

Making children's lives more active

(updated edition)

Children are becoming fatter which has serious implications for their health. One reason is their decreasing levels of physical activity. This is related to their lifestyles and reductions in the amount of walking. This note illustrates these effects and draws conclusions about children's physical activity and car use.

The approach

The findings discussed here come from a research project entitled 'Reducing children's car use: the health and potential car dependency impacts' that has been carried out in the Centre for Transport Studies at University College London under the direction of Professor Roger Mackett, with funding from the EPSRC (Engineering and Physical Sciences Research Council). The work has been carried out in collaboration with others including Hertfordshire County Council, with fieldwork being carried out through schools in Hertfordshire.

The approach has involved collecting data from 195 children in Years 6 and 8. The children were fitted with portable motion sensors and kept activity and travel diaries for four days: two weekdays plus the weekend. The results have been scaled up to one week. The sensors produce results in terms of activity calories which are the calories consumed in carrying out events as opposed to the calories consumed all the time maintaining bodily functions. From these results conclusions have been drawn about the impact of children's activity patterns and travel on the quantities of physical activity.

The findings

Table 1 shows the number of activity calories consumed per minute in various events. It can be seen that PE and games lessons are the most intensive event with an intensity of 3.1, but not very far behind come unstructured ball games at 2.8, structured ball games at 2.4 and walking at 2.3. At the bottom of the list come being at home and sitting in lessons at school at 0.6.

Whilst PE and games lessons are obviously good for children, the children in the sample only

spent the equivalent of 70 minutes a week doing them. They spent much more time playing and in structured sport and school breaks so these contribute more to the children's total physical activity. 60% of the children played outside, while fewer than 50% took part in organised sport. The one thing that children should not be doing is sitting at home – they should be out, running around. Also, the figures suggest that reducing the length of school breaks will have a negative effect on their volumes of physical activity, which should be balanced against the educational benefits of more time spent in class.

Table 1 Intensity of various events undertaken by children (activity calories per minute)

School	PE or games lesson	3.1
	Other lessons	0.6
	Break	1.9
Clubs and tuition	Structured ball games	2.4
	Other structured sport	1.8
	Organisations	1.4
	Tuition	0.7
Playing	Unstructured ball games	2.8
	Other unstructured events	2.1
	Other outdoor play	1.6
Out on trips		1.1
Physical work		1.1
Waiting		1.1
Own home		0.6
Other homes		0.9
Travel	Walking	2.3
	Car	1.0
	Bicycle	1.7
	Bus	1.5
Overall		0.9

The benefits of walking relative to PE and games lessons are shown in Table 2. This shows that walking to and from school every day for a week

uses more activity calories than two hours of PE and games lessons, the recommended standard. This also provides good evidence why travelling to and from school by car is bad for children in terms of physical activity.

Table 2 Consumption of activity calories used in a week travelling to and from school and two hours of PE or games lessons

Walk to and from school	374
Car to and from school	165
Two hours of PE or games	371

Not only does travelling to an event by car use fewer calories than walking, the children who walk use more calories when they arrive, as Table 3 shows. This suggests that there may be a cohort of children who are relatively inactive when undertaking events and whose parent are willing to take them by car, possibly reflecting their own lifestyles.

Table 3 Intensity of various events, classified by the method of travel used to arrive

	Walk	Car
PE or games lesson	3.5	2.4
Other school lesson	0.6	0.5
School break	2.0	1.7
Clubs and tuition	1.7	1.6
Playing	2.4	2.0
Out on trips	1.5	1.0
Other homes	1.1	0.8
Overall	1.7	1.3

The car plays a big part in children's lives, as Table 4 shows, with more events reached by car than walking. This shows that the main reasons the children go by car is to go on trips with parents, to go to other people's homes and to go to school. The trip to school is the main reason for walking. This suggests that trips other than travelling to school need to be targeted in order

Further information

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to reduce children's car use significantly. Also it can be seen that going to clubs and tuition tends to be by car whereas children tend to walk when they go out to play. This suggests that the shift from unstructured to structured events for children is one of the causes of their decrease in walking and that letting children go out to play is one of the best things that parents can do for their children's health: outdoor play uses more calories than clubs and tuition and is more likely to be associated with walking.

Table 4 Number of events each week classified by how the children travel

	Walk	Car	Other	Total
At school	2.6	1.4	0.5	4.6
Clubs and tuition	0.3	0.8	0.0	1.2
Playing	0.7	0.4	0.0	1.2
Out on trips	0.6	1.7	0.2	2.4
Other homes	1.5	1.4	0.2	3.1
Other	0.3	0.3	0.0	0.7
Total	5.9	6.1	1.1	13.1

Conclusions

- Walking and playing provide children with more physical activity than most other events.
- Encouraging children to be out of the house will increase their physical activity.
- Walking to and from school can be better for children than two hours a week of PE and games lessons.
- Reducing the length of school breaks will reduce children's quantity of physical activity.
- Children who walk to events are more active when they arrive than those who go by car.
- The shift from unstructured to structured out-of-school events encourages car use.
- The main reason children travel by car is to accompany their parents on trips.