



The Science Of Sedentary Behavior: Too Much Sitting And Too Little Exercise

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Sedentary behavior is becoming an important component of the exercise and health equation. There is new evidence that prolonged, unbroken sitting time is related to people's risk of obesity and type 2 diabetes, according to a lecture presented today at the 56th Annual Meeting of the American College of Sports Medicine (ACSM) in Seattle. Examples of sedentary behaviors include watching television, playing video games, using the computer, reading, and doing homework.

"At the basic-science level, it appears that there are unique physiological processes and pathways associated with sedentary behavior, particularly prolonged sitting," said Neville Owen, Ph.D., lead presenter. "There are some promising studies that point to what is likely to be a unique 'sedentary physiology', which is distinct from what is known about the physiological processes generated by working muscle."

Owen highlighted work done by the Genevieve Healy, Ph.D. and David Dunstan, Ph.D. with Australia's Baker IDI Heart and Diabetes Institute. These scientists used accelerometers to measure sedentary behavior in order to confirm their studies showing harmful metabolic relationships with blood fats and blood glucose, associated with large amounts of television viewing time.

'Healy's research has identified the importance of breaking up sitting time,' said Owen. '(People) who stand up and simply move around more have healthier blood fat and blood glucose levels than those whose sitting time is not broken up by these transitions.'

Healy has also shown that even among active adults - those who participate in 30 minutes of moderate-to-vigorous physical activity on most days of the week, large amounts of television viewing time were still associated with poorer metabolic health. She describes these findings as the 'active couch potato' effect.

Healy and Dunstan presented alongside Charles E. Matthews, Ph.D., Marc T. Hamilton, Ph.D., and Wendy Brown, Ph.D.

"The work being done at the University of Queensland is exciting," said Matthews. "They are trying to understand the metabolic consequences of prolonged sitting, as well as the benefits of getting up from your chair more often throughout the day. The average amount of time spent in sedentary behaviors in the U.S. was nearly eight hours per day. The most sedentary population groups were older adolescents (16-19 years old) and adults aged 60 and older. Both spent about 60 percent of their time in sedentary behaviors."

Owen added that more attention is being given to sedentary behavior in light of many people's chosen occupations.

"People in business, industry, and the occupational health and safety arenas are beginning to pick up on these ideas," he said. "They are seriously talking about the potential unhealthy impact of spending a long time in front of the computer at work, watching television, or sitting in an automobile. We are already seeing some interesting shifts in public discussion and attitudes."

Matthews notes that while more research is needed, workplaces are starting to experiment with standing work stations and other office design components so that workers will not have to sit at a computer all day.

"We know that walking for 30 minutes a day expends a significant amount of energy and is associated with better health. If a person reduced their sedentary time by two hours per day and shifted this time to light intensity activities, they could expend the same amount of energy as they would during a 30 minute walk. We now need to find out if the health benefits start to add up along with this type of

energy expenditure."

Owen suggested it is time to begin to consider whether broad-based public-health guidelines on physical activity should also include an explicit identification of the need to reduce or break-up prolonged sitting. Currently, ACSM guidelines support the 2008 Physical Activity Guidelines for Americans, which recommend that adults participate in at least 150 minutes of moderate-intensity physical activity, which can be achieved in 30-minute segments five days a week.

Source

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