

## NUTRITION AND AGING: POOR NUTRITION IN A LAND OF PLENTY

It is hard to believe that in the resource-rich United States up to 16% of Americans age 65 and older are not regularly getting adequate nutrition, and that one in four older adults is actually at risk of malnutrition. People who are chronically ill and those who are of advanced age, in frail health, living alone or in nursing homes are at highest risk of malnutrition and its complications.

Low food energy intake ultimately causes inadequate levels of essential nutrients which can result in chronic illness and impaired health. Due to the many changes that accompany aging, there are numerous reasons why older Americans are at risk of inadequate nutrition. Many of these problems are preventable or treatable, and can dramatically reduce nutritional problems in older adults.

Until recently, nutritional studies did not address the dietary needs of people over age 50. As more research was done on the specific nutritional needs of an aging population, the United States National Academy of Science, Institute of Medicine, Food and Nutrition Board established specific recommendations for older adults of calcium and related nutrients in 1997 and for B vitamins and choline in 1998. Understanding of the relevance of adequate nutrition to

disease prevention, the new recommendations are based on the amount of each nutrient required to prevent chronic diseases and not simply to prevent nutritional deficiency which was the method used to make nutrient recommendations in the past. These new dietary recommendations are called Daily Reference Intakes (DRI) and now include values for infants and children, adults ages 18 through 50, ages 51 through 70 and over age 70. New DRIs are forthcoming for other nutrients as research results are analyzed by the Food and Nutrition Board.

In addition to specific nutrient recommendations, basic dietary intake advice has changed in the last ten years. The United States Departments of Agriculture and Health and Human Services designed a food pyramid in 1992 with a goal of reducing American's intake of meat, fat and sugar and increasing intake of complex carbohydrates, fruits and vegetables. In the late 1990's, Dr. Robert Russell of Tufts University in Boston and coworkers at the Department of Agriculture's Human Nutrition Research Center on Aging at Tufts revised its "food pyramid" for individuals over age 70. This diagram includes water, six basic food groups and includes a flag at the top which recommends certain vitamin supplements for seniors.

The new food pyramid recommendations include:

- Eight 8-ounce glasses of water daily.
- Six servings daily of bread, fortified cereal, rice and pasta. A serving size consists of one piece of bread, one ounce of cold cereal, 1/2 cup of cooked cereal, rice or pasta.
- Two or more servings of fruit. One serving is one medium apple, banana or orange, or 1/2 cup chopped, cooked or canned fruit.
- Three or more servings of vegetables. One serving is one cup of raw leafy vegetables, 1/2 cup of other vegetables, cooked or raw.
- Three servings daily of milk, yogurt and cheese. A serving size is one cup of milk or yogurt, 1 1/2 ounces of natural cheese and two ounces of process cheese.
- Two or more servings of meat, poultry, fish, dry beans, eggs and nuts. A serving size is two to three ounces of cooked meat, one cup of cooked beans, four tablespoons of peanut butter or two eggs.
- Sparing use of fats, oils and sweets
- Calcium, Vitamin D, and Vitamin B-12 supplements

## **NUTRITION ISSUES IN THE COMMUNITY**

A survey by the U.S. Department of Agriculture (USDA) between 1994 and 1996 found older Americans made major dietary changes in their diets between 1974 and 1994. They reduced their intake of red meat, eggs, sugars and sweets and ate more vegetables, fruits, grains and legumes. These positive dietary changes mirror those made by younger adults during the same time period as more public health information was provided regarding the health implications of diet. The survey also found that older people ate less fruit and milk products than desirable. For community-based elders, nutritional status declined with advancing age, poverty, isolation, homebound status, and grief.

## **NUTRITION ISSUES IN NURSING HOMES**

Some of the most significant nutrition problems occur among nursing home residents. Only 5% of Americans 65 years and older currently live in nursing homes, and these vulnerable residents are often chronically ill with such conditions as diabetes, congestive heart failure, chronic lung disease, hypertension and depression. 70% have some type of dementia, and many of these residents have poor appetite, weight loss, eating dependency, sensory loss and poor dental health. All these factors put them at high risk for malnutrition.

The Program on Aging and Long-term Care at the nonprofit Research Triangle Institute of North Carolina recently completed several nutritional studies with frightening results.

- Between 25% and 30% of all nursing home residents are underweight.
- 31% of 2,100 residents in 255 nursing homes in ten states were underweight enough to put them at risk of premature death.
- Only 9% of residents in nursing homes ranked as providing high

quality care were underweight, compared with 23% of residents in homes found to be providing poor quality care, according to a four state study.

Nursing homes are faced with increasingly dependent residents and increasing difficulty in hiring sufficient trained staff to care for them. Inadequate staffing is a major reason for poor nutrition in nursing home residents. On the day shift in most nursing homes, nursing assistants are required to get seven to ten residents to the dining room, ready to eat breakfast and lunch and then feed those who need assistance within 60 to 90 minutes. Evening nursing assistants may have twelve to fifteen residents to assist. This can result in insufficient time to feed those who are not able to feed themselves. Nursing homes are required by federal law to weigh residents regularly and devise a plan to eliminate weight loss; however, designing the plan and actually implementing it are not the same, and sometimes residents continue to experience weight loss and resulting complications. The results of poor nutrition lead to a downward spiral of weight loss, weakness and inability to adjust position, skin breakdown, lethargy and increased susceptibility to infections. Individuals in this deteriorating condition require additional nursing care which increases the workload of the nursing home staff.

## **ADDRESSING NUTRITIONAL CONCERNS**

The first step in ensuring adequate nutrition for seniors is to determine their usual eating patterns and habits. The University of Wisconsin Extension Service developed a ten point questionnaire (see Nutrition Questionnaire box on back) which is designed to determine if an older adult is at nutritional risk. The questionnaire is scored from 0 to 10 based on "yes" answers, and shows that people with a score of 6 or more are at high nutritional risk and

people with scores from 3 to 5 are at moderate nutritional risk.

Resolving nutritional problems involves identifying and addressing the cause(s) of inadequate intake of nutrients. The chart, Reasons for Impaired Nutrition, outlines numerous reasons why people may not be able to eat sufficient amounts of appropriate foods. Many people with impaired nutrition will have a number of causes for their inadequate intake, and each problem must be identified and solved. This usually requires the participation of the health care team including physician, nurse, dietitian and case manager, as the problems include both medical and psycho-social sources.

Inadequate knowledge regarding the necessary nutrients may be a factor for seniors who have tried to follow the USDA's new dietary recommendations for the last twenty-five or more years. While these recommendations are adequate for younger, healthy people, they may not contain enough nutrient-dense foods for an older person with a smaller appetite. Recommended nutrients for older adults include the following:

- Protein-0.8 to 1.0 grams per kilogram of body weight for healthy elderly; about 12-14% of calories.
- Fat-A small amount, equal to about 1 tablespoon per day. Polyunsaturated fats are healthier choices than saturated fats. Dietary cholesterol should be limited to 300 mg. per day or less.
- Carbohydrates-Minimum of 50 to 100 grams per day. 50% of total calories should come from complex carbohydrates. Recommended fiber intake is 25 to 30 grams per day.
- Calories-Calories come from fats, proteins and carbohydrates. Energy, or caloric needs, decrease with age due to decrease in lean body mass and decrease in activity. Excess calories causes weight gain;

insufficient calories causes weight loss.

- Calcium-The new DRI for people over 50 is 1200 mg. per day, with post-menopausal women encouraged to consume 1500 to 1700 daily. Calcium is found in dairy products, broccoli, tofu and other soy products.
- Vitamin A-The need decreases with age. It is recommended to eat foods high in beta-carotene.
- Vitamin D-The need increases with age. The new RDI is 600 IU (international units) for persons over 70, and 400 IU for those 50 to 70. (Measured in micrograms, this is about 10 to 15 mcg. per day)
- Folate-The need for folate increases with age, and the new

recommended DRI for folate is 400 mcg. per day for people over 50. This is found in whole grain foods, enriched cereals.

- Vitamin B-12-The need increases with age to 3.4 mcg. per day. This vitamin is found in lean red meat, skim milk and chicken. Some older adults cannot absorb Vitamin B-12 orally and may need monthly injections. Check with a doctor about need for injections.
- Chromium-The need for chromium increases with age, and foods rich in chromium include brewer's yeast and whole grain foods.
- Zinc-The need for zinc increases also, and can be found in lean

red meat, oysters, wheat germ and whole grain foods.

- Sodium-The need for sodium is about 500 mg. per day, but the American diet is generally much higher in sodium. Too much sodium aggravates high blood pressure and congestive heart failure, so elders should avoid using high sodium foods and should not add salt after food is prepared.
- Fiber-25 to 35 grams of fiber are recommended daily, but most Americans consume only 11 grams. Fiber can be found in whole grain foods, fruits, vegetables, legumes, nuts and seeds. It is helpful in ensuring colon health preventing constipation.

## REASONS FOR IMPAIRED NUTRITION

### MEDICAL REASONS

- Pain due to:
  - acute injury or surgery
  - chronic conditions such as arthritis
- Lack of sense of hunger due to:
  - slower emptying of stomach
  - changes in hormones and nerves that regulate food intake
- Gastrointestinal problems such as:
  - nausea and/or vomiting
  - diarrhea
  - constipation
  - mechanical obstruction
- Impaired absorption due to:
  - inadequate stomach acid
  - interactions with meds and food
  - alcoholism
  - certain chronic diseases
- Difficulty chewing and/or swallowing due to:
  - dental problems
  - dementia
- Decreased sense of taste or change in taste due to:
  - effects of medication
  - diseases such as renal failure
  - normal aging
- Mechanical cooking/eating problems due to:
  - stroke
  - arthritis
  - Parkinson's disease
  - heart disease
- Increased metabolic needs due to:
  - fever
  - surgery
  - injury

### PSYCHO-SOCIAL REASONS

- Increasing age resulting in:
  - increased frailty
  - impaired ability to procure and prepare food
  - increase in number of health problems
  - increase in number of medications
- Depression due to:
  - bereavement
  - losses of aging
  - pain
  - chronic or terminal illness
  - loneliness
- Dementia which causes:
  - forgetting to eat
  - eating inappropriate foods or substances
  - inability to prepare food
  - forgetting how to eat
  - impaired swallowing
- Social isolation related to:
  - lack of transportation to shopping
  - cooking and eating alone
  - loss of interest in eating
- Economic adversity which causes:
  - inability to purchase adequate food
  - inability to maintain dentition
- Lack of knowledge about proper nutrition
  - no experience shopping or cooking
  - unaware of proper nutrition
  - mishandling food resulting in spoilage

## NUTRITION QUESTIONNAIRE

Ask the senior the following questions and record points for "yes" answers.

1. Do you have an illness or condition that has made you change the kind and/or amount of food you eat? (2 points)
2. Do you eat fewer than 2 meals per day? (3 points)
3. Do you eat few fruits or vegetables or milk products? (2 points)
4. Do you have 3 or more drinks of beer, liquor or wine almost every day? (2 points)
5. Do you have tooth or mouth problems that make it hard for you to eat? (2 points)
6. Do you have less money than you need to buy food? (4 points)
7. Do you eat alone most of the time? (1 point)
8. Do you take 3 or more prescribed or over-the-counter drugs a day? (1 point)
9. Without wanting to, have you lost or gained 10 pounds in the last 6 months? (2 points)
10. Are you physically unable to shop, cook and/or feed yourself? (2 points)

### SCORE

0 to 2

3 to 5

6 or more

### RECOMMENDATION

Good job! Check your score again in 6 months.

May be at moderate nutritional risk.

Try to improve eating habits and lifestyle.

May be at high nutritional risk. Make an appointment to see doctor, nurse, or dietician and talk with them about any problems that prevents eating a healthy diet.

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**MATRIX**<sup>™</sup>  
ADVOCARE NETWORK

Brooklyn Crossing • Suite 505  
3300 County Road 10  
Minneapolis, MN 55429