



# Compliance with the Australian 24-hour movement guidelines for the early years: associations with weight status

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## Abstract

Background: For effective public health and surveillance it is important to document the proportion of young children who meet the new Australian Integrated 24 h Movement Guidelines for the Early Years and how these associate with

## Background

Overweight and obesity during childhood are major public health concerns. Globally it is estimated that 6.7% of children under the age of 5 are overweight or obese and it is expected that this prevalence will reach 9.1% by 2020 [1]. In Australia, the prevalence of overweight and obesity in pediatric ages has increased substantially in the last two decades, particularly among those from low socio-economic backgrounds [2, 3]. Although the prevalence has leveled off somewhat over the past decade [2, 3], there are still 1 in 5 Australian children aged 2 to 4 years who are overweight or obese [4]. These figures are particularly disturbing given the plethora of short term and long-term adverse health consequences associated ]wi

normal weight, overweight or obese according to the World Health Organization age and sex specific criteria [20].

#### Screen time

Parents were asked to report the child's screen time by answering the following questions: "For how long does your child use screen entertainment on a typical week-day?" and "For how long does your child use screen entertainment on a typical weekend day?" Time reported in both questions was summed as follows: (screen time weekdays \* 5 + screen time weekend days \*2) / 7 = average screen time per day.

[23] and Cliff et al. [24], in this supplement, also show that the majority of young children met the physical activity guideline and that 15% or less met all three guidelines of the 24-h Movement Guidelines for the Early Years.

As none of the participants had sedentary bouts of 1 h or more, these 11.4% that met the sedentary behavior

guideline reflects the amount of children meeting the screen time component of the sedentary behavior guideline; which is of concern given the potential long-term health impacts of excessive screen-based sedentary behaviors during the first years of life [16]. In our study, girls spent on average more time in sedentary behaviors than boys, a finding that is consistent with previous studies in older children [25–27] but contradicts others [28–31]. In this respect, it is important to notice that the correlates of sedentary behavior appear to be dependent on the type and context of the behavior, as well as how sedentary behavior is assessed [27–33]. Also, as sedentary behaviors seem to track from early childhood to middle childhood [34] and from childhood to adolescence [35, 36] efforts to limit the amount of time spent in sedentary pursuits from an early age are therefore necessary.

The proportion of overweight and obese children in our sample (26.8%) is higher than the most recent data for Australian toddlers and pre-schoolers (22.8%) [4], most likely because our study was conducted with children living in low socio-economic areas. Average BMI Z-scores did not differ significantly between children who complied with none or any individual guideline, any combination of meeting two guidelines, and those who met all three guidelines ( $p > 0.05$ ). Although the differences were not statistically significant, participants who accomplished any combination of two guidelines or all three guidelines appear to have a lower BMI Z-score,

aged 0 to 4 years, the associations between adiposity and sedentary time, screen-based sedentary behaviors,



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References