

Combatting Sedentary Behavior in Older Adults

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Introduction

As the number of older adults in our population continues to rise, it becomes increasingly important for us to discover and implement ways to increase the independence and health of our seniors. According to the U.S. Census Bureau, there were 40.3 million U.S. residents 65 years and older in the 2010 Census, which increased to more than 54 million by July 1, 2019. (1) Since this population group includes those over 65, it is important to note that the average life expectancy for adults in the US was 77.8 years in 2020. (2) This leaves an average amount of 12 years for people in this category, which is a long period to deal with a decline in overall health and independence. Any method that can alleviate or delay a decline in health or independence is of urgent importance, as this is not a problem that will resolve itself. One of the major risk factors facing our seniors is a sedentary lifestyle. Regardless of age, sedentary lifestyles are associated with increased weight gain, cardiovascular disease risk, and risk of developing other diseases, as well as a general increase in mortality risk. However, while the risks of sedentary behavior are similar among different age groups, the risk of having a sedentary lifestyle is far higher among seniors. Therefore, the purpose of this article is to consider the strategies, effects, and results of combatting sedentary behavior in older adults.

Prevalence and Outcomes of Sedentary Behavior in Older Adults

It is not surprising that older adults often form the most sedentary segment of the population. The natural decline in energy and strength that comes with age often leads to seeking activities that involve less intensity or less risk of injury. Because such a lifestyle is categorized by low energy output, it is all too easy to associate a well-earned retirement with a life with minimal discomfort, labor, or activity. A generally accepted marker of sedentary behavior is activities involving an energy expenditure equal to or less than 1.5 METs. Given this definition, a sedentary lifestyle contains a wide range of activities including reading, playing games, and watching TV. And these are just a few examples of activities that take place in a sitting, lying, or reclining posture, all of which are far too common in the lifestyles of older adults. Sedentary behaviors do provide an important time for the body to rest and recover. However, this can cause problems when the sedentary behavior consistently takes up too much time of the day or is too prolonged in duration. It is general advice for sedentary behaviors to be limited, and for active

breaks to be taken throughout the day even when sedentary behaviors are consistent or required, regardless of age.

An important distinction regarding physical activity among the senior population is the idea that a sedentary lifestyle is not just referring to a life with no exercise. Having a desk job where you sit for the majority of the hours during the week, and then go for a run on the weekends or at night still qualifies as a sedentary lifestyle. However, this issue is compounded for older adults, because they are often no longer working at an active job or pursuing exercise outside of that. Somehow, both of these things are easily left behind as someone ages. Older adults can sit for hours and hours, and yet never pursue a dedicated active segment of their week. This lifestyle has not only become socially acceptable but is even encouraged among our elderly. Rest or leisure time can be a great thing, but the evidence is pointing that too much of this behavior is causing more harm than good. A systematic review by Rezende et al. pinpointed a relation between greater amounts of sedentary time and an increased risk of all-cause mortality among older adults. (3) Findings like these highlight the need for change in how we approach lifestyle and exercise guidelines for our elderly population as we seek to provide the appropriate and effective care throughout this period of their lives.

Another factor to consider is where people are engaging in this behavior. A study by Leask et al. found that approximately 70% of the time that older adults spend engaging in sedentary behavior is done in their own homes, with almost 57% of that being done when they are by themselves. (4) This means that these problems need to be addressed at the source. Solutions that involve increasing active behavior outside of the house, such as those that require transport to other locations are less likely to be as impactful as those that address behaviors inside or close to the home.

Chronic Diseases and Sedentary Behavior

A discussion of the risks of sedentary behavior would be incomplete without a consideration of chronic diseases. Chronic diseases tend to be more common in older adults, and their effects can be wide-ranging. As an example, consider osteoporosis. For older adults who are already experiencing a loss of bone density, the risk is made more severe by sedentary behavior. It is common knowledge that exercise is the main controllable factor when it comes to lessening bone density loss and is a concrete way an individual can help manage their risk of developing or worsening the disease. A study of bone health among older people by Rodríguez-

Gómez et al. identified the strong positive effects of moderate-to-vigorous physical activity on bone density for men, but also found that women have a decreased bone fracture risk through an increase in light physical activity, when paired with a reduction of sedentary behavior. (5) This study provides compelling evidence that reduction of sedentary behavior is an important step to decrease bone fracture risk among older adults, as well as for the idea that even moderate-to-vigorous physical activity can have positive effects for older individuals at risk of osteoporosis.

Sadly, chronic diseases like osteoporosis are also a small part of a larger picture when it comes to risks for the elderly. Accidents such as falls often come with broken bones and lessened mobility. These accidents are far too common among seniors and can severely reduce and limit a person's health or independence, sometimes even permanently. If a chronic disease is mixed in with a traumatic incident such as a fall, it not only complicates the event itself, but also the treatment, and the recovery. The changes in balance or physical performance that are common symptoms or side effects of chronic diseases increase not only the risk but also the severity if such an unfortunate event occurs.

However, the effects of chronic diseases stretch even beyond traumatic and unfortunate events. Effects of such diseases are felt even in everyday life for older adults. In a study of adults aged 60 or older, Sebastião et al. found that those diagnosed with at least two chronic diseases were significantly less active, and more likely to perceive their health as poor when compared to those with zero diagnosed chronic diseases. This perception stayed consistent, even when the groups spent similar amounts of time sitting. (6) If chronic diseases take a toll on not only the physical health of a client but also their perception of their health, it becomes even harder to motivate a client to maintain their activity level.

The sobering reality is that osteoporosis is only one example of a chronic disease. High amounts of sedentary behavior also bring an increased risk of obesity, diabetes, metabolic syndrome, and death. And these diseases are not exclusive. Increased risk of one often means an increased risk of others. Overall, the association between a lack of activity and the risk of developing or worsening chronic diseases is strong and has a negative trajectory for long-term health and independence.

Cardiovascular Risk and Sedentary Behavior

Under the discussion of chronic diseases, there is another topic that is important to mention. Increased cardiovascular risk factors have a known association with both a sedentary

lifestyle and being overweight or obese. Sustaining an overweight or obese weight is already known to be associated with heart disease, heart attack, or stroke. Although these are risk factors that already increase with age, the risk becomes significantly higher when coupled with an overweight or obese weight. A study by Same et al. concluded that with the mounting body of evidence between sedentary behavior and poor health outcomes, there are significant public health gains in reducing sedentary behavior. More specifically, reduced cardiovascular disease risk is associated with a replacement of sedentary time with other activities. (7)

Essentially, sedentary behavior can trigger a vicious cycle of declining health. An elderly person who spends much of their time sitting or lying down is more likely to gain weight. Any increase in weight makes it harder and more uncomfortable to move. Avoidance of this discomfort is found in limiting active movement, which in turn causes more weight gain and increased cardiovascular risk. This reduction of activity also increases their risk of developing other chronic diseases, which continues the cycle of reduced activity and a reduction in overall health.

Strategies to Combat Sedentary Behaviors

Now that we've established the complications and seriousness of sedentary behavior, let's look at strategies to combat it. It is easy enough to say, "be more active". But building patterns of exercise that people are excited about and likely to consistently follow through with is the key. Interviews conducted by Brookfield et al. found several commonly self-reported restrictions keeping seniors from engaging in low-to-moderate-intensity activities around the house included things like impaired vision, joint and muscle pain, restricted movement, poor balance, heart conditions, and mobility problems. They also cited increased tiredness resulting in more sedentary lives. (8) These are important considerations when we look at strategies we can implement because if we can address some of the most common complaints or restrictions, we increase the range of cases that our strategies are qualified to address.

As previously stated, our first consideration is that most of the sedentary behaviors take place in the home. Strategies that focus more on increasing activity within, or close by the home are more likely to be successful than those centered on getting elders to leave their house and go to a gym or park to exercise, at least for the majority of the target population.

Some good news is that many of the answers to this problem are simpler than they appear. There are already recommended guidelines for decreasing sedentary behaviors and/or

breaking these extended periods of stillness with small active breaks among other population segments. With a few modifications, these are easily applied to the older segment of our population. For example, building in a routine of taking a few minutes to walk around the house, much like the recommendations to take a break at a desk job. Maybe once every hour, have a goal of standing up and making a few laps around the living room, or several trips up and down a hallway. Having an established location for such walks to take place will also make it simpler to follow through with a client. “How many laps did you complete around your living room on an average day this last week?” is a simple enough question to use to track progress and consistency. Additionally, having a designated spot for this routine to occur creates an incentive to set up and maintain an area free of things like tripping hazards that could pose an additional health risk.

Another good strategy is to make it more social. Instead of going on a walk alone, maybe encourage family members, friends, or couples among the senior population to go together. The addition of social interaction is a fantastic way to increase exercise compliance, while additionally having the benefit of stabilizing mental health. Sometimes the extrinsic motivation is enough to overcome the temptation to stay sedentary, especially if a friend or loved one is there to encourage exercise.

Results of Lessening Sedentary Behaviors

We’ve already touched on many of the results of lessening sedentary behavior among older adults. To summarize, a reduction of sedentary behavior can increase or maintain mobility and independence among seniors. Active people can maintain bone density and coordination longer, and these can be important markers for the protection of dignity and independence as the lifespan stretches on. Additionally, reduction of sedentary behavior was also found to decrease the risk of chronic diseases, as well as being associated with a general increase in life expectancy.

In analyzing current tracking and treatments for aging, research by Anton et al. highlighted the importance of forming a consensus on what is considered successful aging. Different realms of health and fitness workers use differing definitions of positive markers, but several have begun to use common markers such as walking speed to monitor successful aging among older populations. They also emphasized the importance of the development for future interventions to improve mobility and physical function and reduce declines for the elderly. (9)

As we look to the future of this field, developing more clear and commonly accepted criteria for successful aging will be an important step to increase effectiveness of treatments moving forward.

As we seek to increase successful aging in our populations, it is important to view these strategies through a multi-faceted lens. No one of these strategies is a perfect solution to the problems facing our seniors. However, it does give us a direction to work in, and a place to start making positive changes. Solutions tend to be far more finicky and individualized than we would like them to be, but it provides an excellent opportunity for health and fitness professionals to show compassion and flexibility with their clients. If a client is sitting for the majority of the day, encouraging them to take small walking breaks around their house may be a great step. This kind of advice can range well up into moderate-intensity activities, depending on the health status of the client. The key is to focus on meeting the client where they are at, and encouraging them towards making positive changes, whether they start small or large.

Conclusion

We've long known that sedentary behavior is a slippery slope and one that can have drastically negative consequences for human beings as a species. Avoidance of a sedentary lifestyle may be one of the most important markers we have to gauge someone's long-term health, independence, and wellbeing. Implementing strategies to expand our seniors' ability to combat sedentary behavior will be a great step towards improving the quality and duration of life among our elderly populations.

4 Elements

Apply It!

- This article highlights the prevalence and effects of a sedentary lifestyle on elderly individuals.
- The fitness professional should expect to gain knowledge on effective strategies to use to combating sedentary lifestyles and increase successful aging among older adults.
- Key words: Sedentary Behavior, Older Adults, Successful Aging, Chronic Diseases

Bridging the Gap: Combatting sedentary behavior in older adults is an important consideration for health and fitness professionals. As the percentage of elderly people in the population continues to increase, it becomes increasingly urgent for people in the health and fitness industry to develop strategies to help guide and encourage such a large segment of the population to better

health. Using the strategies in this article can help promote awareness of the dangers of habitual sedentary behavior, as well as to take strides to limit its negative effect on the elderly population.

Summary Statement: Creating healthy lifestyles for our elderly population is urgently needed as they continue to increase in number. A major step toward increasing successful aging is the breaking up or reduction of sedentary behavior in older adults.

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3. As we look to the future of this field, developing more clear and commonly accepted criteria for successful aging will be an important step to increase effectiveness or treatments moving forward.

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References

1. United States Census Bureau Web site [Internet]: [cited 2021 February 10]. Available from: <https://www.census.gov/topics/population/older-aging.html>
2. Arias E, Tejada-Vera B, and Ahmad, F. Provisional Life Expectancy Estimates for January through June, 2020. *Centers for Disease Control Vital Statistics Rapid Release*. [cited 2021 February 10]; Report 010. Available from: <https://www.cdc.gov/nchs/data/vsrr/VSRR10-508.pdf>
4. Rezende L.F.M.d., Rey-López J.P., Matsudo V.K.R, and Luiz O. Sedentary behavior and health outcomes among older adults: a systematic review. *BMC Public Health*. 2014;**14**, 333

5. Leask C.F., Harvey J.A., Skelton D.A., Chastin S. Exploring the context of sedentary behaviour in older adults (what, where, why, when and with whom). *European Review of Aging and Physical Activity*. 2015; **12**, (4)
6. Rodríguez-Gómez I, Mañas A, Losa-Reyna J, et al. Associations between sedentary time, physical activity and bone health among older people using compositional data analysis. *PLoS ONE* [Internet]. 2018 [cited 2021 February 10];13(10): e0206013. Available from: <https://doi.org/10.1371/journal.pone.0206013>
7. Sebastião E., Galvez P.A.E., Nakamura P.M., Papini C.B., Kokubun E. and Gobbi, S. Activity behavior, nutritional status and perceived health in older Brazilian adults: Does the number of chronic diseases matter?. *Geriatrics Gerontology International*. 2017;17: 2376-2382.
8. Same R.V., Feldman D.I., Shah N. et al. Relationship Between Sedentary Behavior and Cardiovascular Risk. *Current Cardiology Reports*. 2016; **18**: 6.
9. Brookfield K, Fitzsimons C, Scott I, et al. The home as enabler of more active lifestyles among older people. *Building Research & Information*. 2015; 43:5, 616-630.
10. Anton S, Woods A, Ashizawa T, et al. Successful aging: Advancing the science of physical independence in older adults. *Ageing Research Reviews*. 2015; 24, Part B, 304-327.