

Introduction To Nutrition



By:

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A top-down view of various fresh ingredients including pasta, tomatoes, basil, and garlic on a teal background. The ingredients are scattered across the left side of the frame, with some pasta in a small basket and others in loose piles. The background is a textured, light blue-green color.

Learning Objectives:

- Define nutrition and describe its relationship to health and well-being.
- To know the importance of nutrition .
- To clarify some related terms.
- To define serving size of different food groups.

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Definition :

- **Nutrition is the science of food, nutrients, and other substances, their action, interaction and balance in relation to health & disease, and the process by which they are used by the body.**



Why Nutrition is Important?

1. Proper nutrition supports wellness:

- **Wellness** is more than the absence of disease
- Physical, emotional, mental, psychological and spiritual health.
- Active process.
- **Critical components of wellness**
 - Nutrition
 - Physical activity



Why Nutrition is Important?

- 2. Nutrition can prevent disease:
- Nutrient deficiency diseases:
 - scurvy, goiter, rickets
- Diseases influenced by nutrition:
 - chronic diseases such as heart disease
- Diseases in which nutrition plays a role:
 - osteoarthritis, osteoporosis



Why Nutrition is Important?

3. Obesity is a growing problem:

- Eating more calories than expended
- Risk factor for heart disease, stroke, type 2 diabetes, and some forms of cancer

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Why Nutrition is Important?

4. Nutrition is an international goal to promote optimal health and disease prevention.



DETERMINANTS OR THE FACTORS AFFECTING FOOD AND NUTRITION OF AN INDIVIDUAL

- **Development**
- **Gender**
- **Genetics**
- **Beliefs about Food**
- **Experience**
- **Personal Preference**
- **Nutritional habits**
- **The quality of food**
- **The quantity of food**
- **The efficiency of our digestive system**
- **Biochemical availability**



Consequences Of Poor Nutrition On Health:

1. Nutrient deficiency diseases
2. Cardiovascular disease (CVD)
3. Type 2 Diabetes
4. Cancer
5. Problems of being overweight or obese
6. Mental Disorders
7. Undernutrition



Terms Used In Nutrition

Nutrients:

- The nourishing chemical substances in food that provide **energy** and promote the **growth** and **maintenance** of human body.

The essential nutrients :

- Are those the body cannot make for itself in sufficient quantity to meet physiological needs, and which must therefore be obtained from food.



The Six Criteria for Nutrient Essentiality

The nutrient....

- is essential for one or more of the (8) functions of life
- is not synthesized or synthesized adequately in the body
- has a function that is either biochemical or structural
- if deficient, a recognizable loss of function or structure results
- if deficient the loss of function or structure is proportional to degree and duration of depletion
- if deficient the loss of function is, in the short term, reversible by the specific nutrient

The Six Types of Nutrients

• Food nourishes the body with more than 45 different nutrients. These nutrients are grouped into six categories.

- Carbohydrates
- Proteins
- Fats
- Vitamins
- Minerals
- Water



• Eating a variety of foods to provide these nutrients is essential to good health.



Classifications of nutrients

By function:

- **Fuel Nutrients** needed for energy: carbohydrates, fats, and proteins.
- **Regulatory nutrients** necessary to function normally with no caloric value: vitamins, minerals, and water

By Amount:

- **Macronutrients** needed in proportionally large amounts daily: carbohydrates, fats, proteins, and water.
- **Micronutrients** required in small amounts daily: vitamins and minerals.

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A. Macronutrients which include:

- **Carbohydrates**
- **Protein**
- **Fat**

Macronutrients



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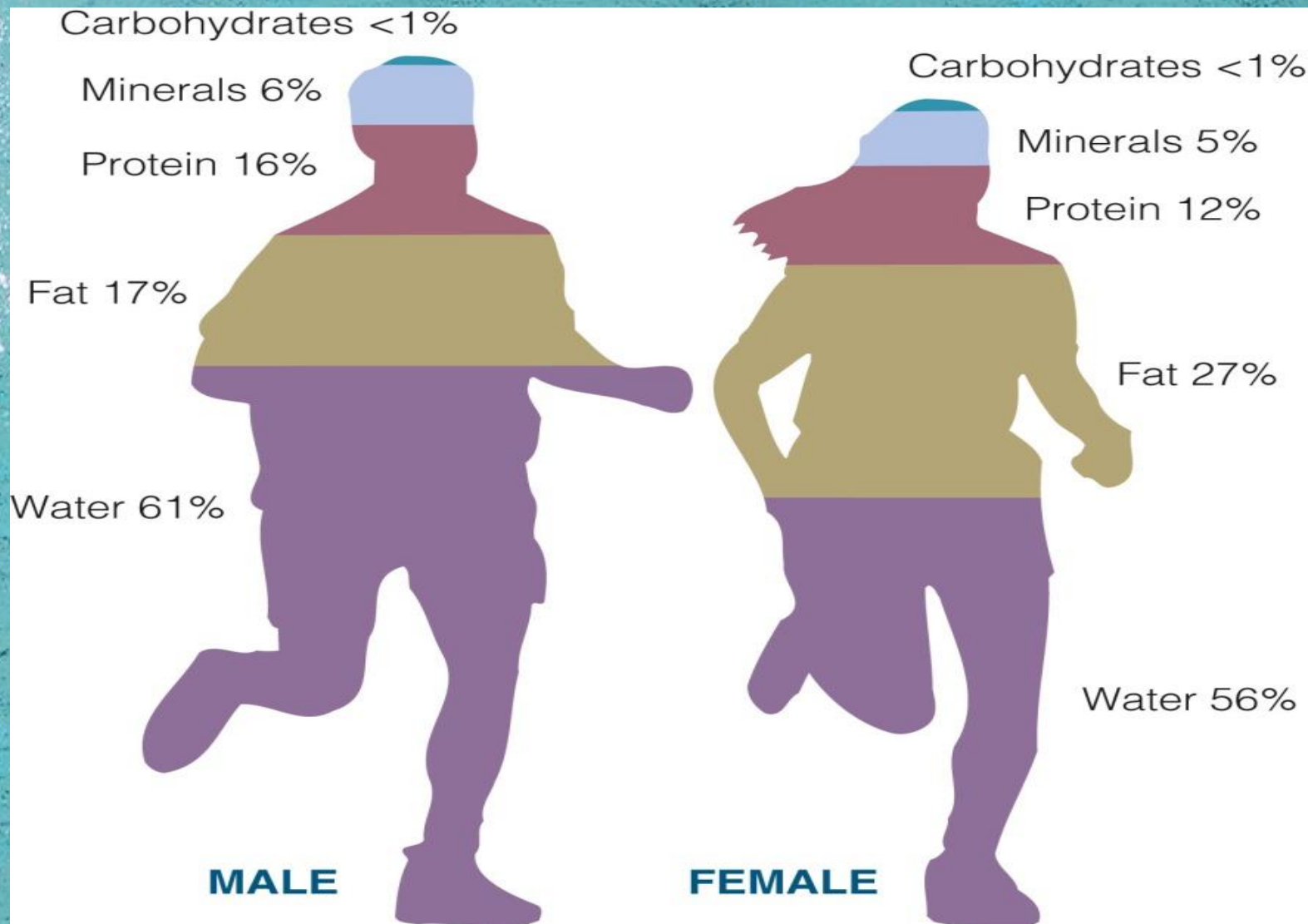
B. Micronutrients which include:

- 1. Vitamins.**
- 2. Minerals.**

Micronutrients



Water





MACRONUTRIENTS

VS

MICRONUTRIENTS



Characteristics of a Nutritious Food

- Adequate
- Balanced
- Moderate
- Varied



The background of the slide is a vibrant teal color with a textured, slightly mottled appearance. On the left side, there is a collection of fresh ingredients: a small basket of farfalle pasta with basil leaves, a halved cherry tomato, a whole garlic clove, a small bowl of red sauce, another halved cherry tomato, a bunch of spaghetti with basil, and several sheets of pasta. There are also some scattered peppercorns and flour on the surface.

Estimated Average Requirement (EAR)

The daily dietary intake level that is estimated to meet the nutrient requirement of **50% of healthy individuals in a particular life stage and gender group**

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Recommended Dietary Allowance (RDA)

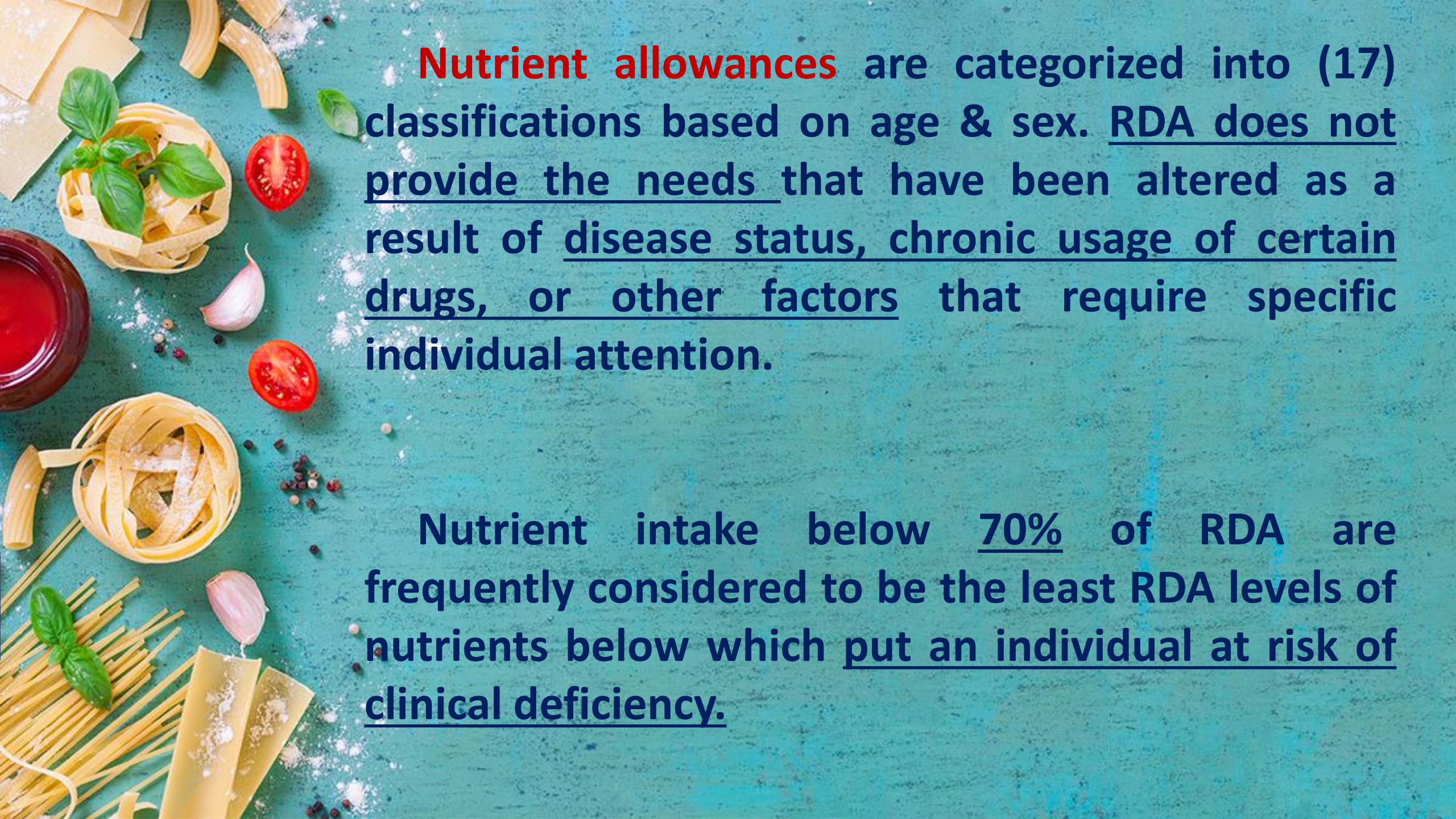
- Daily amount of a nutrient considered adequate to meet known nutrient needs of almost 98% of all healthy people .



Adequate Intake (AI)

An observational standard that is used when insufficient data is available to determine an RDA from an existing EAR

- Because it is set using presumable healthy groups of individuals, the AI is expected to meet or exceed the actual nutrient requirement in all healthy members of a specific life stage and gender group



Nutrient allowances are categorized into (17) classifications based on age & sex. RDA does not provide the needs that have been altered as a result of disease status, chronic usage of certain drugs, or other factors that require specific individual attention.

Nutrient intake below 70% of RDA are frequently considered to be the least RDA levels of nutrients below which put an individual at risk of clinical deficiency.

SERVING SIZE

A serving size: is the suggested amount of food or beverage to consume at a meal or in a snack.

Serving sizes help to **regulate the amount of calories** consumed each day; they also **encourage eating a wide variety of foods** to completely meet nutritional needs.

Milk Group



*Your body needs lots of us
every day to be healthy!*

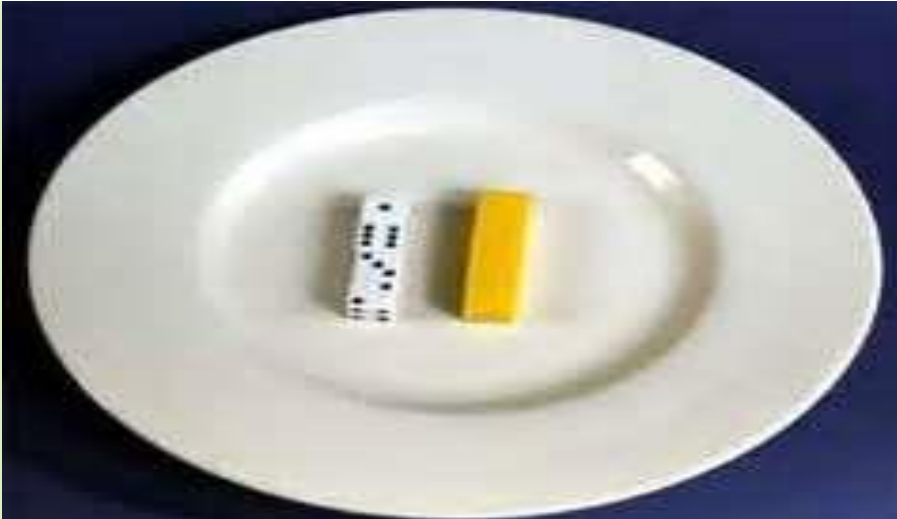
Milk Group

The food from MILK GROUP, are a major source of **calcium, Protein & riboflavin.**

Serving sizes include 1 cup milk, 1 cup yogurt.

The serving size for cheese: 1 oz. of cheese is the size of four dices

MILK, YOGHURT, CHEESE



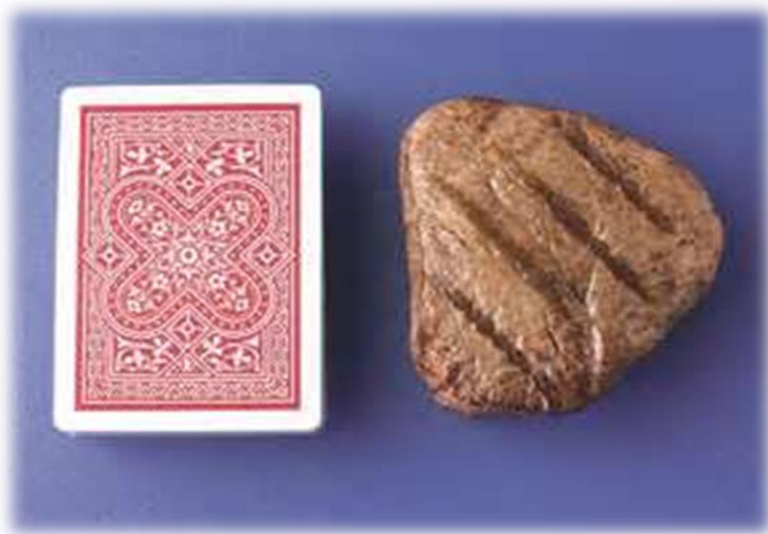
Items in the MEAT GROUP supply **protein, fat, iron and other minerals as well as several vitamins,** (dry beans, eggs& nuts group).



Meat Group Servings

The recommended daily intake of meat or other protein based on gender, age and calorie needs.

Serving size of meat is approximately the **size of the palm** of hand or **a deck of cards**.



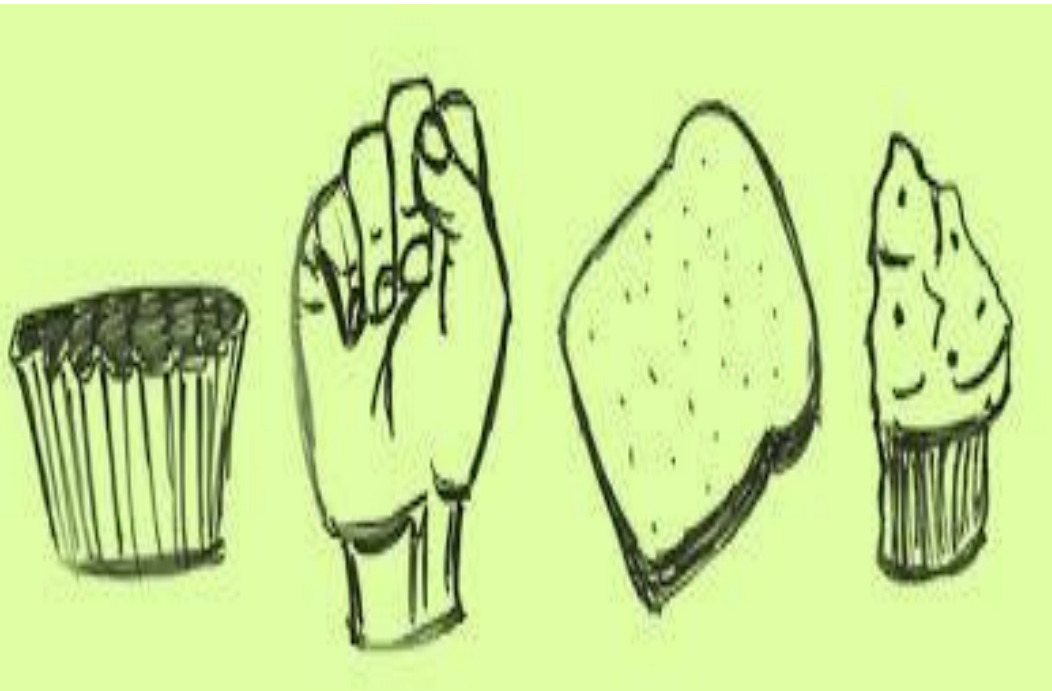
BREAD & CEREAL GROUP

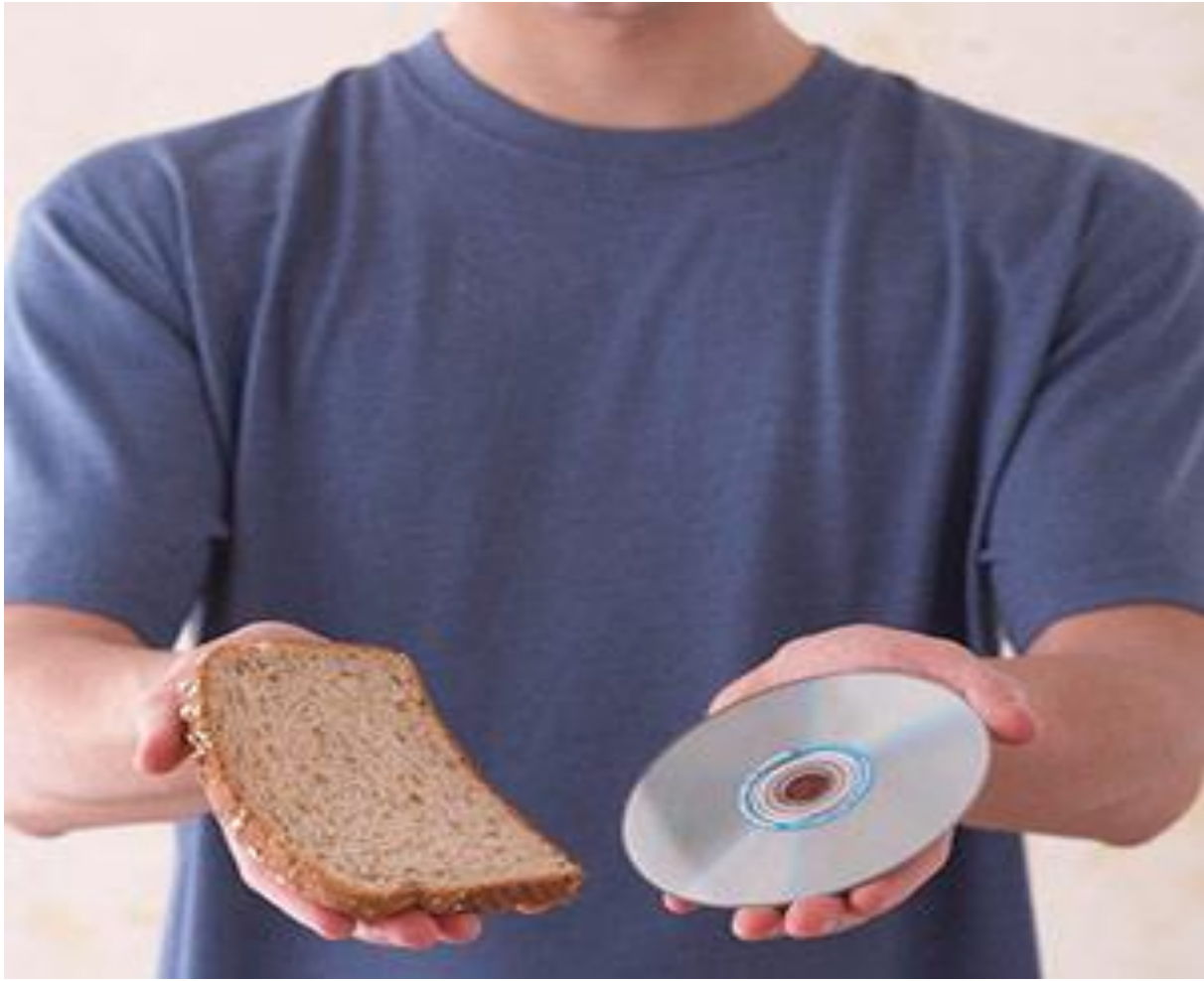
Provide **carbohydrate, several B vitamins & iron.**



Bread and cereal group

Some examples of serving sizes include, **1/2 cup cooked rice** which is about the size of a **tennis ball**, a slice of bread the size of an audio-cassette tape, and a **cup of pasta/spaghetti** or cereal, both about the **size of a fist**.







Fruits & Vegetables

Are rich in **vitamin C** & precursors of **vitamin A**.

Fruits and Vegetables

Eating a diet rich in fruits, vegetables and whole grains is important to maintaining good health.

A **tennis ball** is a good visual for one medium piece of fruit.

A serving of **cooked** vegetables is **1/2** cup while a serving of **raw** leafy vegetables is **1 cup**.





HAND:

Breads



PALM:

Meats



FIST:

**Veggies, Rice,
Pasta, Fruits**



FINGERTIP:

Fats (butter)

The Food Pyramid

A **food pyramid** or diet **pyramid** is a **pyramid**-shaped diagram representing the optimal number of servings to be eaten each day from each of the basic **food** groups. The first **food pyramid** was published in Sweden in 1974.





Food pyramid:

Recommendation of what to eat based on dietary Guidelines.

Food pyramid from top to bottom :

- Fats
- Dairy
- Meat
- Fruits & Vegetables
- Grains

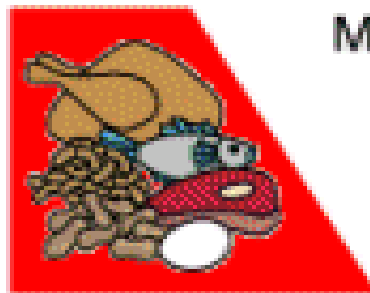
Fats, Oils & Sweets
USE SPARINGLY



Milk, Yogurt &
Cheese Group
2-3 Servings



Meat, Poultry, Fish, Dry Beans,
Egg & Nut Group
2-3 Servings



Vegetable
Group
3-5 Servings



Fruit Group
2-4 Servings



Bread, Cereal,
Rice & Pasta
Group
6-11 Servings



**Protein, Dairy
& Healthy Fats**



**Vegetables
& Fruits**



**Whole
Grains**



New 2025-2030 Government Dietary Guidelines

Eat More Real Food

Key Recommendations:

- ✓ Eat a variety of protein sources (eggs, poultry, seafood, red meat, beans, nuts, legumes)
- ✓ Choose **full-fat dairy** without added sugars
- ✓ Consume colorful, **nutrient-dense** fruits & vegetables
- ✓ Choose **whole grains** like oats, brown rice, and whole-grain breads







Key Changes & Focus Areas




Prioritizes Protein and Whole Foods: Great emphasis on animal based protein foods and eating real whole foods, rather than processed alternatives.




Focuses on Healthy Fats: The recommendations include using animal fats like butter, beef tallow, etc. as well as fruit based fats such as olive oil, avocados and coconut oil.



Targets Processed Foods: Explicitly calls out sugary, refined packaged foods (chips, candy, etc.) as detrimental.




Shifts Hierarchy: The old food pyramid emphasized whole grains, the new one prioritizes protein and healthy fats in the prominent, larger section and whole grains at the bottom - meaning eat those only in moderation.



Warns Against Sugar: Recommends delaying added sugar for children until age 10, this is a huge win for children's health and a big difference from previous guidelines.

Key Daily Serving Goals (Approximate)

- **Vegetables:** 3 servings per day.
- **Fruits:** 2 servings per day.
- **Dairy:** 3 servings per day (including full-fat dairy).
- **Whole Grains:** 2–4 servings per day.
- **Protein:** Emphasized alongside vegetables and fruits, with 1.2–1.6 grams of protein per kilogram of body weight.
- **Fats/Oils:** Used in small amounts. 



THANK YOU