

3-plus hours daily screen time linked to diabetes risk factors for kids

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Credit: Paul Brennan/public domain

Daily screen time of three or more hours is linked to several risk factors

associated with the development of diabetes in children, finds research published online in the *Archives of Disease in Childhood*.

These include adiposity, which describes total body fat, and, crucially, [insulin resistance](#), which occurs when cells fail to respond to insulin, the hormone produced by the pancreas to control levels of blood glucose.

Previous research suggests that spending a lot of time glued to a screen is linked to a heightened risk of weight gain and type 2 diabetes among adults.

But it is not clear if children might also be at risk, particularly as recent trends indicate that the amount of time they spend watching TV and using computers, [games consoles](#), tablets and smartphones is on the rise.

The researchers therefore assessed a sample of nearly 4500 9-10 year old pupils from 200 primary schools in London, Birmingham, and Leicester for a series of metabolic and cardiovascular [risk factors](#).

These included blood fats, insulin resistance, fasting [blood glucose](#) levels, inflammatory chemicals, blood pressure and body fat. The children were also asked about their daily screen time to include TV, and use of computers and games consoles.

Complete information was obtained for 4495 (2337 girls and 2158 boys) out of the 5887 who took part in the study between 2004 and 2007; additional data on [physical activity](#) was also available for 2031 of them.

Some 4% of the children said that screen time didn't take up any of their day, while just over a third (37%) said they spent an hour or less on it.

Of the remainder, 28% said they clocked up 1-2 hours; 13% said their daily tally was 2-3 hours; and around one in five (18%) said they spent

more than 3 hours on it every day.

Boys (22%) were more likely than girls (14%) to say they spent 3 or more hours on screen time, as were African-Caribbean (23%) kids compared with their white European (16%) or South Asian peers (16%).

Trends emerged between screen time and ponderal index—an indicator of weight in relation to height, and skinfolds thickness and fat mass—indicators of total body fat.

These levels were all higher in children reporting 3+ hours of daily screen time than in those who said they spent an hour or less on it.

And there was a strong trend between a daily quota of 3 or more hours of screen time and levels of leptin, the hormone that controls appetite; fasting glucose; and insulin resistance.

The associations between screen time and insulin levels, insulin resistance, ponderal index, skinfolds thickness and fat mass remained significant even after taking account of potentially influential factors, such as household income, family background, puberty stage, and physical activity levels.

The researchers emphasise that while their findings are "of considerable potential public health interest," they are observational and so no definitive conclusions can be drawn about causality.

But the use of electronic devices is pervasive, the researchers point out, and there are now more options available, such as tablets and smartphones, than when the study was initially carried out.

"Our findings suggest that reducing screen time may be beneficial in reducing type 2 diabetes risk factors, in both boys and girls and in

different ethnic groups from an early age," they write.

"This is particularly relevant, given rising levels of type 2 diabetes, the early emergence of type 2 diabetes risk, and recent trends suggesting that [screen time](#) related activities are increasing in childhood and may pattern screen-related behaviours in later life," they conclude.

More information: Screen time is associated with adiposity and insulin resistance in children, [adc.bmj.com/lookup/doi/10.1136 ... dischild-2016-312016](https://adc.bmj.com/lookup/doi/10.1136/adc.2016.312016)

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