

S T A N F O R D
M E D I C I N E

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strength training: not only for the young

OLDER ADULTS CAN ADD LIFE TO THEIR YEARS THROUGH

VIGOROUS PHYSICAL ACTIVITY By Wayne T. Phillips, Ph.D.

*'You are old Father William!' the young man said,
'and your hair it has turned very white.
But yet you incessantly stand on your head,
do you think at your age that is right?'*

LEWIS CARROLL (1832-1899)

*'You are old Father William!' the young man cried
the few locks which are left you are grey.
You are hale Father William, a bearty old man
Now tell me the reason I pray?'*

ROBERT SOUTHEY (1774-1843)

Unlike “Father William,” about 70 percent of people over 65 do not exercise regularly, and less than 10 percent routinely engage in vigorous physical activity. Yet regular strength training for older adults can reduce disability while maintaining and improving independence, health and vitality.

Not long ago, such a statement by a health care professional would have provoked skepticism among colleagues at the very least and perhaps even raised liability concerns. Such views have been largely due to misconceptions about the desirability or safety of exercise for older adults, particularly vigorous exercise. Lingering doubts still exist in the minds of some physicians, caregivers, and even in society in general regarding the appropriateness of vigorous physical activity in the “declining years.”

Until recently, exercise for elderly people, particularly strength exercise, was prescribed almost exclusively with an abundance of caution and an emphasis on low intensity and decreased resistance. It turns out that this perception may actually have been causing more harm than good. Research studies over the last 10 years or so have consistently documented that as much as 50 percent of the decline associated with aging can be attributed to inactivity.

In everyday terms, a decline in physiological function is indicated by increasing difficulty in performing ordinary activities of daily living. As these activities — such as getting in and out of a bathtub or low chair; lifting, holding or carrying groceries or grandchildren; climbing stairs and hills or even walking short distances — gradually grow more difficult, older people tend to avoid them.

For example, daily walks may be shortened or missed because there are steps to negotiate or hills to climb. This may result in further reductions of both strength and endurance, leading to a loss of independence — an all too common occurrence for aging men and women in the United States.

Even though many activities reportedly become more difficult with age, performing those activities largely depends on adequate levels of muscular strength and endurance — two factors that can be significantly improved with training. Results from a growing body of research indicate that strength training is not only effective but also safe and even desirable for the majority of folks over 65. It may be even more important for those over 75. The National Institute on Aging recommends that older people, after consulting with a physician, include a

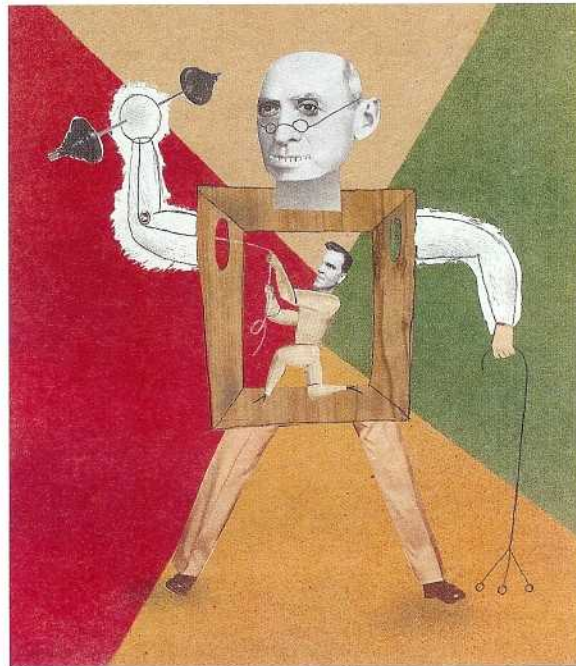
increased their leg strength, and there were no adverse medical or safety events.

Although this study was designed only to investigate the effect of the training on strength improvement, one of the more interesting and important results for me occurred in the anecdotal responses of the participants. All said they thoroughly enjoyed the experience. Two said they were sleeping better. One stopped using his cane halfway through the study. And several reported they were more easily managing the two flights of stairs up to the study area.

Strength training for older adults has now become a “hot topic.” Dramatic increases in strength and even in muscle mass are being reported in studies of elderly people on high-intensity training programs. In addition, early results from such studies indicate that gains in strength may enable

older individuals to adopt more active lifestyles — or to maintain existing ones with greater ease. Benefits of strength training programs reported in men and women as old as 96 demonstrate that it really is never too late to start exercising. Even elderly individuals who are less than healthy — or who have functional deficits due to arthritis or hemodialysis, for instance — may benefit from strength training

Currently, we are conducting a study of high-intensity strength training in 65- to 85-year-old men and women with histories of heart disease. The 50 participants are randomly assigned either to a cardiac rehabilitation class (which is predominantly aerobic in nature) or to the rehab



strength training regimen as part of a well-rounded health program.

Several years ago, I conducted a program of leg strength training with a group of 10 men between 65 and 83 years of age. The men trained three times a week for 12 weeks using an isokinetic strength training machine that allowed them to work at maximum effort for every repetition in the training session. All subjects significantly

class plus strength training.

People in the strength training group are tested on conventional weight training machines to find their one-repetition maximum (1RM), which is the amount of weight they can lift with a single maximum effort. The participants then train at approximately 80 percent of this weight three times a week for 12 weeks using a system of

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color-coded rubber bands with graduated resistance (Therabands®). In addition to observing strength improvement at the end of this study, we will also look for improvements in quality-of-life measures and in the performance of daily activities.

Older adults interested in beginning strength training have numerous options. Many health clubs and local YMCA and YWCA branches offer discounts to seniors. The Y's in particular often offer individual as well as group instruction. For those who

belly" are also available, either in the conventional shape or with a comfortable customized hand grip.

Another home-exercise equipment option — rubber bands like those used in our study — can provide an effective strength training program. These rubber bands are available in a wide range of color-coded, graduated resistances and are easily portable. Just roll them up and pack them in your bag or suitcase. Illustrated instructions are usually included. An even simpler and cheaper approach could be to use everyday items such as bags of potatoes or cans of vegetables as homemade dumbbells.

struction is likely to be available at a YMCA or YWCA. But even with a home exercise program, seek the advice of an exercise specialist before starting.

Also, begin your exercise program with relatively low levels of resistance (something more than "comfortable" but less than "hard") and relatively high numbers of repetitions (between 12 and 15). Increase the resistance gradually. Since the safe and appropriate amount of weight or resistance will vary from person to person, you should determine your own best amount, with the help of an exercise specialist.

Strength training is not a fad but a valu-

BENEFITS OF STRENGTH TRAINING PROGRAMS REPORTED IN MEN AND WOMEN AS OLD AS 96 DEMONSTRATE THAT IT IS NEVER TOO LATE TO START EXERCISING.

prefer a less public place to exercise, some good home-exercise options are available.

Home-exercise equipment for strength training includes "wrist weights" and "ankle weights" — padded bands of leather or plastic with pockets for small lengths of metal or bags of sand. The weighted bands are wrapped around wrists or ankles and secured with Velcro fasteners. The bands are made heavier or lighter by simply adding or removing weight from the pockets. A basic instruction program is usually provided. Hand-held weights or "dumb-

Some final advice: Strength training can make you feel good all over or it can make you feel sore all over! Since the former condition is much preferable, the following simple guidelines for safe and effective training can help.

First, get clearance from a physician and then master basic strength training techniques before you begin your training program. All of the participants in the studies mentioned in this article completed a comprehensive instruction program before beginning their training. This kind of in-

struction is likely to be available at a YMCA or YWCA. But even with a home exercise program, seek the advice of an exercise specialist before starting.

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