

# The effects of exercise in the elderly



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As the baby-boomers continue to age, associated incident of disease and premature death is increasing. The benefit of exercise in seniors is being studied to see if it will impact these processes and its impact on obesity and fragility.

It is well documented that functional dependence and disability increases with age, but what if any will the role of fitness play in impacting these. The impact of this decline in both skeletal muscle mass and strength is well noted and are considered major contributing factors to the loss of functional mobility and independence in many older adults This paper will focus on the strengths and benefits of physical activity among the older population and the impact it can have on the reduction of physical decline in the aging. The

Effects of Exercise in the Elderly As time moves on so do the risk of increased injury in the elderly, let's face it the population boon for the baby boomers is here. It is well documented that our bodies' ability to fight aging will be dependant on a combination of many things. Activity and fitness have been shown to increase disease prevention and provide increased health promotion.

It's not just about treating the chronic diseases such as obesity, bone loss, but changing the very lifestyle the elderly are facing. Prescribing Guidelines for Fitness Functional independence can be impacted by the medications you take, and as you age this dependence can exponentially increase. Many times exercise has been the prescription for decreasing medications, look at obesity and diabetics. With weight loss type II diabetics are able to wean off medications controlling their lives regaining independence, and increasing their general daily activity. " Evidence suggests that regular physical activity provides substantial health benefits, reducing the risk of many chronic conditions, reduced medical costs and increased overall age" (McDermott, A.

& Memitz, H. , 2006, p. 1). It is important for the physicians to understand the benefits of an exercise program and work with their patients to eliminate barriers preventing exercise. " Flexibility is the ability to move a joint through a complete range of motion, by increasing flexibility you facilitate movement and can prevent injury throughout life" (McDermott, A.

& Memitz, H. , 2006, p. 2). In order to optimize a successful exercise program it must be multi-focused, measurable and patient-appropriate, but more importantly it must be tailored to meet the needs of the person.

These decisions must be a combined decision of both the qualified physician and the patient in order to improve compliance and improve the patient's satisfaction. Of course no exercise program should begin without medical clearance and a risk factor assessment by the fitness club. Continued support will be important and physicians should use the "A" model to support success: " assess, advise, agree, assist and arrange" (McDermott, A. & Memitz, H.

, 2006, p. 3). It is important if available to involve the patient's support system as this historically has proved to be most effective in increasing compliance. Goal setting must be an integral part of the program set forth in order to have continued compliance, and it is important to celebrate milestones as they occur. " Home based exercise can be effective for physically or financially limited patients, whereas patients who are frail or who have balance and agility problems may benefit more from supervised activities" (McDermott, A.

& Memitz, H. , 2006, p. 3). Now let's explore the old an ounce of prevention. A Little Exercise – Prevention Hippocrates, c. 450 B.

C. stated: All parts of the body which have a function if used in moderation and exercised in labors in which each is accustomed, become thereby healthy, well developed and age more slowly; but if unused and left idle they become liable to disease, defective in growth and age quickly (Hippocrates, c. 450 B. C. ).

" Talk about wisdom! Nearly 2500 years later, the debate about exercise and aging continues with little understanding of the topic beyond Hippocrates'

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words” (Ferruchi, 2006, p. 1). It is no doubt the burden for reaching out to the elderly is going to fall on the family and healthcare workers as the baby-boomers age. New strategies must be developed for reaching out to the “ frailest and sickest segments of the older population” (Ferruchi, 2006, p. 2). Ferruchi suggests that previous studies have found that by increasing physical activity you can significantly improve chronic disease processes such as Congestive Heart Failure, Osteoarthritis, and so much more (Ferruchi, 2006). Of course the primary goal is to improve the quality of life and decrease health risks but to do this it is up to the individual, if you continue to smoke and eat grossly unhealthy foods then the chances of changing your quality of life is poor. A simple program of beginning a walking program can improve motor function.

It is not necessarily about the distance, but more about the time spent sustaining the activity. If you start out at five minutes and work up to twenty minutes in four to six weeks three times a week, think of the freedom you are offering yourself. Provision needs to be made for the availability of places to do these exercises. Design of a different era needs to occur, it cannot look like the traditional “ fitness” center, and it must cater toward the new “ older generation”. Focus also needs to occur on the prevention side of the equation. Providers such as the gerontologists, geriatricians, health policy makers and all others need to come together to develop and implement system-wide practices for prevention (Ferruchi, 2006).

While outwardly seniors can appear healthy and functionally intact, at closer detection they can actually be on the irreparable road of functional

limitations. “ The National Institute of Aging has labeled lack of physical activity “ Public Enemy Number One”” (Lauro, 2007, p. 1). While outwardly exercise changes the mobility it can also have an impact on the immune system, impact reduction of heart disease and even increase lung capacity thus potentially decreasing upper respiratory infections. It is documented that exercise has an impact on health, but how does it impact self esteem? Exercise and Self Esteem While an effect of exercise on the outer shell of the body is noted, evaluation of the internal effects such as self esteem must also be studied. “ Self esteem is important for a successful and satisfying life and is a central aspect of psychological well-being” (McAuley, Elavsky, Moil, & Konopack, et.

l. , 2005, p. 1). Physical self esteem is just as important and mental self esteem, each plays a pivotal role in the success by an individual. Look at cancer survivors; it was not all about the medicine, but the belief by the individual that they would survive.

It is just as important to recognize the physical self esteem with exercise. Most people while not aggressive to point out are impacted by their physical appearance; it is no different for the elderly. There is some research to suggest that a reduced capacity to carry out normal activities of daily living can and probably do have an impact on ones self esteem. Reduction of functional independence would have the potential to impact the participation in physical activities and also have a significant influence on the person’s self-worth. This impact on ones physical self-worth ultimately can have a positive impact on ones global self-esteem.

“ Living well in concert with living longer is an important public health goal in our society, and quality of life outcomes are receiving increasing scientific and lay attention” (McAuley, et. al. , 2005, p8. ). Concentration needs to continue in how ones esteem either physical or mental can be impacted with something as simple as walking.

Overall it goes back to what quality of life an individual is either forced to endure or looks forward to living. These efforts have to go beyond traditional exercise, and needs to be able to help those with physical limitations as well as those with no limitations. New Ideas for Exercise As we have explored up to now exercise is a key mechanism in the elder population, promoting physical activity is proving to be a key success in decreasing the incidence of disease and even premature death. One of the most prevalent diseases affecting this and all age groups is obesity. To combat the health care costs associated with a sedentary lifestyle, there is a growing interest in promoting exercise among mature and older adults” (Godbey, Burnett-Wolfe & Chow, 2007, p. 1).

A better understanding of programs available to the older population is needed, specifically stated Godbey, et. all. , defining what “ successful aging” means and what can be done to impact physical activity as the baby-boomers age (Godbey, et. all, 2007). “ Getting middle age and older adults physically active is becoming more difficult due to two revolutions.

First, unprecedented growth of this age group and secondly, the fact that physical activity has been removed from nearly every aspect of life” (Godbey, et. all, 2007, p. 1). Lets face it the majority of Americans do not get

enough exercise and it is well proven, just take a look around you as you walk down the street. Obesity is reaching epidemic proportions and is quickly outranking smoking as the number one threat to health in the population.

Obesity is not just a limited to mobility, but effects almost every major system in the body, from heart disease to diabetes, cancer, asthma and so much more (Godbey, et. II, 2007). But it is not just the social cost that this disease is affecting, but the very encumbrance for the nation. The failure on the part of the United States with this population is the inability to capture, attract and retain older adults in exercise programs leading to misconceptions about successfully aging. It is important at this stage that society becomes creative in defining successful adaptation in the traditional “exercise” phenomena. It is not just about going to the gym and working out, it is recognized that physically aging slows the mobility, but also can impact the cognitive skills as well, finding the balance between the two is the goal.

It is all about the appeal and esthetics to draw the crowd, what niche is someone putting on the program to invite membership? Selection of the activity is important, if the participant was a tennis player all their life, then perhaps they would switch from singles to doubles in order to maintain their love of the game. Optimally it will be dependant on maximizing the performance in order to facilitate success. Combining activities that promote physical and cognitive activities could be the key to success. Godbey, et.

all, point out that these combinations such as bench seating among ethically pleasing walking paths can encourage physical and cognitive exercise (Godbey, et. all, 2007). Fortunately for us our mind like our bodies has the



tendency to grow if continually challenged. Balance and Exercise So far the focus has been on the effects of exercise, but there is still another important factor that exercise plays, the ability to maintain balance itself. Falls are one of the most significant injuries for the elderly. One activity specially targets this debilitator of the elderly, Tae Kwon Do.

“ Improving balance and walking ability through Tae Kwon Do exercise may serve to restore function that has declined with age and preserve mobility for older adults (Cromwell, Meyers, P. E. , Meyers, P. M. & Newton, 2007, p.

1). Cromwell, et. all, point out that one-third of the elder population will experience a fall each year, considering the exponential number of baby-boomers this statistic is significant. It is apparent that aging is directly related to a decline in the ability to walk and not surprisingly, adaptations in the very pattern of walking are compromised causing a dynamic increase in fall risks. Given this factor concentration on preventing deterioration of balance and walking must provide tasks that can help to mitigate this debilitation.

Tae Kwon Do while a form of martial arts offers a combination of “ kicking, blocking, and striking techniques, which requires participants to actively shift their eight between the lower extremities while the upper extremities are moving” (Cromwell, et. all, 2007, p. 2). Of course no activity should begin without extensive pre-certification from both a physician’s standpoint and the fitness trainer’s assessment; prevention will be one of the key factors to continued engagement and success for the participants. The goal here is to stay the deterioration of one of the persons most valued resource

independence. Water and Exercise One of the least aggressive, yet most pleasing forms of exercise is water aerobics; this has been proven true for most age groups.

As the population ages “ it is clear that there is a need to develop effective, targeted interventions to prevent disability and to optimize independence in the elderly” (Tsourlou, Benik, Dipla, Zaferidis, & Kellis, 2006, p. 2). Water aquatic is a viable alternative exercise in improving overall fitness in those individuals whose low fitness strength is noted. It has been well noted that aquatics does not have high impact on the joints like aerobics and can provide a sense of freedom during exercise that traditional methods just cannot provide. The benefits of this form of exercise do not stop with just the joints; it also impacts the cardiovascular system as well as increasing muscle strength.

These benefits are drawing considerable attention from groups like the Council on Aging who is always seeking viable alternatives to slow the effects of decreased mobility. In particular isometric strength in older people, especially women, is greatly effected as the population ages, effecting simple activities such as grocery shopping, posture and more. One exercise that has proven beneficial in aquatic exercise is leg extensor movements, this can contribute to increased daily activities such as stair climbing and even walking. While this helps with mobility there are still disease processes that weigh in with significant impact. Exercise and Osteoarthritis There have been many factors discussed with regards to the benefits of exercise in the elderly but by far the most common condition effecting older adults is osteoarthritis.

This disease is the leading cause of disability in the aging with regards to mobility. It is not only a cause of limited mobility, but a very painful disease process. It is known that exercise can increase mobility and possibly decrease the effects of osteoarthritis, but what is the impact if you combine a multitude of different processes. Studies are now being conducted to see if “ treatments have an additive effect if they are combined into a single multicomponent intervention that incorporates range of motion, aerobic condition, strength training and education for behavior changes” (Hughes, Seymour, Campbell, Huber, et al. p.

2). As dialogue has occurred with different methodologies that may work it is important to remember that any recommendations that are made must be able to be duplicated. One of the issues surrounding the ability to be independent for many elderly is being able to rise from a chair or in worse case scenario the floor, for many this is a completely daunting task. The goal of course to provide some semblance of independence and while doing this to hopefully decrease some of the pain incurred with osteoarthritis. As the authors pointed out while not an exclusive agenda item to the elderly it is certainly one that is common among this age. Finally we need to look at how exercise can impact, if any, dementia in the elderly.

Exercise and Dementia Up to now it has been about the impact of the physical body, but what about the mental well being that exercise can provide. “ Alzheimer disease and other dementing disorders are major sources of morbidity and mortality in aging societies” (Larson, Wang, Bowen, McCormick, et al. , 2006, p. 1). Think of it exercise providing effective prevention of dementia, improving quality of life and giving millions back

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quality that they nor their loved ones thought would ever be possible. Could it be so simple, at every turn today advertising is promoting doing puzzles and number games will stimulate the cortexes and increase memory, can exercise do this as well? Exercise does many things, but improving circulation and oxygen delivery is a common benefit with physical exercise.

If physical exertion on any level increases delivery of oxygen to the brain then it stands to reason that this could then have an effect on cognition by older adults. Exercise alone will not do this many co-factors such as smoking, obesity and other health risks all which have a significant impact on the ability to exercise, causing an increase in the risk of dementia. In society today about one in ten Americans over the age of sixty-five will be diagnosed with Alzheimer's Disease and as the baby-boomers become of the new old age, this number will grow exponentially given the magnitude of seniors. "Poor memory alone is not dementia, and some declines in short-term memory are normal as people age" (Larson, et al. 2006, p.

8). While there are several causes for dementia the most common are Alzheimer's and vascular disease. At present there is no cure so any prevention that can be evaluated benefits both the person affected and their family. Conclusion Age should never be a limiting factor in exercise training; society must concentrate on prevention and continue to look at different ways to stay the effects of aging. Exercise as it has been explored is very effective in more than just the physical sense. Formal partnerships must be formed and continue to grow if Americans hope to impact the debilitation that comes with aging.

There is a sizable subset of our population that will be affected as we age and finding ways to change the outcome of how they can live their lives will be a key to changing outcomes in the elders. Living well is as important as living long and society will continue to make demands to address the debilitation that many seniors are experiencing. Scientists will need to continue their exploration of the many ways quality of life can be enhanced and the role that exercise can play. It was shown that promotion of physical activity can have a profound effect on decreasing incidences of disease and premature death. These promotions potential impact of healthcare costs are very important as more Americans are either without or cannot afford healthcare and the elderly are worse as their limited income causes the choice of medical coverage or food. People do not want to loose their independence; the older population is terrified of loosing not only their mobility, but their cognition as well.

Future research is needed in order to combat things like Alzhemiers Disease, Osteoarthritis and the other diseases that can impact each of us as we age. The golden years are supposed to be the time for travel, relaxation and interaction with grandchildren, if you cannot walk or remember who they are it is devastating. References Cromwell, R. , Meyers, P. M.

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