

The case against unlimited screen time for children

July 23 2015, by Travis Saunders



PLOS Blogs colleague Beth Skwarecki has a post this week on the

potential benefits of screen time for kids. It's makes points that are similar to those brought up by former PLOS Blogger Melinda Wenner Moyer over at Slate last year, and another by Emily Oster at Five Thirty Eight titled [Screen Time for Kids is Probably Fine](#).

One commonality between these studies is that they tend to focus on the psycho-social impacts of [screen time](#) (learning, executive function, grades, etc), rather than the physical impacts. As shown in the below table from a systematic review on the impacts of sedentary behaviour (mostly TV time) in kids, there is a pretty strong relationship between increased screen time and negative outcomes in school-aged children ([the same is true for pre-schoolers](#)).

A common argument made in the recent articles by Beth and others is that that many studies looking at these outcomes may be influenced by other factors, such as socio-economic status, which make it difficult to draw questions about screen time itself. For example, if poor kids tend to get more screen time and have lower grades than kids who aren't poor, then it's tough to know if it's the screen or the poverty (or something else entirely) that is causing the poor grades. [And screen time is higher among kids in lower socio-economic groups, which supports that argument](#). And when you adjust for socio-economic status, the relationships between screen time and mental health outcomes often weakens, which again supports their point. So I will agree that the research there is murky, and that their conclusion with respect to those particular outcomes is pretty reasonable. As they argue, the content of the screen time (e.g. reading vs educational video games vs violent video games) may also be important here, rather than the total amount.

However, my concern is that there are other health outcomes for which the evidence is not so nuanced. For example, the association between screen time and [physical health](#) is consistent regardless of what you adjust for. Take [this study from my PhD](#), which examined the

association between screen time and various health outcomes in kids with a family history of obesity (I've discussed the study in more depth here.).

Table 7 Summary table of results showing relation between sedentary behaviour and pro-social behaviour

Type of Study	Number of Studies	Number of participants	Narrative recommendation and main findings
RCT	0		
Longitudinal	1	2707	Watching > 2 hrs of TV per day is a risk factor for social behaviour problems
Intervention	0		
Cross sectional	17	91934	Individuals watching > 3 hrs of TV per day are more likely to exhibit poor social behaviours and be more aggressive. Limited evidence to suggest this relationship is stronger in boys.
Total of all studies	18	94391	> 2 hrs of TV per day is associated with poor pro-social behaviour. Those watching less than 3 hrs of TV per day scored more positively in aspects of pro-social behaviour Mean Downs and Black score = 19.9 (± 1.34), Level 3 evidence.

Table 7 from Tremblay et al., 2011

We found that leisure time computer/video game use was positively associated with overall health risk, increased [waist circumference](#), and reduced HDL-cholesterol (the "good" cholesterol) in boys, while TV viewing was positively associated with overall health risk, waist circumference [body weight](#) in girls (all of these results have been adjusted for [socio-economic status](#) and other confounders).

To give a sense of the strength of these associations, a 1 hour increase in computer use was associated with a 0.8cm increase in waist circumference in boys, even after adjusting for sexual maturation, parents' education and income, and daily physical activity. Similarly, a 1 hour increase in TV time was associated with a 0.66 cm increase in waist circumference in girls, after adjustment for the same confounders as above.

The links between screen time and physical health are very consistent, and have been outlined in a number of large systematic reviews (see [here](#) and [here](#) for examples). And most strikingly, studies that force children to reduce their screen time result in reductions in body weight, without making any other lifestyle changes (discussed [here](#)).

Contrary to what you might think, this doesn't seem to have anything to do with physical activity. [From Emily Oster's piece](#):

With this insight, it's easy to see why less television is likely to decrease obesity. The process of weight gain and loss is pretty simple: if you burn more calories than you take in, you'll lose weight. Watching television is mostly done sitting. And most other activities involve at least some moving around. So pretty much no matter what else they do, watching less TV is likely to be associated with kids burning more calories and losing weight.

The studies that have shown that cutting screen time cuts body weight have found that it's actually due to reduced [food intake](#), rather than increased activity (details [here](#)). It seems that screen time is really good at promoting food intake, and cutting screen time results in natural reductions in food intake, without needing to make other changes. It's actually a super cool finding, especially considering how difficult it can be to influence food intake or body weight with traditional interventions.

All this to say that even if screen time doesn't have such a big impact on mental health outcomes (or if the impact is complicated, which is likely the case), that doesn't mean that we can just sweep the physical health implications under the rug. This is not to say that all screens are necessarily equal (e.g. an iPad may be different from a TV, etc), or that your child is doomed if they get the odd bit of screen time. But the evidence linking screen time with negative physical [health outcomes](#) is too clear to simply ignore.

More information: "Systematic review of sedentary behaviour and health indicators in school-aged children and youth."

www.biomedcentral.com/content/...f/1479-5868-8-98.pdf

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