Infographic. Active commuting is linked to lower coronary atherosclerosis

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Regular physical activity is a cornerstone of cardiovascular disease (CVD) prevention, the leading cause of death worldwide.[1] However, physical inactivity remains highly prevalent globally.[2] Recent evidence shows that even modest, realistic increases in daily activity, such as a few minutes per day, may confer meaningful health benefits,[3] highlighting the importance of feasible strategies to move more. Active commuting (walking or cycling to work) offers a practical way to integrate physical activity into daily routines. Yet, its relationship with early atherosclerosis, the primary mechanism underlying CVD, has been largely unexplored.

This infographic summarises key findings from our recent population-based study, the first to investigate the association between active commuting and coronary atherosclerosis assessed using state-of-the-art coronary CT angiography (CCTA), independent of other physical activity and lifestyle factors.[4]

KEY FINDINGS

In a population of 23,722 individuals (aged 50–64 years; 51.3% women) from the Swedish CArdioPulmonary bioImage Study (2013–2018), self-reported year-round active commuting was associated with lower odds of coronary atherosclerosis, assessed by CCTA, compared with car commuting. Active commuters had 13% lower odds of any coronary stenosis (OR: 0.87; 95% CI 0.80 to 0.94) and 7% lower odds of having a coronary artery calcium (CAC) score of ≥1 Agatston unit (OR: 0.93; 95% CI 0.86 to 1.00), after adjustment for multiple confounders, including leisure-time exercise and occupational physical activity (see figure 1). Associations appeared somewhat stronger for cycling than for walking. No clear association was observed between active commuting and the presence of carotid plaque (OR: 0.97; 95% CI 0.90 to 1.03) assessed by ultrasound.

Interpretation and implications

Active commuting was associated with a lower prevalence of coronary stenosis and coronary artery calcification. These associations remained significant after adjustment for multiple confounders and were independent of occupational and leisure-time physical activity. Active commuting may therefore represent a potential preventive strategy to reduce atherosclerosis and ultimately CVD. However, longitudinal and interventional studies are still needed to confirm causality, clarify dose-response relationships and determine whether increasing active commuting leads to sustained

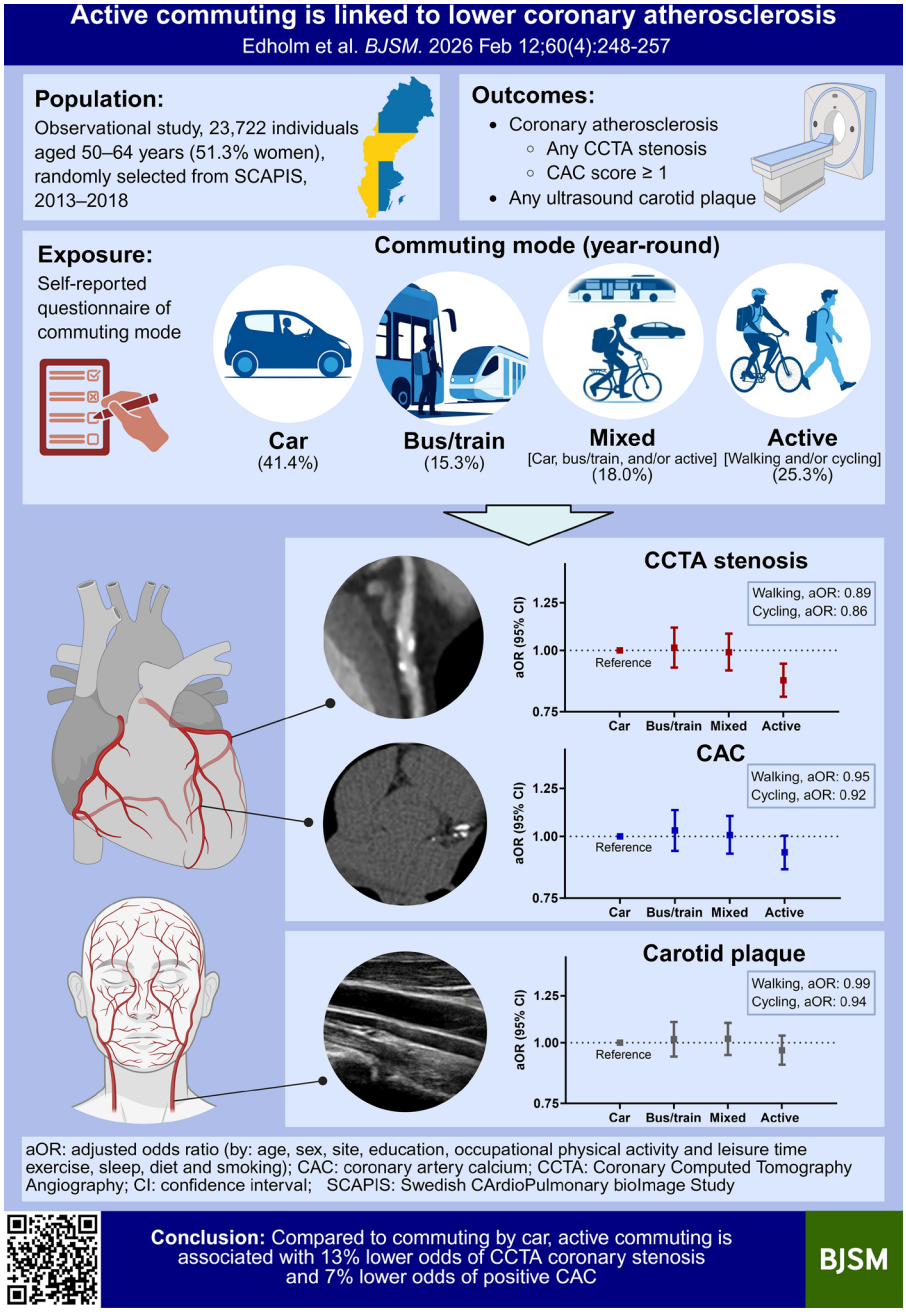

Figure 1 Commuting mode and atherosclerosis.

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reductions in coronary atherosclerosis and cardiovascular events.

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REFERENCES

1 Lear SA, Hu W, Rangarajan S, *et al*. The effect of physical activity on mortality and cardiovascular disease in 130 000 people from 17 high-income, middle-income, and low-income countries: the PURE study. *Lancet* 2017;390:2643–54.
2 Strain T, Flaxman S, Guthold R, *et al*. National, regional, and global trends in insufficient physical activity among adults from 2000 to 2022: a pooled analysis of 507 population-based surveys with 5·7 million participants. *Lancet Glob Health* 2024;12:e1232–43.
3 Ekelund U, Tarp J, Ding D, *et al*. Deaths potentially averted by small changes in physical activity and sedentary time: an individual participant data meta-analysis of prospective cohort studies. *The Lancet* 2026;407:339–49.
4 Edholm P, Wennberg P, Ballin M, *et al*. Active commuting and atherosclerosis in a population-based sample of middle-aged adults: the Swedish CArdioPulmonary bioImage study (SCAPIS). *Br J Sports Med* 2026;60:248–57.

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