



## Fewer hospital admissions when people are fitter

**People who maintain or increase their aerobic fitness are at less risk of being hospitalized in future, particularly if they were hospitalized previously. These are the findings of a study conducted at the University of Gothenburg.**

Regular physical activity is linked to a number of health benefits, including a reduced risk of developing and dying from cardiovascular disease. However, there has been little research into the link between development of aerobic fitness and the likelihood of being hospitalized.

The study in question, published in the European Journal of Preventive Cardiology, includes 91,140 individuals who underwent two repeated health profile assessments in the occupational health service. These assessments include fitness tests on a bicycle, measurements of weight, height and blood pressure, and questions about lifestyle and health experiences.

The study compared changes in aerobic fitness between the two health profile assessments with data on subsequent hospital admissions, from national registry data. The study looked at hospitalizations in general and hospitalizations specifically for cardiovascular disease, for seven years on average.

“Maintaining aerobic fitness” related to changes of up to plus or minus one percent per year. Major changes were classified as improved or poorer aerobic fitness. The average time between participants’ tests was just over three years.

### Significant links to aerobic fitness

The results show that the group that maintained aerobic fitness had 7 percent fewer hospitalizations for any reason during the follow-up period, and those with improved aerobic fitness had 11 percent fewer hospitalizations, compared to those whose aerobic fitness deteriorated.

The difference was greater for participants who had previously been hospitalized. When aerobic fitness was maintained or improved in this group, the number of hospitalizations for any reason was 14 percent lower during the follow-up period, compared to participants whose aerobic fitness deteriorated.

For hospital admissions due specifically to cardiovascular disease, maintaining aerobic fitness was associated with 9 percent fewer admissions and increasing aerobic fitness was associated with 13 percent fewer admissions, compared to participants whose aerobic fitness deteriorated. There was a 20 percent reduction in admissions due to cardiovascular disease during the follow-up period among participants who were previously hospitalized and maintained or increased their aerobic fitness.

All results are adjusted for changes relating to aspects such as diet, smoking and perceived stress levels.

Results with a clear bearing on healthcare

Behind the study are Sahlgrenska Academy and the Department of Food and Nutrition and Sport Science at the University of Gothenburg, the Centre for Lifestyle Intervention at Sahlgrenska University Hospital Östra, the Swedish School of Sport and Health Sciences (GIH), and HPI Health Profile Institute, which is responsible for the database of health profile assessments conducted by the occupational health service, during 1986-2019.

Elin Ekblom Bak, Associate Professor of Sport Science at the Swedish School of Sport and Health Sciences (GIH), is one of the authors.

“The links show not only potential benefits for the health of individuals, but also an opportunity to maybe influence societal and healthcare costs, as an average hospitalization costs just under SEK 100,000 per instance,” she notes.

Mats Börjesson is Professor of Sports Physiology at the University of Gothenburg, senior physician and director of the Centre for Lifestyle Intervention, and senior author for the study.

“Increased physical activity, especially among people who have been hospitalized, can reduce readmissions and hence the greatly increased burden expected in healthcare in the future,” he concludes.

Image: Mats Börjesson (foto: Johan Wingborg)

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