

Human Nutrition

Dietetics



HND 222 | Fall 2026-2027

Assessment of nutritional status

Lecture 1

جميع الأوراق والمحتويات التابعة للمنصة محمية بموجب حقوق الملكية الفكرية.
يُمنع منعاً باتاً نسخ، أو نشر، أو مشاركة أي محتوى أو مستندات تخص المنصة بأي شكل
دون إذن مسبق. ويُعد أي تجاوز أو مخالفة لهذا القرار خرقاً قانونياً يعرض مرتكبه للمساءلة
والملاحقة القانونية الفورية

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Definition of Nutritional Status

NUTRITIONAL STATUS

Is the **physiologic state or condition of an individual** based on the balance between the individual's **intake** and unique **requirement** for nutrients.

OPTIMUM NUTRITIONAL STATUS

Is a state of **balance between nutrient intake and nutritional requirements.**

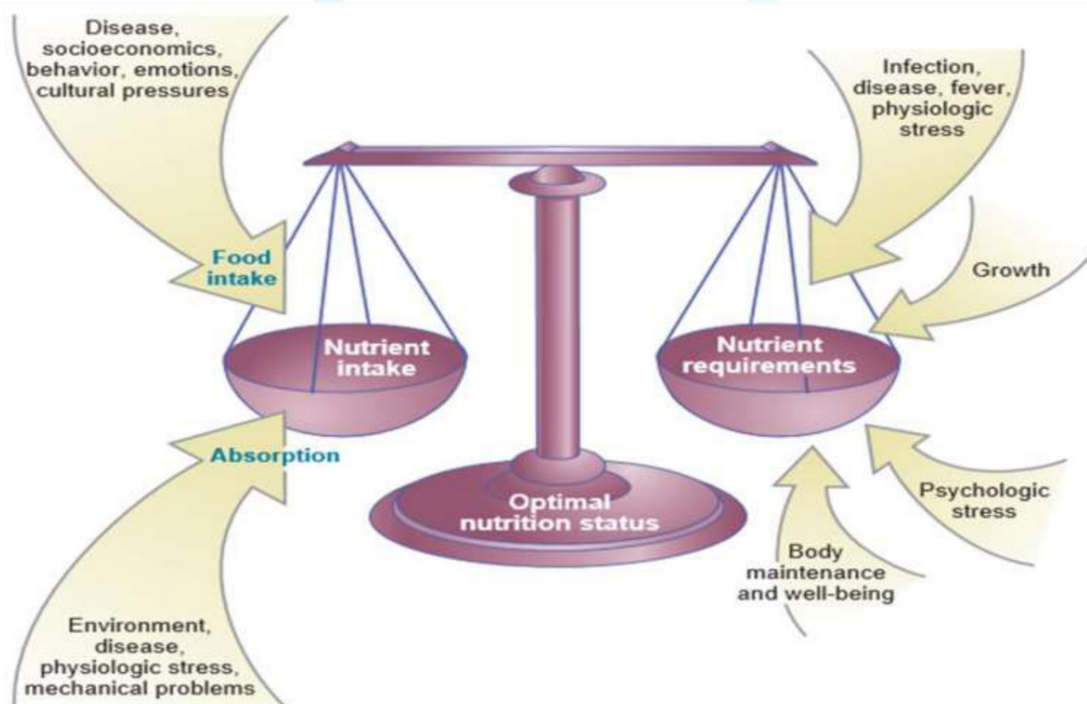


FIGURE 4-1 Optimal nutrition status: a balance between nutrient intake and nutrient requirements.

FIGURE 4-1 Optimal nutrition status: a balance between nutrient intake and nutrient requirements.



Nutritional Status Spectrum

PEOPLE CAN HAVE

An **optimal nutritional status** or they can be **under-, over- and/or malnourished**.

**Severe underweight
(Under-nourished)**



**Healthy baby
(Optimal nutritional
status)**

**Morbid Obesity
(Over-nourished)**



Consequences of Nutritional Status

OPTIMAL NUTRITIONAL STATUS

Is a powerful factor for **health and well being**. It is a major, modifiable and powerful element in **promoting health, preventing and treating diseases** and improving the quality of life.

MALNUTRITION

May increase risk of (susceptibility to) **infection and chronic diseases**:

Undernutrition

May lead to increased infections and decreases in physical and mental development.

Overnutrition

May lead to obesity as well as to metabolic syndrome or type 2 diabetes.



Factors Affecting the Nutrition Status

The nutritional status is determined by a **complex interaction** between internal/constitutional factors and external/environmental factors.

Internal / Constitutional factors like:

- Age
- Sex
- Nutrition
- Eating habits
- Physical activity
- Diseases

External / Environmental factors like:

- Cultural
- Social
- Economic factors



Factors Affecting Nutrition Status

SOCIAL FACTORS	PHYSICAL FACTORS	PSYCHOLOGICAL FACTORS
• Poverty • Isolation (living alone or living in a remote area) • Poor nutrition, difficulty with food preparation, poor knowledge of food safety • Elder abuse and neglect • Institutional environment (hospital or old-age home)	• Dental problems and/or dysphagia (difficulty swallowing) • Diminished sense of smell or taste and/or xerostomia (dry mouth) • Effects of medications • Impaired absorption of nutrients • Increased metabolism (as in Parkinson's disease) • Chronic disease or chronic infection • Severe problems with vision • Physical disabilities and/or impaired performance of basic daily activities (including food shopping, cooking, and eating)	• Widowed or bereaved • Depression • Loneliness • Dementia • Alcoholism • Fear of choking and other food-related anxieties • Anorexia (loss of appetite)

Source: Adapted from Darnton-Hill et al., 2002.



Malnutrition

DEFINITION

A condition resulting from a combination of varying degrees of **under- or over nutrition** and **inflammatory activity**, leading to an abnormal body composition, diminished physical and mental function and impaired outcome of diseases.

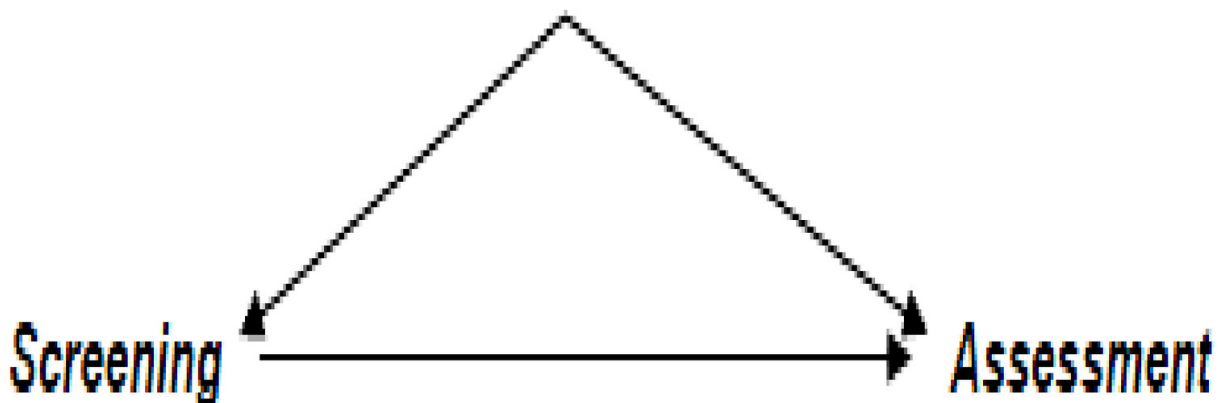


Nutritional Screening

DEFINITION

A process to **identify an individual who is malnourished** or who is **at risk for malnutrition** to determine if a detailed nutrition assessment is indicated.

Diagnosis of malnutrition (undernutrition)



Diagnosis of malnutrition (undernutrition): Screening ↔ Assessment



Nutritional Assessment

DEFINITION

A **systematic process** of **obtaining, verifying, and interpreting** data in order to make decisions about the nature and cause of nutrition related problem.

Nutritional assessment can be

Individual based

Community based



Purpose of Nutritional Assessment

- 1 Identify individuals or population groups **at risk of becoming malnourished**.
- 2 Identify individuals or population groups **who are malnourished**.
- 3 To **develop health care programs** that meet the community needs which are defined by assessment.
- 4 To **measure the effectiveness** of the nutritional programs and interventions once initiated.



Purpose of Community Nutritional Assessment

- 1 To know the **magnitude and geographical distribution** of malnutrition as a public problem.
- 2 To **analyse the factors** responsible for it.
- 3 **Anchors interventions** in the reality of the community.



Nutritional Assessment Components

A

Gather Data, considering:

- Dietary intake.
- Nutrition related consequences of health and disease condition.
- Functional, psycho-social and behavioural factors.

B

Compare to relevant standards.

C

Identify possible problem areas.



Methods of Nutritional Assessment

Nutrition is assessed by **two methods; Direct and Indirect.**

Direct methods

Deal with the **individual** and measure **objective criteria**.

Indirect methods

Use **community indices** that reflect the community nutritional status/ needs.



Direct Methods — ABCD

A

Anthropometric methods.

B

Biochemical, laboratory methods.

C

Clinical methods.

D

Dietary evaluation methods.



Anthropometric Methods

Involve measurements of the **physical dimensions and gross composition** of the body.

Variation

The measurements vary with **age**, and sometimes with **sex, race** and **degree of nutrition**.

Practicality

Can be performed relatively **quickly, easily, and reliably** using portable equipment.

LIMITATION

In some cases they can detect moderate and severe degrees of malnutrition, but the methods **cannot be used to identify specific nutrient deficiency states**.



Biochemical Methods

Include **measuring a nutrient or its metabolite** in **blood, feces, or urine** or measuring a variety of other components in blood and other tissues that have a relationship to nutritional status.

Blood

Feces

Urine

Other tissues



Clinical Methods

A **medical history** and a **physical examination** are the clinical methods used to detect signs and symptoms associated with malnutrition.

Signs

Observations made by a **qualified examiner**.

Symptoms

Manifestations **reported by the patient**.

LIMITATION

These signs and symptoms are often **non-specific** and only develop during the **advanced stages** of nutritional depletion; for this reason, **diagnosis of nutritional deficiency should not rely exclusively on clinical methods**.



Dietary Methods

Measuring the **quantity of the individual foods and beverages consumed** during the course of one to several days **or** assessing the **pattern of food use** during the previous several months.



In-direct Methods of Nutritional Assessment

These include **3 categories:**

- 1 **Ecological variables** including crop production.
- 2 **Economic factors** e.g. per capita income, population density & social habits.
- 3 **Vital health statistics** particularly infant & under 5 mortality and fertility index.



Direct vs In-direct

	DIRECT METHODS	IN-DIRECT METHODS
Deal with	The individual	Community indices
Measure	Objective criteria	Community nutritional status/ needs
Types	A: Anthropometric B: Biochemical C: Clinical D: Dietary	Ecological variables Economic factors Vital health statistics



To Summarise...

STATUS 1

Nutritional Status

- Physiologic state based on balance between intake and requirement
- Optimum = state of balance
- Internal and external factors interact

MALNUTRITION 2

Malnutrition

- Under- or over nutrition plus inflammatory activity
- Abnormal body composition
- Impaired outcome of diseases

SCREENING 3

Nutritional Screening

- Identifies the malnourished or at-risk
- Determines if detailed assessment is indicated
- Screening → Assessment

ASSESSMENT 4

Nutritional Assessment

- Obtaining, verifying and interpreting data
- Individual based or community based
- Gather data, compare to standards, identify problem areas

PURPOSE 4

Purposes

- Identify at risk and malnourished
- Develop health care programs
- Measure effectiveness of programs

METHODS 2

Direct and Indirect

- Direct: ABCD
- Indirect: ecological, economic, vital health statistics
- Direct deals with the individual

Anthropometric



Biochemical



Clinical



Dietary