RCPCH
Royal College of Paediatrics and Child Health
Leading the way in Children's Health

The health impacts of screen time: a guide for clinicians and parents

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Why write this guide?

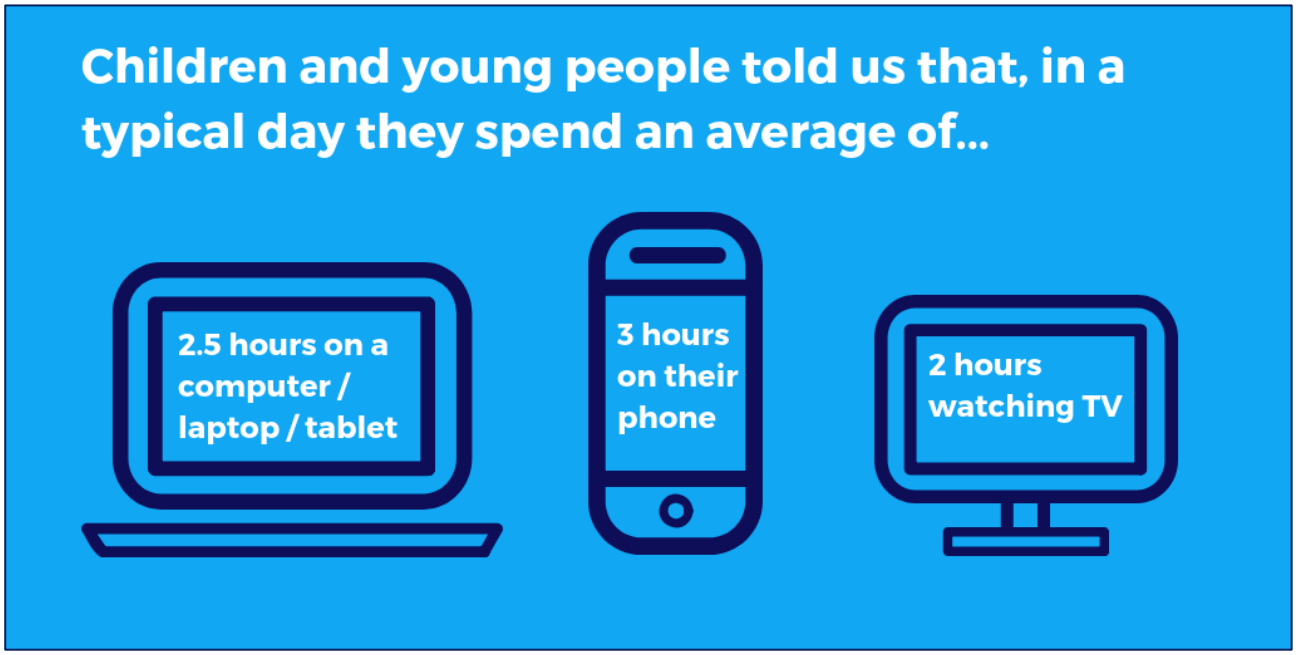
Our children and young people are 'digital natives' who grow up surrounded by digital information and entertainment on screens. Time spent on screens – from social media to computers and television – is a major part of modern life and a necessary part of modern education.

However, screen time has been cited in the media as the cause of obesity, mental health problems and educational failure[1,2,3,4] - but the evidence base for a direct 'toxic' effect has always been contested.[5] It is clear that trends towards poorer mental health amongst young people in the UK were evident before the advent of social media and digital technologies.[6]

There are a separate set of concerns about the specific content of screen use: these vary from concerns about exposure to violence in films, to the effect of cyberbullying through social media; with particular concern over the impact of social media on mental wellbeing amongst children.[7]

What do young people think about screen time?

To develop this guide, we consulted 109 children and young people aged 11-24 from across the UK. Their views are included in graphics throughout to strengthen this guide.



What is the evidence for the effects of screen harm?

Research in this area is difficult to apply to today's children and young people, as their use of screens is evolving so rapidly (e.g. social media, homework, mobile devices) and the majority of the literature deals only with television screen time.

To inform this guide, we undertook a comprehensive review[8] of the evidence on the impact of screen time on children's physical and mental health, largely looking at television screen time. We identified 940 abstracts, with 12 systematic reviews meeting our criteria for inclusion. This gave us evidence of the following associations:

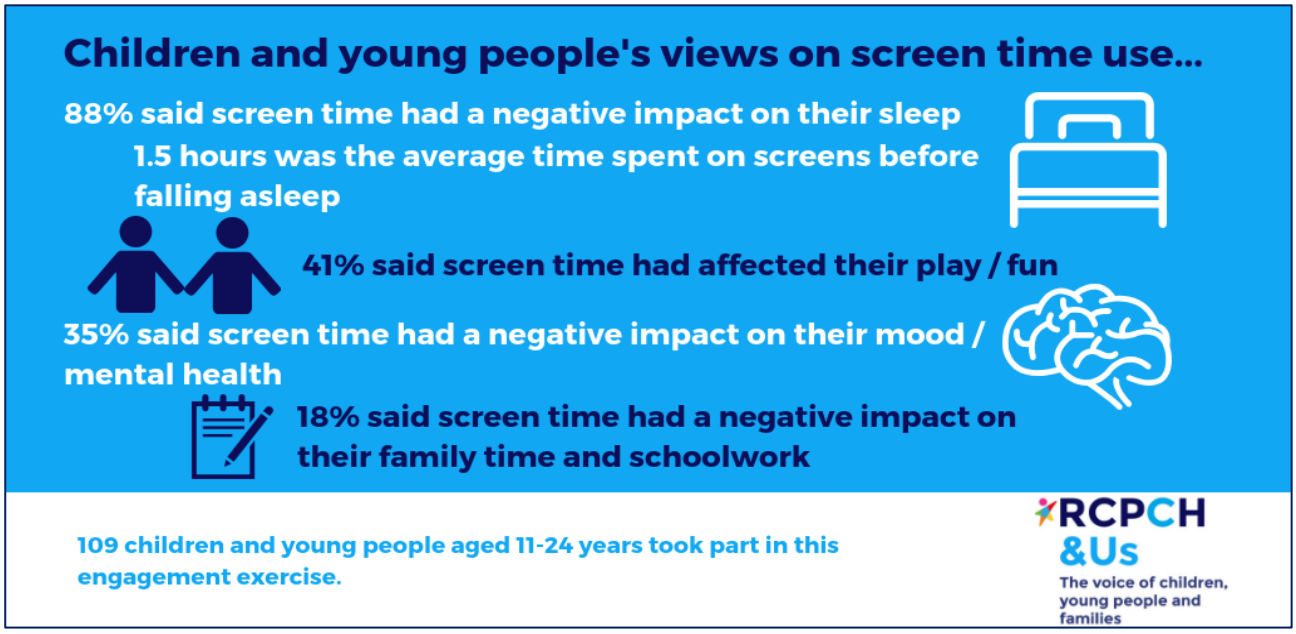
- Children with higher screen time tend to have a less healthy diet, a higher energy intake, and more pronounced indicators of obesity.
- Children with higher screen time, particularly over 2 hours per day, tend to have more depressive symptoms, although it has been found by some studies that some screen time is better for mental health than none at all.

There also seems to be a trend towards poorer educational outcomes, sleep and fitness in children using screens for long periods, although the evidence is weaker for these associations. We didn't find consistent evidence for any specific health or wellbeing benefits of screen time.

When the effect of screen time on health amongst young people in the UK was analysed, it was found that the contribution of screen time to wellbeing is small when considered together with the contribution of sleep, physical activity, eating and bullying as well as poverty.[9]

There is some specific evidence for an association between screens experienced around bedtime and sleep duration.[10]

We are very aware of the limitations of the evidence base in this area and would urge both *more* and *better* research. This should particularly focus on newer uses of digital media, such as social media.



What does the association between screen time and negative outcomes mean?

It is important to note that an association does not imply a causative link. There are several ways to interpret these associations, as follows:

1. Screen time is directly 'toxic' to health. This view is popular outside the scientific literature,[11] but has essentially no evidence to support it.
2. Screen time alters behaviour and thus leads to negative outcomes. There is some evidence for this when it comes to diet: watching screens can distract children from feeling full, and this may be contributing towards the increased energy intake mentioned above.[12] Also, children are often exposed to advertising while using screens, which appears to lead to higher intake of unhealthy foods.[13]
3. Screen use exposes children and young people to harmful content, through cyberbullying, watching violence or pornography, unrealistic imagery (unrealistic body shapes) or through monitoring online status (e.g. 'likes') with their peers.
4. Screen time displaces positive activities. Analysis of what leads to positive wellbeing has consistently supported socialising, good sleep, diet and exercise as positive influences. All of these can be displaced by screen-based activities, which may lead to an 'opportunity cost' in terms of other beneficial activities. For this reason we feel that this is the main way in which screen time and negative outcomes may be linked.

Should there be different amounts of screen time for different age groups?

Our systematic review did not highlight any different effects of screen time at different ages. However, the developmental, physical and sleep needs of children *do* vary with age, and this will impact upon the decisions that families make about screen use.

Is there a 'safe' level of screen time?

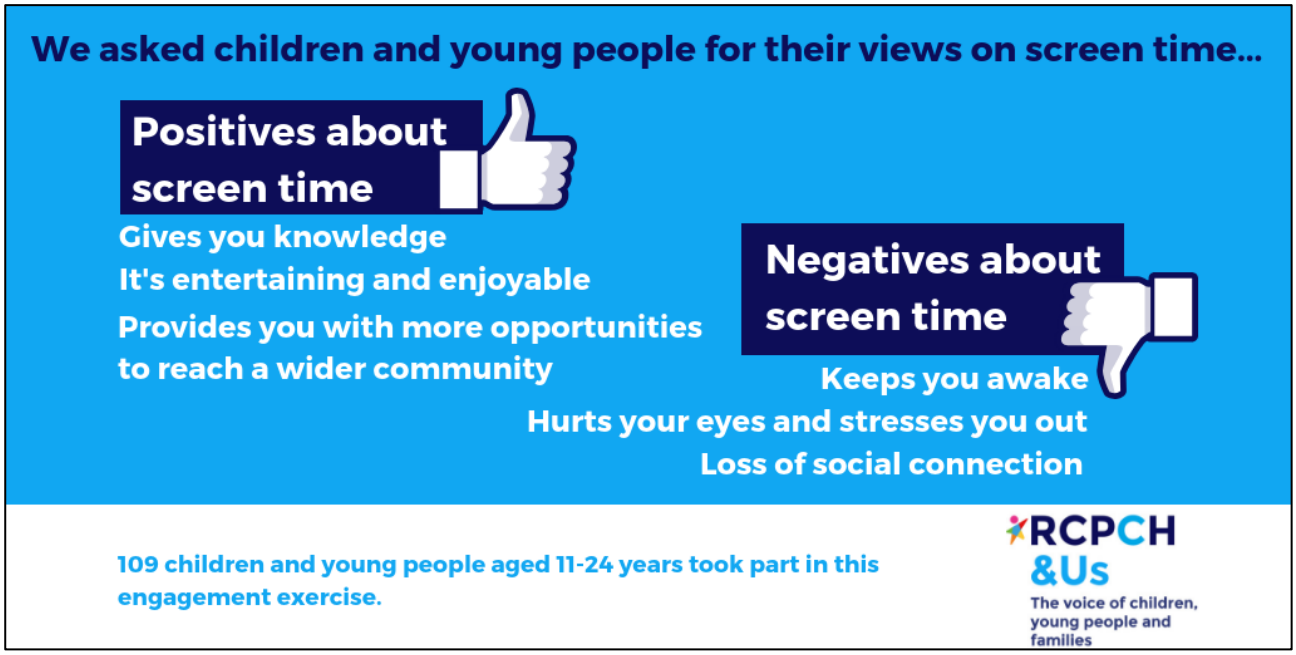
In short, no – but this doesn't mean all screen time is harmful.

To say that there is a safe level would be to suggest that below that level there are no negative consequences, whereas above this level there *are* negative consequences. As outlined above, there is little evidence that this is the way that screen time works in influencing children's wellbeing. It is perhaps better to think of screens as displacing desirable minimum levels of positive activities, such as sleep, time with family and exercise, and the effects this may have.[14]

What about different forms or content of screen time?

Clearly, children can potentially be exposed to material or interactions which are inappropriate and/or harmful via screens – as they can be in the non-digital world. Although this is not the main focus of our guide, it is appropriate to make two observations:

a. Children need to be kept safe online, from bullying, exploitation and other negative influence, as they are off-line. This is well covered in the NSPCC's Net Aware material,[15] which gives detailed information on 38 different social networks and applications (apps), including their suitability for different age groups, what young people think about using them, and different privacy settings that can be applied.
b. Both video content and games have certification systems, designed to protect children from inappropriate content. It is important that parents are aware of these systems, and mindful of them, especially when older siblings may be playing violent or explicit games.



Key messages for health professionals

We believe that the risks from screen exposure should not be overstated. The evidence is relatively weak overall. Further, the magnitude of impact of screens is small on key health outcomes. Lastly, the literature takes little account of the increasing demands for school homework to be undertaken on screens. We note there is no evidence that homework undertaken on screens is associated with greater or lesser health harms or benefits than that undertaken more traditionally.

Many of the apparent connections between screen time and adverse effects may be mediated by lost opportunities for positive activities (socialising, exercise, sleep) due to displacement by screen time. This is not the case however for the increase in the consumption of high-density foods while using screens, which appears to be related to being distracted from feelings of satiety.

Screen time limits

Evidence is weak for a threshold to guide children and parents to the appropriate level of screen time. We are unable to recommend a cut-off for children's screen time overall. Equally, because of the lack of evidence on the differential effects of different forms of screen time, we cannot recommend a universal cut-off for specific forms of screen time. However, thresholds may be an appropriate part of a family's media planning.

Our primary recommendation is that families should negotiate screen time limits with their children based upon the needs of an individual child, the ways in which screens are used and the degree to which use of screens appears to displace (or not) physical and social activities and sleep.

Content of screen time

It is outside the scope of this guide to make recommendations on specific content. In any case content evolves so rapidly that guidance would instantly be out of date. We note the concerns about particular forms of screen media, but also the lack of robust evidence of harm at an individual or population level. Regarding the specific area of online safety, we suggest using existing guidance from organisations such as the NSPCC.[16]

Parental control

The evidence that time spent on screens is associated with harmful impacts on health and wellbeing amongst children should lead families to ensure that exposure to screens by children and young people is subject to parental control.

RCPCH recommendations for discussing screen time with families

Because the effect of screen time depends so much on context, and the uncertain nature of the evidence, it is impossible to give comprehensive national guidance or limits. However, we think that families should examine their own screen time regime using the following questions as a guide. These questions and the accompanying notes will hopefully also be useful to clinicians when discussing children's screen time with families.

If a family can ask themselves (or be asked by others) these questions, and are satisfied with the answers, then they can be reassured that they are likely to be doing as well as they can with this tricky issue.

Question 1: Is screen time in your household controlled?

For infants and younger children this means that screen time duration and content is set by their responsible adults. If these limits are regularly broken and the parent feels that screen use is out of control, this may indicate the need for parenting support.

For older children and young people, there will be a move towards autonomy and self-control, but this will need to be gradual and under the overall guidance of an adult.

Adults within families also need to consider their own use of screens, using the questions below for guidance. It is useful for us all to ask, especially regarding smartphones, "whether you are using it for what you want to, or whether you are unconsciously using it all the time"[17]

Question 2: Does screen use interfere with what your family want to do?

This will obviously vary from family to family- however, many families want to spend more time together, and there is good evidence that this is beneficial for the welfare of all family members.[18]

Mealtimes are an opportunity for this, and so many families declare meals to be a 'screen-free zone'. This may be a good way to ensure interaction, especially with older, more independent young people, but each family needs to find its own way to maximise interaction and shared enjoyment.

For younger children, face-to-face social interaction is vital to the development of language and other skills. Screen-based interaction is not an effective substitute for this.

Question 3: Does screen use interfere with sleep?

Even quite modest sleep deprivation can interfere with mental and physical health, educational success and family relations.[19] Is it important, therefore, that screens do not interfere with a

good bedtime routine, either for children *or adults,* and we would adopt the expert recommendation that screens are avoided for an hour before the planned bedtime.

Question 4: Are you able to control snacking during screen time?

It can be very easy to lose track of how much is eaten during a session of screen time particularly if meals are eaten in front of screens. Adults should monitor what is eaten during sessions on screens, especially in children at risk of obesity.

If a family want to reduce screen use, what can they do?

There is little evidence that any specific intervention can be applied across the population to reduce screen time. However, the following practical tips may be helpful to families:[20]

Have a plan and stick to it: this is a principle borrowed from standard parenting practice.[21] It is helpful to sit down in calm moment, as a family, and discuss the boundaries of screen use you will be adopting, using our previous questions to guide. It is important that:

1. Everyone understands the boundaries
2. Family members are praised and, if appropriate, rewarded for respecting these boundaries
3. Boundaries are consistently applied and, if necessary, consequences are put in place.

Be aware, but not intrusive or judgmental: It's important to know what apps and networks young people are engaged with, how these work and what content they are likely to encounter. It is, however, often counter-productive to insist on monitoring every detail of online activity- an informed and open approach will lead to a more mature approach in the long run.

Think about their own media use: children will learn more from example than from instruction. It may be that what you are doing on your phone is important, but it is worth pausing to reflect, if your children are around and available for interaction, whether it can wait.

Prioritise face-to-face interaction: Online interaction is a valid form of interaction- great relationships can be formed and encouraged online. However, for children to develop the skills and resilience to cope with the world, they need regular interaction in the physical world. This is especially true for young children who need regular play and interaction with other people, but for older children active, offline play should also be encouraged, as well as regular space for conversation. While screen-based interaction is enjoyable it does not have the positive developmental effects of in-person interaction. For instance educational apps do not appear to help communication in most children.

Be snack aware: It can be very easy to finish a session of media use, look around and wonder where all these packets came from! If you are going to combine snacks with screen use, do so as part of an overall diet plan.

Protect sleep: most experts advise that children are not exposed to screens for an hour before bed, so that their brains have time to wind down for sleep without the stimulation from the light of the screen (and the content being viewed). Some manufacturers have introduced 'night-modes' which emit less blue light, but there is no evidence that these are effective so we do not think that this makes screen use before bed 'OK'.

Key resources for parents

- NSPCC online safety information and NetAware – a comprehensive no-nonsense guide to 38 different social networks, apps and games, including explanation of privacy settings and assessment of suitability for different age groups.
- NHS change4life - healthy recipes, nutritional advice, and top tips and activities to help families stay healthy.

Appendix: What have other organisations said?

The American Academy of Paediatrics (AAP) updated its screen time guidelines in 2016 to include a suite of recommendations for families around media viewing:[22,23]

- For children younger than 18 months, avoid use of screen media other than video-chatting. Parents of children 18 to 24 months of age who want to introduce digital media should choose high-quality programming, and watch it with their children to help them understand what they're seeing.
- For children age 2 to 5 years, limit screen use to 1 hour per day of high-quality programs. Parents should co-view media with children to help them understand what they are seeing and apply it to the world around them.
- For children age 6 and older, place consistent limits on the time spent using media, and the types of media, and make sure media does not take the place of adequate sleep, physical activity and other behaviours essential to health.
- Designate media-free times together, such as dinner or driving, as well as media-free locations at home, such as bedrooms.

The Canadian Paediatric Society recommendations (2017) are similar; essentially recommending no screen time for children <2 years, a 1-hour daily limit for 2-5-year olds and avoiding screens for an hour before bed.[24]

However, these and similar guidelines have been criticised as not being fully evidence-based and being focused on risks, rather than recognising the potential benefits of digital screen use in education and industry.[25,26] Given the controversy, it is essential we stick to the evidence. No authoritative body has yet issued guidance on screen time and media use for children in the UK. This guide aims to remedy that.

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To accompany this guide, we have also produced a supplementary fact sheet for parents to support them in navigating their children's screen use. For more information and to download a copy visit https://www.rcpch.ac.uk/screen-time

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