

Guidelines for Designing a Healthful Diet

Chapter 2

BIOL1400

Dr. Mohamad H. Termos

Food philosophy that works

1- Variety:

- Eating many different foods within a food group
- Needed because no one food meets all nutrient needs
- Every food in a food group is made up of different nutrients
- Supplements don't always have the same components as foods
- Different phyto-chemicals are present in different fruits and vegetables
- Some phyto-chemicals can help decrease cancer and other disease risk



Food philosophy that works

2- Balance:

It means not to over consume any single type of food.
Food should be selected from all food groups



Food philosophy that works

3- Moderation:

Refers to portion size:

- don't over consume a specific nutrient
- moderate intake of fat, salt, and calories.



Food philosophy that works

4- Nutrient density: (focuses on nutrient content)

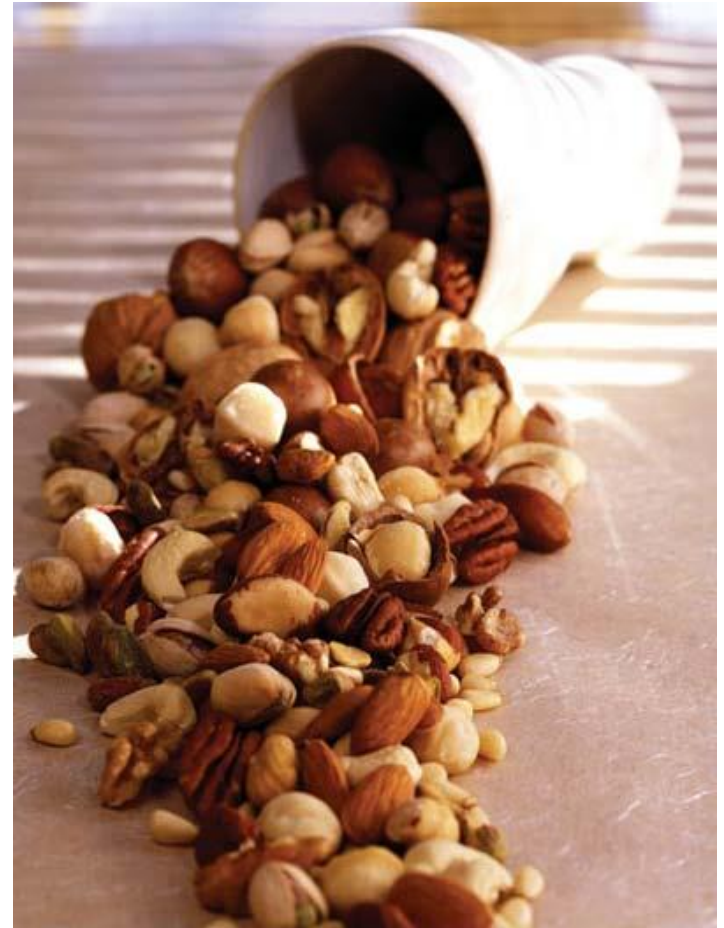
- divide the amount of nutrients by the calories in a food
- usually used to describe a specific nutrient but can be used to describe the food overall
- a high nutrient density means a food has many nutrients and few calories.



Food philosophy that works

5- Energy (kcal) density: (influences calorie intake)

- compare the calorie content with the weight of the food
- high energy density foods include: nuts, fried food, cookies.
- low energy density foods promote satiety without high calorie content
- people tend to consume fewer calories when eating low energy dense foods
- low energy dense foods contain high amounts of water and fiber like fruits and vegetables.



States of Nutritional Health

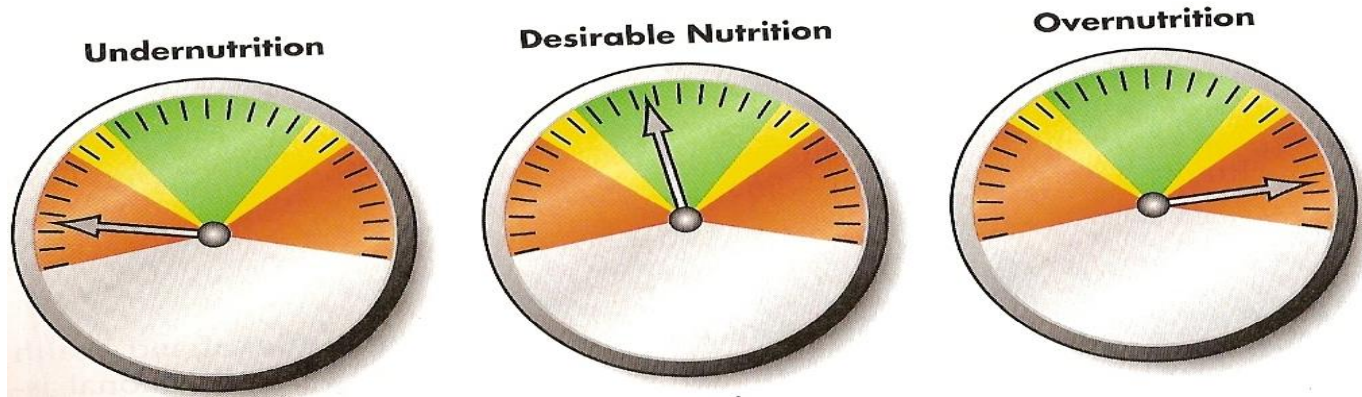
- A nutritional state is how much a body has of the needed nutrients
- Desirable nutrition: body tissues have enough of a nutrient to support normal metabolic function.



States of nutritional health

Under-nutrition:

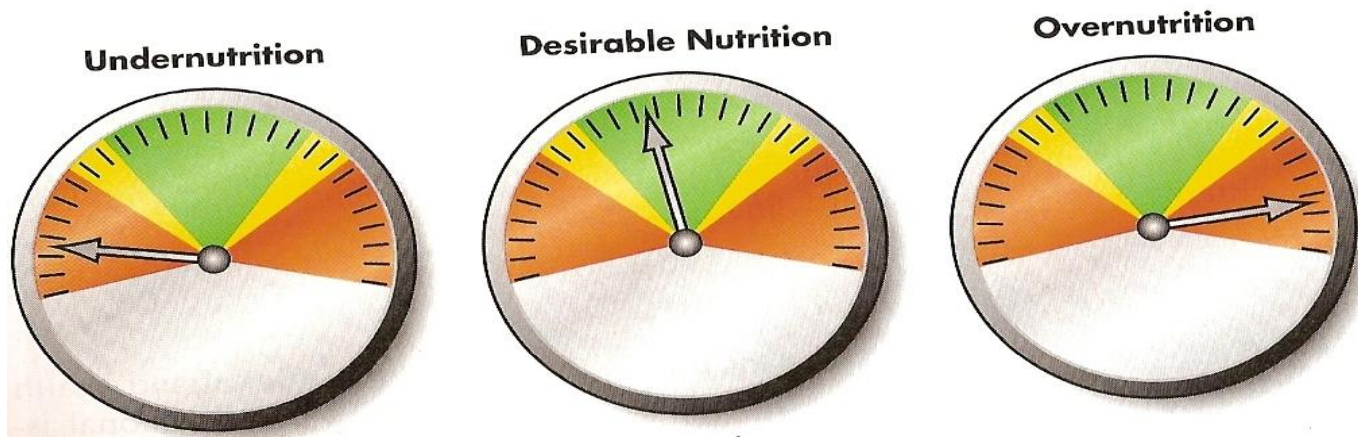
- Nutrient intake does not meet nutrient need
- When the nutrient falls sufficiently low, biochemical evidence appears
- Subclinical means there are no outward signs
- Eventually symptoms appear often in skin, hair, tongue or eyes



States of nutritional health

Over-nutrition:

- Prolonged consumption of more nutrients than the body needs
- Example, too much vitamin A can have negative effects during pregnancy
- Most common in industrialized nations is too many calories
- The difference between optimal and over consumption is the smallest for vitamin A, calcium, iron, and copper.



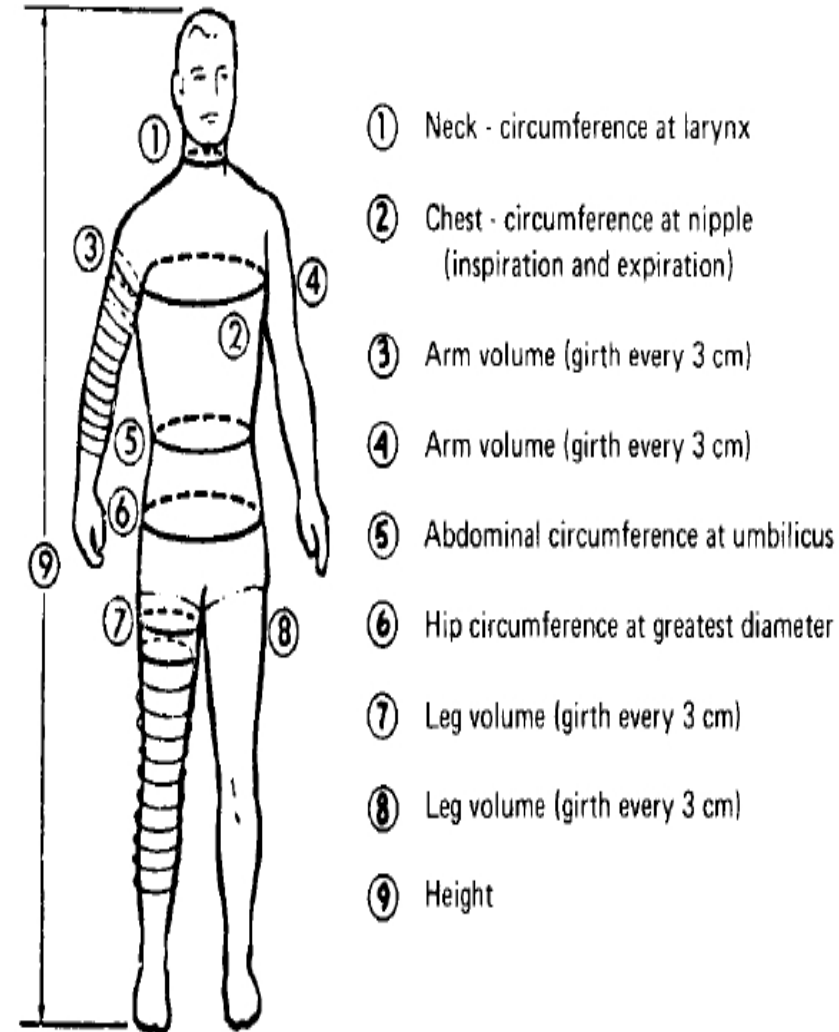
Measurement of Nutritional State

1- background factors evaluation: which includes assessment of the medical history, medications, social history, education, and economic status

Measurement of nutritional state

2- The ABCDEs assessment:

- Anthropometric assessment: height, weight, body composition, circumferences
- Biochemical assessment: measuring nutrients in the blood and other body fluids



The ABCDEs assessment (cont.)

- Clinical assessment:
looking for physical evidence like high blood pressure
- Dietary assessment:
looking at dietary intake
- Economic assessment:
ability to purchase and prepare foods.



Measurement of nutritional state

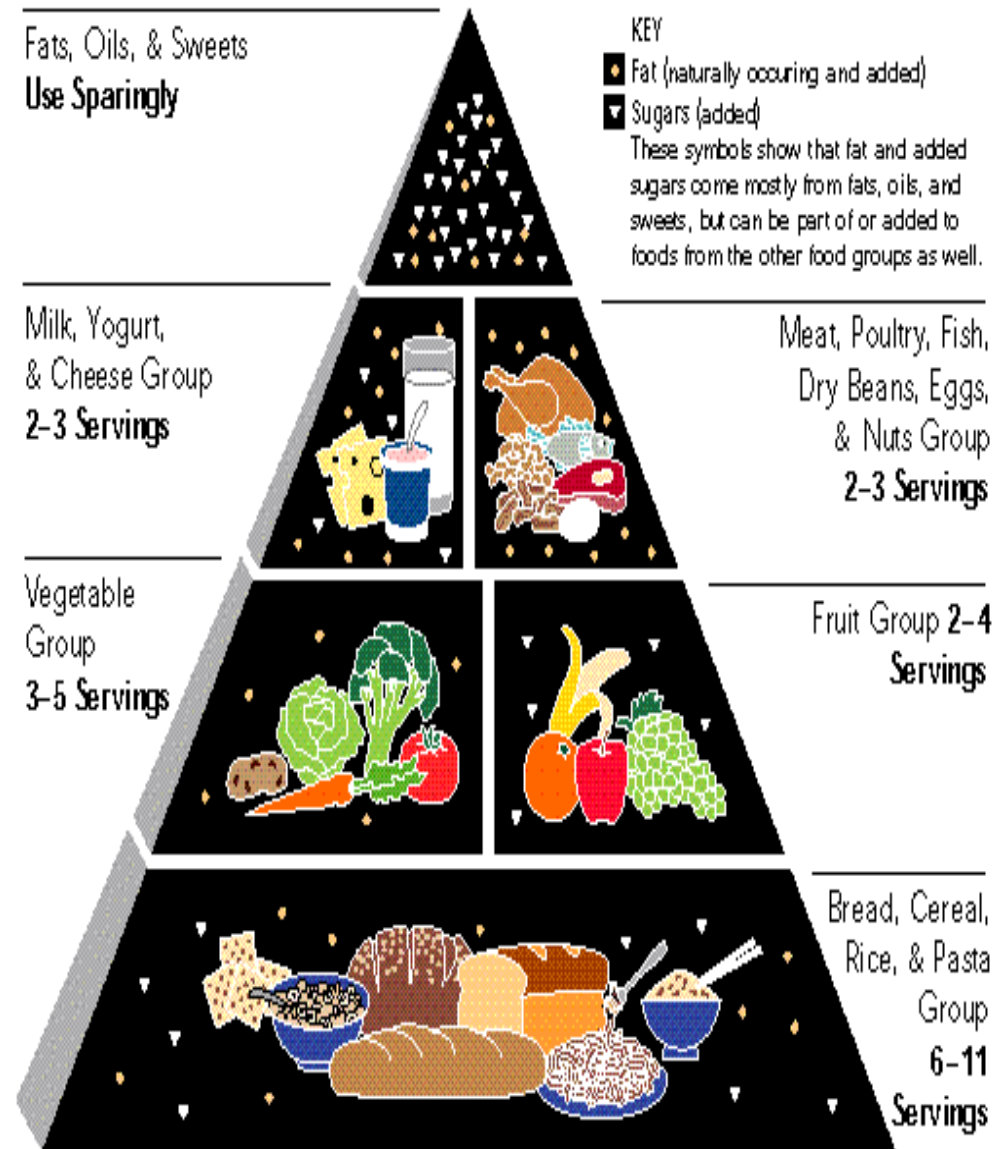
3- Recognizing the limitations of nutritional assessment:

- Many times there is no evidence until much later in life
- One may eat a diet high in saturated fat for many years before a heart attack occurs
- One may have a calcium deficiency but it takes years to appear as low bone density
- Many signs are not specific to a nutrient deficiency like diarrhea or facial sores



The Food Guide Pyramid

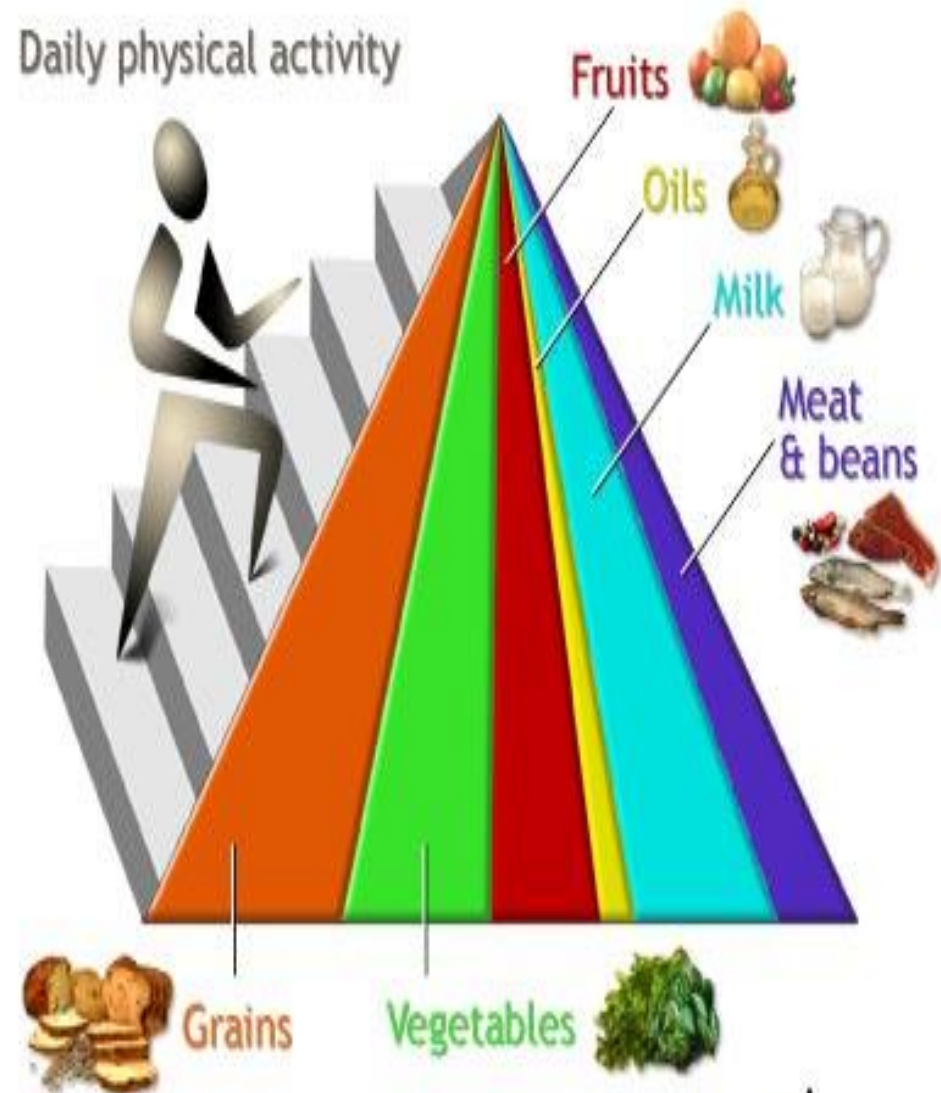
- The Food Guide Pyramid is an outline of what to eat each day.
- The Pyramid calls for eating a variety of foods to get the nutrients you need and at the same time the right amount of calories to maintain healthy weight.



SOURCE: U.S. Department of Agriculture/U.S. Department of Health and Human Services

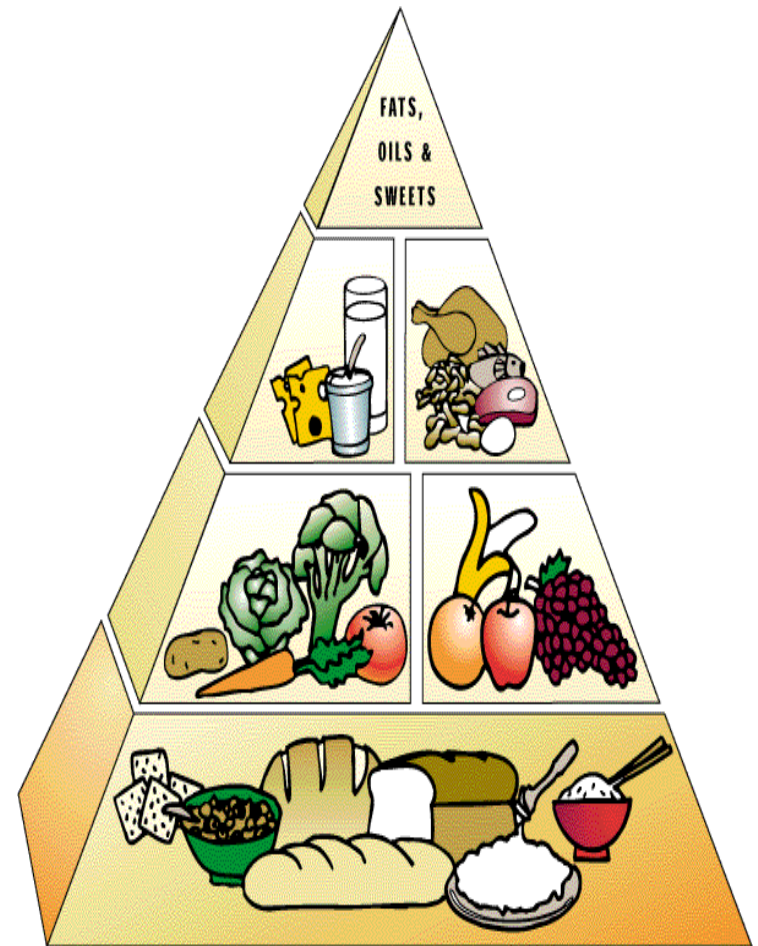
The Food Guide Pyramid

Use the Pyramid to help you eat better every day. Start with plenty of breads, cereals, rice, pasta, vegetables, and fruits. Add 2-3 servings from the milk group and 2-3 servings from the meat group. Remember to go easy on fats, oils, and sweets, the foods in the small tip of the Pyramid.



Dietary Guidelines

- Food pyramid was designed to meet nutritional needs for the macro and micronutrients
- Major chronic diseases in America are not associated with deficiencies of these nutrients
- Dietary guidelines is another tool for menu planning



Dietary Guidelines

Three main messages:

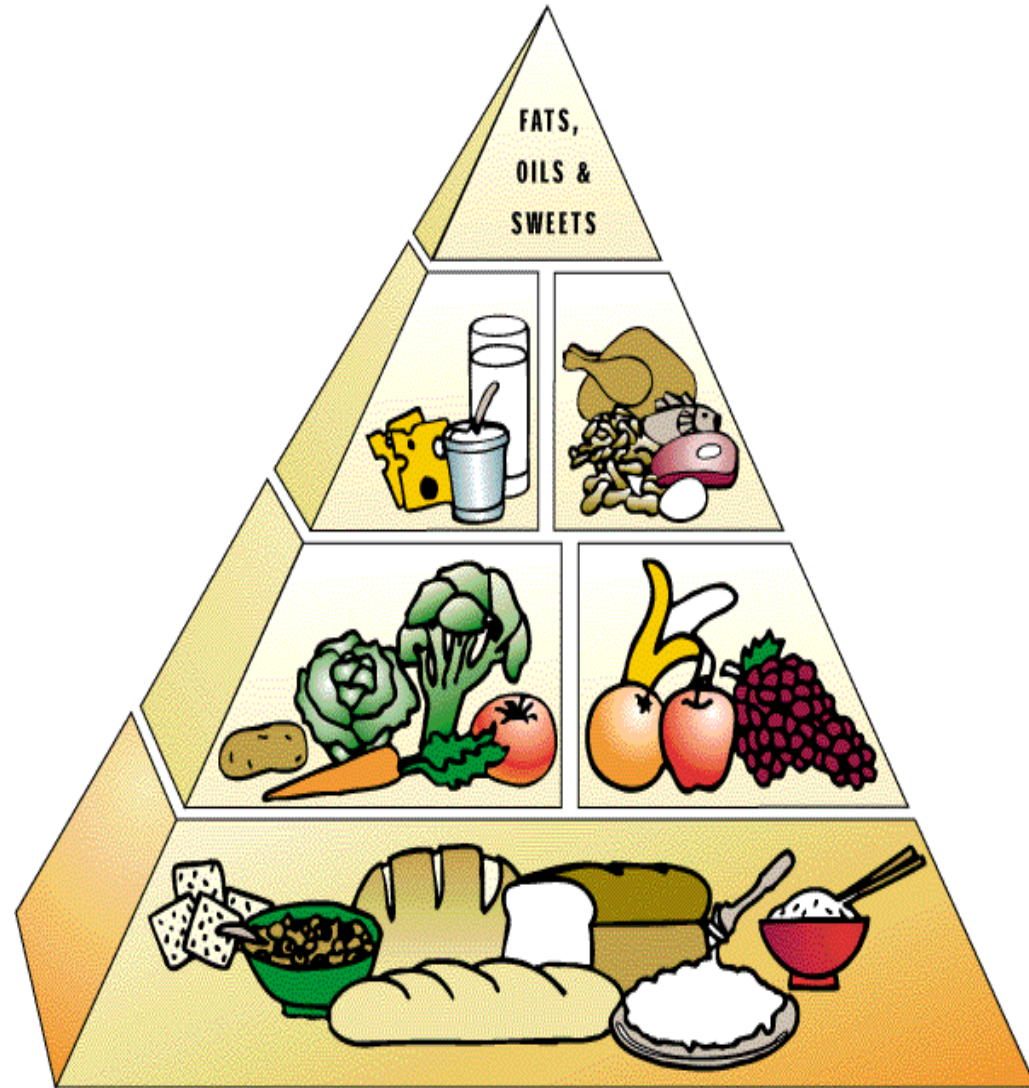
1- Aim for fitness:

Be physically active
(>30mins a day)

2- Build a healthy base:

Let the Pyramid guide your choices, eat a variety of grains, fruits and vegetables daily, and keep foods safe to eat.

3- Choose sensibly: your diet should be low in saturated fat, cholesterol, salt, alcohol and moderate in sugar.



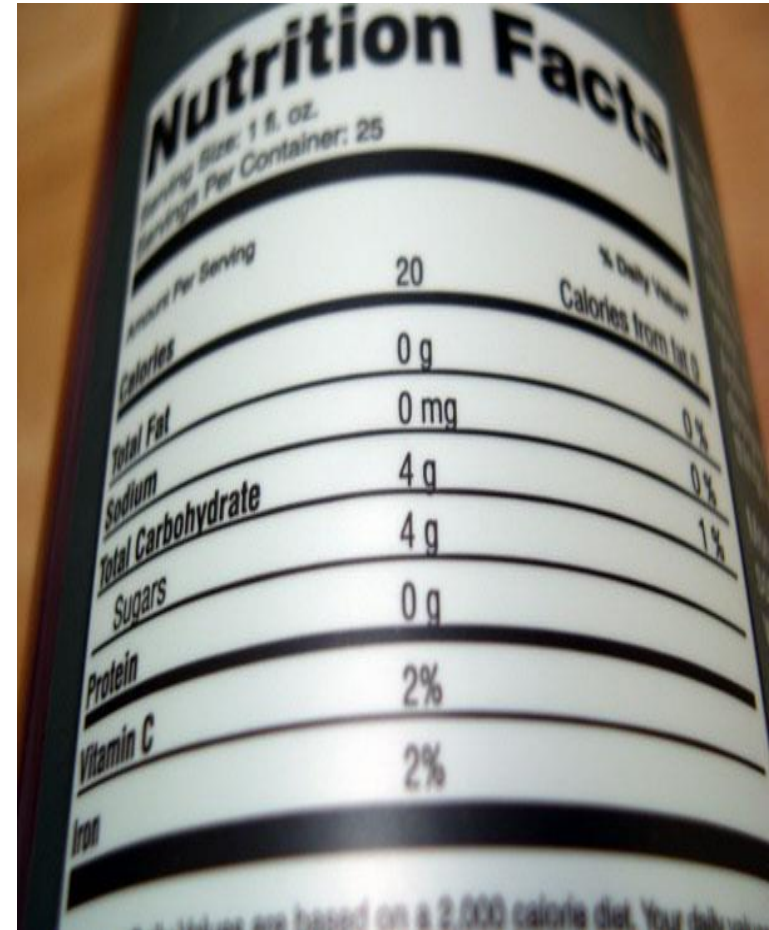
Dietary Guidelines

- The Dietary Guidelines are designed to meet nutritional needs and decrease risk of cardiovascular disease, type 2 diabetes, alcoholism and food borne illness.
- It is easy to implement and not expensive



The Standards Used for Food Labeling

- It would be impossible to display nutrient needs for each nutrient for all ages and genders on the labels.
- More generic standard was created for food labels that applies to both genders and all ages above 4 years old
- Based on a 2000 kilocalories diet
- Used to compare a person's intake to desirable or maximum intakes.



Nutrition Facts		
Serving Size: 1 fl. oz.		
Servings Per Container: 25		
Amount Per Serving		% Daily Value*
Calories	20	Calories from fat 0
Total Fat	0 g	0%
Sodium	0 mg	0%
Total Carbohydrate	4 g	1%
Sugars	4 g	
Protein	0 g	
Vitamin C	2%	
Iron	2%	

Food Labels

- Labels must include: product name, manufacturer name and address, amount of product in package, ingredients in descending order by weight
- Should be monitored by the FDA (Food and Drug Administration)

Nutrition Facts	
Serving Size 4 oz. (112g)	
Servings Per Container 5	
Amount Per Serving	
Calories 290	Calories From Fat 200
% Daily Value*	
Total Fat 22g	34%
Saturated Fat 8g	39%
Cholesterol 75mg	25%
Sodium 50mg	2%
Total Carbohydrate 0g	0%
Protein 20g	
Calcium 2%	Iron 4%

Food Labels

Nutrition facts panel must include:

- Kcal
- Calories from fat, total fat grams, saturated fat, trans fat, and cholesterol
- Total CHO g, fibers, sugar
- Protein in grams
- Vitamins A, C, calcium, and iron
- Monosaturated, or polysaturated fats, potassium and others, if health claims are made about them
- Percent of the daily value for each nutrient

Nutrition Facts	
Serving Size 1 cup (4 oz)	
Serving Per Container 3	
Amount Per Serving	
Calories 75 Calories from Fat 27	
	% Daily Value*
Total Fat 3 g	5%
Saturated Fat 0 g	0%
Cholesterol 0 mg	0%
Sodium 300 mg	4%
Total Carbohydrate 10 g	3%
Dietary Fiber 5 g	20%
Sugars 3 g	
Protein 2 g	
Vitamin A 80% - Vitamin C 60% - Calcium 4% - Iron 4%	
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.	
	Calories: 2,000 2,500
Total Fat	Less Than 65g 80g
Sat Fat	Less Than 20g 25g
Cholesterol	Less Than 300mg 300mg
Sodium	Less Than 2,400mg 2,400mg
Total Carbohydrate	300mg 300mg
Dietary Fiber	25g 30g
Calories per gram	
Fat 9 - Carbohydrate 4 - Protein 4	

The total carbohydrate tells how many grams of carbohydrate are in 1 serving.

Fiber has to be subtracted from the Total Carbohydrate

Total CHO (10g)
- Fiber CHO (5g)
5g Net CHO

The **NET** Carbohydrate is **5g**

Health claims on food labels

Some current allowed claims by the FDA

- Calcium and osteoporosis
- Total fat and some cancers
- Sat fat and cholesterol and heart disease.
- Fiber from fruits, vegetables and grains and cancer (reduce)
- Sodium and potassium and hypertension and stroke