

Health Promotion and Wellness for Older Persons

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Description of the Module:

This 2-hour module will present:

- common definitions of health and wellness, healthy aging, primary to tertiary prevention
- methods to promote behavioral change
- common health screens for older persons
- rural and cultural issues associated with health promotion
- an overview of prevention strategies for common health problems of older persons with emphasis on cardiovascular disease and blood pressure, osteoporosis, diabetes, osteoarthritis, multiple medications, smoking, injuries, and mental health
- weight control and exercise as health promotion activities

Learning Objectives:

The learner will demonstrate the ability to apply knowledge of health promotion and wellness for older persons in her or his professional setting. Specifically the learner will:

- Define health and wellness as related to healthy aging. Discuss different perspectives on the definition of health.
- Define primary, secondary, and tertiary prevention strategies and give two examples of each in professional practice.
- Describe three ways to promote behavioral change.
- List common health screens for older persons as related to wellness assessment.
- Describe two health promotion practices for each of the following: cardiovascular disease, diabetes, osteoporosis, osteoarthritis, and depression.
- Give two examples of how wellness strategies may be affected by ethnic or rural issues.
- Give two examples of how selected health promotion practices could be used in his/her professional setting.

Content Outline

- Introduction
- Definitions of Health and Wellness; Health Promotion; Primary, Secondary, and Tertiary Prevention
- Changing Health Behavior
- Nutrition and Exercise
- Cardiovascular Disease and Hypertension
- Osteoporosis, Falls Risk Reduction, and Injuries
- Type II Diabetes
- Osteoarthritis
- Multiple Medications
- Smoking
- Mental Health – Depression
- Infectious Diseases
- Cultural and Rural Issues

Continuing Education Requirements

- Completion of Participant Profile
- Completion of Pre-Test
- Reading of Text
- Completion of Post-Test with at least 70% accuracy

Appendix -- The Health Promoting Lifestyle Profile [This is part of the to-be-accomplished addition of an appendix.]

Glossary

Resources

Health Promotion and Wellness for Older Persons

Introduction

As the emphasis in health care in the United States shifts from acute diseases to chronic diseases, prevention and health promotion become important parts of a comprehensive system. This module will introduce you to some of the basic concepts for promoting wellness and health and for disease prevention. As you may know, much of the research in this area has involved younger persons. Nevertheless, we apply many of the same findings and principles to our interactions with older persons.

Health, Wellness; Health Promotion; Healthy Aging; Primary, Secondary, and Tertiary Prevention

Definition of Health and Wellness:

The concepts of health and wellness can be viewed from broad or limited perspectives. An example of the broad perspective of wellness is that of the World Health Organization which defines health as a "state of complete physical, mental, and social well being"(WHO, 1958). This view emphasizes the balance between the body, mind, spirit, and environment. Health is viewed as having the resources necessary to meet the demands of life. Many holistic and non-traditional practitioners utilize this perspective. Recent publications from the World Health Organization focus on the impact of health conditions on bodily systems and functions as well as activity participation (WHO, 2001). If you wish to learn more about the World Health Organization's concepts visit their web site at www.who.int/health_topics. Another excellent source of information on health in the United States is the Healthy People 2010 website (www.healthypeople.gov/). The two overall goals of Healthy People 2010 are to increase quality and years of healthy life and to eliminate health disparities. Healthy People 2010 includes two other helpful websites: www.healthfinder.gov/ which provides data bases on health and <http://odphp.osophs.dhhs.gov> which is the web site of the Office of Disease Prevention and Health Promotion.

Many health care providers take a more limited perspective on health in which health is viewed as the absence of illness or disease. The emphasis is on prevention of specific diseases or prevention of complications of these diseases (Edelman & Mandel, 2002). This more limited perspective is

commonly used in health promotion and prevention literature and by many traditional practitioners.

In a world with limited resources, the focus remains on first achieving the more limited view of health; that is, to prevent common major health problems or their sequelae. While this author would like to encourage a more holistic view of health, the brief nature of this module will emphasize common health problems in the elderly and their prevention. Because this broader view of health also includes attention to social and spiritual issues, our module on Psychosocial Aspects of Aging provides a more in depth review of these concerns.

Definition of Health Promotion

Health promotion refers to helping persons to have a state of optimum health. This involves

- identifying risk factors,
- providing education,
- and fostering possible lifestyle changes

Health promotion can be facilitated by individuals and organizations. Despite stereotypes of elderly persons not being willing to change, many older persons seek information on healthy life styles and adopt significant lifestyle changes.

Definition of Healthy Aging

The process of normal aging involves declines in body systems. See the Biology of Aging module for a more complete discussion of these changes. Healthy aging involves minimizing these decrements through health promotion and prevention activities, as well as adapting to inevitable changes.

Definition of Primary, Secondary, Tertiary Prevention

The three goals of prevention activities are:

- prevent or delay the onset of illness, injury, or disability
- ameliorate the effects of illness or injury
- ultimately improve the quality of life of older persons (Nadoo & Wells, 2000)

Activities to prevent illness or injury can be divided into primary, secondary and tertiary activities.

Primary prevention includes procedures or behaviors that forestall occurrence of injury or onset of illness. Examples of primary prevention activities are:

- reduction of hypertension to reduce risk of stroke
- immunization for pneumonia
- control of blood lipids, weight, smoking, and increasing exercise to reduce risk of heart disease
- medications, exercise, and diet to improve bone density
- community resources such as support groups to prevent depression after loss of a loved one

Secondary prevention focuses on the early detection of underlying disease. Examples include:

- clinical and self -breast exams
- screens for prostate problems
- bone density scans

After a disease or injury occurs, **tertiary prevention** involves the restoration or maintenance of maximal function and prevention of further disease or disability. Health care providers are frequently involved with tertiary prevention. Examples are:

- programs to prevent pressure sores in patients confined to bed
- proper shoes for patients with diabetic neuropathy
- rehabilitation for patients after stroke or surgery
- proper diet post surgery to promote healing
- arranging for home health or community services

Changing Health Behaviors

Health promotion, wellness, and prevention often require changing behaviors, which can be quite difficult. To appreciate the difficulty, you might set a goal of changing one behavior in your life and try to maintain it for one month.

Some of the factors that affect the ability to change a behavior include (Ogden, 2000):

1. **Perceived susceptibility** to a given health threat. An example is the perception, "My risks for osteoporosis are high because I have a family history, I don't eat milk products, and I am not active."
2. **Perceived severity** of a health threat. An older person might be ready to modify diet and exercise after a major cardiac problem. "I could die from heart disease."
3. **Perceived costs** of change/barriers to change. All individuals will have costs or barriers to behavioral change. "Exercising will flare up my knee osteoarthritis" or "I really like to eat fatty foods, low fat foods just don't taste good."

4. **Perceived benefits** of the change. Perceived benefits must fit into the person's value system and goals. "Stopping smoking will improve many aspects of my life. I will be able to play with the grandchildren and do my own shopping."
5. **Social Support** for the change. Support from family or friends for change can be very important. "My family is willing to change their diet so that I can lose weight."
6. **Perceived self-efficacy** for the change. It is important that the person perceives that they can accomplish the change. For this reason, small changes may be more successful than major ones. "I am confident I can eat at least one piece of fruit daily."

Another approach to behavioral change involves the concept of *stages* of change (Prochaska & DiClemente, 1984). In this approach, in order to change behavior, persons must go through various stages of knowledge and action. These stages are:

1. **Precontemplation** – The person is not yet intending to make changes. This stage requires education about risk factors and the benefits of change.
2. **Contemplation** – The person is considering change and action. This stage requires additional education and breaking down barriers.
3. **Preparation** – The person is developing specific plans for change, for example, planning on buying specific foods or joining an exercise group
4. **Action** – The person is actively engaged in the new behavior. It is important to provide early positive rewards and other positive reinforcement during this stage. Planning to make gradual changes and expecting setbacks is important in this stage. An example of a positive reward would be: "I have stopped smoking for one week; and I am going to reward myself with going to a movie."
5. **Maintenance** – The person is able to sustain the change over time. It is important to continue rewards and support. The person needs to not expect perfection. For example: "I have been able to walk at least three times a week for six months now. I have much more energy and have been able to wear one-size smaller pants. When I have guests I haven't walked as much, but I am generally keeping up the habit" (Ogden, 2000).

Nutrition and Exercise

Weight Control

For older persons weight control can be a problem whether at one end of the spectrum or the other: overweight and not maintaining weight. Generally, body weight is measured by body mass index (BMI) (body weight in kg/height in m²). For all adults, a BMI greater than 25 is considered overweight and a BMI over 30 is considered obese. Overweight and obesity are associated with increased risk for cardiovascular disease, stroke, type II

diabetes, hypertension, arthritis, cancers of the breast, colon, endometrium, and prostate, apnea, and gallbladder disease.

Factors associated with obesity in older adults include lower education, racial background, cultural expectations, and sedentary lifestyle. It is estimated that one third of persons over age 70 are overweight or obese. While the adverse effects of overweight may continue into old age, this age group has not been as well studied. The effect of excess weight is not as clear in older adults compared to younger adults. Optimum weight may be higher for older adults. Overweight is not necessarily associated with increase mortality in older adults (Ferrini & Ferrini, 2008).

Normal aging changes in body composition include decreases in lean body mass, basal metabolic rate, protein stores, and stores of water. Increases in activity including moderate exercise and weight lifting can help to increase lean body mass, basal metabolic rate, and overall energy expenditure.

Under-nutrition can also be a problem with older persons. Nutritional deficiency can be caused by many factors including poor dentition, poor quality of food, sensory changes, gastrointestinal disturbances, poor cognitive status, and lack of social stimulation. Nutritional deficiency can result in additional decreased immune function, decreased healing capacity, and loss of reserve capacity. Health problems such as surgery, illness, or infection can stress the system and result in increased nutritional needs. Special care should be taken at these times to insure adequate protein and mineral intake (McCloy, 2000)

Strategies for improving an elder's nutritional status include:

- Assess all possible barriers to an adequate intake.
- Enlist family assistance. Use home health services. If available, consult experts in nutrition, physical therapy, speech, or social workers to address barriers.
- Use snacks and supplements to boost intake. Encourage smaller, more frequent meals and high-calorie, high-protein foods wherever possible.
- Monitor weight on a regular basis.
- Give a daily multivitamin and mineral supplement. It is often difficult for the elderly to consume adequate amounts of nutrients from food alone. (Tripp, 1997)

The module on Nutrition and Aging provides a more detailed discussion of issues of nutrition in older persons.

Activity and Exercise

While activity levels may increase after retirement, in general, exercise and activity decrease in the long term with aging. However, increased activity is associated with decreased risk for obesity, Type II diabetes, heart disease, osteoporosis, some cancers, and hypertension. Exercise has also been

shown to reduce the symptoms of some diseases including osteoarthritis, obesity, and depression. Activity can also improve the quality of life by decreasing fatigue and improving the sense of well-being (Ferrini & Ferrini, 2008).

Components of a good exercise program include

aerobic activities
resistive exercise such as weight lifting
and stretching to maintain flexibility

Aerobic exercise that is weight bearing can also help maintain bone density. Due to the frequency of joint problems in older persons, low impact activities such as walking are favored aerobic activities. Weight lifting exercises should emphasize trunk extension (straightening the back). Sustained stretching rather than bouncing provides the best maintenance of flexibility.

While some moderate exercise daily is desirable, at least 30 minutes three times a week is considered minimum for positive results. Older persons considering an exercise program should check with their health care provider and consult an expert who frequently works with older persons. One simple way to track progress in activity level is to record the distance walked in six minutes. There are many books and web sites dedicated to fitness and activity for older persons.

- One excellent book published by the National Institute on Aging is *Exercise: A Guide from the National Institute on Aging*, available on the web at www.niapublications.org/exercisebook/exerciseguidecomplete.pdf.
- Another good web site for exercise and the elderly is the American College of Sports Medicine at www.acsm.org.

Assessment

The Health-Promoting Lifestyle Profile

One common assessment instrument for measuring Health Promotion beliefs and behaviors is the *Health-Promoting Lifestyle Profile* (Walker, et al., 1987). This profile has 52 items that measure general health promoting lifestyle, health responsibility, physical activity, nutrition, spiritual growth, interpersonal relations, and stress management. Please familiarize yourself with the Profile, which is presented in this module as **APPENDIX-- The Health-Promoting Lifestyle Profile**.

Cardiovascular Disease and Hypertension

Cardiovascular disease is the leading cause of death in the United States. It includes:

- hypertension
- coronary heart disease
- congestive heart failure
- and stroke

These diagnoses combined affect over 60 million people. Risk factors for heart disease include age, gender, family history, smoking, diabetes, hyperlipidemia (high cholesterol levels), hypertension, obesity, high stress, and physical inactivity. The first three of these risk factors cannot be changed but the remaining seven factors may be modified by medication and lifestyle. Lifestyle changes may include exercise, stress reduction, diet modification, and smoking cessation.

Specific measures indicating risk for cardiovascular disease include:

- BP over 140/90. Controversy exists as to whether these numbers should be increased in elderly persons. Some studies utilize 160/95 as hypertensive in older persons. Other studies include blood pressure as low as 130/85 as a risk factor for persons with diabetes or chronic kidney disease (Chobanian, et al., 2003).
- Body mass index greater than 30
- Currently smoking
- Total cholesterol greater than 200 mg/dL with LDL greater than 130 mg/dL and HDL less than 35 mg/dL
- Fasting blood sugar greater than 110 mg.dL
- Inactivity

Primary prevention includes the use of:

- appropriate nutrition
- exercise
- smoking cessation
- stress reduction techniques
- medications to reduce hypertension

Diet modifications include reduction in fat and sodium intake. Recommendations for exercise include aerobic exercise of 60-90% of maximum (or perceived exertion of 11-14 on the Borg Scale) for 30 minutes at least 3 times per week and increase of moderate activities to almost every day. Smoking cessation has proven to be quite difficult. Combined programs including such techniques as group support, nicotine replacement, contracts, and self-monitoring have shown success. Stress reduction

techniques include slow controlled breathing, meditation, imagery and visualization, progressive muscle relaxation, exercise, and special techniques such as Yoga and Tai chi. There are many websites for details of these techniques such as:

www.meditationsociety.com

www.lessons4living.com

www.holistic-online.com

Lifestyle changes must often be combined with medications in order to reach acceptable levels of blood pressure, blood glucose and blood cholesterol.

While many of the research studies dealing with risk factors for cardiovascular disease involved middle-aged persons, the beneficial effects of lifestyle changes and medications appear to continue into older age groups. For example, the beneficial effects of smoking cessation occur in all age groups about six months after stopping smoking. Even if the individual already has lung damage associated with emphysema, progression of the disease is reduced when smoking is stopped. Increasing exercise not only reduces risk factors but also improves reserve capacity and reduces the workload required for everyday activities (Ferrini & Ferrini, 2000).

Reducing hypertension and hyperlipidemia also reduces the risk of stroke. Elders must be educated regarding the warning signs of transient ischemic attack (TIA) or stroke www.americanheart.org:

- sudden numbness or weakness of face, arm or leg, especially on one side of the body
- sudden confusion, trouble speaking or understanding
- sudden trouble walking, dizziness, loss of balance or coordination
- sudden severe headache with no known cause

Osteoporosis, Falls Risk Reduction, and Injuries

Prevention of fractures in older individuals involves both the maintenance of adequate bone density and the reduction of falls risk. Common sites for fractures include the trabecular (porous) bone in the wrist, hip, and spine.

Osteoporosis

Bone density decreases in all individuals as they age; there is a more rapid decline in women in the perimenopausal period. Throughout life, bone is laid down by activity of osteoblastic (bone forming) cells and bone is remodeled by osteoclastic cell activity. After skeletal maturity, osteoclastic activity generally is greater than osteoblastic activity.

Risk factors for pathological low bone density include female gender, age, northern European or Asian ethnic background, family history, small body mass, smoking, low calcium intake, inactive lifestyle, early menopause, high caffeine intake, use of steroidal medications (for example in asthma and rheumatoid conditions), malabsorption syndromes, and menstrual abnormalities in young women. As with cardiovascular disease some of these factors cannot be modified but others can be changed through lifestyle. Bone density can be screened with broadband ultrasound or measured more specifically through more expensive DEXA scans. Medications to slow bone loss or increase bone density are also available (Gold et al., 2001).

Maintenance of bone density, or at least slowing the loss of bone, has three primary components. These are:

- maintenance of endocrine control of bone density through various medications after menopause and appropriate body fat during adolescent and premenopausal years
- adequate calcium and Vitamin D intake through diet and supplements throughout life
- adequate activity including weight bearing activity and weight lifting exercises throughout life

Hormone replacement has reduced applicability due to its association with increased risk for breast cancer and heart disease. Other medications that are used include selective estrogen receptor modifiers, bisphosphonates, and calcitonin.

Nutritional recommendations for calcium include at least 1000 mg/day during premenopausal years and 1500 mg/day in the postmenopausal years. Dietary sources of calcium include dairy products, sardines, and dark leafy green vegetables. Recommendations for vitamin D include 400 IU per day for post-menopausal women. Sources include egg yolks, liver, fatty fish, butter, fortified milk, and supplements. Exposure to sunlight is important for formation of provitamin D; this may be an important consideration for homebound or institutionalized older women.

While the effect of increased activity on maintenance of bone density is variable, inactivity clearly results in decreased bone density. Exercise and activity programs that combine weight bearing, low impact activities, and weight lifting are the most beneficial. Activities that selectively load hip and spinal areas may be most beneficial. These include walking, low impact aerobics, carrying backpacks, and weight strengthening emphasizing back extension (McCloy, 1998).

The modules on Musculoskeletal Problems, Screening for Osteoporosis, and Nutrition and Aging provide more detailed discussions of osteoporosis prevention and treatment.

Falls Risk Reduction

Another important part of prevention of fractures for older persons is reducing the risk for falls. Many factors are associated with falls including older age, previous history of falls, certain medications, decreased balance and strength, dizziness, and diagnoses such as Parkinson's Disease, advanced Alzheimer's Disease, and stroke. Practices that can reduce risk for falls include

- strengthening muscles of the lower extremity, especially around the ankle
- balance training emphasizing one leg standing (Tai chi has been shown to be particularly helpful)
- review and consultation on medications
- environmental modifications

Examples of helpful environmental modifications include bars and stools in showers and tubs, raised toilet seats and bars around the toilet, nightlights, railings on stairs inside and outside the home, elimination of loose rugs, and placement of furniture to aid with balance.

Many older individuals who have fallen develop a fear of falling that may limit their quality of life as much as any physical problems. Tertiary prevention for persons with this fear includes environmental modifications as described above, assistive devices for walking, medication review, exercise, and counseling to increase confidence (Edelman & Mandel, 2002).

Persons with an Osteoporotic Fracture

Older persons who have suffered an acute osteoporotic fracture require intense medical and social intervention to help them to return to the maximum functioning possible. Early medical procedures may include surgery, casting or bracing, pain control, and rehabilitation. The environmental, medications, and exercise programs described for primary and secondary prevention are also important for these persons.

Injuries

While falls are the most common cause of injuries for older persons, other important sources of injuries for the elderly include the environment and driving accidents. Home modifications to reduce falls risk were outlined above. Many older persons live in older homes that may need upkeep, new wiring, and smoke detectors to reduce injuries in the home. As persons age, sensory loss and slowing of reactions may increase the danger of accidents while driving. More frequent testing of older drivers and special driving safety courses for older drivers can help reduce driving accidents involving elderly persons.

Type II Diabetes

Older persons are at higher risk for Type II diabetes, which most commonly develops between ages 50 and 60. Type II diabetes is usually controlled with diet and/or oral hypoglycemic medications, and sometimes use of exogenous insulin. Risk factors besides age include family history and being overweight. Blood sugar levels are tested using fasting blood sugar, glucose tolerance testing, or HbA1c test, which measures blood sugar levels over the previous 60 days. Major diabetes prevention studies have shown that risk for diabetes can be reduced by exercise and diet resulting in a modest weight loss. In addition to promoting weight loss, moderate exercise may also increase the effectiveness of insulin in reducing blood sugars. Medications are also available that may be combined with diet and exercise to reduce blood glucose levels.

For individuals with diabetes, important prevention activities include:

- keeping blood glucose levels as close to normal as possible with diet, exercise, and medications
- control of blood pressure and lipids
- routine eye exams for the early detection of any damage
- regular foot inspection and care including specialized shoes, if needed
- regular kidney function tests
- careful skin inspection and wound care

The Endocrine Problems and Screening for Diabetes modules include more detail on diabetes in elderly persons. Web sites providing additional information on diabetes and prevention include:

www.diabetes.niddk.nih.gov/dm/pubs/preventionprogram/index.htm.

www.ndep.nih.gov/

Osteoarthritis

Osteoarthritis is the most common chronic disease in older persons. Joints most commonly affected include the distal finger joints, hip, and knee. Risk factors include family history, overweight, occupations involving heavy lifting or vibration, and joint trauma from injury and high impact sports. The increased risk associated with excessive weight begins in early adulthood. Even a modest reduction in weight (11 pounds in one study) can reduce the symptoms associated with osteoarthritis. While many believe that exercise may aggravate the symptoms of arthritis, many studies have demonstrated that proper exercise can reduce the pain of osteoarthritis and increase activity level. Types of exercise can include aquatic exercise or strengthening with weights. Other key elements for prevention or reduction of the symptoms of osteoarthritis include

- proper conditioning
- proper equipment and training for participation in sports or activities
- the use of foot orthotics and assistive gait devices (for example, a cane) for certain individuals

Other measures include exercise to improve strength of the thigh and calf muscles for persons with knee osteoarthritis, proper shoes for a walking program, or lessons when participating in golf or tennis activities (Ettinger, 1998; Felson, et al., 2000).

Multiple Medications

The elderly are at greater risk for both polypharmacy and adverse drug reactions (ADRs). The larger numbers of prescription medications taken by older persons for multiple illnesses combined with the altered absorption, metabolism, and excretion associated with aging increase the risk for adverse drug reactions and drug interactions. Over the counter (OTC) medications, supplements, and herbal medications may also complicate these problems. These ADRs and drug interactions may decrease compliance, decrease quality of life, and result in unnecessary expense. Often the knowledge of a health care professional is required to evaluate these possible reactions and interactions and recommend possible solutions (Endelman & Mandle, 2002). Suggestions to help reduce the risk of problems from multiple medications include:

- education of the health care providers and patient in order to more quickly identify problems
- developing a comprehensive medication profile including OTC meds, herbals and supplements
- utilizing a single pharmacy so that medications from multiple providers can be evaluated
- when possible, combining medications into single dose regimes -- for example, a beta blocker and diuretic may be combined in one medication (See www.medinfo.ufl.edu for a review of polypharmacy issues.)

Smoking

Smoking remains the number one preventable cause of disability and mortality for older as well as younger persons. While older persons are often not included in smoking cessation studies, the few studies that do include older persons indicate that the elderly are at least as likely to benefit from smoking cessation programs as younger folks. Some studies have shown a higher compliance in stopping smoking with older persons. Smoking cessation in older persons has been linked to

- better outcomes following coronary artery bypass graft
- reduced risk of sudden death from cardiovascular disease
- reduced bone loss
- improvement in symptoms of inflammatory bowel disease and intermittent claudication

As with younger persons, stopping smoking in older persons would be expected to reduce the progression of chronic obstructive pulmonary disease and to promote healing after surgery. Health care professionals are encouraged to offer smoking cessation programs to their older clients (Burns, 2000).

Mental Health – Depression

Despite common stereotypes, older persons have about the same rate of depression as younger adults. Nevertheless, depression is the most common psychological problem occurring in older persons. At particularly high risk for depression are

- very old men
- persons entering a nursing home
- persons with a history of depression
- persons with major health problems

The key symptoms of depression are predominantly sad mood or loss of interest in normally pleasurable activities. These symptoms should affect social or occupational roles. Other symptoms might include alterations in eating and sleep activities, feelings of worthlessness, and complaints of fatigue (Endelman & Mandle, 2002). Various self-report screens for depression are available including the Center for Epidemiological Studies Depression Scale (CESD) or the Geriatric Depression Scale (Kane & Kane, 1981). The Mental Health and Aging Module provides a detailed discussion of depression in older persons.

Infectious Diseases

While older persons generally have fewer acute infections than younger persons, the effect of an infection can be more devastating in the elderly. Therefore persons over age 65 and those with chronic illnesses, especially cardiovascular, pulmonary, or immunocompromised diseases, should be sure to have an annual influenza vaccinations. All persons over age 50 should have a one-time pneumococcal vaccination. A one-time pneumococcal revaccination is recommended for immunocompromised persons or persons over age 65 if the original vaccination was at least 5 years ago and the

person was under 65 at primary vaccination. A tetanus/diphtheria booster is recommended every 10 years. (www.cdc.gov/vaccines/recs/schedules/downloads/adult/06-07/adult-schedule.pdf) Unfortunately, it is estimated that fewer than 50% of older persons have these vaccinations. One of the goals of *Healthy People 2010* is to increase this percentage (Edelman & Mandel, 2002).

Rural and Cultural Issues

Rural Health Care for Elders

Living in rural areas provides special challenges in providing health care and prevention services to older persons. Rural areas tend to have a higher percentage of elderly persons and fewer of them have Medicare or prescription drug coverage. At the same time there are fewer health care professionals, specialists, and facilities. Montana has higher than the US average of persons with diabetes in the over 65 population, as well as lower than average Medicare spending per beneficiary. Transportation to health care facilities, as well as provision of dental care, are especially troublesome for elderly persons. Urban health care centers have begun to provide outreach services to more remote rural areas.

Cultural Issues

American Indian communities have begun to focus on older persons for the provision of both health care and preventative services. Numbers of elderly persons in Native American communities is increasing and provision of services requires coordination of tribal, state, and federal programs. Identified issues include transportation to services and increased availability of community-based and hospice services for older persons. Programs emphasize the need for respect for elder tribal members and the need to maintain them within their communities during their later years.

Prevention programs for elders are also becoming available in American Indian communities. Existing programs emphasize an annual health exam for elders and the provision of consultative services for dental, vision, hearing, podiatry, and activity issues. Follow-up services are provided by specially educated nurse practitioners. Elders identify individual and community needs and goals and work with community-based services to help provide them. Again, coordination of the many different agencies involved is critical. If you would like to learn more about health care and preventative services for American Indians, the following web sites provide additional information:

www.ihs.gov/MedicalPrograms/ElderCare

<http://ruralhealth.und.edu/projects/nrcnaa>

www.nicoa.org

Glossary

Bisphosphonate – oral agent used to inhibit the resorption of bone. A common example is alendronate (Fosamax^R).

Body Mass Index (BMI) – body weight in kilograms divided by the square of body height in meters, kilograms/meters²

Calcitonin – hormone important in calcium and phosphorus metabolism. Suppresses resorption of bone.

DEXA Scan – dual energy X-ray absorptiometry. Low energy x-ray procedure used to measure mineral content of bone.

HbA_{1c} – glycated hemoglobin. Measurement of the average serum glucose through binding of glucose to the hemoglobin in red blood cells. Indicative of glucose control during the preceding 2-3 months.

High Density Lipids (HDL's) – high density lipoprotein cholesterol. Low levels of these lipids are associated with increased risk of atherosclerosis and heart disease.

Low Density Lipids (LDL's) – low density lipoprotein cholesterol. High levels of these lipids are associated with increased risk of atherosclerosis and heart disease.

Neuropathy – a functional disturbance or pathological change in the peripheral nervous system.

Primary Prevention – prevention of the onset of a disease or injury

Secondary Prevention – early detection of a disease or injury

Selective Estrogen Reuptake Modulators – medications that select specific estrogen receptors in the body and either stimulate or depress an estrogen like response. Two common examples are raloxifene (Evista^R) used to treat osteoporosis and tamoxifen (Nolvadex^R) used to treat breast cancer.

Tertiary Prevention – prevention of complications or sequelae of a disease or injury that is present

Resources

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