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Abstract

Background:

To examine the association between accelerometer-assessed physical activity and visual acuity among a nationally representative sample of adults with evidence of diabetes.

Methods:

Six hundred seventy adult participants with diabetes (age 20 to 85) from the 2003–2006 NHANES cycles constituted the analyzed sample. Participants wore an accelerometer for 7 days to quantify time spent in sedentary behavior, light-intensity physical activity and moderate-to-vigorous physical activity. Visual acuity was objectively assessed for each eye.

Results:

In multivariable models, every 1-hour increment in daily sedentary behavior was associated with 23% greater likelihood (OR = 1.23; 95% CI: 1.01–1.52) of having uncorrected refractive error as opposed to normal sight. Performing more than 5 minutes of daily moderate-to-vigorous physical activity was associated with a 82% lower likelihood of having vision impairment as opposed to normal sight (OR = 0.18; 95% CI: 0.06–0.50) while every 1-hour increment in daily light-intensity physical activity was, after adjustments, independently associated with a 38% lower likelihood of vision impairment (OR = 0.62; 95% CI: 0.42–0.92).

Conclusion:

People with diabetes spending more time in sedentary behavior and less time performing light or moderate-to-vigorous physical activity are more likely to have poorer vision.

Keywords: epidemiology, exercise, population



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