

NHM Final

6 Classes of Nutrients

- Carbohydrates
- Protein
- Lipids (fats)
- Vitamins
- Minerals
- Water

Macronutrients-provide energy for the body

- Carbohydrates
- Proteins
- Lipids

Micronutrients-vitamins and minerals

Do not provide energy for the body

Vitamins: organic and complex and can be destroyed

Minerals: inorganic and indestructible

Can bind and hinder absorption or leach into water

Energy from Food

- Carbs= 4 kcal/gm
- Proteins= 4 kcal/gm
- Lipids= 9 kcal/gm
- Alcohol= 7 kcal/gm- contributes to energy but not considered a nutrient

Calories are units used to measure energy

- 1000 calories= 1 kcal

Dietary Reference Intakes (DRI's)

- Adequate Intake (AI)
 - Nutrient recommendation based on observed or experimentally determined approximation
 - Sufficient scientific evidence is not available to calculate RDA or EAR
- Estimated Average Requirement (EAR)
 - Average requirement of nutrient for healthy individuals
 - Only used to assess nutrient adequacy of populations
- Recommended Dietary Allowance (RDA)
 - Amount of nutrient needed to meet the requirements of almost all healthy individuals (97-98%)
 - Serves as goal intake for individuals, not populations
- Tolerable Upper Intake Level (UL)

- o Highest level of daily nutrient intake that is unlikely to have adverse health effects

EAR has to be set before a RDA is set

RDA is set when there is a decent amount of information out there

Establishing Energy Recommendations (AMDR)

- Acceptable Macronutrient Distribution Ranges
 - o 45-65% kcal from carbohydrate
 - o 20-35% kcal from fat
 - o 10-35% kcal from protein

Dietary Guidelines

- Adequacy-sufficient energy and enough nutrients
- Balance-enough but not too much
- Kcal Control-key is to select high nutrient density foods
- Moderation-occasionally it low nutrient density foods
- Variety-“eat the rainbow”
- Nutrient Density-minimum nutrients on a limited energy budget
 - o Avoid empty kcal foods
 - o Ex/ low density foods such as cake, potato chips, and candy are low density otherwise known as empty-kcalorie foods
 - o “empty” because they deliver energy with little or no protein, vitamins, or minerals

Food Groups

Grains, fruits and vegetables, proteins, milk products, oils

MyPlate

- MyPlate icon divides plate into four sections-fruits, vegetables, grains, and protein

Food Labels

Nutrition Facts panel must provide nutrient amount, percent daily value, or both of the following:

- Total food energy
- Food energy from fat
- Total fat
- Saturated fat
- Trans fat
- Cholesterol
- Sodium
- Total carbohydrate (starch, sugar, and fiber)
- Dietary fiber
- Sugars
- Protein

Percent values for the following vitamins and minerals:

- Vitamin A
- Vitamin C
- Iron
- Calcium

Label Definitions

- Fat-Free
 - Less than 0.5 grams of fat per serving
- Low Fat
 - 3 grams of fat or less per serving
- Trans fat-free
 - Less than 0.5 grams of trans fat and less than 0.5 grams of saturated fat per serving
- Light or lite
 - 1/3 fewer kcal than the comparison food
- Organic
 - At least 95% of the products ingredients have been grown and processed according to USDA regulation

Anatomy of Digestive Tract

- Mouth
- Esophagus
- Stomach
- SI
- Large Intestine (colon)
- Rectum
- Anus

Sphincters

- Upper esophageal sphincter- mouth/pharynx to esophagus
- Lower esophageal sphincter- esophagus to stomach
- Pyloric sphincter- stomach to SI
- Ileocecal valve- SI to large intestine

Peristalsis: wavelike muscular contractions of the GI tract that push the contents- occurs continuously

- GI tract ringed with circular muscles and surrounding the rings are longitudinal muscles
- Circular muscles tighten and long muscles relax
 - Tube is constricted
- Circular muscles relax and long muscles tighten
 - Tube bulges

Secretions

Required from 5 different organs:

- Salivary glands-mouth