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Introduction Much research exists on the relationship between environmental factors and physical activity (PA). However, few studies have investigated the role of social cohesion in neighbourhoods. The aim of this study was to assess the extent to which social cohesion and changes over time in the levels of social cohesion were associated with PA.

Methods We used data from the survey WoonOnderzoek Nederland 2006 and 2009, using two samples of 57,092 Dutch adults. Using multi-level Hurdle Negative Binomial models, we assessed if the odds of being physically inactive and the mean hours of PA among people who are physically active were related to levels of social cohesion at neighbourhood level, and changes in social cohesion between 2006 and 2009. Next, we examined if these associations varied according to sex, age, and economic activity.

Results In areas with higher levels of social cohesion compared to areas with lower social cohesion, more people were physically active. In addition, generally social cohesion was not associated with the amount of PA among people who are physically inactive. Improvements in social cohesion between 2006 and 2009 were associated with PA. Improvements in social cohesion at neighbourhood level, and changes in social cohesion between 2006 and 2009. Next, we examined if these associations varied according to sex, age, and economic activity.

Conclusion Social cohesion is related to physical (in)activity. However, improvements in social cohesion were not strongly related to physical (in)activity. This raises question on the causality of the relationships that are observed in cross-sectional analyses. Enhancing social cohesion in neighbourhoods may have limited influence on population levels of physical activity.

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