Public Health Scotland

Disease burden in Scotland attributable to physical inactivity: mental health and musculoskeletal disorders

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About this release

This report estimates the disease burden in Scotland attributable to physical inactivity from selected mental health and musculoskeletal disorders. It builds on previous work on cardiovascular disease, cancer and diabetes by applying population attributable fractions to Scottish Burden of Disease data for anxiety, depression, self-harm, falls, rheumatoid arthritis and low back pain.

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SAMH Scottish Action for Mental Health

Main points

The report finds:

- Over 12,000 DALYs in Scotland are attributable to physical inactivity from mental health and musculoskeletal disorders.
- Over 80% of this burden is linked to very low activity: less than 30 minutes of moderate activity per week.
- Mental health conditions account for 58% of the new DALY burden, with anxiety the largest contributor.
- Around three quarters of DALYs are years lived with disability, highlighting physical activity's role in quality of life.
- When combined with previous findings for cardiovascular disease, cancer and diabetes, physical inactivity accounts for nearly 24,000 DALYs a year in Scotland.
- Action should focus on the least active people and the wider drivers of inactivity.

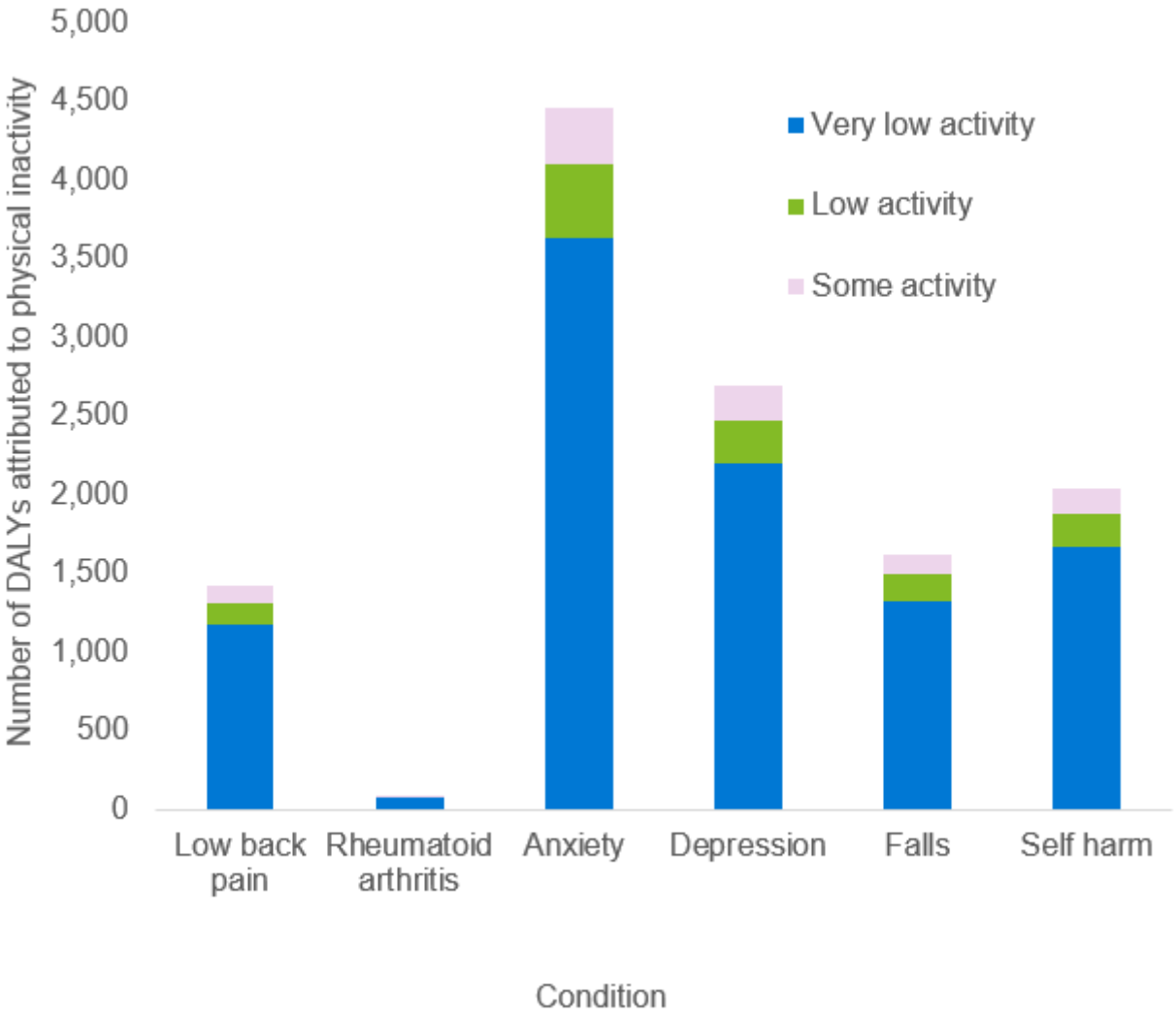
What the report adds

Previous estimates focused on cardiovascular disease, cancer and diabetes, where premature mortality is a major factor. This report extends the analysis to conditions affecting healthy life and daily functioning, showing that physical inactivity contributes substantially to disability through mental health and musculoskeletal disorders, especially anxiety, depression, self-harm, falls and low back pain.

National findings

Figure 1 shows that 12,317 DALYs in Scotland are attributable to physical inactivity across the selected conditions, including 10,050 linked to very low activity. Anxiety contributes the most DALYs (4,463), followed by depression (2,687), self-harm (2,037), falls (1,619), low back pain (1,427) and rheumatoid arthritis (84).

Figure 1. DALYs attributed to physical inactivity, condition and activity level



Around 75% of this burden comes from years lived with disability. Low back pain, anxiety and depression are entirely disability-related, while falls and self-harm are more strongly linked to years of life lost. This highlights physical activity's role in supporting healthier, not just longer, lives.

Background

Physical inactivity is a major modifiable risk factor. Previous Public Health Scotland analysis estimated that it contributes to over 3,000 deaths and more than 11,000 DALYs

each year through cardiovascular disease, cancer and diabetes. This analysis extends the evidence to mental health and musculoskeletal disorders.

The findings are relevant to Scotland's wider population health priorities, including improving healthy life expectancy, reducing inequalities and shifting the focus towards prevention and early intervention. They also reinforce the importance of physical activity for mental wellbeing, mobility, strength and balance, musculoskeletal health and quality of life.

Methods

Population attributable fractions were calculated using published relative risks and Scottish Health Survey physical activity data. These were applied to Scottish Burden of Disease estimates for DALYs, years lived with disability and years of life lost, with results produced for Scotland, NHS boards and local authorities, including age-standardised rates.

The report includes anxiety, depression and self-harm, and falls, rheumatoid arthritis and low back pain. Osteoarthritis and schizophrenia were excluded because their relationship with physical inactivity is complex and bidirectional, making a reliable population attributable fraction difficult to calculate.

Findings by condition

Mental health conditions account for more than 9,000 DALYs attributable to physical inactivity. Anxiety represents the largest share, followed by depression and self-harm. More than 80% of the mental health burden is associated with people in the very low activity category.

Musculoskeletal disorders account for over 3,000 DALYs attributable to physical inactivity. Falls contribute the largest share, followed by low back pain and rheumatoid arthritis. As with mental health conditions, more than 80% of this burden is associated with very low activity levels.

Implications and conclusion

Physical inactivity contributes substantially to Scotland's burden of disease through mental health and musculoskeletal disorders, particularly through years lived with disability. Prioritising physical activity can improve quality of life, support healthy life expectancy and help reduce inequalities.

The greatest gains are likely to come from supporting people with very low activity levels to become more active, especially in areas with the highest attributable burden. Action should be proportionate to need, address social, economic and environmental barriers, create supportive environments and opportunities for everyday movement, and strengthen prevention across health and social care.

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