



3 1799 00014 2968

RECEIVED

APR 12 1990

COLORADO STATE LIBRARY

State Publications Library

Colorado State
University
Cooperative
Extension

no. 9.322

service in ACTION

Nutrition and aging

Jennifer Anderson¹

Quick Facts

Eat a variety of foods to stay healthy. With age it becomes more important that diets contain more calcium, fiber, iron, protein and vitamins A, C and folacin.

To reduce calories select nutrient-dense foods and enjoy smaller portions of foods high in fat, sugar and sodium.



Physiological Changes and Nutrition

Physiological changes occur slowly over time in all systems in the body and are influenced by life events, illnesses, genetic traits and socioeconomic factors.

With age, sensory changes occur that include a decline in sight and peripheral vision, hearing, smell and taste. These losses are not complete or rapid, but they do affect nutritional intake and health status. Loss of visual acuteness may lead to restriction in activity or fear of cooking, especially using a stove. Inability to read food prices, nutrition labels or recipes also may lead to a decline in food purchasing, preparation and eating. This could have an adverse effect on nutritional status.

Loss of hearing may lead to a restriction on eating out or asking questions of the waiter or store clerk. The changes in smell and taste are more obvious. If food does not taste appetizing or smell appealing, it will

not be eaten. If salt, sugar or fat must be reduced in the diet there may be a greater tendency not to eat.

Body composition changes as everyone ages, especially the loss of lean body mass. Reductions in muscle mass include skeletal muscle, smooth muscle and muscle that affects vital organ function, with loss of cardiac muscle perhaps the most important. Cardiac capacity can be reduced and cardiac function impaired by chronic diseases such as atherosclerosis, hypertension or diabetes.

Changes also occur in the kidneys, lungs and liver, and in the general ability to generate new protein tissue. In addition, aging can slow the immune system's response in making antibodies.

¹Jennifer Anderson, Ph.D., R.D., Colorado State University Cooperative Extension foods and nutrition specialist, food science and human nutrition; appreciation to former instructor, Gail W. Doxtader, consumer sciences and housing (2/89)

However, the most significant result of the loss of lean body mass may be the decrease in basal energy metabolism. Metabolic rate declines proportionately with the decline in total protein tissue. If weight gain is to be avoided, calorie intake must be reduced or activity must be increased. Energy balance should be the goal. With the loss of lean body mass, a reduction in total body water occurs (72 percent of total body water is in the lean muscle tissue as interstitial fluid). Total body fat typically increases with age. This often can be explained by the slight excess of calories. As aging occurs fat tends to be more truncal and more internal with fat deposits around the vital organs. However, in more advanced years, weight often declines.

Finally, there is a loss of bone density. Women tend to lose bone mass at an accelerated rate after menopause. Recent attention has focused on the high incidence of osteoporosis. Severe osteoporosis is debilitating and serious. Fractures and potential mortality and morbidity remain a concern, but in addition there is an increase in vertebral compression fractures leading to changes in chest configuration. This can affect breathing, intestinal distension and internal organ displacement.

Nutrition can be a factor in all of the physiological changes noted above. However, slowing of peristalsis action of the gastrointestinal (digestive) tract plus general changes have the most direct effect on nutrition. Digestive secretions diminish markedly, but quantities of enzymes remain adequate. Adequate dietary fiber, as opposed to increased use of laxatives, will maintain regular bowel function and not interfere with the digestion and absorption of nutrients as occurs with laxative use and/or abuse.

Suggestions for Coping with Change

Sensory changes—Loss of smell and taste affect the nutritional intake and status of many seniors. If food does not smell or taste appetizing, it will not be eaten.

Suggestions:

- Try a variety of new food flavors. Experiment with low sodium seasonings such as lemon juice, Worcestershire sauce, dill, curry and herbs of all types.
- Sometimes the problem is not dulled senses, but rather a drab, soft diet. Don't overcook vegetables until they are mushy. Instead, reawaken the senses to fresh, flavor-

ful foods. Experiment a little with fresh herbs and unusual spices.

Loss of teeth—Improperly fitting dentures unconsciously may change eating patterns because of difficulty with chewing. A soft, low-fiber diet without important fresh fruits and vegetables may result.

Suggestions:

- Have a dentist make adjustments to poorly fitting dentures.
- Foods, like carrots and other hard vegetables or tough meats, can be chopped, steamed, stewed, ground or grated to make them easier to chew without losing nutritional value. Try a grated carrot and raisin salad.

Osteoporosis—Exercise and a diet high in calcium are two ways to help protect against osteoporosis. Current therapies to treat osteoporosis include estrogen replacement, exercise and calcium supplements. (For more details read Service in Action 9.359, *Osteoporosis*.)

Suggestions:

- Walk, swim or enroll in a water aerobics class. Exercise for pleasure at least three times a week and have fun!
- Include two to four daily servings of dairy products such as milk, yogurt or cheese.
- If digesting milk is a problem, cultured dairy products, like buttermilk and yogurt often are consumed easily. Lactaid can be used to make a reduced lactose milk and is available in most stores for those who cannot digest milk.
- Post-menopausal women may need a calcium supplement if they are not able to consume sufficient levels of calcium through diet. Talk to a physician or registered dietitian about this.

Specific Nutrient Needs

Calorie needs change as aging occurs due to a greater percentage of body fat and a lower percentage of lean muscle. Decreased activity can cause further decrease in caloric requirements. Thus the challenge for the elderly is to meet the same nutrient needs as when they were younger while consuming fewer calories. The answer to this problem is to choose foods high in nutrients in relation to calories (nutrient-dense). For example, low-fat milk is more nutrient dense than regular milk, in that nutrient content remains the same while calorie content is reduced, due to lower fat content.

Protein needs usually do not change for

the elderly, although research studies are not definitive. Protein requirements can vary in individuals due to the presence of chronic disease. Thus, balancing needs and restrictions is a challenge, particularly in health care facilities. Protein absorption may decrease as we age and less synthesis of body protein may occur. However, protein intake should not be routinely increased due to the general decline in kidney function previously noted. Excess protein could stress kidneys unnecessarily.

Reducing the overall fat content in the diet is reasonable since it is the easiest way to cut calories. This is appropriate if weight needs to be reduced. Lower fat intake is often necessary because of chronic disease.

Carbohydrate intake should comprise approximately 60 percent of calories with emphasis placed on complex carbohydrates. Glucose tolerance may decrease with advancing years, and higher complex carbohydrates puts less stress on the circulating blood glucose than refined carbohydrates. Dietary fiber intake also is enhanced in such a regime. This, together with adequate fluid intake, will help maintain normal bowel function. Fiber also is thought to decrease risk of inflammation of the intestines. Vegetables, fruits, grain products, cereals, seeds, legumes and nuts are all sources of dietary fiber.

Vitamins and Minerals

Vitamin deficiencies may be sub-clinical in many older people, but any illness will put stress on the body and may be sufficient to deplete whatever stores exist and put the person into a deficient state. Medications also interfere with many of the water-soluble and fat-soluble vitamins. Drug histories always should be questioned when nutrient deficiencies emerge. Eating nutrient-dense foods becomes increasingly important when calorie needs decline but vitamin and mineral needs remain high.

Fat-soluble vitamins can be stored in the body and usually the elderly are at lower risk of fat-soluble vitamin deficiencies. There is a risk of vitamin A toxicity and vitamin D deficiency. This is generally due to a low intake of dairy products. Vitamin D fortified milk should always be provided for the house bound, nursing home residents, and anyone who does not get exposure to adequate sunlight.

Of the minerals, iron and calcium intakes sometimes appear to be low in many elderly.

It's best to eat a wide selection of foods, including calcium-rich foods such as low-fat dairy products, and vitamin C rich fruits and vegetables with non-heme iron sources such as cereals to enhance iron absorption. Thus, juice or sliced fruit with cereal, tomato slices in a cheese sandwich, and salsa with a bean burrito enable the iron in the cereal, bread and beans to be absorbed more. Such enhanced absorption also can occur when heme iron foods (meats, for example) are eaten with a vitamin C source. Baked potato with roast beef, vegetables with fish, or fruit with chicken are all practical suggestions to help the elderly obtain adequate iron.

Zinc also can be related to specific diseases seen in the elderly and can be a factor with vitamin K in wound healing. Zinc improves taste acuity in people where stores are low. Chronic ingestion of zinc supplements of more than 15 mg/day, in addition to dietary intake, is not recommended without medical supervision. If an older person eats meats, eggs and seafood, zinc intake should be adequate. This underscores the importance of eating a wide variety of foods.

The needs for electrolytes, sodium and potassium can be altered when drugs are used to control diseases such as hypertension or heart disease.

Even though absorption and utilization of some vitamins and minerals become less effective as age increases, higher intakes do not appear to be necessary. As for any age group, it's important to select a wide variety of foods that can be eaten and enjoyed.

Water

Generally, water as a nutrient receives very little attention once a person is old enough to talk. However, of all the nutrients, water is most important, serving many essential functions. Adequate water intake reduces stress on the function of the kidney, which tends to decline with age. Water consumption should be equivalent to five to eight glasses every day. This also can be helpful in solving the problem of constipation. Thirst is not an adequate or accurate indicator of need, therefore drink water or beverages frequently, regardless of the degree of thirst.

Variety of Foods

People of all ages need more than 40 nutrients to stay healthy. With age it becomes more important that diets contain enough

calcium, fiber, iron, protein and the vitamins—A, C, D, and Folacin (B). Remember to reduce calories you eat, select nutrient-dense foods and enjoy smaller portions of foods high in fat, sugar and sodium. Because no one food or pill provides all of the nutrients, it is important that an individual eat a variety of foods that provide the full spectrum of needed nutrients.

Variety often is lacking in the diets of seniors who often eat the same foods over and over again. Get out of this food rut by trying some of these suggestions.

- Eat breakfast foods for lunch or lunch foods for dinner.
- Use color as a guide for variety in a meal. A good meal should provide three distinct colors on the plate.
- Increase the variety of texture in meals. Add to your usual fare whole grain breads (rye, wheat, pumpernickel), whole grain cereals, and cooked legumes (beans of all types, lentils, dried peas).

Eating Alone

Pamper yourself and pay special attention to meal preparation. If eating alone means skipping meals or not eating a variety of foods try one of the following to add mealtime sparkle.

- Start an eating club.
- Eat by a window and use the best dishes.
- Eat a lunch in the park.
- Treat yourself to a meal out.
- Invite a friend to a potluck dinner.
- Attend the nutrition program for the elderly and enjoy meals in the community.
- Arrange for home delivered meals during an illness from the community nutrition program for the elderly.
- Make leftovers into "planned overs."
- Prepare a new recipe each week and invite friends over for a tasting party.
- Use frozen prepared dinners for added variety and convenience.

Buy More Nutrients Per Food Dollar

To buy a variety of nutrient-rich foods on any budget requires planning. Consumers get more nutrients for their dollar when they buy milk, eggs, legumes, grain, lean meat, fish or poultry than if they buy prepared processed foods, ready-made desserts and snack foods.

Look for specials. Check the newspaper ads for sales on meat, fish, poultry, fruits and vegetables.

Use coupons. Coupons save money if the person usually buys that product. Buying expensive convenience foods with coupons may cost more.

Plan ahead. Buy an advertised meat special and use it for several meals. Freeze portions for later use. Always keep a supply of food on hand for bad weather or illness.

Make a shopping list. Plan meals for the week, then make a list of the food needed at the store.

Shopping. Shop when the store is not crowded and after a meal. Ask for help at the store, if needed. If necessary take a magnifying glass to read the fine print on the labels.

Read the labels. Find out the ingredients used in the food and the date for wholesome use. If unable to find the date, ask for the information. If enough people ask, it will appear in larger print.

Read the nutrition labels. When the label says "low calorie" or "low sodium," check to see the number of calories per serving and the amount of sodium per serving on the nutrition information label. Sodium labels give valuable information on the sodium content per serving of foods as follows: sodium free, 5 mg; very low sodium, 35 mg; low sodium, 140 mg; reduced sodium, 75 percent less sodium than before, but unsalted, processed without salt, may still contain sodium.

Use unit pricing. Unit pricing helps the consumer find the best buy. The unit pricing label tells the cost per unit of measure such as ounce, serving or pound. Use this to compare brands and different size packages to get the most food per dollar.

Use food stamps. Apply for food stamps. If eligible they can extend the food dollar.

References

Eating For Your Health, American Association of Retired Persons, 1909 K Street, NW, Washington, D.C., 20049.

Nutrition and the Elderly, Food and Nutrition News, 60:15, Nov/Dec. 1988.

Nutrition Which Promotes Health and Wellness, Mary Scott Lecture Series Proceedings, J. Anderson, K. Petre, April, 1988.

Geriatric Nutrition, Daphne Roe. Prentice Hall Publ. Co.

Nutrition, the Aged and Society, C. Kart and S. Metress, Prentice Hall Publ. Co.