Protein Needs During Cancer Treatment

Why protein is important

Protein is necessary for body maintenance, growth and repair. Protein is present in almost all body cells and has many functions including:

- Formation and maintenance of muscles, connective tissues, red blood cells, enzymes, and hormones
- Transporting many body compounds as well as medications
- Maintaining the balance of body fluids
- Fighting infections and strengthening immunity

Generally, your diet provides adequate protein; however while undergoing surgery and treatment for cancer your protein requirements may increase. It is important to be aware of the food sources of protein and to include these foods at every meal and snack.

Your protein requirement

To come up with a quick estimate of your protein requirement:

1. Divide your weight in pounds by 2
2. The results is the approximate grams of protein you need per day (example: 180 lb ÷ 2 = 90 grams of protein)

*If you are undergoing chemotherapy, radiation or surgery, the number of grams of protein needed each day may be higher.

Food sources of protein

Protein is found in both animal and plant foods. Animal sources of protein include meat, poultry, fish, eggs, and dairy products. Plant sources of protein include nuts, seeds, tofu and legumes (dried beans, peas and lentils). Grains (cereals, breads and rice) and vegetables contain a small amount of protein. Fruits and fats do not provide any protein. The amount of protein in milk alternative products such as soy, rice, coconut and almond milk is variable so check the label of your product.

Protein Supplements

The cheapest and most convenient protein supplement is dry skim milk powder. Add dry milk powder to any creamy foods such as smoothies, yogurt, milkshakes, coffee, ice cream, mash potatoes, casseroles, scrambled eggs and creamed soups or add to the batter for cakes, cookies, pancakes, muffins, and puddings. Use pasteurized eggs substitute in shakes and recipes as a protein supplement, however, never use raw eggs due to the risk of salmonella contamination.

Products such as double strength milk, whey protein powder, pea protein isolate, soy protein, or hemp protein powders are good options to supplement your meals. A Registered Dietitian can assist with determining which protein supplement may best meet your needs.

Lactose Intolerance

Low lactose milks such as Lactaid, cheeses, and ice cream are available. Individuals who are mildly lactose intolerant can often tolerate yogurt and fattier dairy foods such as cheese and ice cream. Milk alternates can be substituted for milk but it is important to note that protein content of these products varies and may not be comparable to the protein content of cow’s milk. Lactaid pills, which contain the enzyme that digests milk, can also be taken before eating a dairy food and are available almost
Weight loss affects protein function: importance of adequate calorie and protein intake

To ensure that the protein you eat is used for essential body functions you must meet your calorie requirement. If you do not consume enough calories to maintain your weight, your body will use protein for energy rather than to support essential body functions.

High protein snacks

- Cheese with crackers, vegetables or fruit
- Trail mix (mixture of assorted nuts and dried fruits)
- Granola, energy, protein and breakfast bars
- Cereal and milk
- Yogurt
- Cottage cheese or ricotta cheese with fruit or apple butter
- Chicken, tuna or egg salad on crackers
- Deviled and hard-boiled eggs
- Hot cocoa (if using instant cocoa replace water with milk)
- Puddings and custards
- Regular, flavored or malted milk
- Nuts
- Peanut butter on crackers
- Hummus and pita bread
- Pizza bagel
- Dry roasted edamame
- Sandwich (meat & cheese, peanut butter and jelly, grilled cheese)
- Milkshakes
- Nutrition supplement drinks

Ways to add protein into food

- Shredded cheese - sprinkle over vegetables, potatoes, noodles, casseroles, soups or salads
- Milk - use in place of water when making soups, pudding, cocoa or cooked cereals instead of water
- Make double strength milk - add 1 cup of nonfat instant dry milk powder to 1 quart (4 cups) of whole milk
- Ice cream, yogurt, and frozen yogurt - add to cereals, fruits, gelatin, pies or milkshakes
- Hard-cooked eggs - chop and add to salads, vegetables or casseroles
- Left-over meat, chicken or fish - add to soups, salads or omelets
- Nuts and seeds - sprinkle over vegetables, fruits, salads, yogurt, cereal and pasta
- Beans - add to salads, pasta or soups

Foods with high protein content

<table>
<thead>
<tr>
<th>Food</th>
<th>Serving Size</th>
<th>Grams of Protein</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meat:</td>
<td>3 ounces</td>
<td>21</td>
</tr>
</tbody>
</table>
| -Beef
-Lamb
-Pork | | |

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<table>
<thead>
<tr>
<th>Food</th>
<th>Quantity</th>
<th>Calories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poultry - Chicken</td>
<td>3 ounces</td>
<td>21</td>
</tr>
<tr>
<td>Poultry - Turkey</td>
<td>3 ounces</td>
<td>21</td>
</tr>
<tr>
<td>Fish</td>
<td>3 ounces</td>
<td>21</td>
</tr>
<tr>
<td>Egg or ¼ cup liquid egg substitute</td>
<td>1 egg</td>
<td>7</td>
</tr>
<tr>
<td>Milk</td>
<td>1 cup</td>
<td>8</td>
</tr>
<tr>
<td>Yogurt</td>
<td>1 cup</td>
<td>10</td>
</tr>
<tr>
<td>Cottage or Ricotta Cheese</td>
<td>½ cup</td>
<td>12</td>
</tr>
<tr>
<td>Hard cheese</td>
<td>1 ounce</td>
<td>8</td>
</tr>
<tr>
<td>Dried Beans &amp; legumes</td>
<td>½ cup</td>
<td>8</td>
</tr>
<tr>
<td>Tofu</td>
<td>½ cup</td>
<td>14</td>
</tr>
<tr>
<td>Soybeans</td>
<td>½ cup (cooked)</td>
<td>14.3</td>
</tr>
<tr>
<td>Textured soy protein</td>
<td>½ cup</td>
<td>11</td>
</tr>
<tr>
<td>Soymilk</td>
<td>1 cup</td>
<td>6.6</td>
</tr>
<tr>
<td>Edamame</td>
<td>½ cup</td>
<td>11</td>
</tr>
<tr>
<td>Tempeh</td>
<td>½ cup</td>
<td>15.7</td>
</tr>
<tr>
<td>Nuts</td>
<td>¼ cup</td>
<td>7</td>
</tr>
<tr>
<td>Peanut butter</td>
<td>2 Tbsp.</td>
<td>7</td>
</tr>
</tbody>
</table>

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