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DAY LENGTH AND WEATHER EFFECTS ON CHILDREN'S PHYSICAL ACTIVITY AND PARTICIPATION IN PLAY, SPORTS AND ACTIVE TRAVEL

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Policy context Proponents of the Daylight Saving Bill currently under consideration in the UK parliament have hypothesised that extending afternoon daylight would promote child physical activity.

Objective To investigate the relative contribution of day length and weather to children's physical activity, and the behavioural mediators underlying these effects.

Design Cross-sectional school-based study

Setting Hertfordshire, UK

Participants 325 children (170 girls) aged 8–11 wore RT3 accelerometers as an objective measure of physical activity (964 days of valid data) and simultaneously completed travel and activity diaries (995 days).

Outcome Overall daily physical activity (mean accelerometer counts per minute).

Exposures Our main exposure measures were day length, temperature rainfall, cloud cover and wind speed. We also examined the mediating role of time spent in out-of-home play, structured sports and active travel.

Results Overall physical activity was higher on long days (≥ 14 h daylight), but there was no difference between short days (< 9.5 h) and medium days (10.2–12.6 h). The effect of long day length was largest between 17:00 and 20:00, and persisted after adjusting for rainfall, cloud cover and wind. Around half this effect was explained by a greater duration and intensity of out-of-home play on long days; structured sports and active travel were less affected by day length. Higher rainfall was associated with lower physical activity in the morning and early afternoon, and this was not explained by participation in play, sport or active travel.

Conclusion At least above a certain threshold, longer afternoon/evening daylight appears to have a causal role in increasing child physical activity. This strengthens the public health arguments in favour of daylight saving measures such as those currently under consideration in Britain.