The Active Aging Toolkit:

Promoting Physical Activity in Older Adults for Healthcare Providers

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Executive Summary

In response to the National Blueprint Increasing Physical Activity Among Adults Age 50 and Older, The **Active Aging Toolkit** has been developed as a collaborate effort of the Blueprint, professional organizations, and private industry as an evidence-based and an easy-to-instruct program for healthcare providers to educate their patients on increasing physical activity. Because physical activity is known to be essential in the prevention and management of chronic diseases, healthcare providers are the most important motivators for older adults to begin physical activity programs.

The purpose of this *Toolkit* is to provide specific interventions and programs to improve health and functional ability, to promote independence, and to prevent chronic disease and disability in older adults. The *Toolkit* allows healthcare providers to more effectively communicate with patients, including specific strategies for changing perceptions and behaviors toward physical activity, guidelines, educational materials, and research to support evidence-based practice.

The *Toolkit* focuses on a "HOW TO" approach:

- *assess current levels of physical activity*
- *counsel patients to change behaviors and perceptions on physical activity*
- *assess individual risk for physical activity and exercise*
- *assess individual physical ability and functional limitations*
- *identify individual needs & establish goals*
- *determine initial physical activity prescription*
- *progress activity and track progress*
- *modify programs for specific subgroups*
- *keep individuals motivated & improve compliance*

Toolkit Contents

1. The **Active Aging Toolkit** *Provider Manual* includes professional "how to" information on:
    - strategies to promote physical activity to older adults.
    - assessment tools to help individualize physical activity programs.
    - individualized, evidence-based physical activity programming options.
    - guidelines to modify, progress, motivate, and follow-up.
    - resources for more information and referral to community resources that provide evidence-based, specific, and individualized physical activity programs for older adults.

2. ***The First Step to Active Health™*** *Program*. A progressive, 4-step program that provides evidence-based, specific, and individualized physical activity programs for older adults. Includes cardiorespiratory, flexibility, strength, and balance activities.

3. *Website* (www.FirstStepToActiveHealth.com) for healthcare providers and consumers that includes the First Step to Active Health™ program and other resources for healthcare providers.

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Introduction

The increase in the aging population has led to a public health issue of inactivity. In response, the National Blueprint Increasing Physical Activity Among Adults Age 50 and Older has been developed by a coalition of professional organizations. The Blueprint includes a "call to action" for healthcare providers to increase the physical activity of older adults. While much research exists on the benefits of physical activity, little information on the practical application and programming is available to healthcare providers, particularly during their professional training. In today's healthcare environment, providers need evidence-based and easy-to-instruct programs to educate their patients on increasing physical activity.

"Approximately 95% of the 1.4 trillion dollars that we spend as a nation on health goes to direct medical care services, while an estimated 5% is allocated to preventing disease and promoting health. This approach is equivalent to waiting for your car to break down before you take it in for maintenance. By changing the way we view our health, the *Steps* initiative helps us move from a disease care system to a true health care system."

—Secretary Tommy G. Thompson
U.S. Department of Health and Human Services

Purpose

The purpose of this **Active Aging Toolkit** is to provide specific interventions and programs to improve health and functional ability, to promote independence, and to prevent chronic disease and disability in older adults. The **Active Aging Toolkit** will define a standardized approach and an inexpensive, turn-key program for healthcare providers to promote physical activity among older adults. The **Active Aging Toolkit** will allow healthcare providers to more effectively communicate with patients, including specific strategies for changing perceptions and behaviors toward physical activity, guidelines, educational materials, and research to support evidence-based practice.

Vital Statistics

Aging & Physical Activity Statistics *(from the National Blueprint, 2002)*	Chronic Disease Statistics *(from USDHHS, 2002)*
• By 2030, 20% of Americans will be aged 65 • 28-44% of adults over 65 are inactive • In 1998, only 10% of Americans aged 65-74 reported activity 2 or more days per week that enhances and maintains strength and endurance • 88% of those over 65 have at least one chronic health condition, and 21% of people 65 and older have chronic disabilities	• 12.6 million people have heart disease • 50 million people have high blood pressure • 108 million adults (61% of the adult population) are overweight or obese • 17 million people have diabetes • 107,000 are diagnosed with colon cancer yearly • 300,000 people suffer hip fractures yearly

The aging population will continue to grow rapidly. Millions will be affected by chronic disease and disability, costing billions of dollars. Increasing physical activity is the most important tool for older adults to prevent & manage chronic disease, and to prevent and decrease injury and disability.

Benefits of physical activity

Physical activity in older persons produces three types of health benefits: (1) reduction in risk of developing chronic diseases; (2) aid in management of chronic diseases; (3) improve the ability to function and stay independent (USDHHS, 2002).The following table illustrates some of the health benefits of regular physical activity *(from Blueprint, 2001).*

Health Issue	***Benefits of Physical Activity***
Cardiovascular health	➢ Improves myocardial performance ➢ Increases peak diastolic filling ➢ Increases heart muscle contractility ➢ Reduces premature ventricular contractions ➢ Improves blood lipid profile ➢ Increases aerobic capacity ➢ Reduces systolic blood pressure ➢ Improves diastolic blood pressure ➢ Improves endurance
Obesity	➢ Decreases abdominal adipose tissue ➢ Increases lean muscle mass, ➢ Reduces percentage of body fat
Lipoproteins/Glucose Intolerance	➢ Reduces low-density lipoproteins ➢ Reduces-cholesterol/very low density lipoproteins ➢ Reduces triglycerides ➢ Increases high-density lipoproteins ➢ Increases glucose tolerance
Osteoporosis	➢ Slows decline in bone mineral density ➢ Increases bone density
Psychological well-being	➢ Improves perceived well-being and happiness ➢ Increases levels of catechotamines, norepinephrine and serotonin
Muscle weakness and functional capacity	➢ Reduces risk of musculoskeletal disability ➢ Improves strength and flexibility ➢ Reduces risk of falls due to increased strength ➢ Reduces risk of fractures ➢ Improves reaction time, quadriceps strength ➢ Sustains cerebral perfusion and cognition

Impact of Aging on Healthcare System & Costs (NCHS, 1999)

- 1/3 of total healthcare expenditures are for adults over 65. By 2030, healthcare spending will increase 25%.
- Direct medical costs attributable to inactivity and obesity accounted for nearly 10% of all healthcare expenditures in the United States.
- 25% of physician visits of patients 65 & older in 2000 were made to primary care (Internal medicine, family practice, general practice), over 200 million visits.
- 45% of all visits by patients 65 and older were to internal medicine physicians (39% of internal medicine visits were by patients older than 65).
- The additional medical costs for adults with Diabetes Mellitus are approximately $4000 greater per year compared to adults without Diabetes. Lifestyle interventions in at-risk adults (physical activity and weight loss) have been effective in reducing the development of Diabetes Mellitus by more than 50% (Knowler et al. 2002)

- The Washington Business Group on Health reported in 2003 that obesity and weight related conditions costs their member organizations more than $12 billion per year.

Physical inactivity is an epidemic that directly affects healthcare costs. By increasing physical activity levels, particularly among older adults, chronic diseases and disability can be reduced, thus lowering healthcare costs.

The National Blueprint & a "Call to Action"

In May of 2001, a coalition of nearly 50 national organizations released a major national planning document that addresses aging and physical activity. With the help of the Robert Wood Johnson Foundation, The National Blueprint to Increase Physical Activity Among Adults Age 50 and Older was developed to serve as a guide for organizations and individuals to help them increase physical activity among older adults.

The Active Aging Partnership:
Blueprint Steering Committee

AARP
American College of Sports Medicine
American Geriatrics Society
Centers for Disease Control and Prevention
The National Council on the Aging
The National Institute on Aging
The Robert Wood Johnson Foundation

"Scientific evidence increasingly indicates that physical activity offers one of the greatest opportunities to extend years of active independent life, reduce disability, and improve the quality of life for older persons as well. Although the evidence is clear, it has not yet been translated into national action. That is the aim of this Blueprint. The vision of the people who developed the Blueprint states: "*We envision a society in which all people age 50 and older enjoy health and quality of life, which is enhanced through regular physical activity. We will inspire an approach to aging that encourages physical activity in all aspects of people's lives*." (The National Blueprint, 2001)

The Blueprint provides background information on issues related to physical activity in older adults, addresses the barriers to increasing physical activity in this population, and outlines strategies related to research, home & community, workplace, medical systems, public policy & advocacy, and crosscutting issues to overcome these barriers.

The National Blueprint: Medical Systems

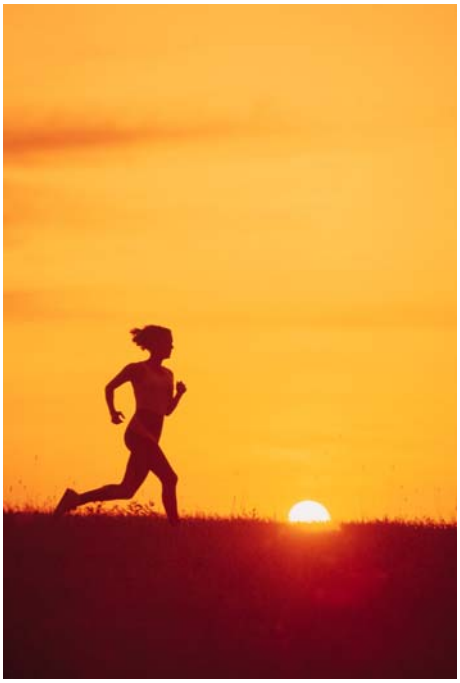
Inactivity among older adults is very complicated and multi-factorial. The Blueprint suggests strategic priorities to address barriers to physical activity in Medical Systems (Strategic Priorities, 2002) . These strategies can be summarized in several areas that are addressed as objectives of this Toolkit:

1. Disseminate information on physical activity guidelines and best-practices to the medical community

2. Develop partnerships between medical professionals and the community to facilitate patient referrals to local physical activity resources

3. Develop resources for clinicians to use in making personalized physical activity recommendations/prescriptions for their patients.

Importance for the Healthcare Provider



The focus of this **Active Aging Toolkit** is to address the medical system barriers to increasing physical activity among adults over 50 years old. The Blueprint (2001) suggests healthcare systems will

- provide access to physical activity information, resources, and counseling to their older consumers
- use evidence-based protocols to link assessments to intervention
- evaluate the effectiveness of systems promoting physical activity
- serve as change agents and model employers regarding physical activity

According to a clinical study, the single most important factor determining participation in an exercise program was a recommendation from their primary care physician (Ades et al, 1992). The physician-based Activity Counseling Trial (ACT) showed that 4 minutes of structured advice during a primary care visit increased physical activity and improved physical fitness parameters. Patrella and Wight (2000) noted several barriers to prescribing exercise in primary care: lack of time, necessary skills and tools, and lack of reimbursement. Healthcare providers (physicians, therapists, exercise specialists) are uniquely qualified to recommend physical activity for their older patients. Unfortunately, there are significant barriers to physical activity within medical systems outlined in the Blueprint. Medical Systems include healthcare delivery centers, such as clinician's offices, clinics, medical centers, hospitals, and healthcare reimbursement organizations. The Blueprint (2001) addressed several barriers in Medical Systems, including:

- **Lack of reimbursement for preventive services**.
- **Lack of time to address physical activity**
- **Lack of adequate educational materials or health-promotion programs for older patients.**
- **Lack of information for healthcare providers about making community referrals**

In addition, there are several self-reported barriers to physical activity including:

- **Lack of motivation : "I just don't feel like exercising"**
- **Lack of time : "I don't have the time to exercise"**
- **Lack of facilities : "I don't want to go to a gym to exercise"**
- **Fear of injury : "I don't want to hurt myself"**
- **Lack of knowledge : "I don't know what to do"**
- **Disease or disability : "I can't because of my disease"**

The *Active Aging Toolkit* for Healthcare Providers

Healthcare providers know the value and importance of physical activity in older adults. Several barriers in the medical system exist, including lack of time, education, and resources. The **Active Aging Toolkit** for healthcare providers to promote physical activity in older adults was developed to answer the "call to action" by the Blueprint. The Toolkit is provided as a "How To" guide to answer common questions for healthcare providers.

Active Aging Toolkit Contents

1. The **Active Aging Toolkit** *Provider Manual* includes "how to" information on:
   - strategies to promote physical activity to older adults.
   - assessment tools to help individualize physical activity programs.
   - individualized, evidence-based physical activity programming options.
   - guidelines to modify, progress, motivate, and follow-up.
   - resources for more information and referral to community resources that provide evidence-based, specific, and individualized physical activity programs for older adults.

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How to Use the **Active Aging Toolkit**

- Incorporate strategies in the **Active Aging Toolkit** *Provider Manual* into daily practice when interacting with older adults.
- Use assessment tools in the **Active Aging Toolkit** *Provider Manual* to determine the risk, ability, and most appropriate physical activity prescription for your patient.
- Prescribe an individualized program for each patient such as the *First Step to Active Health ™*. Programs should include cardiorespiratory, strength, flexibility, and balance activities.
- Review the contents of the individualized activity program with each patient. Use guidelines to modify and progress patients in the **Active Aging Toolkit** *Provider Manual* .
- Follow-up with the patient on their progress by having patients complete the physical activity logs.
- Use resources in the **Active Aging Toolkit** *Provider Manual* or at www.FirstStepToActiveHealth.com to refer patients to other professionals or sources of information, particularly in your local community.

Strategies for Healthcare Providers

How to Assess Current Levels of Physical Activity

Healthcare providers should routinely ask patients during their history and physical if they are currently physically active. "Do you participate in physical activity regularly; if so, what type, how long, and how often?", or "Are you active 30 minutes a day most days of the week?", or "Do you plan to become active in the next few months?" This question may be considered a "vital sign" in the history.

Other specific questions are helpful, such as, "Do you take the stairs when possible", or "Do you work in the garden regularly". The healthcare provider can then determine if the patient is meeting the recommended levels of being moderately active for at least 30 minutes on most days of the week.

For sedentary individuals who are reluctant to change, healthcare providers should assess patient fears about physical activity. Have patients complete the sentence, "The one thing that I fear most about physical activity is_____". The healthcare provider should address these worries to assess their readiness to increase physical activity.

How to Counsel Patients on Physical Activity

Several studies have evaluated the effectiveness of healthcare providers prescribing exercise for older adults. Wee et al. (1999) reported that physician counseling to nearly 10,000 patients of various age was only 34%. Damush et al. (1999) noted that physician advice on exercise could be particularly increased among specific groups of older adults. The 4-minute intervention, *Activity Counseling Trial* (2001) found that 91% of patients had completed physical activity diaries for 24 months after receiving advice from their physicians on physical activity. Elley et al. (2003) found that counseling patients (ages 40-79) on physical activity in general practice was effective in increasing physical activity and improving quality of life over 12 months.

Older adult focus group participants were more likely to start and follow through with an exercise plan if their doctors recommended it (AARP, 2002). Healthcare providers should (1) provide concrete and consistent information; (2) make recommendations that are clear & consistent, and (3) recognize obstacles that people face in beginning & maintaining a physical activity program.

Pre-contemplators are encouraged to do the following 3 things, which should be followed-up on the next visit:

1. talk with someone who is active
2. review the benefits of physical activity
3. see how the benefits pertain to you

How to change perceptions & behaviors

1. Recognize personal barriers to physical activity, including lack of motivation, lack of time, lack of knowledge on how to start a program, lack of community facilities, fear of injury, or disease/disability that hinder physical activity (ACSM, 2002).

Quotes	Barrier	Strategy
I'm not motivated *I don't feel like exercising* *I'm too old; it's too late* *Exercise is not for me* *I'm too tired*	**Lack of motivation**	Emphasize the importance and benefits of regular physical activity, including health and function. Discuss methods of getting started such as walking the dog, taking the stairs, etc.
I don't have time *I have too many other things to do*	**Lack of time**	Begin with 5-10 minutes of daily activity that is enjoyable. Set aside a specific time of the day to be active.
I can't afford a gym *I don't have transportation* *There's no safe place to exercise* *The weather is bad (hot, cold, etc)*	**Lack of facilities**	Physical activity doesn't require expensive equipment, and can be done at home.
I'm afraid of getting hurt *I get too sore*	**Fear of injury**	Moderate activity is safe. Soreness is to be expected with any new exercise program, and will resolve in a few days.
I don't know how to get started *I don't know what to do* *I'm afraid to bulk up*	**Lack of knowledge**	Discuss how patients can do simple and enjoyable tasks, and provide a structured activity program specific to their needs
I have sore joints, bad back *I'm too fat or heavy* *My condition will get worse*	**Disease or disability**	Patients may need referral to another specialist (such as a physical therapist) to address physical conditions. Regular exercise actually benefits most injuries and diseases.
I don't have anyone to exercise with *My family/friends think it's a bad idea* *Culturally specific questions*	**Lack of friend/family support**	Encourage patients to find a partner to exercise with, and to educate their family members on the importance of activity.

2. Note importance of increasing physical activity for health and prevention of disease & disability.
   - Reduces risk of developing chronic diseases such as heart disease.
   - Aids in the management of active problems such as high blood pressure, diabetes, obesity, or high cholesterol.
   - Can improve the ability to function and stay independent in the face of active problems like lung disease or arthritis.

3. Avoid the term, "exercise" and avoid the perception of strenuous workouts; use the term, "physical activity" and encourage individuals to incorporate activity in daily life, encouraging a lifestyle change.

4. Recommend behavioral modification programs for individuals such as "Active Living" at www.activeliving.info .

How to recommend patients increase physical activity

1. Identify opportunities to add more physical activity into everyday life.
    - Walk or ride a bike rather than driving
    - Walk the dog
    - Take the stairs instead of an elevator
    - Begin hobbies that require physical activity (such as gardening or hiking)
    - Incorporate light physical activity into daily routine
    - Park the car farther away and walk
    - Participate in physical activities with grandchildren

2. Recommend individuals reach a goal of 30 minutes of physical activity that makes you breathe harder on most or all days of the week. Emphasize it's OK for them to start at 5 or 10 minutes of easy and fun activity, and work up to 30 minutes of activity on most days of the week. Individuals may also break up the 30 minutes into smaller, 10-minute segments.

3. Prescribe individualized programs based on individual goals that incorporate cardiovascular, strength, flexibility, and balance activities such as the *First Step to Active Health*™ program. Specific, written physical activity prescriptions involving goal setting and follow-up are most effective (AHRQ, 2002).

4. Refer patients to local community resources such as senior centers, medical fitness facilities, or university aging centers with evidence-based, structured physical activity programs.

More resources on changing healthcare behaviors include Marcus & Forsyth (2003), and Rollnick et al. (1999).

PATIENT ASSESSMENT

The **Active Aging Toolkit** recommends two assessments: (1) a general risk assessment by the physician or healthcare professional for beginning exercise, and (2) a functional assessment of ability done by a healthcare provider and the patient. Assessment of risk factors for complications is the most important step in developing a physical activity program for an older adult. Assessment of physical ability helps develop individualized programs and goals. The overall goal of a physical activity program in an older adult is to increase the quality of life, decrease disability, and prevent injury or disease.

How to assess cardiac risk for adverse events

Because of the high incidence of heart disease in older adults and the increased risk for cardiac events, it's important that older adults are screened for potential problems during a physical activity program. The American College of Sports Medicine (ACSM) provides guidelines for exercise testing & prescription (ACSM Guidelines, 2000). Physical activity is generally safe for most individuals, although there are a few contraindications to exercise such as active rheumatoid arthritis, unstable cardiac disease, or recent myocardial infarction. As with any intervention, the benefits should outweigh the risks. Individuals who present with persistent musculoskeletal symptoms should be first referred to a physical or occupational therapist for evaluation before prescribing a structured physical activity program.

Major Signs/Symptoms suggestive of cardiovascular and pulmonary disease
(ACSM Guidelines, 2000)

- Pain, discomfort (or anginal equivalent) in the chest, neck, jaw, arms, or other areas that may be due to ischemia
- Shortness of breath at rest or with mild exertion
- Dizziness or syncope
- Orthopnea or paroxysmal nocturnal dyspnea
- Ankle edema
- Palpitations or tachycardia
- Intermittent claudication
- Known heart murmur
- Unusual fatigue or shortness of breath with usual activities

How to assess and document individual physical ability

There are several useful and clinically proven methods of assessing fitness levels among older adults. These assessments are used to help determine initial fitness levels, set goals, and to assess progress. It's important to choose the tests that are appropriate for the individual. These recommended assessments don't require expensive equipment or large facilities.

The Senior Fitness Test (Rikli & Jones, 2001) is suggested for office or clinical assessment of physical ability, and is particularly useful when documenting outcomes. Norms for this assessment have been established for various age groups (Rikli & Jones, 1999). The test involves six different activities to assess upper and lower body strength and flexibility, as well as balance and cardiorespiratory fitness.

How to assess functional limitations

Several scales are available to document functional limitations. The functional assessment checklist (also available at www.FirstStepToActiveHealth.com) uses a simple checklist of subjective functional limitations that can help determine the appropriate physical activity program for older adults. It also helps patients to understand that their healthcare provider is aware of their functional limitations, and that their healthcare provider is developing an individual program to improve their specific functional needs.

Check areas you have difficulty with due to pain or limitation:

√	Daily Tasks that are difficult for me	Important for me	Activity to Emphasize
	Getting dressed (shirts)		Upper Body Flexibility
	Getting dressed (pants)		Upper & Lower Body Flexibility
	Putting on shoes		Upper & Lower Body Flexibility
	Personal Hygiene/Grooming (wash hair, brush teeth, etc)		Upper Body Flexibility
	Housework		Cardiorespiratory, Upper/Lower Body Strength
	Carrying groceries		Upper Body Strength, Balance
	Opening jars (grip)		Upper Body Strength
	Opening doors (push or pull)		Upper Body Strength
	Stoop to pick up object from floor		Lower Body Flexibility and Strength
	Reach and place objects overhead		Upper Body Flexibility, Balance
	Lifting light objects (10 pounds)		Upper Body Strength
	Lifting heavier objects (>20 pounds)		Upper & Lower Body Strength
	Walking for 10 minutes		Cardiorespiratory, Lower Body Strength
	Stairs (up and down 1 flight)		Lower Body Strength, Balance
	Walk uphill without getting tired		Lower Body Strength, Cardiorespiratory
	Walking on uneven ground/surfaces		Lower Body Strength, Balance
	Getting out of a chair		Lower Body Strength
	Getting out of bed		Upper & Lower Body Strength
	Getting into and out of bathtub		Upper & Lower Body Strength, Balance
	Moving around in bed		Upper & Lower Body Strength
	Other recreational activity/hobbies		Varies with activity (discuss with patient)

How to identify individual needs and goals

Once the above physical ability tests and/or functional limitation checklist are completed, healthcare providers can look for possible areas to improve through an individualized physical activity program. For example:

Limitation	Activity Recommendation
Carrying groceries	Upper Body Strength, Balance
Getting into and out of bathtub	Lower & Upper Body Strength and Balance
Walking on uneven ground	Lower Body strength, Balance

Individual goal-setting should precede physical activity prescription to facilitate compliance. Goals should be S.M.A.R.T.: *specific, measurable, attainable, relevant, and time-dependent* for the individual.

Specific: specific reference to functional activities should be listed
Measurable: goals that can be measured should be included (not "I will feel better")
Attainable: goals should be realistic and attainable by the individual
Relevant: goals should be relevant to the individuals' daily activities
Time-dependent: time frames should be provided

Goals should be based on the results of the physical assessment or checklist noted above. For example, "After 8 weeks of strength training, I will be able to walk up and down a flight of stairs 3 times". A chart is useful in motivating individuals to continue activity.

My goals:

Specific Goals to Improve Daily Tasks	Activity to Emphasize	TARGET DATE
Walk up & down my stairs 3 times	Lower body strength	8 weeks

Older adults tend to be more compliant with a physical activity program if they have individualized programs based on their needs and specific goals. It's important for healthcare providers to use the results of a physical ability assessment as well as their subjective functional limitations in determining individual goals and exercise needs. Activities should be recommended to individuals that are safe and efficient to address their functional limitations. By including specific activities to address specific impairments, individuals should be able to see progress in their functional limitations, thus promoting compliance

PHYSICAL ACTIVITY PROGRAMS

Healthcare providers are uniquely qualified to counsel patients on beginning physical activity programs. Many sedentary individuals simply need some external motivation or guidance to begin a program. Unfortunately, most of these individuals see this activity as hard work or too difficult. It's important that healthcare providers emphasize the importance of incorporating *any* physical activity into daily life. This may include 5 minutes of walking or simply parking the car further away in the parking lot, or taking the stairs instead of the elevator. Understanding that there are many levels of internal motivation and ability, healthcare providers should adjust their physical activity counseling accordingly.

How to determine initial physical activity prescription

Because of an epidemic of inactivity, mortality, and disease, the Centers for Disease Control (CDC) and ACSM recommended that every adult should strive to participate in at least 30 minutes or more of moderate-intensity physical activity on most, if not all, days of the week (Pate et al. 1995)

The ACSM (2000) and the Blueprint (2002) recommend the following elements of physical activity: cardiorespiratory (aerobic) endurance, muscle strength & endurance, balance, and stretching. Based on the results of an individual's assessment, the healthcare practitioner can develop a specific program.

Healthcare providers must remember that typical physical activity recommendations are GOALS, and not necessarily the "first step" in adopting an active lifestyle. Emphasize that individuals may start at 5 or 10 minutes of easy and fun activity, and work up to 30 minutes of activity on most days of the week. Individuals may also break up the 30 minutes into smaller, 10-minute segments. They can incorporate other activities they may enjoy such as a sport or strength training program.

Healthcare providers should provide written, individualized physical activity programs for older adults based on their abilities, needs, and goals. In addition to counseling individuals on increasing physical activity with daily activities, individuals should receive a specific physical activity prescription in four basic areas: cardiorespiratory, strength, flexibility, and balance. Activities should be safe, appropriate, practical, easy to understand, and adaptable to different populations.

Individuals who present with persistent musculoskeletal symptoms should be first referred to a physical or occupational therapist for evaluation before prescribing a structured physical activity program.

How to prescribe components of a physical activity program

Components should be individualized and specifically outlined in written form. Emphasize that these are GOALS to attain, and that it's appropriate to progress slowly. A well-rounded physical activity program includes cardiorespiratory, flexibility, strengthening, and balance activities.

For example, The *First Step to Active Health* ™ program provides a simple 4-step routine to increasing physical activity by addressing each of these areas. These exercises are provided for each step to improve specific functional tasks among older adults. As patients progress in steps, they modify the previous steps to progress toward a well-rounded program. Some patients may start and progress quickly through the steps; others may only be able to do one or two steps. While it's ideal to be able to complete each of these components on a weekly basis, simply doing any type of physical activity is better than none for the sedentary older adult.

First Step to Active Health™

WHEN TO CONTACT YOUR PHYSICIAN: If you experience any symptoms of weakness, unsteadiness, light-headedness or dizziness, chest pain or pressure, nausea, or shortness of breath with exercise. Mild soreness after exercise may be experienced after beginning a new exercise. If you have severe or increasing pain that lasts for several days, contact your healthcare provider.

STEP 1: Begin Cardiorespiratory (Aerobic) activities

WHY: To improve functional activities such as being able to walk further, faster, or uphill without fatigue or shortness of breath, or to maintain endurance for daily activities and independence; and to improve efficiency of the cardiorespiratory system, improve endurance, and decrease in disease & mortality. Cardiorespiratory fitness is one of the most important controllable risk factors in death and chronic disease.

WHAT: Use large muscle groups over prolonged periods in activities that are rhythmic and aerobic in nature. It's most important to do something enjoyable, such as walking, hiking, running, swimming, cycling, rowing, dancing, skating, skiing. Use Borg's (Borg, 1998) Rating of Perceived Exertion Scale (See below: 12-13 RPE, "somewhat hard") to determine moderate exercise intensity. Those taking heart medications such as beta-blockers should use the RPE scale. Start slowly and progress intensity and duration slowly.

Borg's RPE Scale (Borg, 1998):

Rate your exertion
6 No exertion at all
7
8 Extremely light
9 Very Light
10
11 Light
12
13 Somewhat hard
14
15 Hard (heavy)
16
17 Very hard
18
19 Extremely hard
20 Maximal exertion

WHEN: 3-5 (most) days of the week. (if performing endurance exercise daily, alternate weight-bearing with non-weight bearing (i.e., walk one day, then ride or swim the next)

WHERE TO START. (depends on initial fitness level) Begin 2 to 3 times per week at 10-15 minutes of a fun, low-level aerobic activity with RPE of 12-13 ("somewhat hard"). Simply adding more steps to the daily routine can also help. A pedometer can be useful in working toward a goal of 10,000 steps per day. Therefore, patients can choose a more structured program like swimming for 30 minutes or try to incorporate more walking into daily routines using a pedometer.

HOW TO PROGRESS. Progress by increasing frequency per week (from 2 to 3 days, or 3 to 4 days). Gradually increase duration for workouts by 5 to 10 minutes more per week, then progress intensity each week (to maintain RPE 12-13 "somewhat hard"). As endurance improves, patients will notice they will be able to do more activity at the same intensity.

GOAL. The goal for healthy adults is to attain a maintenance phase, exercising 4-5 days per week (13 RPE, "somewhat hard"), for 30 minutes a day, or 10,000 steps, most days of the week.

WHEN TO MOVE TO STEP 2 (FLEXIBILITY): Begin adding flexibility and stretching exercises as soon as possible into cardiorespiratory activities as part of a warm-up and cool-down.

LIST OF AEROBIC ACTIVITIES

Walking, hiking, stair climbing, swimming, cycling, rowing, dancing, skating, skiing, jogging. (Running is not recommended as the first activity for people who are just becoming active; walking and hiking are more appropriate activities to start.)

STEP 2: Add Flexibility (Stretching) activities

WHY: Improves range of motion for activities of daily living, such as combing hair, getting dressed, or picking up objects from the floor. Stretching may also prevent pain or injury.

WHAT: Muscular flexibility activities include stretching of major muscle and/or tendon groups to improve muscle length and flexibility.

WHEN: Stretching activities are typically performed before and after aerobic activities or strength training. Stretching should be performed a minimum of 2-3 days/week

WHERE TO START: Begin with 5 to 10 stretches of the upper and lower body. Use either static (hold without bouncing) or contract-relax techniques (stretch the muscle, contract muscle against resistance for 6 seconds, and stretch again); Hold stretch to position of mild discomfort for 10-30 seconds. Repeat 3-4 times for each stretch. Be sure to continue breathing while holding stretches.

HOW TO PROGRESS: Begin a stretching routine by choosing stretches based on needs (for example, someone with functional limitations in the upper body will perform more upper body stretches). Add other stretches as needed.

GOAL: Perform stretching activities at least 2 to 3 days per week, preferably before and after each cardiorespiratory or strengthening activity routine.

WHEN TO MOVE TO STEP 3 (STRENGTHENING): Integrate a strengthening program into the weekly routine once regular cardiorespiratory & flexibility activities are performed.

LIST OF FLEXIBILITY EXERCISES

Neck retraction
Overhead stretch
Pectoral stretch
Mid back stretch
Side bends
Trunk rotation
Hamstrings
Calf stretch

STEP 3: Begin Strengthening Activities

WHY: Strengthening activities improve or maintain muscle & bone mass, improve balance & reduce fall risk, improve cardiovascular endurance, and improve functional ability, such as lifting objects, getting out of a chair, carrying groceries, or opening jars.

Older adults have more potential gain from strengthening than any other mode of exercise.

WHAT: Use large muscle groups (arms, shoulders, chest, abdomen, back, hips, and legs), against resistance of body weight or external resistance (weights, machines, elastic bands). Be sure to balance the strength of opposite muscle groups (for example, strengthen both the front and back of the shoulder).

WHEN: 2-3 days of the week (don't strength train on consecutive days).

WHERE TO START: Choose strengthening activities based on needs (for example, someone with less upper body strength may require more upper body exercises). Start with 2 to 3 strengthening activities for each area: the upper body, lower body, and back. Perform 1 set of 10 repetitions at a resistance that creates minimal fatigue with the last repetition, but be sure to maintain proper form. Alternately, use the Borg RPE Scale to maintain intensity at a level between 12 and 14.

Rest for two minutes between exercises. Maintain normal breathing patterns, breathing once with each repetition. Soreness is to be expected with any type of activity that is not familiar, but it should resolve in a few days.

HOW TO PROGRESS: Progress by increasing repetitions to 15 per exercise, then increase from 1 to 2 sets of each exercise. Increase resistance to allow fatigue with last repetition, or to maintain RPE at 12-14. As strength improves, patients will notice they will be able to do more activity at the same intensity. Patients must progressively increase resistance to increase strength.

GOAL. The goal for healthy older adults is to perform strengthening activities 2-3 days per week for 1-2 sets of 8-10 exercises for 10-15 repetitions to fatigue (10-15RM).

WHEN TO MOVE TO STEP 4: Once patients are comfortable with strengthening activities, begin to incorporate balance activities into daily routines (see below) as soon as possible and begin a specific balance program during the week.

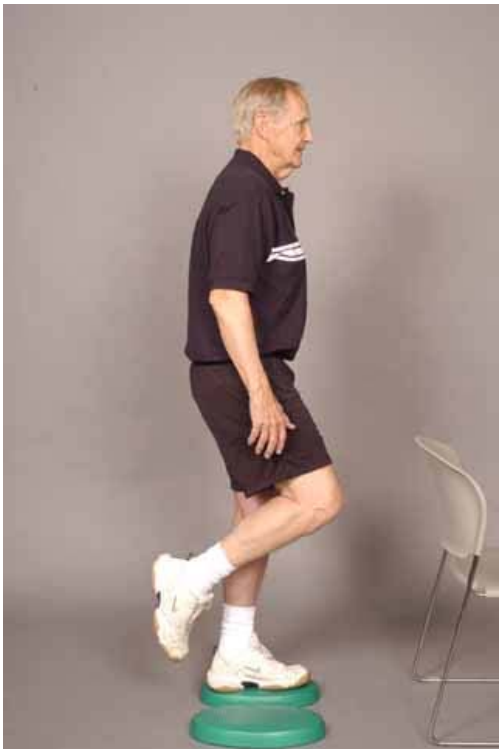
Strength Program References (Topp et al. 1993, Topp et al. 1994; Mikesky et al. 1994)

LIST OF STRENGTHENING ACTIVITIES

Upper Body: Biceps, Triceps, Chest Press, Overhead Reach, Grip *(for lifting, carrying, & reaching)*
Back: Seated Row, Pull Down, Back Pull (*for posture, lifting and pulling*)
Lower Body: Hip Lift, Leg Press, Chair Squat, Dorsiflexion (*for gait, balance, and mobility*)

STEP 4: Add Balance Training Activities

WHY: To improve balance, postural stability, & gait; reduce risk and fear of falls.



WHAT: Balance training activities involve maintaining standing and postural stability under a variety of conditions, including static (stationary) and dynamic (moving) balance.

WHEN: Recommend incorporating balance into everyday activities, as well as performing a 2 to 3 times per week specific program.

WHERE TO START: Incorporate balance training in daily activities such as standing on one foot while doing dishes or brushing teeth. Begin 5 balance-specific activities, 2 times per week with one set of each activity for 10-15 seconds each. Choose activities based on needs (someone with extremely poor balance should not perform exercises alone)

HOW TO PROGRESS: Progress by increasing the time of each activity to 30 seconds, then by increasing to 2-3 sets of each activity. Gradually increase the challenge of the activity by standing with one foot in front of the other, or on one leg, change the surface patients stand on, (foam surface), perform dynamic movements (tandem walk, pivot turn, backward & side-step), and reduce sensory input (close eyes). Progress program to 8-10 balance-specific activities for 2-3 sets of 15-30 seconds.

GOAL: The goal for healthy adults is to perform balance activities 2-3 days per week for 2-3 sets of 8-10 specific activities for 15-30 seconds.

*Balance training program references (*Campbell et al. 1999*,* Rogers et al. 2002, 2003; Shores et al. 2001, 2002*;* Tinetti et al. 1994*)*

LIST OF BALANCE TRAINING ACTIVITES

Tandem Stand
1-leg standing
Standing knee bend
Standing hip raise
Standing kick
Side kick
Stand on foam
1-leg stand on foam
Side kick with band
Back kick with band

How to prescribe a well-rounded physical activity program

Healthcare providers should provide individualized recommendations with specific goals for any physical activity program based on the abilities and needs of the patient. Many factors are taken into consideration in prescribing a physical activity program such as safety, physical ability, motivation, support, and goals. For example, the *First Step to Active Health™* helps providers provide appropriate levels of activity for different patients. For some patients, simply walking for 10 minutes a day is a start; others who may not be able to walk can implement some upper body strengthening; and others may be ready for a well-rounded daily routine. **The overall goal of the program is to facilitate a behavioral change among older adults to begin some type of physical activity, working toward the recommendations of the ACSM:**

Well-rounded physical activity program recommendations (ACSM, 2000):

- Incorporate moderate activity for a goal of 30 minutes at least 4 days per week
- Perform strengthening activities at least 2 days per week
- Include warm-up & cool down with each workout
- Incorporate balance activities into daily activities

Monday	Cardiorespiratory activities 10-30 minutes (walk/jog, bike, swim) & flexibility activities
Tuesday	Strengthening & balance activities
Wednesday	Cardiorespiratory activities 10-30 minutes and flexibility activities
Thursday	Strengthening & balance activities
Friday	Cardiorespiratory activities 10-30 minutes and flexibility activities
Saturday	Strengthening & balance activities
Sunday	Gardening, walk in park or mall, or other recreational activity with friends and family 10-30 minutes

It is critical NOT to overwhelm patients with physical activity. Remember, this is a behavioral change with many factors to consider. While the ACSM recommendations are ideal, any level of physical activity is beneficial for virtually every patient.

How to progress physical activity and track progress

An individualized physical activity program will include specific activities for specific impairments or limitations. A **goal-based** physical activity program addressed at improving function and decreasing disability is important for compliance.

Use an "activity log" to track progress by noting the specific activity performed, as well as the intensity and duration of each activity. This chart is used to document progress toward goals and to show the healthcare provider on follow-up visits. Use either a monthly or weekly chart (below) to track progress.

Once the physical activity program has been established (including exercise prescription & goals), individuals must learn how to progress the activities. The following progressions are defined:

Frequency: The number of times per week
Duration: The length or number of the activity/exercise (time, sets, repetitions)
Intensity: The level of the activity (noted by resistance or RPE)

Progression is the key to improving fitness. Progression simply involves increasing the duration or intensity of an activity toward individual goals.

WEEKLY (Indicate the type of activity you performed each day)

Activity	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Cardio	10,000 steps	20 min swim		10,000 steps		30 min bike	
Stretch	√	√	√	√	√	√	
Strength			√		√		
Balance	√			√			√

MONTHLY (indicate days that you did some type of physical activity with a check, and note the activity)

Week	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1							
2							
3							
4							

How to modify programs for specific subgroups

It is difficult to provide "blanket" physical activity recommendations for all older adults. Healthcare providers should adapt physical activity prescriptions for specific populations based on their specific considerations and abilities. Obviously, different levels of ability should be taken into consideration. For example, strengthening activities should be performed while standing when possible; however, persons with difficulty standing can perform the same activities while sitting.

Frail & Very Old Adults	Chronic Disease & Disability
Many contributing factors of frailty can be addressed through physical activity. Strength training, in particular, offers a safe & perhaps the most beneficial intervention for the frail & very old. The ACSM recommends "all exercise programs for the frail elderly should include progressive resistance training of the major muscle groups of the upper and lower extremities and trunk" (ACSM, 1998). The ACSM recommends 2-3 days per week with 2-3 sets of exercise performed on each training day, including resistance activities while standing to enhance balance & muscle coordination. Strengthening & flexibility activities can also be performed while sitting or in a bed. Balance training should also be incorporated under supervision, particularly for the very frail. Cardiorespiratory activities (difficult to perform in this population) should follow strength and balance training. Once the individual can tolerate weight bearing activity, moderate intensity aerobic training can begin. The ACSM (ACSM, 2000) recommends reaching a target frequency of 3 days per week for at least 20 minutes at 11-13 RPE Scale.	Many chronic diseases can be prevented and treated with physical activity programs. Evidence exists supporting physical activity in the prevention & management of most chronic diseases and disabilities. The ACSM's Exercise Management for Persons with Chronic Diseases and Disabilities (ACSM, 2003) is an excellent resource for healthcare providers. The ACSM guidelines should help healthcare providers modify physical activity programs for patients with chronic disease. Other healthcare professionals with experience in exercise may be able to modify or individualize programs specific to your patient's disease or disability, If you are uncomfortable prescribing a physical activity program for your patient, a specialist in rehabilitation or exercise may be consulted.

How to keep patients motivated & improve compliance

- An individualized program focused on specific goals is key
- Once goals are attained, set new goals important to the individual
- Encourage patients to reward themselves for reaching the first goal
- Moderation is key; start gradually with enjoyable activities and progress slowly
- Emphasize lifestyle changes, incorporating activity into daily life
- Establish regular workouts (same time of day)
- Keep focused on short-term and long-term goals
- Maintain activity logs to record achievements
- Follow-ups (re-testing) with individuals encourage compliance (mail, email, phone or personal)
- Exercising with a partner or in groups helps improve compliance
- Family and friend support is crucial for encouragement

Safety Reminders

- Exercise should be postponed in patients with an unstable medical condition, healing injury, or uncontrolled disease.
- Patients should be informed to contact their physician if they experience chest pain or pressure, trouble breathing or shortness of breath, light-headedness or dizziness, or nausea.
- Warn patients not to perform activities that cause sharp pain or that can aggravate a medical condition.
- Inform patients that soreness is to be expected in the muscles with any unaccustomed exercise program. Use soreness as a guide for intensity. If patients are very sore the day after exercising, they should exercise at a lower intensity next time. If the pain persists more than 2-3 days, patients should contact their healthcare provider.
- Joint pain should be avoided. The saying “no pain, no gain” is not true for older adults.
- Remind patients to breathe properly. Remind them never to hold their breath while straining, particularly in patients with high blood pressure. Generally, exhale during muscle exertion, and inhale during relaxation.

PUTTING IT ALL TOGETHER

1. Determine safety of physical activity (risk factors) and diseases
2. Assess individual ability and reported limitations
3. Discuss personal goals, preferences, & resources for physical activity
4. Determine activities from each successive step, appropriate for individual based on abilities, needs, goals
5. Determine appropriate frequency, intensity, and duration for each activity
6. Establish weekly program and discuss progression
7. Instruct in use of personal handout and logs
8. Follow-up and assess activity levels, and progress or modify activities on next visit

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RESOURCES

The most important resource for healthcare providers is to locate LOCAL resources of physical activity. Healthcare providers should contact their local Council on Aging, YMCA, or hospital fitness center.

There are several resources (brochures, websites, videos, workshops, programs) available for both healthcare providers and patients on increasing physical activity among older adults. (These contacts were current as of November, 2003). Updated contact information can be found at www.FirstStepToActiveHealth.com

AARP (formerly known as the American Association of Retired Persons)
601 E. Street NW
Washington, DC 20049
Phone: 1-800-424-3410
Richmond project, contact Brian Jacks at 804-344-3047 or bjacks@aarp.org
Madison, WI project, contact 608-286-6303 or gslaats@aarp.org
http://www.aarp.org/activeforlife/
AARP is a nonprofit membership organization dedicated to addressing the needs and interests of persons 50 and older. Through information and education, advocacy and service, AARP seeks to enhance the quality of life for all by promoting independence, dignity and purpose. Currently, there are more than 35 million members of AARP.

Active Living Partners
Active Living Partners is a comprehensive behavior change initiative developed by Human Kinetics and The Cooper Institute. Their mission is to help sedentary adults adopt and maintain physically active lifestyles. The program is based on scientific research showing that moderate physical activity improves health; the program also shows that people can be successful in becoming and staying physically active if taught appropriate lifestyle skills such as addressing and overcoming barriers to physical activity, setting realistic goals, and developing social support systems.
http://www.activeliving.info/ActiveLiving/

Active for Life Initiative
University Park Plaza
1103 University Drive
Suite 100
College Station, TX 77840
Phone: 979-458-4202
Fax: 979-458-4264
E-mail: activeforlife@srph.tamu.edu
Web-site: www.activeforlife.info/
Active for Life has been established to learn how to deliver research-based physical activity programs to large numbers of midlife and older adults and to sustain such programs through existing community institutions.

Administration on Aging Fitness Facts for Older Adults
Washington, DC 20201
Phone: 202-619-0724
E-mail: AoAInfo@aoa.gov
Web-site: www.aoa.gov/aoa/eldractn/fitfact.html
ElderAction: Action Ideas for Older Persons and Their Families; provides suggestions and advice about incorporating physical activity into the lives of older adults.

American Academy of Family Physicians
P.O. Box 11210
Shawnee Mission, KS 66207-1210
Phone: 800-274-2237
Web-site: www.aafp.org

Professional association of family physicians. Sponsors “Americans In Motion” (AIM) initiative. The AIM initiative is conceptualized to be a readily available resource to family physicians who wish to promote "fitness" as a path to health for all members of the American family. The mission is to improve the health of all Americans by implementing a multifaceted fitness program addressing physical activity, nutrition, and emotional well-being in the individual, family and community.

American Academy of Orthopedic Surgeons (AAOS)
P.O. Box 1998
Des Plaines, IL 60017
Phone: 1-800-824-BONES
Web-site: www.aaos.org
Professional association of surgeons who care for the body's musculoskeletal system. Ask for free publications about how to safely do exercises like walking or stretching if you have arthritis, osteoporosis, or other musculoskeletal conditions, or if you have had a joint replacement.

American College of Sports Medicine (ACSM)
P.O. Box 1440
Indianapolis, IN 46206
Web-site: www.acsm.org
Scientific and medical association of sports physicians, exercise scientists, and other health professionals with an interest in exercise. Trains and certifies people to work with older adults. Send self-addressed, stamped envelope for free brochures. Be sure to specify that you want material on exercise for older adults.

American Council on Exercise (ACE)
4851 Paramount Drive
San Diego, California 92123
Phone: 858-279-8227 or 800-825-3636
Fax: 858-279-8064
Web-site: www.acefitness.org/contactace/index.cfm
The ACE Web Site is a resource for people interested in information about safe and effective exercise. More than 80 different editions of ACE Fit Facts are available free to the public. Clear, concise, one-page fact sheets covering a multitude of fitness issues, ACE Fit Facts are distributed through the Web Site, via Fax on Demand and through hundreds of health fairs and community events throughout the country

American Diabetes Association
1660 Duke St.
Alexandria, VA 22314
Phone: 703-549-1500
Web-site: www.diabetes.org
Offers free pamphlets about exercise for people of all ages who have diabetes. Request "Exercise and Diabetes," "Starting to Exercise," and "20 Steps to Safe Exercise."

American Geriatrics Society
The Empire State Building
350 Fifth Avenue, Suite 801
New York, NY 10118
Phone - 212/308-1414 Fax - 212/832-8646
Web-site: www.americangeriatrics.org
Email - info@americangeriatrics.org
Professional organization of health care providers dedicated to improving the health and well-being of all older adults. *The American Geriatrics Society's Complete Guide to Aging & Health* is a comprehensive resource for older adults.

American Heart Association
National Center
7272 Greenville Ave.
Dallas, TX 75231-4596
Web-site: www.Americanheart.org
Offers free pamphlets about exercise for people of all ages.

American Physical Therapy Association (APTA)
111 North Fairfax St.
Alexandria, VA 22314-1488
Phone: 1-800-999-2782
Web-site: www.apta.org
The APTA is a national professional organization representing more than 63000 members. It's goal is to foster advancements in physical therapy practice, research, and education. The mission of the APTA is to further the profession's role in the prevention, diagnosis, and treatment of movement dysfunctions and the enhancement of the physical health and functional abilities of the public. Request "For the Young at Heart" (free exercise brochure).

Arthritis Foundation
P.O. Box 7669
Atlanta, GA 30357-0669
Phone: 1-800-283-7800
Web-site: www.arthritis.org
Free pamphlet provides guidelines on how to protect joints during exercise; includes range-of motion exercises for joint mobility, and others.

Centers for Disease Control: Healthy Aging for Older Adults
1600 Clifton Rd.
Atlanta, GA 30333
(404) 639-3311
http://www.cdc.gov/aging/
The report "**Physical Activity and Older Americans: Benefits and Strategies**" pulls together data from various studies and scientific sources to illustrate the benefits and accessibility of physical activity for older Americans. It is available at *http://www.ahrq.gov/ppip/activity.htm* .

Cooper Institute for Aerobics Research
12330 Preston Road
Dallas, TX 75243
Web-site: www.cooperinst.org
Provides information about physical activity and other health topics.

Healthy People 2010
Coordinating Office:
Office of Disease Prevention and Health Promotion
Hubert H. Humphrey Building, Room 738G
200 Independence Avenue, SW.
Washington, DC 20201
Fax: 202-205-9478
Web-site: www.healthypeople.gov/About/
The prevention agenda for the Nation. It is a statement of national health objectives designed to identify the most significant preventable threats to health and to establish national goals to reduce these threats.

International Council on Active Aging (ICAA)
Corporate head office:
3307 Trutch Street
Vancouver, BC, V6L-2T3
Toll Free: 866-335-9777 (North America Only)
Telephone: 604-734-4466
Fax: 604-708-4464
Web-site: www.icaa.cc/Index.asp
The International Council on Active Aging (ICAA) is dedicated to changing the way we age by uniting professionals in the retirement, assisted living, fitness, rehabilitation and wellness fields to help dispel society's myths about aging. Will also help professionals empower aging baby boomers and older adults to improve quality of life and maintain dignity.

International Society for Aging and Physical Activity (ISAPA)
Wojtek Chodzko-Zajko, Ph.D.
ISAPA President
Professor and Head
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University of Illinois at Urbana-Champaign
126 Louise Freer Hall
906 S. Goodwin Avenue
Urbana, IL 61801
USA
E-mail: wojtek@zajko.org
Web-site: www.isapa.org/
ISAPA is an international not-for-profit society promoting research, clinical practice, and public policy initiatives in the area of aging and physical activity.

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Web-site: www.humankinetics.com/products/journals/journal.cfm?id=JAPA
A multidisciplinary journal examines the dynamic relationship between physical activity and the aging process.

MEDLINEplus Health Information: Exercise for Seniors
Web-site: www.nlm.nih.gov/medlineplus/exerciseforseniors.html
Email: custserv@nlm.nih.gov
MEDLINEplus has extensive information from the National Institutes of Health and other trusted sources on over 600 diseases and conditions. There are also lists of hospitals and physicians, a medical encyclopedia and a medical dictionary, health information in Spanish, extensive information on prescription and nonprescription drugs, health information from the media, and links to thousands of clinical trials.

National Blueprint to Increase Physical Activity Among Adults Age 50 and Over
Blueprint Grant Contact Information:
Wojtek Chodzko-Zajko, PhD
Professor and Head
Department of Kinesiology
University of Illinois at Urbana-Champaign
126 Louise Freer Hall
906 S. Goodwin Avenue
Urbana, IL 61801
E-mail:blueprint@kines.uiuc.edu
Web-site: www.agingblueprint.org
A guide for organizations, associations and agencies to plan strategies to help people age 50 and older increase their physical activity. This plan synthesizes input from more than 60 individuals, representing 47 organizations with expertise in health, medicine, social and behavioral sciences, epidemiology, gerontology/geriatrics, clinical science, public policy, marketing, medical systems, community organization, and environmental issues.

National Center on Physical Activity and Disability
1640 W. Roosevelt Rd.
Chicago, IL 60608-6904
1-800-900-8086
Web-site: www.ncpad.org
This site provides information and resources that can enable people with disabilities to become as physically active as they choose to be.

National Coalition for the Promotion of Physical Activity
Web-site: www.ncppa.org
NCPPA is an extraordinary group of national organizations that independently address a host of issues pertaining to physical activity including health/science, education, environments, population specific outreach, and activity behavior.

National Institute on Aging
Bldg. 31, Rm. 5C27
31 Center Drive, MSC 2292
Bethesda, MD 20892-2292
Information Center: Toll Free Phone: 800-222-2225
Web-site: www.nih.gov/nia
Part of the National Institutes of Health. Call or write to receive free publications about health and fitness for older adults. Includes the booklet "Exercise: A Guide from the National Institute on Aging" with information for older Americans on beginning an exercise routine. It is available at *http://www.nia.nih.gov/exercisebook/intro.htm*

National Institute of Health
National Institutes of Health (NIH)
9000 Rockville Pike
Bethesda, Maryland 20892
www.nih.gov
http://nihseniorhealth.gov/ is a website that provides information on healthy aging, including an on-line exercise program. The website also offers audio and visual enhancements for impaired individuals.

National Osteoporosis Foundation
1150 17th St. N.W., Suite 500
Washington, DC 20036
Phone: 202-223-2226
Web-site: www.nof.org
Voluntary organization that promotes study and treatment of osteoporosis. Call to request free copy of "The Role of Exercise in the Prevention and Treatment of Osteoporosis," "Guidelines for Safe Movement," and "Fall Prevention."

President's Council on Physical Fitness and Sports
Dept. W
200 Independence Avenue, SW
Room 738-H
Washington, DC 20201-0004
Phone: 202-690-9000
Web-site: www.fitness.gov
The President's Council initiates and administers programs, often in partnership with other groups, which reach individual people in schools, homes, workplaces and communities.

Thera-Band® Academy
1245 Home Ave
Akron OH 44310
800.321.2135
Web-site: www.Thera-BandAcademy.com
Educational resources for clinicians, educators and researchers, including Clinical Corners, CARES, coding and reimbursement guidelines, clinical applications and protocols.

United States Surgeon General's Report on Physical Activity and Health
Division of Nutrition and Physical Activity,
National Center for Chronic Disease Prevention and Health Promotion
Centers for Disease Control and Prevention
4770 Buford Highway, NE, MS/K-24
Atlanta GA 30341-3717
Phone: 770-488-5820
Fax: 770-488-5473
Web-site: www.cdc.gov/nccdphp/sgr/sgr.htm
This is the first Surgeon General's report to address physical activity and health. The main message of this report is that Americans can substantially improve their health and quality of life by including moderate amounts of physical activity in their daily lives.

50-Plus Fitness Association
P.O. Box 20230
Stanford, CA 94309
Phone: 650-323-6160
Web-site: www.50plus.org
The FPFA publishes a newsletter, distributes books and videos, and sponsors activities such as "fun runs" for seniors.

Phil Page is a physical therapist and owner of Benchmark Physical Therapy in Baton Rouge, Louisiana. He is also Manager of Clinical Education & Research for Thera-Band products. He has published several articles and lectured internationally on exercise and rehabilitation. His clinical practice and research interests include wellness programs for older adults, and management of chronic disease and disability through exercise.

Michael E. Rogers is a faculty member in the Department of Kinesiology and Sport Studies at Wichita State University. He teaches graduate courses in exercise physiology, exercise testing, research design, and aging. Dr. Rogers also serves as the research director for the Center for Physical Activity and Aging at WSU. A fellow of the American College of Sports Medicine, he has published and presented on a variety of topics related to physical activity and aging. His primary research interests concern the development and evaluation of balance and strength training programs for older adults.

Robert Topp is a Professor and Associate Dean for Research at the University of Louisville School of Nursing. For the past 15 years he has been involved in numerous studies examining the effect of various exercise programs on the health and functioning of older adults. Dr. Topp has recently published the results of completed NIH supported study which indicates that resistance training is an effective intervention to reducing pain and increasing the ability to complete functional task among adults with osteoarthritis of the knee. His ongoing NIH supported work involves comparing which of three modes of exercise has the greatest impact upon functioning of older adults who are functionally limited.

James H. Rimmer is a Professor in the Department of Disability and Human Development at the University of Illinois at Chicago. For the past 20 years, Dr. Rimmer has been developing and directing health promotion programs for people with disabilities. He has published 60+ peer-reviewed journal articles and book chapters on various topics related to physical activity, health promotion, and disability. Dr. Rimmer is also the director of the CDC-funded National Center on Physical Activity and Disability.

Wojtek Chodzko Zajko is currently Head of the Department of Kinesiology at the University of Illinois at Urbana-Champaign. His primary research interests have focused on the effect of exercise and physical activity on sensory, motor, and cognitive functioning in old age. Dr. Chodzko Zajko served on the World Health Organization, Scientific Advisory Committee which issued Guidelines for Physical Activity in Older Adults. He chairs the National Active Aging Partnership, a national coalition in the area of healthy aging linking the American College of Sports Medicine, the National Institute on Aging, the Centers for Disease Control and Prevention, the American Geriatrics Society, the National Council on the Aging, the American Association for Retired Persons, and the Robert Wood Johnson Foundation.

Chris Himes is a family physician and Director of Geriatrics at Group Health Cooperative in Seattle, Washington. Dr. Himes teaches and writes extensively on the topic of 'healthy aging', focusing on the central importance of physical activity. In recent times, she has focused on primary care clinic senior exercise programs and as well as an entry level exercise video for older patients who prefer to exercise at home.

James Judge is a geriatrician who has studied the role of muscle strength and exercise training on gait, balance, fall prevention, and osteoporosis. He has recently completed a large study testing the effects of moderate resistance training on femoral bone density in older women. Dr. Judge works with Dr. Chris Himes to represent the American Geriatrics Society on the National Blueprint. Dr. Judge's major responsibility for the National Blueprint is to develop strategies and materials to help train physicians on how to assist older patients to become more active. Dr. Judge has addressed the importance of physical activity at national meetings of the American College of Physicians, the American Geriatrics Society, and the Geriatrics Society of America.

Robert M. Pallay is an Associate Professor of Family Practice, Department of Family Medicine, University of Medicine and Dentistry of New Jersey-Robert Wood Johnson Medical School. He is also the Medical Director of the Primary Care Center at Hillsborough. Currently, he is Chair of the AAFP Commission on Public Health and also is Chair of American Academy of Family Physician's national fitness initiative, Americans In Motion (AIM). Dr. Pallay has served as AAFP's representative to the National Blueprint and also serves on the Executive Committee of the Joint Commission on Sports Medicine and Science.

Debbie Brunner is a Board Certified Family Physician and specializes in subacute nursing home care for Group Health Permanente. She has a Masters of Science in Gerontology and Public Administration. Dr. Brunner has worked in health care policy research at the Andrus Gerontology Center at USC in Los Angeles, and for the AARP. She has experience leading exercise groups for seniors in retirement communities, adult day health and nursing home environments.

Richard D. Della Penna is a geriatrician and the National Director of the Kaiser Permanente Aging Network and the National Clinical Lead of the Care Management Institute's Elder Care Initiative. As such he directs Kaiser's strategic efforts to develop clinical capacity and programs that will better address the needs of Kaiser older adult members. Dr. Della Penna's research activity has focused on depression, dementia, falls and the care of people with advanced illness.

Margaret Matthews is employed as a staff geriatrician at Senior Primary Care Practice-an academic practice associated with Palmetto Health Richland Hospital and the University of South Carolina School of Medicine/Division of Geriatrics. Dr. Matthews is the recipient of a 2002 Geriatric Academic Career Award (GACA) sponsoring work on a project entitled "Teaching Physical Activity and Non-Pharmacological Strategies of Disease Prevention in Older Adults". The main focus of her effort is to educate physicians at the training and continuing education levels about the importance of physical activity in older adult patients.

The *Active Aging Toolkit* is a result of the strategies outlined by the National Blueprint Increasing Physical Activity Among Adults Age 50 and Older to address barriers to increasing physical activity among medical systems.

Educational Partners involved in the development of the *Active Aging Toolkit* include:

- Thera-Band® Products
- American College of Sports Medicine
- The Active Aging Partnership
- National Center on Physical Activity and Disability
- The American Physical Therapy Association
- The American Geriatrics Association
- The American Academy of Family Physicians

The Active Aging Toolkit was funded by The Hygenic Corporation, makers of Thera-Band® products.
For more information, contact:
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1245 Home Avenue
Akron, Ohio 44310 USA
800.321.2135 / 330.633.8460
www.thera-band.com / www.thera-bandacademy.com