

Protein

Overview of Protein

- Body is made up of thousands of proteins
- Proteins are made up of individual amino acids
- Food sources of protein include both animal and plant sources.

Protein

- Functions

Protein

- Essential Amino Acids (9)

- Non-essential Amino Acids (11)

Protein

Animal Protein

- Contribution to our diet
- ~70% of our protein intake
- Top 5 contributors of protein in U.S. diet:
- Beef
- Poultry
- Milk
- White bread
- Cheese
- Worldwide, 35% comes from animal sources

Plant Protein

- Provides Protein, minerals, antioxidants and dietary fiber
- Contains no cholesterol
- Limited saturated fats
- Sources:

Health and Plant Proteins

RDA for Protein

- Promotes equilibrium – Protein losses equal protein intake
- **RDA = 0.8 gm of protein / kg of healthy body weight**

$$\frac{154 \text{ lb.}}{2.2 \text{ kg/lb.}} = 70 \text{ kg}$$

$$70 \text{ kg} \times \frac{0.8 \text{ g protein}}{\text{kg healthy body wt}} = 56 \text{ g protein}$$

RDA for Protein

- Increased by ~10-15 gm /day for pregnancy
- Endurance athletes
- May need 1.2 – 1.7 gm/kg healthy weight
- Most of us eat more than the RDA for protein
- Excess protein cannot be stored as protein

High Protein/Low Carbohydrate Diets

- Zone, Atkins, Sugar Busters

- Theory: Too many carbohydrates lead to increased insulin which increases fat stores
- Diet is high in fat and protein
- Low in carbohydrates

High Protein Diet

- Low Carbohydrate Intake (example 20 gms/day)

High Protein Diets

- Weight loss
 - Initial weight loss = water and glycogen stores
 - Muscle loss
 - Fat loss (seems like a good thing, but the body produces ketones when fat is burned without carbohydrate available)

Is a High-Protein Diet Harmful?

- Low in plant foods (fiber), vitamins, phytochemicals
- High in saturated fat and cholesterol
- Excessive intake of processed red meat is linked with colon cancer
- May increase calcium loss in the urine
May weaken the bones over time