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## Single-sex after-school physical activity programs for overweight and at-risk children: the Wollongong sport pilot randomised controlled trial

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## Single-sex after-school physical activity programs for overweight and at-risk children: the Wollongong sport pilot randomised controlled trial

### Abstract

Abstract presented at the 2014 Global Summit on the Physical Activity of Children, held in Toronto, May 19-22, 2014.

### Keywords

trial, controlled, randomised, pilot, sport, wollongong, children, risk, overweight, single, sex, after, school, physical, activity, programs

### Disciplines

Education | Social and Behavioral Sciences

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**Conclusion:** Overall, the intervention was effective in increasing physical activity levels among children in the intervention group. Although the intervention group did not report significantly higher gross motor development scores than the comparison group, there was a pattern of improvement in fundamental motor skills among intervention group children post intervention.

### The Agents of Nature App: Using Mobile Technology to Inspire Active Outdoor Play in Youth

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Technology has left youth disconnected from nature, and the best way to fix the problem is...technology? The Agents of Nature app is a place-based environmental education tool for iOS and Android devices, designed to increase children's exposure to and connection with nature, educate them about their local environment and promote physical activity. **Program Objective:** For youth to download the app, become a 'secret agent of nature' and then head outdoors to a local park site where they find hidden QR codes to unlock educational challenges. The place-based gaming experience gets players learning about wildlife species and habitats while developing valuable trail and orienteering skills. Each challenge requires at least one mile of walking or hiking. To successfully complete their mission and collect coins, players have to get moving. **Outcomes:** The app was piloted at ten parks and green spaces in the City of Calgary, Alberta in 2013. As a result, youth ages 7-14 spent 320 hours walking almost 750 miles in Calgary parks using the Agents of Nature app. It has since been adopted as one of the city's primary environmental education initiatives. **Perspectives:** Mobile technology can be used to promote active discovery of nature, with the effect of enriching a child's physical, cognitive and emotional development. **Funding:** Program support was provided by the City of Calgary Parks Alberta, the Calgary Foundation, the Government of Alberta, Imperial Oil and Encana.

### Single-Sex After-School Physical Activity Programs for Overweight and At-Risk Children: the Wollongong Sport Pilot Randomised Controlled Trial

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**Objective:** To examine the effect of single-sex after-school physical activity (PA) programs on adiposity and physical activity (PA) in overweight and at-risk children aged 8-11y. **Methods:** A 7-month, 2-arm parallel-group pilot randomised controlled trial was conducted in a low-income area of Wollongong, Australia. 17 girls (9.6±0.9y) and 20 boys (9.9±0.8y) were randomly assigned to a PA intervention or a healthy lifestyle education (HLE) active comparison group. PA consisted of two 120min sessions.wk<sup>-1</sup> (30min homework plus 90min PA) at a local school. HLE consisted of one 120min weekly session (30min homework, 45min HLE plus 45min PA). Adiposity and accelerometer assessed moderate-to-vigorous physical activity (MVPA) were measured at baseline, 7m and 12m. **Results:** Large effects (Cohen's d) on adiposity outcomes were observed for PA

girls at 7m (BF%=0.83, BMIz=1.00, WCz=0.78). For boys at 7m, a large effect was observed for WCz (0.98); a medium effect was observed for BF% (0.49), and a small effect in favour of HLE was observed for BMIz (-0.19). Medium to small effects were observed on adiposity outcomes at 12m for PA girls (BF%=0.36, BMIz=0.29, WCz=0.17) and boys (BF%=0.58; BMIz=0.30, WCz=0.50). For MVPA at 7m and 12m, small and medium effects, respectively, were observed for girls (0.12; 0.60) and boys (-0.22; -0.60), although boys' results favoured HLE. **Conclusion:** The effects of single-sex after-school PA programs on adiposity and PA were more apparent for girls than boys. **Funding:** Children's Foundation of Australia.

### Sedentary Behaviour and Sleep Duration as Risk Factors for Adolescent Obesity: Objectively Measured Prospective Associations From the ROOTS Study

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**Objective:** To investigate if objectively measured sedentary time is positively associated, and sleep duration negatively associated, with 2.5y changes in adiposity from mid-to-late adolescence. **Methods:** This study was conducted in 732 students who were recruited from 18 schools in Cambridgeshire, UK. Awake sedentary time (SED; min/d) at age 15y was objectively measured by the equivalent of ≥3 days of combined heart rate and movement sensing. Sleep duration (SLP; min/d) was measured by combined sensing in conjunction with self-reported bed times. Fat mass index (FMI; kg/m<sup>2</sup>) was estimated at ages 15 and 17.5y by anthropometry and bioelectrical impedance. Multilevel models considering adjustment for basic demographics, birth weight, depressive symptoms, moderate-to-vigorous physical activity, energy intake, and maternal factors (age at parturition and BMI) were used to investigate associations between SED and SLP with changes in adiposity. SED and SLP were mutually adjusted for one another. **Results:** SED was inversely associated with rate of FMI gain in girls (p<0.001) but the magnitude of association was small (per 60 min SED/d at age 15y the annual FMI gain was reduced by 0.8% or 0.041 kg/m<sup>2</sup>). No such association was found in boys. SLP was not associated with adiposity gain in either gender. **Conclusion:** Awake sedentary time was weakly inversely associated with FMI gain in girls, but residual confounding cannot be ruled out. It seems that awake sedentary time and sleep duration may not be key determinants of adiposity gain in mid-to-late adolescence, their inclusion in policy statements about obesity prevention may therefore be unwarranted.

### Doctors Nova Scotia's Kids' Run Club—10 Years and Running

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