Understanding the link between sedentary lifestyles and dementia, and how to help aging parents – a Q&A with a brain behavior expert

A healthy lifestyle influences not just physical well-being, but also brain health. The relationship between lifestyle factors and cognitive functions has always been an interesting area of study for Gene Alexander, a professor in the departments of psychology and psychiatry, the Evelyn F. McKnight Brain Institute and the BIO5 Institute. Alexander, who has a keen interest in age-related neurodegenerative diseases like Alzheimer's, recently co-authored a study that linked sedentary behavior in adults with increased risk of dementia [1]. The findings mainly apply to adults over 60 who remain sedentary for more than 10 hours a day.

Research shows that the time spent being sedentary can increase with age [2] owing to physical ailments and relatively fewer opportunities to socialize. Employees might recognize these factors in their own aging parents. In this Q&A, Alexander provides tips and recommendations to help overcome or lessen sedentary behavior in older adults.

What is the lowest level of activity that counts as being sedentary?

Sedentary behavior is often defined as any waking behavior while we are in a sitting or reclining position that has a low energy expenditure. So, time spent sitting or resting while awake would be the sedentary base level, which can then be contrasted with time spent engaged in daily physical activities like walking, exercising, swimming and other aerobic activities.

Is sleeping considered a sedentary activity?

In the study that we just reported, we used a sophisticated algorithm along with a wrist-worn device to measure physical movement for 24 hours per day over 7 days that allowed us to separate sedentary behavior of sitting while awake from daytime sleeping. It's not uncommon for some older adults to nap during the day, especially if they're generally less active. In our analyses, we looked at sedentary behavior after we controlled for daytime sleeping; and we found that sleeping did not influence the overall finding.

What are the actual changes in the brain that result from being sedentary?

That's a great question. We have some ideas about why we think exercise and physical activity can be good for the brain, and why being too sedentary may be detrimental. It may very well have to do with blood flow to the brain and how the heart and other systems in the body support the brain. We also know that there are certain proteins and other factors that are secreted into the blood as we exercise that can be beneficial for brain health. If we spend too much time sedentary, it is possible that we may not get as much of those benefits. Some of those proteins and other factors may actually be beneficial to parts of the brain that are related to cognitive abilities like memory. Importantly, this is an active area of research, one of the areas that my colleagues and I are currently pursuing to better understand how sedentary behavior affects brain health.

How can adult children of older adults help their parents be less sedentary?

Well, in my opinion, it is never too late to get moving and be active. Being physically active is something that everyone can do at any age. If you spend more time during the day being physically active, you may be able to reduce the time you spend being sedentary. There are a lot of options and it's really a matter of tailoring it to a person's own interests, needs and abilities. I think one size doesn't fit all, but it's never too late to start being active. There are some great resources available. For example, the National Institute on Aging has a website that provides very helpful information and tips [3] on how to get started at any age, what types of benefits you can experience, and what kinds of activities you can do.

Do you think activity trackers could help older people? Do you think they should instead log their sedentary time?

In our study, we used a wrist-worn device to measure movement and activity throughout the day. There are similar kinds of trackers that are available commercially as well, which can be a helpful tool for people. But certainly, you don't need to have that kind of technology to fully benefit. Just keeping track of how much time you spend sitting and what kinds of activities you do during the day can be helpful. Knowing how we spend our time during the day can help us modify our behaviors to be less sedentary and more active.

Does socializing frequently help older people feel more energized (psychologically) thereby encouraging them to be more active?

It's one of the lifestyle factors that I've been really interested in. Oftentimes people will do physical activities with a friend or with groups, and he that social interaction influences that activity is an important question. Some studies have
suggested that being socially engaged and having an active social life is a plus for holding off aging effects and maybe even reducing the risk for Alzheimer’s disease. I think an important next step for our research is to not only understand which types of physical activities are better for preventing dementia risk, but also whether doing them with other people can enhance the benefits.

Read more about the study recently co-authored by Alexander[4] in a story published on the University News website.

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