Nutritional Assessments

• “desirable nutrition”

malnutrition
  • undernutrition
  • overnutrition

TEXT PAGES 42-46

Nutritional Health

• **desirable nutrition** - body has enough of the essential nutrients for normal (homeostatic) function plus reasonable surplus stores for times of increased need

• **malnutrition**
  • mal = bad, really means absence of nutritional health, or nutritional imbalance

• **undernutrition**
  • not consuming **enough** nutrients to fully meet biological needs
  • not common in U.S.
  • mostly associated with **poverty**, **illness**, **alcoholism**, some diseases

• **overnutrition**
  • consistently consuming **more than necessary** to meet biological needs
  • risk for **toxicity**
  • overconsumption of fats, calories, cholesterol increase risk of **chronic disease**
Nutritional Assessment of Individuals

- Anthropometric
- Biochemical tests
- Clinical observation (physical exam)
- Dietary intake data
- Economic status/Educational status

Nutritional Evaluation of individuals

- **why?**
  - identify nutrition factors affecting person’s current or future health
  - may want to measure success of an intervention
  - identify people at risk for malnutrition

In general, five methods: ”A, B, C, D, E”

- **anthropometric**
- **biochemical**
- **clinical** observation (i.e. physical examination)
- **dietary** intake data
- **economic status** and **educational status**

- NOTE: historical information other than dietary intake data is also necessary
Anthropometric studies

- anthropos = human
- metric = measure
- measurement of physical characteristics e.g. height, weight, body composition (fat!)
  - compare with standards for age, sex
- drawback: doesn’t say much about specific nutrients
Anthropometric data: uses

- identify **risk factors** for **chronic disease** I.e. elevated BMI
- BMI = standard for comparison of weight to height
- can track weight changes that may indicate disease
- monitor weight loss, fat loss

[Body Mass Index chart]

Nutritional evaluation
Anthropometric data: uses

- good to track growth in kids
- typically measure weight, length, head circumference (brain growth)

*see appendix H in your text for other growth charts

[Image of growth charts]

www.keepkidshealthy.com/growthcharts/boysbirth.html
Nutritional evaluation

Biochemical studies

- take sample of blood, urine, feces
- measure for levels of enzymes, nutrients or metabolites
  - e.g. serum albumin indicative of protein status
  - hemoglobin indicative of iron status
- DOES provide information about specific nutrients!
Clinical observations (physical examination)

- hair, nails, skin, eyes, lips, mouth, bones, muscles, joints
- RARELY provides information about specific nutrients
  - signs often nonspecific but can do further testing
  - e.g.: cracking at corners of mouth may indicate niacin, riboflavin, or B6 deficiency
  - exception: Vitamin C deficiency (scurvy) indicated by bleeding gums, petechiae
**Methods of obtaining dietary intake data: Food frequency questionnaire**

<table>
<thead>
<tr>
<th>Food item</th>
<th>Medium serving</th>
<th>Your serving size</th>
<th>How often?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coffee</td>
<td>1 cup</td>
<td>S</td>
<td>Day 3</td>
</tr>
<tr>
<td>Wheat Bread</td>
<td>1 slice</td>
<td>M</td>
<td>Week 5</td>
</tr>
<tr>
<td>Ice cream</td>
<td>1/2 cup*</td>
<td>L</td>
<td>Month 1</td>
</tr>
</tbody>
</table>

* WHAT?! Are you kidding?!

**Food frequency questionnaire**

- clinician asks how often a particular food is consumed
- use this data to **estimate** person’s average daily intake of nutrients
- **main advantage** - relatively easy to complete, probably good compliance
- **main disadvantage** - erratic consumption of foods may introduce error, can be difficult to convert data to daily averages without use of computer
Other methods of obtaining dietary intake data

- **24-hour recall**: memory-based
- **Diary**: record exact amounts of foods consumed

- **24-hour recall**
  - person lists everything they ate/drank in past 24-hours
  - often used for collecting data for population studies - good snapshot of population
  - collecting data from only ONE 24-hour period would not be best way to assess an individual’s nutritional health - too much variation on daily basis (but CAN repeat several times for one individual to get better picture)

- **Food diary** (a.k.a. food record)
  - person keeps track of exactly what they’re eating/drinking for 3-7 days (can even weigh food!)
  - compared: 24-hour recall easier. less tedious but less accurate
Evaluation of intake data

- How to evaluate data once collected?
- Usually use a computer!
- gets estimate of nutrient intakes
- Compare to dietary standards, food guide pyramid

- This is how we’ll do our own personal nutritional assessments
Economic, educational status and health history

- Economic status
- Educational status
- Family history
- Drug/alcohol use

• Socioeconomic history
  - personal, cultural, financial, environmental influences on food intake, nutrient needs, diet therapy options

• Educational status - ability to comprehend information/instructions (written or oral)

• Health history
  - current, previous health problems, family hx that affect nutrient needs, nutrition status, or need for intervention to prevent problems

• Drug history
  - meds, dietary supplements, alternative therapies that affect nutritional status