

Introduction to Nutritional Assessment

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Purpose: To provide a concise, organized overview of why and how nutritional status is evaluated in clinical, community, and research settings.

1. Why Perform a Nutritional Assessment?

Goal	Example Applications
Identify malnutrition	Hospital admissions, pre-surgical screening
Guide nutrition therapy	Tailoring enteral/parenteral formulas, diet prescriptions
Monitor treatment outcomes	Tracking weight gain in undernourished patients, weight loss in obesity programs
Prevent disease complications	Reducing infection risk, improving wound healing
Support public health planning	Surveying prevalence of micronutrient deficiencies, designing food fortification policies

2. Core Components of a Comprehensive Nutritional Assessment

1. Anthropometric Measurements

- **Weight & Height** → Body Mass Index (BMI)
- **Mid-Upper Arm Circumference (MUAC)** → Muscle mass indicator
- **Skinfold Thickness** (triceps, subscapular) → Estimate body fat
- **Waist & Hip Circumference** → Central adiposity, waist-to-hip ratio

2. Biochemical Data

- **Serum albumin, pre-albumin, transferrin** (protein status)
- **Hemoglobin & hematocrit** (iron status)
- **Electrolytes, glucose, lipids** (metabolic profile)
- **Micronutrient levels** (vitamin D, B12, folate, zinc, etc.)

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3. Clinical Evaluation

- Physical signs of deficiency (e.g., glossitis, edema, skin changes)
- Medical history (chronic diseases, surgeries, medications)
- Functional status (muscle strength, activities of daily living)

4. Dietary Assessment

- **24-hour recall** – detailed intake of the previous day
- **Food Frequency Questionnaire (FFQ)** – habitual intake patterns
- **Dietary records/food diaries** – 3-day or 7-day logs
- **Portion-size estimation tools** (food models, photographs)

5. Social & Environmental Factors

- Socio-economic status, food security, cultural food practices
- Access to health care, cooking facilities, support networks

3. Common Screening & Assessment Tools

Tool	Setting	Key Features
Subjective Global Assessment (SGA)	Hospital, outpatient	Combines history (weight change, intake) + physical exam; classifies A (well-nourished), B (moderately malnourished), C (severely malnourished).
Mini Nutritional Assessment (MNA)	Elderly care	Short questionnaire + anthropometry; scores ≥ 23.5 indicate risk.
Malnutrition Universal Screening Tool (MUST)	Community, primary care	BMI, weight loss, acute disease effect; produces low, medium, high risk.
Nutrition Risk Screening (NRS-2002)	Hospital	Disease severity + nutritional status; score ≥ 3 triggers intervention.
GLIM Criteria (Global Leadership Initiative on Malnutrition)	Research, clinical	Requires ≥ 2 of 3 phenotypic (weight loss, low BMI, reduced muscle mass) and 1 of 2 etiologic (reduced intake, disease burden) criteria.

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4. Interpreting Results

1. Identify patterns – e.g.,