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Longitudinal Relationship Between Television Viewing and Leisure-Time Physical Activity During Adolescence

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OBJECTIVE. The goal was to examine the longitudinal associations of changes in television viewing and other sources of sedentary behavior with changes in leisure-time moderate/vigorous physical activity in adolescence.

METHODS. We studied a cohort of 6369 girls and 4487 boys who were 10 to 15 years of age in 1997. During each of 4 years of follow-up assessments, participants self-reported their weekly hours of television viewing. By using a seasonal questionnaire, we also obtained detailed information on physical activities over the previous year, from which we calculated total leisure-time moderate/vigorous physical activity. We performed linear regression analyses to assess the longitudinal associations between 1-year changes in television viewing and 1-year changes in leisure-time moderate/vigorous physical activity during the same year, using data from 1997 through 2001.

RESULTS. One-year changes (mean \pm SD) were -0.13 ± 7.2 hours/week for leisure-time moderate/vigorous physical activity, -0.55 ± 7.0 hours/week for television viewing, and -1.02 ± 11.0 hours/week for total sedentary behaviors. In longitudinal models adjusted for age, age², gender, race/ethnicity, Tanner stage, menarche (in girls), baseline physical activity, and baseline television viewing, we found no substantive relationship between year-to-year changes in television viewing and changes in leisure-time moderate/vigorous physical activity (0.03 hours/week, for each 1-hour/week change in television viewing). There were no material associations in age or gender subgroups.

CONCLUSIONS. In this longitudinal study, changes in television viewing were not associated with changes in leisure-time moderate/vigorous physical activity. Our findings suggest that television viewing and leisure-time physical activity are separate constructs, not functional opposites.

Key Words: physical activity • television viewing • sedentary behavior • prospective study

Abbreviations: CI—confidence interval

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