

Role of Physical Activity in the Health and Wellbeing of Older Adults

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KEY POINTS

- Regular physical activity can reduce the risk of older adults developing a new chronic condition and reduce the risk of progression of the condition they already have, reduce their risk of falls and fall-related injuries, and improve their physical function and quality of life. Physical activity can help older adults remain active and engaged within their families and communities.
- Older adults should perform 150 min/week of moderate-intensity aerobic activity and muscle-strengthening activities 2 days/week. Balance exercise is recommended for all older adults as a way to prevent falls and fall injuries.
- If health conditions prevent activity at the recommended amount, older adults should perform physical activities as tolerated so as to avoid being sedentary. Avoiding sedentary behavior is an important consideration when promoting health and wellbeing among older adults.

101.1 INTRODUCTION

Is functional decline an inevitable and inescapable consequence of growing older? Or can we play an active role in determining the path that aging takes? There is a growing body of evidence to suggest that we may be able to postpone some of the negative consequences of growing older by maintaining an active lifestyle. Physical activity is shown to be an effective way of postponing the onset of functional decline, promoting independence, and maintaining quality of life in old age. During the past century, many countries have experienced an epidemiological transition in which the impact of communicable diseases has steadily declined and non-communicable diseases (NCDs) have become the leading causes of disease, disability, and death.¹ Because NCDs typically take many years to develop, older adults are disproportionately affected; many of whom have increased risk of developing and dying from cardiovascular disease, type 2 diabetes, obesity-related NCDs, and certain cancers.¹⁻⁴ Many NCDs share common preventable causes that are both lifestyle

related (unhealthy diets, physical inactivity, smoking, and alcohol abuse) and biological (hypertension, obesity, and dyslipidemia). In addition, there are also a number of social determinants of health linked with NCDs, including education, availability, and affordability of healthy food, access to health services, and policies and infrastructures that support a healthy lifestyle.

Despite the complex relationships among the many determinants of health, the World Health Organization (WHO) has identified physical activity as an effective means by which an individual can reduce the risk of developing NCDs and maintain independence and wellbeing in old age.⁵ Epidemiological research has consistently shown significant decreases in the relative risk of cardiovascular and all-cause mortality among persons who are classified as physically active compared with those in a similar age range who are classified as less active or sedentary.⁶ In agreement is the recently published 2018 Physical Activity Guidelines Advisory Committee Scientific Report,⁷ which confirms that physically active individuals sleep better, feel better, and function better. Strong evidence shows that regular physical activity can reduce the risk of older adults developing a new chronic condition and reduce the risk of progression of the condition they already have, reduce their risk of falls and fall-related injuries, and improve their physical function and quality of life.

However, many older adults find it difficult to meet the targets proposed in the physical activity guidelines. Over the past decade, many studies have focused on the positive effects of smaller amounts of physical activity and/or the adverse consequences of sedentary behavior on health and wellbeing.⁷ Strong scientific evidence demonstrates that exposure to high amounts of sedentary behavior significantly increases the risk of developing NCDs (e.g. cardiovascular disease and diabetes) and death. For physically inactive individuals, replacing sedentary behavior with light intensity physical activities is likely to produce health benefits. Although not the focus of this book chapter, avoiding sedentary behavior is an important consideration when promoting health and wellbeing among older adults.

In this chapter, we present an overview of current research and recommendations concerning the role of physical activity in the health and wellbeing of older adults. In the “Benefits of physical activity for older adults” section, we briefly review some of the benefits that accrue to older individuals who adopt a physically active lifestyle. In the “Recommendations and guidelines for physical activity” section, we summarize current guidelines regarding the frequency, intensity, duration, and type of physical activity recommended for older adults. Next, in the “Motivating older adults to initiate and maintain a physically active lifestyle” section, we focus on evidence-based strategies to help motivate older adults to initiate and maintain a physically active lifestyle. Finally, in the “Communicating about exercise and physical activity” section, we discuss how health professionals should talk to older adults about physical activity, focusing on the need to help them learn how to “be active their way.” We conclude by providing answers to frequently asked questions about physical activity. Throughout the chapter, the Institute of Medicine definitions of physical activity and exercise and related concepts are adopted, where physical

activity refers to body movement that is produced by the contraction of skeletal muscles and that increases energy expenditure. Exercise refers to planned, structured, and repetitive movement to improve or maintain one or more components of physical fitness.

101.2 BENEFITS OF PHYSICAL ACTIVITY FOR OLDER ADULTS

Over the past 30 years, a number of studies have confirmed that there are many benefits for older adults who participate in regular physical activity. In 2008, the Department of Health and Human Services (DHHS) published, for the first time, official U.S. Government Physical Activity Guidelines (PAG).⁸ This book chapter presents findings from the 2008 PAG and from the 2018 PAG Advisory Committee Scientific Report.⁷ Both documents reiterate that, compared with less active persons, more active men and women have lower rates of all-cause mortality, coronary heart disease, high blood pressure, stroke, type 2 diabetes, metabolic syndrome, cancer (colon, breast, bladder, endometrium, esophagus, kidney, lung, and stomach), depression, sleep problems, falls and fall-related injuries, and dementia and other aspects of cognitive function. In addition to these biomedical benefits, there are many other reasons older adults should be encouraged to find a way to build physical activity into their everyday lives. Regular physical activity can help to improve quality of life in old age. Physical activity can help older adults remain active and engaged within their families and communities.

A detailed review of the benefits of physical activity for older adults is beyond the scope of this chapter; however, several review articles are available, which provide excellent summaries of the existing evidence.^{7,9,10} For example, the American College of Sports Medicine (ACSM)’s Position Stand on Exercise and Physical Activity for Older Adults⁹ summarizes the benefits of both long-term exercise and physical activity and shorter-duration exercise programs on the health and well-being of older adults. The ACSM Position Stand concludes that, although no amount of physical activity can stop the biological aging process, there is evidence that regular physical activity can slow the physiological declines of an otherwise sedentary lifestyle and increase healthy life expectancy by limiting the development and progression of NCDs and other disabling conditions. Importantly, physical activity not only benefits our physical health but there is also strong evidence that it can improve psychological health and wellbeing.

Ten years ago, the American Medical Association and the ACSM launched a major initiative called “Exercise is Medicine” (EIM).¹¹ The goal of EIM is to make physical activity and exercise a standard part of a global disease prevention and treatment medical paradigm. The initiative recognizes that regular exercise can be an important element in the management of numerous medical conditions including coronary heart disease,^{12,13} hypertension,^{12,14,15} peripheral vascular disease,¹⁶ type 2 diabetes,¹⁷ obesity,¹⁸ elevated cholesterol,^{12,19} osteoporosis,²⁰ osteoarthritis,^{21,22} claudication,²³ and chronic obstructive pulmonary disease.²⁴ A joint statement from ACSM and the American

Heart Association¹⁰ concludes that physical activity is valuable in the treatment and management of depression and anxiety disorders,²⁵ dementia,²⁶ pain,²⁷ congestive heart failure,²⁸ syncope,²⁹ stroke,³⁰ back pain,³¹ and constipation.³² In addition, there is some evidence that physical activity prevents or delays cognitive impairment^{33,34,35} and disability^{36,37,38} and improves sleep.³⁹ EIM strongly advocates that physical activity should be considered by all health professionals as a vital sign in every patient visit and that all patients are effectively counseled and referred with respect to their physical activity needs.

The World Health Organization (WHO) suggests that the benefits of physical activity for older adults can be divided into two broad categories: (1) benefits of physical activity for the individual and (2) benefits of promoting physically active lifestyles for society.⁴⁰ Under the WHO schema, the individual benefits can be summarized in four general areas: physiological benefits; psychological benefits; social benefits; and the benefits for society. Among social benefits for the individual, participation in physical activity can help empower older individuals and assist them in playing a more active role in society. Physical activity programs, particularly when carried out in small groups and/or in social environments, enhance social and intercultural interactions for many older adults. Society at large can benefit from physically active older adults. Physically active lifestyles can help postpone the onset of physical frailty and disease thereby significantly reducing health- and social-care costs. Older individuals have much to contribute to society. Physically active lifestyles help older adults maintain functional independence and optimize the extent to which they are able to actively participate in society. A society which promotes a physically active lifestyle for older adults is more likely to reap the benefits of the wealth of experience and wisdom possessed by the older individuals in the community. As long ago as 1996, the WHO was recommending that virtually all older persons should participate in physical activity on a regular basis and that society has a responsibility to advocate for broad-based participation in physical activity whenever possible. The WHO's recommendations conclude that regular physical activity provides substantial benefits. In addition, it is cheap, safe, and readily available.

101.3 RECOMMENDATIONS AND GUIDELINES FOR PHYSICAL ACTIVITY

The recommendations for the frequency, intensity, and duration of exercise and physical activity for older adults are summarized in the subsequent sections. Older adults should do 150 min/week of moderate-intensity aerobic activity. Additional benefits occur as the amount of physical activity increases through higher intensity, greater frequency, and/or longer duration. In addition, older adults should do muscle-strengthening activities 2 days/week. Participation in multicomponent activities should be considered, as they improve physical function of older adults. The term "multicomponent" refers to physical activity

interventions that include more than one type of physical activity, with common types being aerobic, muscle-strengthening, and balance training. The following recommendation for older adults describes the amounts and types of physical activity including aerobic, muscle-strengthening, and balance exercises.

101.3.1 Aerobic Activity for Older Adults

Frequency: For moderate-intensity activities, accumulate at least 30 or up to 60 min/day (for greater benefit) to total 150–300 min/week or at least 20–30 min/day or more of vigorous intensity activities to total 75–150 min/week or an equivalent combination of moderate and vigorous activity.

Intensity: On a scale of 0–10 for level of physical exertion, 5–6 for moderate intensity, and 7–8 for vigorous intensity.

Duration: For moderate-intensity activities, accumulate at least 30 min/day or at least 20 min/day for vigorous intensity activities.

Type: Any modality that does not impose excessive orthopedic stress, walking is the most common type of activity among older adults. Aquatic exercise and stationary cycle exercise may be advantageous for those with limited tolerance for weight-bearing activity.

101.3.2 Muscle-Strengthening Activities for Older Adults

Frequency: At least 2 days/week.

Intensity: Between moderate (5–6) and vigorous (7–8) intensity on a scale of 0–10.

Type: Progressive power training or resistance training (8–10 exercises involving the major muscle groups of 8–12 repetitions each), stair climbing, and other strengthening activities that use the major muscle groups. The most commonly prescribed methods for increasing muscular strength, endurance, and power involve calisthenics (e.g., push-ups, sit-ups, chin-ups) or specific types of equipment, including weight machines, free weights, resistance bands, and similar devices.

101.3.3 Balance Training for Older Adults

Balance exercise is recommended for all older adults. Balance training activities are movements that safely challenge postural control. If practiced regularly, they improve the ability to resist intrinsic or environmental forces that cause falls whether walking, standing, or sitting. Engaging in multicomponent training that includes balance training is safe and can reduce the risk of falls in older adults. Balance training is often combined with muscle-strengthening activities, with sessions about 3 times per week, for the prevention of falls and fall injuries among older adults. Examples of balance-training activities include standing on one foot, walking heel-to-toe, and using a wobble board. Most balance and fall-prevention programs include progressively more difficult postures that gradually reduce the base of support (e.g.,

AU: Please confirm that this expansion of the acronym WHO is correct.

two-legged stand, semi-tandem stand, tandem stand, one-legged stand), dynamic movements that perturb the center of gravity (e.g., tandem walk and circle turns), stressing postural muscle groups (e.g., heel stands and toe stands), or reducing sensory input (e.g., standing with eyes closed).

101.3.4 Special Considerations for Prescribing Physical Activity for Older Adults

If individuals are unable to meet the recommendations, they should be as physically active as their physical abilities and conditions allow. If older adults have been sedentary for many years, it may be necessary to start out slow when beginning a new exercise program, particularly for older adults who are frail or who have chronic conditions that affect their ability to perform physical tasks. Increases in exercise intensity and duration should be gradual and tailored to tolerance and preference. Taking it easy and being patient are good strategies for deconditioned seniors. For some older adults, multicomponent training that includes muscle-strengthening activities and/or balance training may need to precede aerobic training activities. If chronic conditions prevent activity at the recommended amount, older adults should perform physical activities as tolerated so as to avoid being sedentary.

101.4 MOTIVATING OLDER ADULTS TO INITIATE AND MAINTAIN A PHYSICALLY ACTIVE LIFESTYLE

Developing the best, most well-rounded physical activity program is not going to be sufficient if we do not also pay attention to motivating older adults to participate in the program! In recent years, a great deal of attention has focused on the study of behavioral factors that increase the likelihood of an individual initiating and maintaining a regular program of exercise and/or physical activity. ACSM has summarized the Best Practices for Physical Activity Programs and Behavior Counseling In Older Adult Populations.⁴¹ The ACSM Best Practice Statement suggests that incorporating a comprehensive behavioral management strategy in physical activity interventions can help maximize recruitment, increase motivation for exercise progression, and minimize attrition. The following behavioral strategies can increase the likelihood a person will sustain a new physical activity behavior.

101.4.1 Social Support—Involving Friends and Family

Social support from family and friends has been associated with long-term exercise adherence in older adults.⁴² Examples of social support strategies include peer support

(e.g., tell a friend and bring a friend, exercise buddy system) and professional health educator support (telephone counseling, mail follow-up).

101.4.2 Self-Efficacy—You Can Do It! We Can Help!

For many seniors, aging is associated with a loss of perceived control.⁴³ There is growing evidence that people are more likely to initiate and maintain physical activity if they feel confident about their ability to succeed and if they are afforded a variety of opportunities to actively participate in physical activity. Health contracts, practice/mastery experiences, modeling, and having choices enhance self-efficacy.

101.4.3 Active Choices—Finding the Program That Works For You

As part of a comprehensive behavioral strategy, tailoring the exercise program to the needs and interest of participants has successfully motivated older adults to initiate and maintain a routine of regular physical activity.⁴⁴ Therefore, physical activity leaders should work closely with individuals to design a physical activity regimen that reflects the person's preferences and capabilities. There is growing evidence that providing choices concerning exercise program characteristics (such as group-based vs. individual activity programs and choice of exercise location) contributes to greater adherence. With the diversity of the growing older adult population, significant racial and ethnic disparities exist with regard to NCDs. Older adults from culturally and linguistically diverse backgrounds are less likely to be proactive in undertaking preventative measures to reduce risk of NCDs, such as physical activity. For many individuals, there are several constraints on activity participation beyond personal motivation.⁴⁵ Cultural barriers, socioeconomic factors, psychological trauma relating to migration, perceptions of ill health and injury, and alternate health-seeking behaviors, to name a few. In an attempt to limit these constraints and positively influence the physical activity participation, it is necessary to carefully consider cultural diversity when developing and planning physical activity programs.

101.4.4 Health Contract or Plan of Action—Making a Commitment

A health contract or plan of action is a written agreement, usually negotiated between older adults and their health professionals to accomplish a health goal.⁴⁶ The contract usually includes challenging but realistic goal setting and a measurable, specific, time-delimited plan or course of action for reaching the health goals. The use of a health calendar to record physical activity provides a means for the participant to monitor the targeted physical activity and to reinforce a commitment to the exercise routine. Self-monitoring is most effective when completed

frequently (as it occurs or daily), focuses on the behavior (not absence of), and it is specifically defined.

101.4.5 Perceived Safety— It's Safe, It's Fun

Concerns for safety have been identified as a barrier to exercise by many older adults.⁴⁷ Physical activity programs can help alleviate inappropriate concerns about safety by educating participants about actual risks of physical activity and by helping individuals understand how to self-monitor their exercise intensity levels.

101.4.6 Regular Performance Feedback— How Are We Doing?

Providing regular and accurate performance feedback can assist older adults in developing realistic expectations of their own progress.⁴⁸ Performance feedback should be positive and meaningful to the individual. Observation of meaningful positive changes in performance and success in achieving expected outcomes are associated with exercise adherence in older adults. Recent advances in self-monitoring technology, including step counters and smartphones and watches, have promise for helping people of all ages better track their physical activity behavior.

101.4.7 Positive Reinforcement—Keep It Up, You're Doing Great!

Positive reinforcement is any procedure introduced in an intervention that increases the likelihood of maintenance of the activity.⁴⁹ Examples of effective reinforcement strategies in physical activity settings include recruitment incentives, rewards for reaching targeted goal, and public recognition for attendance and adherence. To maximize the effect of reinforcement, it should be valued by the individual being targeted.

101.5 COMMUNICATING ABOUT EXERCISE AND PHYSICAL ACTIVITY

It is important to help older adults understand that there are many different ways for them to be physically active. For some individuals, structured exercise programs led by certified exercise professionals will be the preferred option, whereas others may wish to find other ways to build physical activity into their everyday lives. The notion that there is a single best way to exercise is no longer tenable, and it is increasingly clear that individuals will need to select the form of physical activity that works best for them. For example, the “Be Active Your Way” (<https://health.gov/paguidelines/pdf/adultguide.pdf>) campaign invites individuals to select physical activities that meet their personal needs and preferences. The steps outlined

in the “Be Active Your Way” guide provide an excellent framework for health-care provider–patient discussions around exercise and physical activity. Another important initiative mentioned earlier in this chapter that facilitates health-care provider–patient communication about active living is “Exercise is Medicine” (EIM) (<http://www.exerciseismedicine.org>). EIM encourages primary care physicians and other health professionals to include physical activity when designing treatment plans and to direct patients to evidence-based exercise programs and certified exercise professionals.

101.5.1 Step 1—Getting Started

Before beginning an exercise or physical activity program, the “Be Active Your Way” guide recommends that older adults first focus on identifying a personally meaningful motive for increasing their activity levels. Health professionals should engage older adults in conversations about some physical activity goals that are personally meaningful to them. Among the possible reasons identified for increasing physical activity are the following:

- Be healthier
- Increase my chances of living longer
- Feel better about myself
- Have less chance of becoming depressed
- Sleep better at night
- Help me look good
- Be in shape
- Get around better
- Have stronger muscles and bones
- Help me stay at or get to a healthy weight
- Be with friends or meet new people
- Enjoy myself and have fun

101.5.2 Step 2—Making Physical Activity Part of Your Life

Health professionals should encourage older adults who are considering a physical activity program to think about reasons why they have not been physically active in the past and to try to develop strategies for overcoming these barriers. The “Be Active Your Way” guide encourages people who have been sedentary for many years to choose something they already like to do and to try to build a physical activity component into the activity. For example, many people like to go shopping or to attend dances and other social events. By increasing the time they spend walking (or dancing), they can gradually combine their fun activity with a healthy dose of physical activity. Older adults should be encouraged to select an activity program that is personally meaningful. Among the strategies recommended are the following:

- Pick an activity you like and one that fits into your life.
- Find the time that works best for you.
- Be active with friends and family. Having a support network can help you keep up with your program.

101.5.3 Step 3—Keeping It Up, Stepping It Up

Once older adults have successfully integrated physical activity into their everyday lives, health professionals should encourage them to gradually increase the intensity and duration of physical activity until they are meeting the physical activity recommendations for older adults. This can be achieved in the following ways:

By being active longer each time. Older adults already walking for 30 min, three times a week, could go longer—walking for 50 min, three times a week.

By being active more often. If an older adult is biking lightly 3 days a week for 25 min each time, he or she could build up to riding 6 days a week for 25 min each time.

101.5.4 Step 4—Being Active for Life

Once older adults are successfully meeting the physical activity recommendations, they should be encouraged to consider adding new elements to their physical activity regimen in order to keep physical activity interesting and fun. For example, once older adults are comfortable sustaining moderate-intensity activities on a regular basis, they could begin to add higher-intensity activities. The “Be Active Your Way” Guide lists a number of moderate and vigorous-intensity physical activity options for older adults’ consideration.

Moderate-intensity physical activity options:

- Biking slowly
- Canoeing
- Dancing
- General gardening (raking, trimming shrubs)
- Tennis (doubles)
- Using your manual wheelchair
- Using hand cyclers—also called arm ergometers
- Walking briskly
- Water aerobics

Vigorous-intensity physical activity options:

- Aerobic dance
- Basketball
- Fast dancing
- Jumping rope
- Martial arts (such as karate)
- Race walking, jogging, or running
- Riding a bike on hills or riding faster
- Team sports
- Swimming fast or swimming laps
- Tennis (singles)

101.6 ANSWERING QUESTIONS ABOUT EXERCISE AND PHYSICAL ACTIVITY

For those of us who make our living advocating for physically active lifestyles, it may come as a surprise to realize

how little many older adults know about physical activity. However, many older adults were educated at a time and in a culture in which little was known about the health benefits of physical activity, and professionals and members of the public were skeptical about the need to remain physically active later in life. In the final section of this chapter, we consider some frequently asked questions that older adults ask about exercise and physical activity with the goal of assisting health professionals to provide succinct but accurate responses that will serve to motivate and inform older adults.

101.6.1 Question: Why Should I Be Physically Active?

Response: There are many reasons you should build physical activity into your everyday life. Regular physical activity can help to improve quality of life in old age. Physical activity can help you stay active and engaged with your family and community. It can help you to manage or postpone some of the chronic diseases and conditions many of us have come to expect from old age. Aging does not have to be something that “happens to us”—on the contrary, being physically active can help us to play a more active role in our own aging. Physical activity can help us to live happier, healthier, and more productive lives.

Additional comment: For many years, exercise professionals have tended to focus on the health or medical benefits of exercise and physical activity when trying to motivate sedentary individuals to become more active. For some individuals, motives such as decreasing cholesterol levels, improving cardiac output, and increasing bone mineral density are effective motivators, but for many seniors, they are not. It is equally important to mention that regular physical activity can be fun, can increase quality of life, and can help older adults continue to do the things that they like to do. It is doubtful that a single motivational strategy will work for all older adults. It is important that we expose older adults to a variety of different motivational strategies to help to find the technique that works best for them.

101.6.2 Question: How Much Physical Activity Do I Need?

Response: Ideally, you should aim to do at least 150 min of moderate-intensity aerobic activity per week, as well as, 2 days/week of muscle-strengthening activities. However, start by doing what you can and gradually look for ways to do more. If you have not been active for a while, start out slowly. After several weeks or months, build up your activities—do them longer and more often.

Additional comment: In this book chapter, we provide the best available scientific recommendations for physical activity. However, it is important to understand that, for many older adults, 150 min of moderate-intensity aerobic activity per week can be an extremely intimidating target that may leave them discouraged or unwilling to even try to increase their physical activity. It is important that health professionals help older adults understand that it is

perfectly acceptable to gradually increase physical activity levels starting at easily achievable, nonthreatening levels, and slowly increasing as they become more comfortable with exercise and physical activity.

101.6.3 Question: What Is the Best Exercise for Older Adults?

Response: There is no single best exercise that works for all older persons. Depending on how you define it, “old age” can cover as much as a 50-year age span, ranging from 50 to 100 years of age and older. For this reason, it is impossible to recommend single set of activities that is best for all older persons. Some seniors can run marathons or compete in triathlons, whereas others may be more comfortable walking or gardening. Still others will get their exercise in a chair or in bed! The most important thing is to do regardless of your age is to avoid inactivity. The specific type of physical activity will always vary from person-to-person. A good idea is to select activities you enjoy. If possible, mixing up activities that promote stamina, strength, and balance is a good idea.

Additional comment: The best exercise or physical activity program is the one that older adults are willing and able to do regularly, that they enjoy, and that adds to their quality of life. For some individuals, this will be a structured group exercise program at the local senior center or YMCA; but for others, it will be something much less structured, possibly involving activities such as active commuting, gardening, or walking the dog. Many health professionals grew up enjoying games and sports and are extremely comfortable “working out” in traditional exercise environments. It is important to remember that not all older adults have enjoyed similar positive experiences with traditional exercise programs. Work with older adults to understand their goals, aspirations, and personal preferences. For some individuals, identifying options for active living may be a much more successful strategy than simply referring an individual to an exercise program at a local fitness center or community agency.

101.6.4 Question: How Many Times a Week Should I Exercise?

Response: Generally, it is better to spread out physical activity throughout the week with a goal of being active on at least 3–5 days/week. By choosing activities that you enjoy, that are convenient and affordable, you may be able to find a way to be active on almost all days of the week. Try to mix up your physical activity program so you are not doing the same thing every day. On some days, you might go for a walk in your neighborhood with a friend or family member, on other days, you might take advantage of a more structured exercise program at the senior center or church. Many people find that wearing a step counter can help them keep track of their activity levels. On days where you have not accumulated many steps, an after-dinner walk can help you maintain your commitment to maintain an active lifestyle.

Additional comment: As a health professional, one of the most important things you can do is to empower

older adults to be independently physically active and not to depend solely on you for advice about their physical activity. It is important to help older adults develop activities that they can do on their own time and in their own space. By helping seniors understand that there are many different ways to be active, health professionals can help them develop a well-rounded, personalized activity program that selects from a menu of physical activity choices and helps them to be active on most, if not all, days of the week.

101.6.5 Question: I Have Not Exercised for Many Years, Where Should I Start?

Response: Forget the old saying “no pain, no gain”—it is simply not true! Too many of us learned in childhood that physical activity has to be painful or exhausting if it is going to do us any good. There are many excellent options for those of us who cannot or do not want to exercise vigorously. Walking is a wonderful way to increase your activity level. Stretching and water exercise are also good options. For example, the Arthritis Foundation offers excellent aqua exercise programs designed especially for those with arthritis and joint disorders. Gardening and working outdoors can also be a good form of physical activity. Remember—the most important thing is not what you do; rather, it is most important to avoid inactivity.

Additional comment: Prescribing exercise and physical activity is as much an art as it is a science. The most successful health professionals are those that have mastered both of these elements. Simply informing patients about the current scientific guidelines may not be sufficient to motivate them to change their behavior. Understanding some of the principles of behavioral change, discussed earlier in this article, can help you develop greater insight into how to identify the right place for an individual to start on their journey toward an active lifestyle.

101.6.6 Question: Will Physical Activity Help to Reduce My Risk for Specific Diseases and Conditions?

Response: Physical inactivity is a major risk factor for many physical and psychological conditions. Sedentary living is associated with heart disease, obesity, type 2 diabetes, and many other conditions. Inactivity is also linked to low self-esteem and psychological depression. Regular physical activity can positively influence all of the aforementioned conditions. Many studies have shown that activity can also help slow the loss of muscle and bone mass that often occurs with advancing age. In addition to these physical and psychological benefits, physical activity can often have significant social benefits. Many seniors enjoy group exercise programs where they have a chance to interact with fellow exercisers of all ages. Even for those individuals who prefer to be active alone or with a partner, physical activity can help them retain the strength and stamina necessary for playing an active role in everyday life.

Additional comment: About 80 percent of older adults have at least one chronic condition, and 77 percent have

at least two. Low levels of daily physical activity often coexist with chronic disease, thereby accelerating the risk of functional decline, disability, and mortality. One of the areas in which more scientific research is needed pertains to the specific mode, intensity, and duration of exercise and physical activity needed to bring about a particular clinical outcome. When approached by an older person with a specific disease or condition, it is especially important for a health provider to recommend an exercise or activity regimen that has been shown to be effective in the treatment and management of that particular condition. For example, when approached by an older woman with osteoporosis who was looking for an exercise program to increase her bone mineral density, it would probably not be optimal to recommend a low-intensity walking and calisthenics program conducted at the local senior center. Health professionals should familiarize themselves with the variety of exercise and physical activity options available in their community and be prepared to work together with older adults to help identify the most appropriate choice for each individual.

101.6.7 Question: Is Exercise Safe?

Response: Yes! Almost everyone can find a safe and effective exercise program tailored toward his or her health status, physical activity goals, and personal preferences. It is far more risky to your health to be sedentary than it is to begin a program of light-to-moderate-intensity physical activity. The greatest risk is that your muscles will be sore in the first few weeks of an exercise program. There are some things that you can do to reduce these risks. Learn to read your body's signals. On days that your body feels tired or weary—take it easy. On good days, take advantage of your body and enjoy yourself! Once we learn how to read our body's signals and respect its needs, we get a better sense of how to adjust our activity programs as we grow older. Very few individuals will be able to (or would want to) run or dance as energetically in their seventies as they could in their twenties. Many believe that the secret of healthy aging is learning how to adjust to changing needs and circumstances while remaining an active and vibrant member of society.

Additional comment: While there are some risks associated with participation in regular physical activity, the risks of being sedentary are much greater! Physical activity risks are related to level of intensity, with lower-intensity physical activity being associated with the lowest risk. Low-intensity physical activity reduces the risks of injury and muscle soreness and may be perceived as less threatening than moderate-to-high intensity routines. While lower risk is associated with lower-intensity exercise, the consensus is that moderate physical activity has a better risk/benefit ratio, and moderate-intensity physical activity should be the goal for older adults. Although speaking with a health care provider is always a good idea, the involvement of a primary care provider prior to beginning a program of physical activity may not always be necessary and depends on a person's health condition and the level of intensity and mode of physical activity they plan to pursue.

101.6.8 Question: Am I Too Old to Exercise?

Response: No! You are never too old to exercise! Strong evidence suggests that it is never too late in life to benefit from physical activity. Physical activity has been shown to be of benefit for individuals of all ages including persons as old as 90 and 100 years. Many people just like you are active on a daily basis. You can find a physical activity program that you will enjoy, that will make you feel better, and that will increase your quality of life. Think about what you most like to do in life and what you hope to gain from being active.

Additional comment: It is increasingly clear that beneficial effects of regular physical activity can be observed at all stages of the life course, ranging from the very young to the oldest-old. In recent years, many excellent and well-publicized studies have focused our attention on the benefits of regular physical activity in those cohorts of seniors who were previously thought to be “too old” or “too frail” to partake in physical activity. There are a number of reasons why the frail and the oldest-old tend to be the most sedentary members of society. First, many of the oldest-old do not think of themselves as candidates for physical activity. They are unaware of the many benefits that can accrue to them if they increase their physical activity levels, and they do not realize that many people just like them enjoy activity on a regular basis. Second, for many years, exercise and physical activity professionals were reluctant to expose the oldest-old to the rigors of even the most modest physical activity regimens. It is only recently that professional organizations and Institutional Review Boards have begun to recognize that the benefits of physical activity are much greater than the very small risks they pose. Third, many of the exercise and physical activity programs traditionally employed with the middle-aged and young-old are poorly suited for use with the frail and the oldest-old. However, there is now an ample number of evidence-based programs that have been proven to work in frail- and older-adult populations.

101.6.9 Question: Do I Need Special Clothing and Equipment?

Response: No! Special clothing and equipment are seldom needed. Safe and effective physical activity can be performed wearing comfortable street shoes and loose fitting everyday clothes. Effective muscle-strengthening activities can be achieved with inexpensive equipment such as elastic bands, water-filled jugs, stairs, or simply using your bodyweight.

Additional comment: Many older adults have significant discretionary income and are ready and willing to spend it on club memberships, exercise equipment, and clothing. However, many others are in less fortunate financial circumstances and do not have a lot of money to invest in physical activity. Health professionals should be sensitive to the resources available to their patients and tailor their advice and recommendations accordingly. Probably the most important equipment needed to maintain an active lifestyle is a well-fitting pair of shoes, which

are both comfortable and provide adequate cushioning to minimize the risk of muscle and joint injuries.

101.7 SUMMARY

Although no amount of physical activity can stop the aging process, there is strong evidence that regular physical activity can minimize the physiological effects of aging and increase active life expectancy by limiting the development and progression of non-communicable diseases and promote independence and quality of life in older age. A combination of aerobic, muscle-strengthening, and balance activities appear to be more effective than either form of training alone in counteracting the detrimental effects of a sedentary lifestyle on the health and functioning of the cardiovascular system and skeletal muscles. While there are clear fitness, metabolic, and performance benefits associated with high-intensity exercise training programs in healthy older adults, it is now evident that such programs do not need to be of high-intensity to

reduce the risks of developing chronic cardiovascular and metabolic disease. Social support, self-efficacy, perceived safety, and regular feedback are important behavioral factors that can help increase the likelihood of an individual initiating and maintaining a regular program of physical activity. Physical activity risks are often related to level of intensity, but the risks associated with a sedentary lifestyle far exceed them.

CLINICAL APPLICATIONS

- Regular exercise can be an important element in the management of numerous medical conditions.
- It is important to help older adults understand that there are many different ways for them to be physically active.
- Health professionals should engage older adults in conversations about physical activity goals that are personally meaningful to them and help them find ways to make physical activity part of their lives.

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