

Physical activity interventions for children have 'little impact'

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Physical activity interventions for children have small impact on overall activity levels and consequently the body fat and mass of children, a study published in the *British Medical Journal* today suggests.

Previous studies have shown that greater <u>activity</u> levels are associated with lower levels of BMI (<u>body mass index</u>) but that physical activity interventions have been unsuccessful in improving children's BMI. Many previous reviews have not, however, confined their analyses to wholeday activity and some relied on <u>questionnaires</u> rather than objective measures of physical activity like pedometers to measure daily steps taken. This is the first systematic review to measure physical activity using accelerometry devices which provide a measure of total bodily movement across <u>waking hours</u>.

Authors from Plymouth and Exeter, England, therefore took results from 30 <u>randomised controlled trials</u> that took place between January 1990 and March 2012. All participants were aged 16 or under and must have completed an intervention that lasted at least four weeks. Eight studies involved only overweight / obese children and the rest involved children from all BMI categories. All trials were matched on age, <u>ethnicity</u> and socio-economic status and were adjusted for gender and baseline activity. Effects of intervention were calculated on both total physical activity and time spent in moderate-or-<u>vigorous physical</u> <u>activity</u>.

Physical activity interventions analysed included one in the US which



sought to increase the <u>physical activity</u> of 729 children (average age 11) by providing three 90 minute after-school activity-related sessions per week. Each session was made up of 60 minutes of <u>high intensity</u> activity but halfway through the trial the children were only carrying out an extra five minutes of walking or running per day and by the end of the trial this effect had disappeared completely.

Another intervention, which took place in Scotland, was carried out over 24 weeks and looked to increase the activity of 268 nursery-school aged children by providing three 30 minute sessions per week during nursery hours. Again this did not increase the activity of the children and appeared to make them less active as they spent one minute less per day walking or running compared to the children in the control group.

The review found that interventions achieved "small-to-negligible" increases in children's total activity volume with small improvements in time spent in moderate-or-vigorous intensities (equal to four more minutes walking or running per day), which would have minimal impact on children BMI or body fat (equal to a reduction of 2mm in waist circumference). The authors suggest that the interventions could be replacing periods of equally intense activity such as after-school activity clubs that would usually be spent outdoors. Previous studies have suggested that interventions do not work because they lead to higher calorie consumption.

The authors conclude that in the mind of the public, physical inactivity is a major cause of childhood obesity and although the need to increase it is intuitive the "small increase gained from formal interventions seems insufficient to improve the body mass / fat of children". They suggest that further studies should capture both whole day activity and activity related to intervention-specific periods.

In an accompanying editorial, authors from University College London



suggest that the study's chosen method of analysis does have "inherent limitations" although the results provide the best evidence to date on the effectiveness of activity interventions in childhood. They suggest that the focus of other studies should also shift away from overweight and obese children and instead look at outcomes that relate to improving health in children regardless of their weight. Hamer and Fisher suggest that future research should focus on how changes to the indoor and outdoor environment can encourage children's activity.

More information: Effectiveness of intervention on physical activity of children: systematic review and meta-analysis of controlled trials with objectively measured outcomes (EarlyBird 54), *British Medical Journal*

Editorial: Are interventions to promote physical activity in children a waste of time? *British Medical Journal*

Provided by British Medical Journal

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