

Evidence in Action

Is Sitting as Bad as Smoking?

By Christopher B. Roecker, DC

Clinical Scenario

You're performing an exam on a 44-year-old woman who sought care in your office. While performing the physical exam, she mentions she noticed a few posts on social media saying "Sitting is the new smoking," because research has shown prolonged sitting is bad for your health. She is particularly interested in this topic because she sits at a desk for most of her workday and has a family history of breast cancer. She is curious to know if this information is hype or if it's legiti-

mate. You're unsure of exactly what the research says on this topic. You explain that you'll look into it and discuss the relevant research at her next appointment.

This means sitting for prolonged periods of time increases your likelihood of death and disease, even if you get regular exercise.

Where to Begin

After listening to this patient's clinical concern, you can focus on some keywords that will help you search for the best information. First, you know she is an adult female with a

family history of breast cancer. Next, you know she is interested in the negative health effects of sitting, which is sometimes called *sedentary time*, and how it may influence her health.

A search of *Pubmed.gov* using "breast cancer" and "sedentary time" yields several studies, two of which seem relevant for this patient.^{1,2} These two studies are useful because they combine results from several related studies into a single article. Combining the results of multiple studies to provide more precise results is known as *meta-analysis*.

What Are the Results?

The first article¹ evaluated 47 articles to establish the association between sedentary time and various measures of ill health and/or death. This study reported its findings in *hazard ratios* (HR), which can be confusing. Simply put, HR is the chance of a bad outcome (hazard) occurring in one group when compared with another.

When HR=1, it means there is no difference between the two groups. Conversely, when HR=2, it means the group of interest is twice as likely to

develop a bad outcome, such as death or disease. This study found prolonged sedentary time was independently associated with developing type 2 diabetes (HR=1.91), developing cardiovascular disease (HR=1.14), dying from cardiovascular disease (HR=1.18), developing cancer (HR=1.13) and dying from cancer (HR=1.17). However, not all cancers are equally associated with sedentary time. This article reported that breast, colon, colorectal, endometrial and ovarian cancers are more likely to develop in sedentary individuals. In addition, simply dying at any time (i.e., referred to as all-cause mortality) was also more likely in sedentary individuals (HR=1.24).

You might be thinking it seems obvious that people who sit a lot are more likely to develop these types of diseases or die because they are spending time sitting instead of engaging in physical activity. You may also think regular exercise would counter the effects of prolonged sitting time. This is where the article became very interesting; the researchers controlled for physical activity. This means sitting for prolonged periods of time increases your likelihood of death and disease, *even if you get regular exercise*.

The second article² was selected because it specifically examined the association between being sedentary and the risk of developing breast cancer. This study reported its findings as an *odds ratio* (OR), which describes the association between being sedentary and the risk of developing breast cancer. The result for this study was an OR=1.08, which means sitting has a subtle influence on increasing the risk of developing breast cancer. This represents an 8 percent increase in overall risk.

How to Discuss These Results With Your Patient

Be sure to choose your words carefully when discussing these results with your patient. Patients who have lost a loved one to some disease, such as breast cancer, may become anxious if you tell them they are at an increased risk of the same disease. Remember, your aim is to provide accurate information, which allows your patients to make informed decisions.

Christopher Roecker, DC, MS, DACO, DACBSP, is an instructor within the Life Sciences Department at Palmer College of Chiropractic, Davenport, Iowa.

You may begin your conversation by acknowledging there is some truth to the social media reports linking time spent sitting with poor health. While it's probably not best to give your patient a list of all the hazard ratios or odds ratios mentioned earlier, it is important you provide accurate information.

Talking to her about the other risks associated with sitting may help to provide her with the motivation needed for healthy change. It is important to emphasize prolonged sitting makes her almost twice as likely to develop type 2 diabetes. You may also want to ask if she has a family history of diabetes and discuss how she can best manage her diet and stay physically active to keep her risk of developing diabetes as low as possible.

Next, it's important to mention sitting for prolonged periods does produce a modest increased likelihood for cardiovascular disease, such as a heart attack or stroke, and some cancers. You can say her risk of developing some of the most common forms of cancer is increased by just over 10 percent, and prolonged sitting has been shown to increase the risk of developing breast cancer by about 8 percent.

While many of these risks are modest, they are still very real and the information may help her in making lifestyle changes.

In addition, while recommendations for regular physical activity are common, it is much less common to hear about recommendations against being sedentary. Research linking sitting to ill health is a relatively new discovery and little exists in the way of how much is too much. Recently, an expert panel released one of the first recommendations regarding standing time for sedentary office work.³ The panel recommends it is ideal for desk-based office workers to stand for four hours per workday. Standing for less than two hours per workday is discouraged.

Your discussion with this patient should focus on her concerns. If she is interested in making some lifestyle changes, she can be encouraged to minimize her time spent sitting at work and to focus on standing for two to four hours each workday. She may want to consider setting an alarm on her office computer or cell phone that triggers her to stand up and walk around for a short period of time or she may be interested in converting her workspace to a standing desk. Encouraging her to keep a log of her daily physical activities or using an

electronic fitness tracker may help to motivate her to make changes that can have a positive influence on her health.

The Takeaway

Providing great patient care may involve interpreting research findings for your patients as a way of educating them to make informed decisions about their health. In the case presented, I discussed how sedentary time is associated with various forms of ill health, such as type 2 diabetes, cardiovascular disease, cancer or simply all-cause mortality. Your search has rewarded you with valuable information you can share with this patient, the rest of your patient base and your community. ■

References

1. Biswas A, Oh PI, Faulkner GE, et al. Sedentary time and its association with risk for disease incidence, mortality, and hospitalization in adults: a systematic review and meta-analysis. *Ann Intern Med.* 2015 Jan 20;162(2):123-32
2. Zhou Y, Zhao H, Peng C. Association of sedentary behavior with the risk of breast cancer in women: update meta-analysis of observational studies. *Ann Epidemiol.* 2015 May 22 [Epub ahead of print]
3. Buckley JP, Hedge A, Yates T, et al. The sedentary office: an expert statement on the growing case for change towards better health and productivity. *Br J Sports Med.* 2015 Jun 1. [Epub ahead of print]

