Basic Nutrition

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Learning Objectives

At the end of the class, students should be able to:

- ❑ Definition of nutrition and its roles in human health.
- ❑ State the factors influencing food choices.
- ❑ Identify the main components of nutrients and their significance.
- ❑Differentiate chemical compositions of nutrients.
- ❑Explain the principles of balanced diets and food groups.

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nutrition

the right balance of real foods

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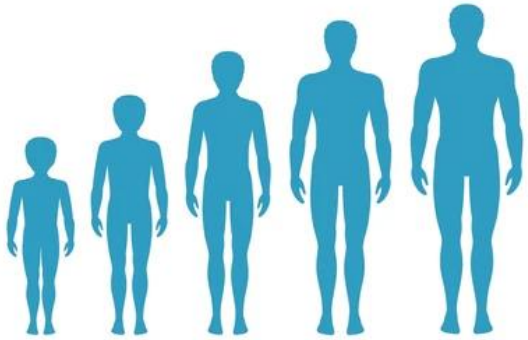
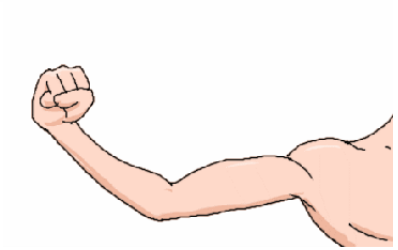
Nutrition

- The study of nutrients in food and their role in the growth, maintenance, and reproduction of living organisms.
- Roles of nutrition in health and well-being:
  - Energy production
  - Growth and development
  - Supporting the immune system
  - Maintaining a healthy weight
  - Mental health and cognitive function
  - Recovery and healing
  - Improving quality of life





- *Let thy food be thy medicine and the medicine be thy food.*

- Nabi Muhammad SAW bersabda yang bermaksud:

  "Perut besar itu adalah sarang penyakit dan banyak makan itu punca segala penyakit."

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The choice that you make can affect your health during lifetime

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Food Choices

Various factors influence personal food choices:

1) Preference : based on taste/flavour

2) Habit : the repeated selection of certain foods over time due to established routines meals, preferences (personal, cultural), and environmental factors (lifestyle, psychological, marketing).

3) Ethnic Heritage and Regional Cuisines : Ethnic heritage preserves the use of traditional ingredients and cooking methods. The local environment heavily influences the availability of ingredients.

4) Value : ethnic cuisines are passed down through generations, locally available and affordable ingredients, emphasizing balance and nutrition, offer comfort and evoke nostalgic feelings.

Food Choices

Various factors influence personal food choices:

5) Availability, Convenience, Economy : based on accessible, quick , easy to prepare and within their financial means.

6) Emotions : in response to a variety of emotional stimuli (to relieve boredom, depression, anxiety, comfort)

7) Body Weight & Image : select food and supplement to improve their physical appearance

Roles and Differences in Nutrition Professions

- **Nutritionist** - Professional who focuses on the impact of food and nutrition on overall health and well-being
- **Dietitian**- A licensed healthcare professional with specialized training in clinical nutrition, food science, and medical nutrition therapy.
- **Sport Nutritionist** - Responsible for teaching athletes and fitness to improve their health, optimize their performance and manage their weight.

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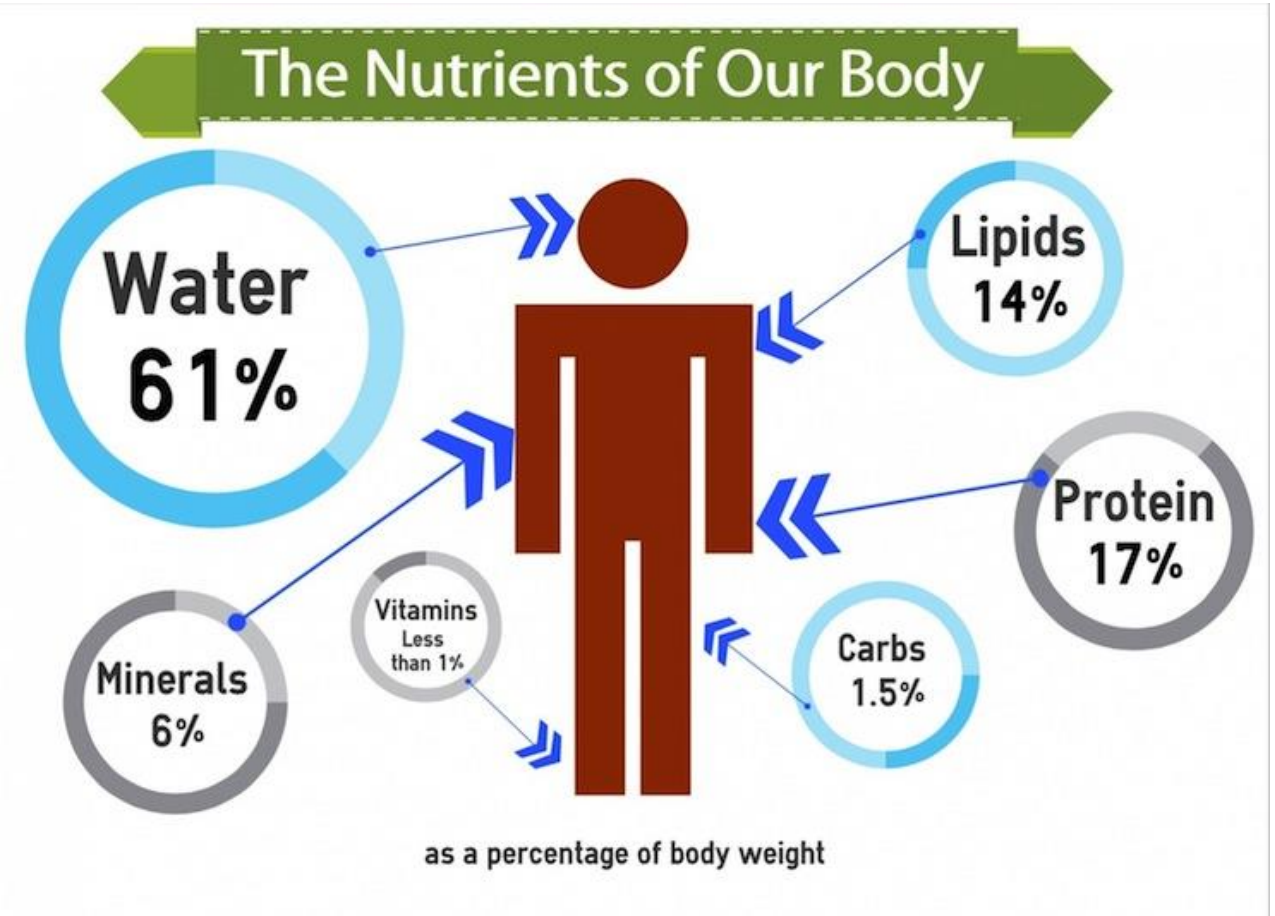
Scope of Nutrition

- **Plant Nutrition:** The study of nutrients and substances required for plant growth, such as nitrogen, phosphorus, and potassium.
- **Animal Nutrition:** Focuses on the dietary needs of animals, including livestock and pets, for growth, reproduction, and productivity.
- **Human Nutrition:** A sub-discipline that focuses on the effects of nutrients on human health, growth, and disease prevention.

Nutrients

- Chemical substances obtained from food that the body uses to function properly, grow, repair tissues, and maintain overall health.



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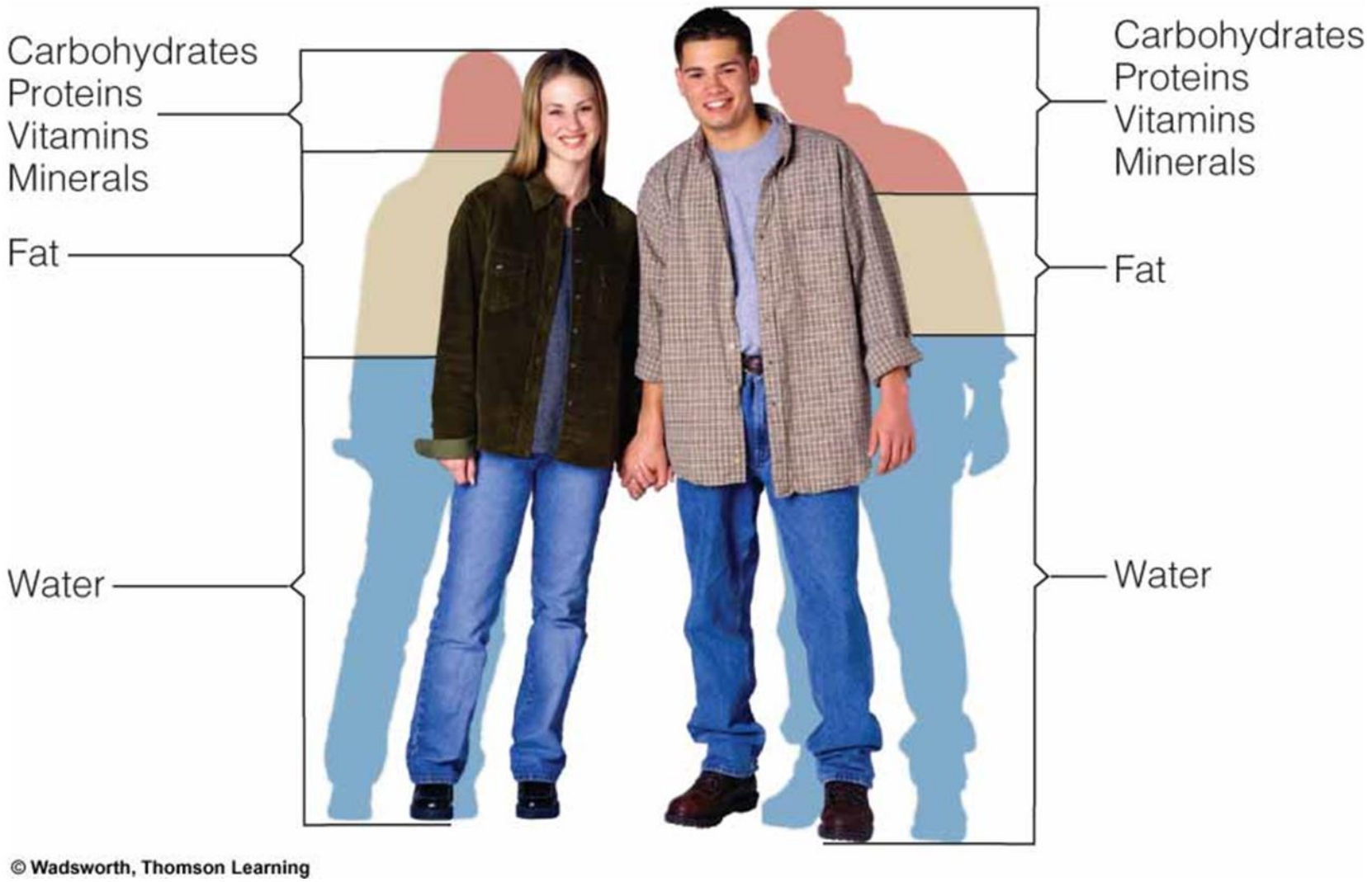
Body Composition



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Nutrients

- Most food, especially those that are highly processed, contain both nutrients and non-nutrients.
- Some non-nutrients are added to provide color, flavor, texture, and/or freshness.

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Main Components of Nutrients

- Nutrients are substances essential for the growth, development, and maintenance of life.
- Main components:
  - **Macronutrients**
  - **Micronutrients**

  } based on the quantity required by the body

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Macronutrients

- Nutrients required in large amounts to provide energy and support bodily functions.

Groups	Function
Carbohydrates	• Provide energy • Provides 4 kcal/gram
Proteins	• Support growth, repair tissues, and maintain immune function • Provides 4 kcal/gram
Fats	• Supply energy, aid in the absorption of fat-soluble vitamins, and protect organs • Provides 9 kcal/gram.
Water	• Regulates body temperature. • Transports nutrients and waste. • Essential for all metabolic processes

Micronutrients

- Required in smaller amounts, micronutrients are vital for numerous physiological functions.

Groups	Function
Vitamins	• Facilitate energy production, immune response, and cell repair. • Fat-soluble & Water-soluble vitamins
Minerals	• Maintain strong bones, fluid balance, and nerve function.

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Dietary Fiber

- Type of carbohydrate that the body cannot digest.
- It is commonly found in plant-based foods.
  - ❑Aids digestion and prevents constipation.
  - ❑Helps control blood sugar and cholesterol levels.

Chemical Composition of Nutrients

Essential Nutrients	Nonessential Nutrients
• Cannot be synthesized by the body or not in adequate amounts.	• Can be synthesized by the body in sufficient amounts
• Must be obtained from food or supplements.	• Can be produced by the body from other nutrients.
• Vitamins, minerals, essential fatty acids, essential amino acids.	• Cholesterol, glucose, non-essential amino acids.

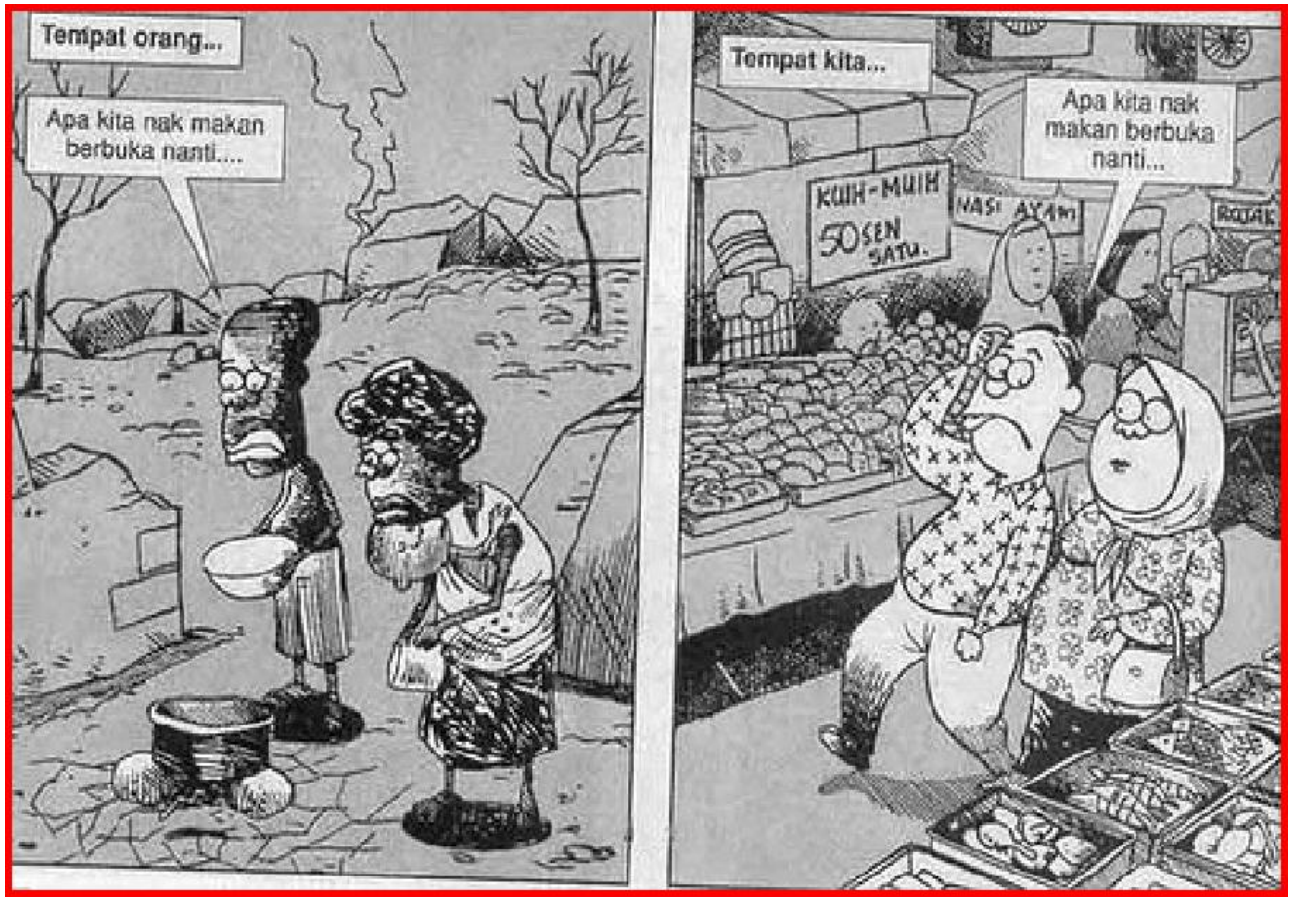
Chemical Composition of Nutrients

Organic Nutrients	Inorganic Nutrients
• Substances containing carbon	• Substances do not contain carbon
• Derived from plants and animals	• Found in soil, water, and the environment
• Provide energy (except vitamins)	• Do not provide energy

Malnutrition & Overnutrition

Malnutrition

- Condition where the body does not receive the proper nutrients in the right amounts to maintain good health.
  - ❑ Undernutrition (deficiency of nutrients or calories).
  - ❑ Overnutrition (excess intake of nutrients or calories).



Overnutrition

- Excessive intake of nutrients and calories.
  - ❑ Overeating high-calorie foods.
  - ❑ Sedentary lifestyle.
  - ❑ Poor dietary choices (e.g., high sugar and fat intake).
  - ❑ Genetic predisposition
  .

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“
EXERCISE IS KING,
NUTRITION IS QUEEN,
PUT THEM TOGETHER
AND YOU’VE GOT
A KINGDOM.
TASHIARA.COM

Principles of Balanced Diets

1. **Variety:**
   - Include diverse food types to ensure all nutrients are covered.
2. **Moderation:**
   - Control portion sizes to avoid overnutrition or undernutrition.
3. **Proportionality:**
   - Balance energy intake with expenditure to maintain a healthy weight.
4. **Adequacy:**
   - Meet the body's needs for macronutrients (carbohydrates, proteins, fats) and micronutrients (vitamins, minerals).
5. **Hydration:**
   - Drink adequate water to support metabolic processes.

Use healthy oils (like olive and canola oil) for cooking, on salad, and at the table. Limit butter. Avoid trans fat.

Drink water, tea, or coffee (with little or no sugar). Limit milk/dairy (1-2 servings/day) and juice (1 small glass/day). Avoid sugary drinks.

The more veggies – and the greater the variety – the better. Potatoes and French fries don't count.

Eat a variety of whole grains (like whole-wheat bread, whole-grain pasta, and brown rice). Limit refined grains (like white rice and white bread).

Eat plenty of fruits of all colors.

Choose fish, poultry, beans, and nuts; limit red meat and cheese; avoid bacon, cold cuts, and other processed meats.

STAY ACTIVE!

MyPlate Malaysia

- Visual consists of five food groups, each representing a section of a plate.
- These groups show how to balance daily food intake for optimal health.

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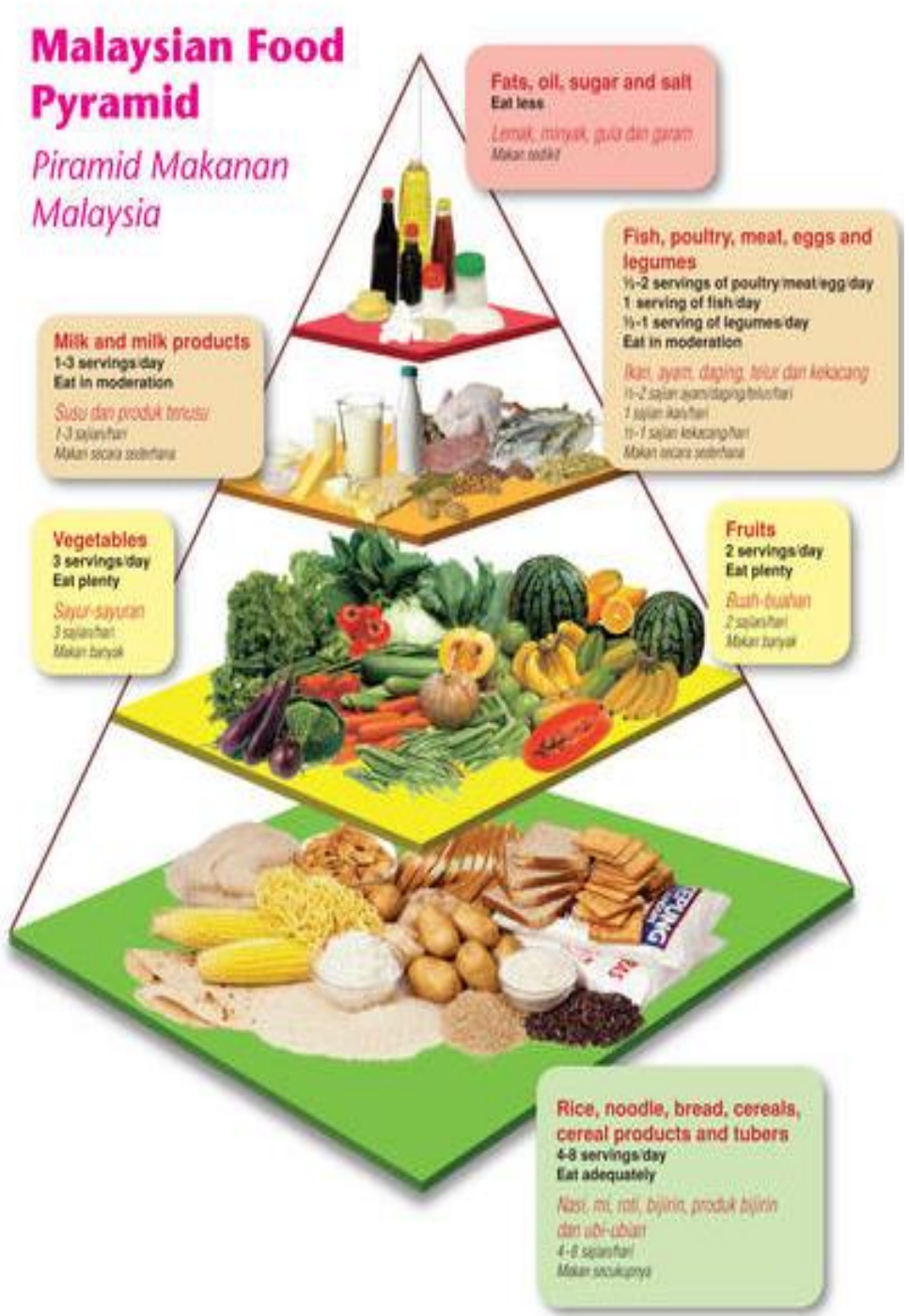

Food Pyramid

- Visual representation of a healthy eating guide that shows how different food groups should be consumed in proportion to one another for balanced nutrition.
- It is a simple guide for individuals to vary their food intake according to the total daily food serving recommended

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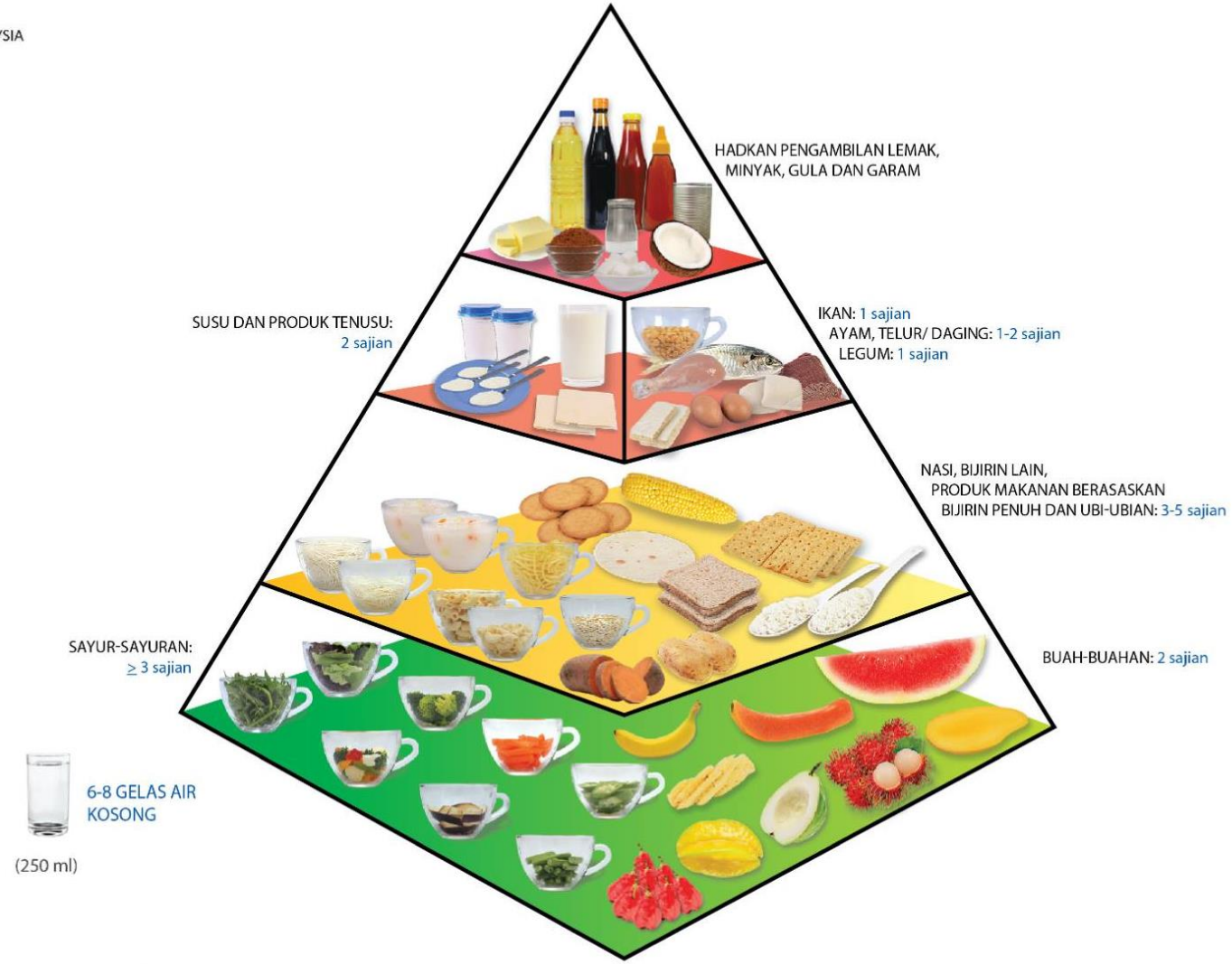
KEMENTERIAN KESIHATAN MALAYSIA
BAHAGIAN PEMAKANAN

PIRAMID MAKANAN MALAYSIA 2020

Panduan Pengambilan Makanan HARIAN Anda



Nota:

1. Bilangan sajian dikira berdasarkan 1,500 kcal, 1,800 kcal dan 2,000 kcal untuk dewasa.
2. Orang dewasa yang tidak aktif/ sedentary perlu mengambil bilangan sajian yang minimum.

Source: Portal Rasmi Kementerian Kesihatan Malaysia

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Malaysian Dietary Guidelines

- Eat a variety of foods within your recommended intake
- Maintain body weight in a healthy range
- Be physically active everyday
- Eat adequate amount of rice, other cereal products (preferably whole grain) and tubes
- Eat plenty of fruits and vegetables everyday
- Consume moderate amounts of fish, meat, poultry, egg, legumes and nuts

Malaysian Dietary Guidelines

- Consume adequate amounts of milk and milk products
- Limit intake of foods high in fats and minimize fats and oils in food preparation
- Choose and prepare foods with less salt and sauces
- Consume foods and beverages low in sugar
- Drink plenty of water daily
- Practice exclusive breastfeeding from birth until six months and continue to breastfeed until two years of age
- Consume safe and clean foods and beverages
- Make effective use of nutrition information on food labels


Thank you!