tr>
<tr>
<td>Kemps Chocolate Milk ½ gallon</td>
<td>$2.29 (Festival Foods)</td>
<td>8g/serving</td>
<td>.04¢</td>
</tr>
<tr>
<td>Medium Eggs (1 dozen)</td>
<td>$2.95 (Festival Foods)</td>
<td>7g/serving</td>
<td>.04¢</td>
</tr>
<tr>
<td>Boneless Skinless Chicken Breast</td>
<td>$3.99/lb. (Festival Foods)</td>
<td>27g/4 oz.</td>
<td>.04¢</td>
</tr>
</tbody>
</table>
SUPPLEMENTS

- Should SUPPLEMENT a balanced diet
- Not typically needed if sound nutritional practices are followed
- Not regulated
**FUELING: BEFORE, DURING, & AFTER**

**BEFORE**
- High carbohydrate, low fat
- Easy to digest
- Proper fueling on a daily basis

**DURING**
- >60 minutes of exercise
- 150-200 calories of carbohydrate per hour after the first hour
  - Solid foods, gels, sports drinks
  - Training intestinal tract to consume during events
- Hydration & electrolytes

**AFTER**
- Carbohydrate + protein within 45 minutes of finishing exercise
- 3:1 or 4:1 carb to protein ratio
- Chocolate milk
PROTEIN RICH SNACK IDEAS

- Cottage cheese + grapes (25g /1 cup cottage cheese)
- Whole Almonds + apple (15g per ½ cup almonds)
- ½ peanut butter sandwich on whole wheat bread (11g per 1 slice & 2 tbsp.)
- Hard boiled egg + orange (7g per egg)
- Greek yogurt + granola (17g/6 oz. container)
- String cheese + banana (8g per piece of string cheese)
Pumpkin Pie Protein Energy Bites

Yield: ~20 balls

Ingredients
- 1 1/2 cups rolled oats
- 1/2 cup vanilla whey protein powder (optional)
- 1 tsp cinnamon
- 1 tsp pumpkin pie spice
- 1/2 cup peanut butter (or other nut/seed butter)
- 3 Tbsp. maple syrup
- 1 tsp vanilla
- 1/3 cup raisins or craisins
- 3/4 cup nuts or seeds
- 2-4 Tbsp. liquid milk (cow, almond, soy, etc.)

Directions
1. In a large bowl, combine oats, cinnamon, and ginger (and protein powder if using).
2. Add in peanut butter, honey, and vanilla. Stir to combine.
3. Add in raisins/craisins and nuts/seeds. Mixture will be sticky.
4. Slowly add in 1 tablespoon of milk at a time while using hands to combine together a sticky ball that holds its shape. If mixture is too dry add more liquid, but not so much that it won’t hold its shape.
5. Place in refrigerator to set for 30 minutes.
6. Store in Refrigerator until ready to eat.

Nutrition Information Per Energy Ball
Cal 100 | Fat 6g | Sodium 32 mg | Total Carb 9g | Sugar 3g | Protein 4g
(without any protein powder added)