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**PERSISTENCE OR CHANGE IN LEISURE-TIME PHYSICAL ACTIVITY HABITS  
AND WAIST GAIN DURING EARLY ADULTHOOD: A TWIN-STUDY**

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**Objective** To determine the relationship between persistence or change in leisure-time physical activity habits and waist gain among young adults followed for a decade from their mid-twenties.

**Methods** Population-based cohort study among 3383 Finnish twin individuals (1578 men) from five birth cohorts (1975–1979), who answered questionnaires at mean ages of 24.4 y (SD 0.9) and 33.9 y (SD 1.2), with reported self-measured waist circumference. Persistence or change in leisure-time physical activity habits was defined based on thirds of activity metabolic equivalent h/day (inactive, moderately active, active) during follow-up (mean 9.5 y; SD 0.7).

**Results** Waist circumference increased in all activity groups during follow-up. Decreased activity was linked to greater waist gain compared to increased activity during follow-up (waist gain difference 3.6 cm,  $P < 0.001$  for men and 3.1 cm,  $P < 0.001$  for women). Among same-sex activity discordant twin pairs, twins who decreased activity during the follow-up gained an average 2.8 cm (95%CI 0.4 to 5.1,  $P = 0.009$ ) more waist than their co-twins who increased activity ( $n = 85$  pairs); among MZ twin pairs ( $n = 43$ ), the difference was 4.2 cm (95%CI 1.2 to 7.2,  $P = 0.008$ ). For persistently inactive members of same-sex twin pairs compared to co-twins who were inactive at baseline but increased activity during follow-up ( $n = 41$  pairs), the mean difference in waist gain was 4.7 cm (95%CI 1.3 to 8.0,  $P = 0.007$ ). Twins who were active at baseline but decreased activity had a mean difference in waist gain of 2.9 cm (95%CI 0.5 to 5.3,  $P = 0.02$ ) compared to their persistently active same-sex co-twins ( $n = 85$  pairs).

**Conclusions** Among young adults, an increase in leisure-time physical activity or staying active during a decade of follow-up was associated with less waist gain, but any decrease in activity level, regardless baseline activity, led to waist gain that was similar to that associated with being persistently inactive.