

لا أصل للنسء و البقور

FUNDAMENTALS OF NUTRITION

أصول التغذية

مقدمة

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الحفاظ على صحة جسم الهدف
الأساسي

- Achieving **wellness** that integrates body, mind, and spirit should be the main goal in life. This can be **accomplished through** lifestyle changes such as focusing on healthy food choices, not smoking, participating in regular physical activity, and maintaining a healthy weight

Life style changes

Focusing on Healthy Food
regular physical activity
healthy weight .

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The Relationship Of Nutrition And Health

OBJECTIVES:

- Name the six classes of nutrients and their primary functions
- Recognize common characteristics of well-nourished people
- Recognize symptoms of malnutrition
- Describe ways in which nutrition and health are related
- List the four basic steps in nutrition assessment

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NUTRIENTS AND THEIR FUNCTIONS

To maintain health and function properly, the body must be provided with nutrients. **Nutrients** are chemical substances that are necessary for life.

They are divided into six classes(6):

1. Carbohydrates (CHO) **كربوهيدرات**
2. Fats (lipids) **دهون**
3. Proteins
4. Vitamins
5. Minerals **معادن**
6. Water

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Table 1-1 The Six Essential Nutrients and Their Functions

ORGANIC NUTRIENTS	FUNCTION
Carbohydrates	Provide energy
Fats	Provide energy
Proteins	Build and repair body tissues Provide energy
Vitamins	Regulate body processes
INORGANIC NUTRIENTS	FUNCTION
Minerals	Regulate body processes
Water	Regulates body processes

Organic nutrients contain hydrogen, oxygen, and carbon. (Carbon is an element found in all living things.) Before the body can use organic nutrients, it must break them down into their smallest components. Inorganic nutrients are already in their simplest forms when the body ingests them, except for water.

الطعام العضوي يحتوي على الهيدروجين والأكسجين والكربون (الكربون عنصر موجود في كل شيء حي). قبل أن يتمكن الجسم من استخدام الغذاء العضوي، يجب تفكيكه إلى أصغر مكوناته. الغذاء غير العضوي موجود بالفعل في أبسط أشكاله عندما يتناولها الجسم، باستثناء الماء.

الغذاء العضوي يحتوي على الكربون والأكسجين والهيدروجين
الغذاء غير العضوي هو الموجود في أبسط أشكاله (مثل الملح)

Zn, Mg, Ca, Na

- The body can make small amounts of some nutrients, but most must be obtained from food in order to meet the body's needs. Those available only in food are called **ESSENTIAL NUTRIENTS**.

* What is essential nutrients?
it's nutrient which is available only in food (body can make it)

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Each nutrient participates in at least one of the following functions:

كل مادة مغذية لها واحد على الأقل من الوظائف التالية

1. Providing the body with energy الطاقة
2. Building and repairing body tissue البناء / الإصلاح
3. Regulating body processes تنظيم العمليات الجسدية

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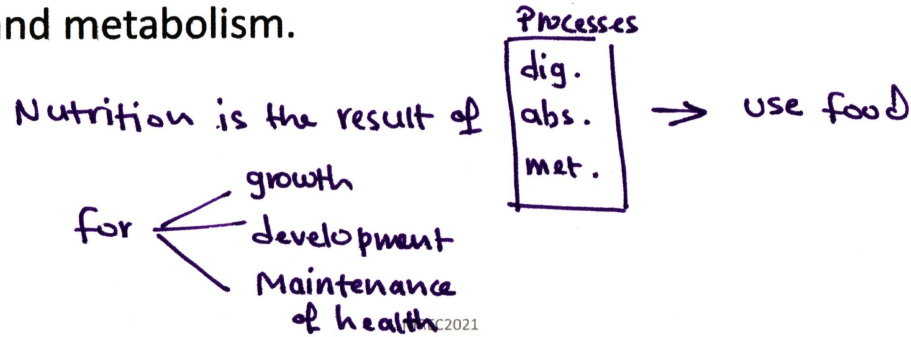
- Carbohydrates (CHO), proteins, and fats (lipids) furnish energy.
- Proteins are also used to build and repair body tissues with the help of vitamins and minerals.
- Vitamins, minerals, and water help regulate the various body processes such as circulation, respiration, digestion, and elimination.

vit. }
min. } → Regulate body processes as
H₂O } → circulation
→ respiration
→ digestion
→ Elimination

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CHARACTERISTICS OF GOOD NUTRITION

Nutrition is the result of the processes whereby the body takes in and uses food for growth, development, and the maintenance of health. These processes include digestion, absorption, and metabolism.



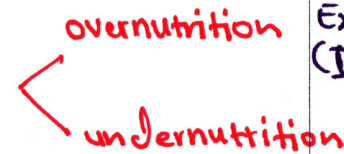
Characteristics of nutritional Status

Table 1-2 Characteristics of Nutritional Status

GOOD	POOR
Alert expression	Apathy
Shiny hair	Dull, lifeless hair
Clear complexion with good color	Greasy, blemished complexion with poor color
Bright, clear eyes	Dull, red-rimmed eyes
Pink, firm gums and well-developed teeth	Red, puffy, receding gums and missing or cavity-prone teeth
Firm abdomen	Swollen abdomen
Firm, well-developed muscles	Underdeveloped, flabby muscles
Well-developed bone structure	Bowed legs, "pigeon" breast
Normal weight for height	Overweight or underweight
Erect posture	Slumped posture
Emotional stability	Easily irritated; depressed; poor attention span
Good stamina; seldom ill	Easily fatigued; frequently ill
Healthy appetite	Excessive or poor appetite
Healthy, normal sleep habits	Insomnia at night; fatigued during day
Normal elimination	Constipation or diarrhea

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MALNUTRITION



Malnutrition can be caused by over-nutrition (excess energy or nutrient in- take) or under-nutrition (deficient energy or nutrient intake).

Excess Energy or excess (Intake)

Nutrient Deficiency

= deficient Energy Intake

-A nutrient deficiency occurs when a person lacks one or more nutrients over a period of time

نقص في الموارد الغذائية

NUTRIENT CLASSIFIED:

- a. Primary
- b. Secondary

??

INDIVIDUALS AT RISK FROM POOR NUTRITIONAL INTAKE

- a. Teenagers
- b. Pregnant mothers
- c. Elderly

المعرضين لسوء التغذية

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Deficiency Diseases

When nutrients are seriously lacking in the diet for an extended period, deficiency diseases can occur.

Serious Lack For Extended Period

↓
deficiency disease

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Nutritional Deficiency Diseases and Possible Causes

DEFICIENCY DISEASE	NUTRIENT(S) LACKING
Iron deficiency	Iron
Iron deficiency anemia	Iron
Beriberi	Thiamin
Night blindness	Vitamin A
Goiter	Iodine
Kwashiorkor	Protein
Marasmus	All nutrients
Osteomalacia	Calcium and vitamin D
Osteoporosis	Calcium and vitamin D, phosphorus, magnesium, and fluoride
Pellagra	Niacin
Rickets	Calcium and vitamin D
Scurvy	Vitamin C
Xerophthalmia (blindness)	Vitamin A

Handwritten notes on the table:

- Fe → Iron deficiency
- Fe → Iron deficiency anemia
- B₁ → Beriberi
- A → Night blindness
- I → Goiter
- Pr. → Kwashiorkor
- all → Marasmus
- Ca, vit. d, Mg, F, P → Osteomalacia
- Ca, vit. D → Osteoporosis
- B₃ → Pellagra
- C → Scurvy
- A → Xerophthalmia (blindness)

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نقطة NUTRITION ASSESSMENT

Proper nutrition assessment includes:

- a. anthropometric measurements Ht, wt, head, upper arm, skin fold
- b. clinical examination
- c. bio-chemical tests
- d. dietary-social history.

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Anthropometric measurements include height and weight and measurements of the head (for children), upper arm, and skinfold.

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Clinical Signs of Nutrient Deficiency

CLINICAL SIGNS

Pallor; blue half circles beneath eyes
Edema
Bumpy "gooseflesh"
Lesions at corners of mouth
Glossitis
Numerous "black-and-blue" spots and tiny, red "pinprick" hemorrhages under skin
Emaciation
Poorly shaped bones or teeth or delayed appearance of teeth in children
Slow clotting time of blood
Unusual nervousness, dermatitis, diarrhea in same client
Tetany
Goiter
Eczema

POSSIBLE DEFICIENCIES

Iron, copper, zinc, B₁₂, B₉, biotin
Protein
Vitamin A
Riboflavin
Folic acid
Vitamin C

Carbohydrates, proteins; calories
Vitamin D or calcium

Vitamin K
Niacin

Calcium, potassium, sodium
Iodine
Fat (linoleic acid)

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