Can a school-based intervention to reduce television use decrease adiposity in children in grades 3 and 4?

Robinson TN. Reducing children's television viewing to prevent obesity: a randomized controlled trial. *JAMA* 1999;282:1561–1567

Correspondence to:
Dr Robinson
Tom.Robinson@stanford.edu

Funding: American Heart Association, California Affiliate; National Heart, Lung, and Blood Institute.

This digest and commentary appeared previously in *Evidence-Based Nursing* 2000;3:43

DESIGN

A 7-month, randomized (allocation concealment*), blinded (outcome assessors and statisticians*), controlled trial.

SETTING

Two public elementary schools in one school district in San Jose, California.

PARTICIPANTS

Of 227 eligible children in grades 3 and 4, 198 had parental consent to participate. 192 children (97%) (mean age 9 yr) completed both the baseline and post-intervention assessments.

INTERVENTION

The 2 schools were matched on sociodemographic and scholastic variables. One school (106 eligible children) was allocated to implement an intervention to reduce media use by limiting access to television sets, budgeting watching or playing time, and more selective use or play. Eighteen lessons (30 to 50 minutes each) were incorporated into the standard curriculum and taught by regular classroom teachers who received special training. The second school (121 eligible children) received the usual curriculum (control group).

MAIN OUTCOME MEASURES

Main outcome was adiposity (body mass index [BMI]) measured at baseline (September 1996) and after the intervention (April 1997). Secondary outcomes included subcutaneous fat (triceps skinfold thickness); body fat distribution (waist-to-hip ratio); child-reported time spent watching television, watching videos, or playing video games; consumption of high-fat foods; frequency of eating breakfast and dinner in front of a television; proportion of time eating a snack during media use; physical activities; and cardiorespiratory fitness (maximal, multistage, 20-m shuttle run test).

MAIN RESULTS

Analysis was by intention to treat. The BMI, skinfold thickness, waist circumference, and hip circumference increased in both groups (as expected for children of this age). Children in the intervention group, however, had relative decreases in BMI ($P = 0.002$), triceps skinfold thickness ($P = 0.002$), waist-to-hip ratio ($P < 0.001$), television viewing ($P < 0.001$), video game use ($P = 0.01$), and frequency of eating meals in front of a television ($P = 0.01$) compared with children in the control group (table). The groups did not differ for videotape viewing, daily servings of high-fat foods, physical activity levels, or cardiorespiratory fitness.

CONCLUSION

A school-based intervention aimed at reducing television and video game use reduced adiposity in children in grades 3 and 4.

*Information provided by author

Curriculum-based intervention to reduce television use versus usual curriculum among children in grades 3 and 4

Outcomes	Adjusted Change (95% CI)†
Body mass index (kg/m²)	−0.45 (−0.73 to −0.17)
Triceps skinfold thickness (mm)	−1.47 (−2.41 to −0.54)
Waist-to-hip ratio	−0.02 (−0.03 to −0.01)
Television viewing (hr/wk)	−5.53 (−8.64 to −2.42)
Video game use (hr/wk)	−2.54 (−4.48 to −0.60)
Meals in front of television (0–3 pt scale)	−0.54 (−0.98 to −0.12)

†Differences between groups after adjustment for baseline value, age, and sex. Negative values indicate a relative decrease in outcome for the intervention group compared with the control group.