Are All the Calories the Same?

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Presenter Disclosures

No relationships to disclose or list
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What is it in terms of nutrition?

Optimal Calories

Quality of Calories
Protein

Protein is found in meat, fish, milk and cheese.

- Protein provides the building blocks for most of the body's tissues, nerves, internal organs

- Proteins are used to make neurotransmitters and are essential to improve immune system
Why is Protein important?

- Protein helps curb hunger
- Protein helps build muscle mass
- Soy protein gives you high quality plant protein without the added calories of animal protein
# Best Protein Sources

<table>
<thead>
<tr>
<th>Food Item</th>
<th>One Unit</th>
<th>Calories</th>
<th>Protein (gm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ocean-Caught Fish</td>
<td>4 oz, cooked weight</td>
<td>130-170</td>
<td>25-31</td>
</tr>
<tr>
<td>Shrimp, crab, lobster</td>
<td>4 oz, cooked weight</td>
<td>120</td>
<td>22-24</td>
</tr>
<tr>
<td>Tuna</td>
<td>4 oz, water pack</td>
<td>145</td>
<td>27</td>
</tr>
<tr>
<td>Scallops</td>
<td>4 oz, cooked weight</td>
<td>135</td>
<td>25</td>
</tr>
<tr>
<td>Egg whites</td>
<td>7 whites</td>
<td>115</td>
<td>25</td>
</tr>
<tr>
<td>Turkey Breast</td>
<td>3 oz, cooked weight</td>
<td>135</td>
<td>25</td>
</tr>
<tr>
<td>Chicken Breast</td>
<td>3 oz, cooked weight</td>
<td>140</td>
<td>25</td>
</tr>
<tr>
<td>Soy Hot Dog</td>
<td>2 links</td>
<td>110</td>
<td>22 (varies)</td>
</tr>
<tr>
<td>Soy Ground Round</td>
<td>3/4 cup</td>
<td>120</td>
<td>24</td>
</tr>
<tr>
<td>Soy Burgers</td>
<td>2 patties</td>
<td>160</td>
<td>26</td>
</tr>
<tr>
<td>Tofu, firm</td>
<td>1/2 cup</td>
<td>180</td>
<td>20 (varies)</td>
</tr>
</tbody>
</table>
Carbohydrate

- Grains, fruits and vegetables are key sources of carbohydrates.
- Sugar, starch are less favorable
## Add Vegetable Servings
3+ per day, about 55 calories

<table>
<thead>
<tr>
<th>Food Item</th>
<th>Portion</th>
<th>Calories</th>
<th>Fiber</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cooked Vegetables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acorn Squash, baked</td>
<td>1 cup</td>
<td>85</td>
<td>6</td>
</tr>
<tr>
<td>Artichoke</td>
<td>1 medium</td>
<td>60</td>
<td>6</td>
</tr>
<tr>
<td>Asparagus</td>
<td>1 cup</td>
<td>45</td>
<td>4</td>
</tr>
<tr>
<td>Beets, cooked</td>
<td>1 cup</td>
<td>75</td>
<td>3</td>
</tr>
<tr>
<td>Broccoli, cooked</td>
<td>1 cup</td>
<td>45</td>
<td>5</td>
</tr>
<tr>
<td>Brussels Sprouts</td>
<td>1 cup</td>
<td>60</td>
<td>4</td>
</tr>
<tr>
<td>Cabbage, cooked</td>
<td>1 cup</td>
<td>35</td>
<td>4</td>
</tr>
<tr>
<td>Cauliflower, ckd</td>
<td>1 cup</td>
<td>30</td>
<td>3</td>
</tr>
<tr>
<td>Carrots, cooked</td>
<td>1 cup</td>
<td>70</td>
<td>5</td>
</tr>
<tr>
<td>Celery, diced</td>
<td>1 cup</td>
<td>20</td>
<td>2</td>
</tr>
<tr>
<td>Chinese Cabbage, ckd</td>
<td>1 cup</td>
<td>20</td>
<td>3</td>
</tr>
<tr>
<td>Collard greens, ckd</td>
<td>1 cup</td>
<td>50</td>
<td>5</td>
</tr>
</tbody>
</table>
# Add Fruits 3+ per day, about 70 calories

<table>
<thead>
<tr>
<th>Food Item</th>
<th>Portion</th>
<th>Calories</th>
<th>Fiber</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apricots</td>
<td>3 whole</td>
<td>50</td>
<td>3</td>
</tr>
<tr>
<td>Avocado</td>
<td>¼ average fruit</td>
<td>80</td>
<td>2</td>
</tr>
<tr>
<td>Blackberries</td>
<td>1 cup</td>
<td>75</td>
<td>8</td>
</tr>
<tr>
<td>Blueberries</td>
<td>1 cup</td>
<td>110</td>
<td>5</td>
</tr>
<tr>
<td>Cantaloupe</td>
<td>1 cup cubes</td>
<td>55</td>
<td>1</td>
</tr>
<tr>
<td>Grapes</td>
<td>1 cup</td>
<td>115</td>
<td>2</td>
</tr>
<tr>
<td>Honeydew</td>
<td>1 cup cubes</td>
<td>60</td>
<td>1</td>
</tr>
<tr>
<td>Kiwi</td>
<td>1 large</td>
<td>55</td>
<td>3</td>
</tr>
<tr>
<td>Mango</td>
<td>½ large</td>
<td>80</td>
<td>3</td>
</tr>
<tr>
<td>Nectarine</td>
<td>1 large</td>
<td>70</td>
<td>2</td>
</tr>
<tr>
<td>Orange</td>
<td>1 large</td>
<td>85</td>
<td>4</td>
</tr>
<tr>
<td>Orange Juice</td>
<td>½ cup</td>
<td>50</td>
<td>0</td>
</tr>
<tr>
<td>Papaya</td>
<td>½ large</td>
<td>75</td>
<td>3</td>
</tr>
<tr>
<td>Peach</td>
<td>1 large</td>
<td>70</td>
<td>3</td>
</tr>
</tbody>
</table>
Fat

- Saturated Fats
- Mono-unsaturated Fats
- Poly-unsaturated Fats
Mono-unsaturated (\(? -9\))

Sources
- olive oil (71%)
- Avocados (67%)
- Almond oil (65%)
- Peanut oil (40-55%)
- Rapeseed (Canola) oil (53%)

Biologic Role
- Helps lower circulating levels of LDL cholesterol, triglycerides
- Not-essential but improves vascular health
Two Types of Poly Unsaturated Fatty Acids

Omega-6 (linoleic)
- Safflower oil (75%)
- Sunflower oil (70%)
- Grapeseed oil (68%)
- Corn Oil (55%)
- Soybean oil (51%)

Omega-3 (linolenic)
- Walnut oil (10%)
- Rapeseed oil (10%)
- Wheat germ oil (10%)
- Other sources
  - Fish (DHA, EPA)
  - Flaxseed
  - Leafy greens
Opposing Roles of 6’s and 3’s

Omega-6 eicosonoids
- pro-inflammatory
- pro-aggregatory
- pro-vasoconstriction
- ?Il-6, TNF-a

Omega-3 eicosomoids
- less-inflammatory
- less aggregatory
- favor vasodilation
Ratio of ? -6 to ? -3

Paleolithic Man 2:1

Inuit Eskimo 1:1 to 2:1

Current American 15:1 to 30:1

WHO recommendation 5:1 to 10:1
Vitamins & Minerals

- Vitamins and minerals are essential

- The 'B' complex vitamins are particularly important for producing energy. Vitamins A, C and E are powerful antioxidants and immune function

- Vitamin D is important for cell maturation
Phytochemicals/ Phytonutrients

- Non-nutrient plant compounds
- provide health benefits against certain chronic human illnesses such as cancer, heart disease, neurodegenerative diseases etc.
Colors Represents Nutrients
In the Beginning

Soil

Energy

Water

There were Plants and Herbs
And They Grew.............
Then The Plants Made Oxygen Using Energy of the Sun

As oxygen built up, they needed to protect themselves from the bad effects of too much oxygen.
So Each Plant Protected Itself from Extra Oxygen by Making ... COLORFUL NATURAL PLANT NUTRIENTS (ANTIOXIDANTS)
PEOPLE CAME AND ATE THE PLANTS...

AND LIFE WAS GOOD!!!
Unprecedented opportunities exist for the expanded use of foods and components to achieve genetic potential, increase productivity and reduce the risk of disease.
Cruciferous Vegetables

- Sulforaphane (SFN), a prominent isothiocyanate
SPICES

EXOTIC FLAVORS & MEDICINES
Avocado
Lycopene

- In addition to its antioxidant activity, biological activities include induction of cell-cell communications and growth control.
Berry Phenolics

- Flavanoids
- Hydrolyzable tannins
- Phenolic Acids

Seeram et al., Food Chem 2005,
Tea

- First tea 5000 years ago by Shen Nung
- Consumption of tea second to water
- Camellia sinensis or assamica
- White tea, Green tea - not fermented
- Black tea - fermented
- Oolong tea - partially fermented
- Green tea extract supplement
Sources of Resveratrol

- Resveratrol is found in
  - Grapes (only in skin)
  - Wine
  - Grape Juice
  - Peanuts
  - Blueberries
  - Bilberries
  - Cranberries
TURMERIC

Historical Uses:
- Used as a condiment, healing remedy, and textile dye
- Used in Indian and Chinese medical systems as an anti-inflammatory agent
What Your Body Needs

- PROTEINS
- CARBOHYDRATES
- FATS
- MINERALS
- VITAMINS
- NATURAL PLANT NUTRIENTS
CONCLUSIONS

- Not all the Calories are the same
- Optimal calories are the key to Health
- Fruits and vegetables contain high levels and a wide diversity of phytonutrients