The Role of Nutrition in TB Patients
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• No conflict of interests
• No relevant financial relationships with any commercial companies pertaining to this educational activity
What is Nutrition?

- Nutrition is the study of nutrients in food, how the body uses nutrients, and the relationship between diet, health and disease.
- Nutrition focuses on how diseases, conditions and problems can be prevented or lessened with a healthy diet.

The Importance of Nutrition

- Dietary Guidelines
- Dietary Intake
- Nutritional Assessment

Created for Americans to encourage eating a healthful diet.

Main Focus:
- Key Elements of Health Eating Patterns
- Shifts needed to Align with Healthy Eating Patterns
- Everyone has a Role in Supporting Healthy Eating Patterns


Dietary Reference Intake

A set of reference values used to plan and assess nutrient intakes of healthy people. Vary by age and gender

- **Recommended Dietary Allowance (RDA)** - is the nutrient intake level sufficient to meet the requirements of 97-98% of people.
- **Adequate Intake (AI)** - is based on the nutritional intake of a group of healthy people. AI is used when there is not enough data to figure out EAR or RDA.
- **Tolerable Upper Intake Level (UL)** - is the level of nutrients (vitamins), that should not be exceeded to prevent adverse health effects.
- **Estimated Average Requirement (EAR)** - is the intake level for a nutrient at which the needs of 50% of the population will be met.

Nutritional Assessment

Definition
• Used to collect data, integrate, and analyze nutrition data from a patient.

Purpose
• The data will then be gathered to provide recommendations and an evaluation of a patient’s care.

Nutritional Assessment

Includes:
- **Anthropometric**
  - Weight
  - Height
- **Biochemical**
  - Blood
  - Urine
- **Clinical**
  - Medical Hx
    - Including acute and chronic illness, diagnostic procedures, therapies, nutrient malabsorption, medications, OTCs, vitamins, minerals, and homeopathic supplements
- **Dietary**
  - 24-48 hour Nutrition Interview
  - 3-Day Food Diary
  - Food Intolerances
  - Caffeine and Alcohol use
  - Type of Kitchen Equipment
- **Evaluation**
  - Nutritional Intervention
Nutritional Assessment

Tools for Success

- Body Mass Index (BMI)
- Ideal Body Weight (IBW)
- % Ideal Body Weight
- Mini Nutritional Assessment
- Dietary Reference Intakes (DRIs)
- 24-Hour Diet Recall
- Health Literacy Level

Correlation Between Health Outcomes and Nutrition

- Impact of poor nutrition on TB patient outcomes
- WHO Recommendations
- Nutritional Consideration
Impact of Poor Nutrition on TB Patient Outcomes

Tuberculosis and Nutrition

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2813110/

Abstract

Malnutrition and tuberculosis are both problems of considerable magnitude in most of the underdeveloped regions of the world. These two problems tend to interact with each other. Tuberculosis mortality rates in different economic groups in a community tend to vary inversely with their economic levels. Similarly, nutritional status is significantly lower in patients with active tuberculosis compared with healthy controls. Malnutrition can lead to secondary immunodeficiency that increases the host’s susceptibility to infection. In patients with tuberculosis, it leads to reduction in appetite, nutrient malabsorption, micronutrient malabsorption, and altered metabolism leading to wasting. Both, protein-energy malnutrition and micronutrients deficiencies increase the risk of tuberculosis. It has been found that malnourished tuberculosis patients have a delayed recovery and higher mortality rates than well-nourished patients. Nutritional status of patients improves during tuberculosis chemotherapy. High prevalence of human immunodeficiency (HIV) infection in the underdeveloped countries further aggravates the problem of malnutrition and tuberculosis. Effect of malnutrition on childhood tuberculosis and tuberculin skin test are other important considerations. Nutritional supplementation may represent a novel approach for fast recovery in tuberculosis patients. In addition, raising nutritional status of population may prove to be an effective measure to control tuberculosis in underdeveloped areas of the world.

Impact of Poor Nutrition on TB Patient Outcomes

Tuberculosis and Nutrition

Food insecurity is also closely connected to TB. There is significant correlation between regions with high TB prevalence and high food insecurity.
Impact of Poor Nutrition on TB Patient Outcomes

Food and nutrition support breaks the vicious cycle through two key mechanisms:

- Food and nutrition activities support nutritional stabilization and recovery, resulting in increased immune system strength, faster sputum clearance and faster weight gain.
- Food and nutrition activities also support access and adherence to treatment. By providing food support to members of the community, health centres are able to reach more individuals, leading to increased case detection, better treatment uptake and greater treatment adherence.

Support can include food rations to people with active TB and their households as well as nutritional assessment, education and counseling to provide long-term solution to food insecurity and malnutrition.


World Health Organization Recommendations

Guideline

Nutritional care and support for patients with tuberculosis

Overview

This guideline provides guidance on the principles and evidence-informed recommendations on the nutritional care and support for patients with tuberculosis. Undernutrition increases the risk of tuberculosis and in turn tuberculosis can lead to malnutrition. Undernutrition is therefore highly prevalent among people with tuberculosis. It has been demonstrated that undernutrition is a risk factor for progression from tuberculosis infection to active tuberculosis disease and that undernutrition at the time of diagnosis of active tuberculosis is a predictor of increased risk of death and tuberculosis relapse. However, the evidence concerning the effect of nutritional supplementation on tuberculosis prevention and health outcomes among people with tuberculosis had not previously been systematically reviewed.

Member States have requested guidance from the World Health Organization (WHO) on nutritional care and support for patients with tuberculosis.

WHO, 2015
www.who.int/nutrition/publications/guidelines/nutcare_support_patients_with_tb/en/
Nutritional Considerations

• Cultural preference
• Religious preference
• Food Allergies
• Chronic Disease
  – Diabetes
  – Heart disease
  – Obesity/Overweight
• Alcohol/Drug use

Nutrition Resources

- Health Department
- WIC
- Community Food Pantries
- Religious Organizations
- Community Gardens
- Food Samples
- Handouts
- MyPlate
Health Department

- Food Assistance Program (SNAP)
- List of local food pantries in your area
- Social workers
- Free community health programs
  - Diabetes classes
    - Y Living Program
    - Take Control Diabetes Self-Management Program
- Healthy Start
- Infant Health-WIC
- Dental Services
- STD/HIV Services


Community Food Pantries

- Food Assistance
  - Project Hope
  - Seasonal Seniors Farmers’ Market
  - Food Fairs
  - Growing Healthy Children
  - Mobile Pantry
  - Backpack Program
  - Kid’s Café

Religious Organizations

- Food Assistance
- Clothing
- I.D. Recovery
- Mail Services
- Clothing
- Utility & Rental Assistance
- Other Financial Assistance
- School supplies
- Spiritual Support

Christian Assistance Ministry. 2015. [http://www.christianassistanceministry.org/]

Community Gardens

- Any urban green space that is developed and maintained by volunteers members of the community to the benefit of those members may be deemed a community garden.
- Currently Working with 37 groups in the San Antonio area
- Monthly visits with gardens to assist, teach, donate plants, give demos

Green Spaces Alliance. 2015. [http://www.greensatx.org/]

MyPlate

• ChooseMyPlate.gov provides practical information to individuals, health professionals, nutrition educators, and the food industry to help consumers build healthier diets with resources and tools for dietary assessment, nutrition education, and other user-friendly nutrition information. As Americans are experiencing epidemic rates of overweight and obesity, the online resources and tools can empower people to make healthier food choices for themselves, their families, and their children.

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