

19 January 2010

## BRITISH JOURNAL OF SPORTS MEDICINE

### Prolonged bouts of sitting are a killer, not just lack of exercise alone

[Are we facing a new paradigm of inactivity physiology? Online First 2010; doi:10.1136/bjsm.2009.067702]

Prolonged bouts of sitting are a real killer, and we should focus on the harms caused by daily inactivity rather than on the lack of regular exercise alone, argue specialists in the British Journal of Sports Medicine.

Doctors from the Karolinska Institute and the Swedish School of Sport and Health Sciences in Stockholm, Sweden, say that the term "sedentary behaviour" has come to mean taking no exercise.

But it should be more correctly used to describe "muscular inactivity," they say.

This is because recent research points to prolonged bouts of sitting and lack of whole body muscular movement as being strongly associated with obesity, diabetes, heart disease, cancer, and an overall higher risk of death, irrespective of whether moderate to vigorous exercise is taken.

One Australian study showed that for every additional hour a woman sits in front of the TV, her risk of metabolic syndrome - a precursor to diabetes and cardiovascular disease - increases by 26%, irrespective of how much moderate exercise she does.

And the health of people who already do too little exercise will suffer even more if combined with prolonged bouts of sitting, say the authors.

More research is needed to establish a causal effect between prolonged sitting and ill health, say the authors, but some underlying mechanisms have already been identified, including an enzyme (lipoprotein lipase) that has a key role in the regulation of key blood fats.

Accordingly, the authors propose a new model or paradigm of "inactivity physiology" which recognises that sitting and non-muscular activity may independently boost the risk of ill health, and that sedentary behaviour is a distinct class of behaviour with specific consequences for ill health, which are not the same as those sparked by taking too little exercise.

The molecular and physiological responses of the body prompted by too much sitting cannot simply be cancelled out by taking additional exercise, say the authors.

"In the future, the focus in clinical practice and guidelines should not only be to promote and prescribe exercise, but also to encourage people to maintain their intermittent levels of daily activities [that involve movement]," they add. "Climbing the stairs, rather than using elevators and escalators, five minutes of break during sedentary work, or walking to the store rather than taking the car will be as important as exercise."