

EDITORIAL

Adolescents' digital screen time as a concern for health and well-being? Device type and context matter

Digital screen use is highly prevalent among adolescents, most of whom use smartphones, tablets, games consoles, computers and televisions daily. WHO guidelines for physical activity and sedentary behaviour recommend that school-age children and adolescents limit such recreational screen time, while a more definitive recommendation of up to 2 hours/day recreational screen time is provided in Canada, Australia and New Zealand. Compliance with this recommendation is typically low (eg 23% among UK adolescents)¹ with 4–5+ hours/day screen use commonplace.²

A widely held view is that excessive screen time is detrimental to adolescents' health and well-being. Screen time is unfavourably associated with sleep duration and quality, weight status, cardiometabolic risk, physical fitness, mental health and health-related quality of life.³ The magnitude of associations does though vary depending on the specific type of screen in question and the amount of time that adolescents engage with it. The potential negative health and well-being implications of screen time for adolescents may be further exacerbated by the consistently observed decline in physical activity and increase in sedentariness through the teen years. Maturation drives physical changes that may contribute to reduced motivation for physical activity, particularly among girls, which may be compounded by societal norms and expectations related to physical appearance and accepted behaviours. Furthermore, sedentary and activity habits formed during adolescence can strongly predict those in adulthood.

As a consequence, adolescence has been described as a 'risk factor' for physical inactivity with adolescent girls at heightened risk.⁴ The ubiquity of screen-based devices and their prevalence among teenagers only adds to this risk. iPhones and Android smartphones have only been around since 2007 and 2008, respectively, but they and other devices like games consoles, tablets, computers and televisions are now owned and used daily by adolescents across most parts of the world. Devices are central to the lives of adolescent girls and boys with social media, on-demand streaming, interactive gaming and other digital activities firmly embedded in teenagers' routines.

In this issue, Harrington and colleagues⁵ describe English adolescent girls' screen use and associations with lifestyle behaviours and psychosocial health. The authors focused on concurrent use of multiple screen-based devices in over 800 adolescent girls who self-reported which screen-devices they used simultaneously during

four discrete time periods (after-school, evenings, in bed at night and at weekends). Smartphones were most frequently used at all time periods, followed by televisions and tablets. Between 59% and 68% of girls used concurrent combinations of smartphones, televisions and tablets after school, in the evenings and at weekends, with over one-third using at least two screens in bed at night. At weekends, girls who used three screens simultaneously did 22 min/day less moderate-to-vigorous physical activity (MVPA) overall, 25 min/day less weekend MVPA, and spent an additional 1.5 hours/day in weekend sedentary time than girls who used no screens. Those using two screens concurrently in bed spent around 9 minutes less engaged in MVPA at the weekends, while evening screen use was associated with lower MVPA after-school and in the evening. After-school concurrent screen use was associated with higher body mass index and shorter weekday sleep duration, but interestingly, there were no significant differences in sleep related to bedtime screen use.

Harrington and colleague's novel study demonstrates that during discretionary leisure time it is common for adolescent girls to 'screen-stack' with at least two devices. This is an important observation for researchers because usually data on simultaneous device use is not gathered, which limits efforts to understand adolescents' screen behaviours and the potentials implications for health and well-being. The cross-sectional results indicate that concurrent screen use was negatively associated with healthy lifestyle factors like physical activity and sleep, and positively related to sedentary time and body mass index.

The study findings raise the question of whether screen time displaces 'healthy' behaviours like physical activity, particularly after-school and at weekends when adolescent girls (and boys) have most choice about how they spend their time. While on the face of it this supposition may seem reasonable, the relationship between screen time and physical activity is more nuanced, depending on the type of screen behaviour and mode of physical activity. For example, in a recent analysis of adolescent behaviours during the Covid pandemic, it was found that screen time and habitual physical activity increased, but these changes coincided with a drop in structured sport participation, suggesting that screens do not necessarily compete with all physically active behaviours.⁶ Conversely, adolescent girls using social media for >2 hours/day are less likely to achieve physical activity and sedentary time guidelines.⁷ Use of screens for social media is highly



prevalent in teen girls and is a significant means of social interaction. During the Covid pandemic, the potential value of screens to offset the limited opportunities for face-to-face peer contact and interaction has doubtless been beneficial in supporting adolescent girls' social functioning and well-being.

Thus, the view that screen use is detrimental to adolescents' health and well-being is an oversimplification. Although much of the research to date tends to highlight the negative influence of screens, this partly relates to how 'screen time' has been defined (ie as television viewing in earlier studies or as total screen time), which screen behaviours were studied, and the contexts for these behaviours. This is illustrated by a large study of Australian adolescents, which found that time spent by girls and boys in passive screen use (ie television) was negatively associated with physical and mental health outcomes, but that educational (ie homework) and interactive (ie video gaming) screen use were positively associated with school achievement. However, when interactive screen time was analysed in relation to physical and mental health, the associations were unfavourable.⁸ Thus, the interplay between screen type, the context of its use, and the health and well-being outcomes under consideration all need to be accounted when thinking about the role, benefits, and risks of adolescent screen use. Notably, the effect sizes for these associations were very small suggesting that the impact of screen use on adolescents' health and well-being may be less of an issue than some believe.

In circumstances where adolescents' screen use may impinge on more healthy lifestyle activities, strategies which ironically embrace and integrate screens (eg smartphone apps, social media groups) have potential to support positive behaviour change, for being physically active and helping teens to 'power-down' their devices. As screen time is associated with device availability (particularly in bedrooms),⁹ time spent in bedrooms and being alone after school,¹⁰ then families concerned about adolescents' screen use could agree ways that limit home screen use at specific times of the day to enable better balance with other activities.

Adolescents' use of digital screens is here to stay, and it is incumbent on researchers, health professionals, practitioners and parents with an interest in adolescent health and well-being to be aware of the potential risks and also benefits of screen use. Improving understanding of adolescents' screen use and promoting active behaviours that are accessible, developmentally appropriate and enjoyable and which can harness the appeal and familiarity of digital screens may be more fruitful endeavours than solely investing effort into limiting screen time.

CONFLICT OF INTEREST

None.

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