

Being sedentary can be deadly

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Translated from Le Journal de Montréal, May 19th, 2019

A study has shown that long periods of time spent sitting completely cancels out the positive effects of physical exercise on metabolism.

THE RISKS ASSOCIATED WITH BEING SEDENTARY

According to recent estimates from the World Health Organization, being sedentary is directly responsible for about 10% of premature deaths worldwide, an impact similar to those of smoking or obesity¹. Canada does not escape from this trend, with only 15% of people performing the minimum recommendation of 150 minutes of physical activity per week and only 5% who make it a regular effort, i.e. by being active for at least 30 minutes per day, five days per week.

It should also be borne in mind that the ubiquity of screens in our lives (television, computer, cell phone or tablet) ensures that even the most active people spend enormous amounts of time in a sitting position. For example, a person who spends a half hour each morning in a rapid walk (which corresponds to the recommendations of 150 minutes of physical activity per week) but who remains seated the entire day at a desk and spends the evening in front of a television or computer before going to bed may be devoting more than 16 hours of their waking day to these passive activities. In other words, even someone whom we consider to be an active person, according to current guidelines, may really be active for only about 3% of his or her available time! In such a case, the positive effects associated with 30 minutes of physical activity are in large part counteracted by the negative effects of being sedentary on the metabolism. Aside from this, studies have shown that the increased risk of death observed in people who devote many hours per week to watching television is also observed even in those who are physically active more than 7 hours per week². In other words, it's not enough just to exercise at least 30 minutes per day but, to be optimal, this burning of energy should be accompanied by a reduction in the time spent being sedentary.

RESISTANCE TO EXERCISE

Normally, a single hour of exercise immediately improves several aspects of metabolism, particularly sensitivity to insulin, glucose tolerance and levels of triglycerides, three factors associated with good cardiovascular health. According to a randomized clinical study, the negative effect of being sedentary which is observed even in active people is caused (at least in part) by blocking these beneficial effects³. In this study, the volunteers first spent four days without exercise, were in a sitting position for a good part of the day (about 14 hours per day) and took fewer than 4000 steps each day. After the fourth day ended, half the participants did an hour of intense exercise on a treadmill while the other half remained inactive. When the researchers then measured different metabolic markers (triglycerides, glucose and insulin) they noted that there



was no significant difference between plasma levels for these markers between the two groups. According to the authors, these results suggest that being seated for a good part of the day creates conditions where people become resistant to metabolic improvements which would normally be obtained after aerobic exercise.

NEW HABITS TO ADOPT

Exercise cannot, by itself, allow us to achieve the full preventive effects possible if the time we devote to it is negligible compared to the amount of time spent being sedentary. We must find a way to utilize the 15 or so hours which remain at our disposal by being more physically active, whether it is by standing while talking on the telephone, taking a pause of a few minutes each hour to drink some water, walk outside during the lunch break, lift light weights while reading something, etc. Sedentariness is an abnormal behaviour from an evolutionary point of view, completely maladapted to human physiology and we must refrain whenever possible from remaining inactive for long periods of time, regardless of the type of activity being performed.

- (1) Lee IM et al. Impact of physical inactivity on the world's major non-communicable diseases. *Lancet*. 2012; 380: 219–229.
- (2) Matthews CE et al. Amount of time spent in sedentary behaviors and cause-specific mortality in US adults. *Am. J. Clin. Nutr.* 2012; 95: 437-445.
- (3) Akins JD et al. Inactivity induces resistance to the metabolic benefits following acute exercise. *J. Appl. Physiol.* 2019; 126: 1088-1094.