

What About The Children?

Patrons: Sir Michael Morpurgo, Rebecca Abrams, Sir John Timpson



'Raising awareness of the never-changing emotional needs of children in our ever-changing society'

Aric Sigman: Screen Exposure, Screen Location and Infancy

The question of how much 'screen time' is appropriate for children of different ages is often seen as a controversial one. Parents, teachers and perhaps above all the tech industry often argue that the children 'need' to start using digital tools as early as possible, so they will be able to enter the digital world that they will inhabit as adults. Aric Sigman, a psychologist, author and expert on early childhood, disagrees. His talk at the 2019 What About The Children? conference was an impassioned plea for small children's access to screens to be very strictly limited, with no screen time at all recommended for infants and toddlers. He based it very largely on authoritative studies published in the peer-reviewed literature.

Throughout his talk, Sigman frequently compared screens to books. Age-appropriate books can be as engrossing for children as screens and can take their attention away from the 'real world' in what seems like a similar way, but there the similarity ends. No expert has ever said that reading or looking at pictures in books is anything but extremely positive for child development. All forms of displacement and all forms of cognitive activity are by no means equal.

However, despite the controversy, most children in rich countries are more dependent on screen-based entertainment today than ever before. Toy companies are marketing apps that are meant for the very youngest children. Fisher Price has produced an 'apptivity seat' with an iPad holder placed immediately above a baby's face, and there is even – bizarrely – an iPotty. Many three-year-old children now have screens in their bedrooms, and by the time an average British child reaches the age of eight he or she will have spent a year using digital media. All the published evidence suggests that young children who spend the longest time looking at screens are more likely to become technology-dependent teenagers than those whose screen time is restricted. We are raising a generation whose interaction with the world is different from any previous one, and we know little yet of what difference it will make in the long term.

The effect of screens on children is, of course, dependent on many factors, including the length of exposure, the time of day, the type of content and, most importantly for delegates at WATCH? conferences, the age of the child. Sigman quoted a number of studies in the paediatric literature that suggest that excessive - or, indeed any - screen use very early in life can increase the risk of various problems later on. One study in *Nature Paediatric Medicine* showed that children who had screens in their bedrooms at the age of four were more likely than others to suffer from depression and other emotional problems by the time they were 12. Another, in *Preventative Medicine*, suggested that screen time in two-year-olds can predict how socially engaged children are at 13.

One of the main benefits suggested by advocates of screen use in childhood is that the programs viewed, and the apps interacted with, are educational. That can certainly be the case for older children and teenagers, but in early childhood such evidence as there is points mainly in the other direction. In 2016 the American Academy of Paediatrics published a study of digital toys for young children that parents and caregivers honestly perceived as 'educational' but which found no such benefit. In fact, children responded less well and used fewer adult words when playing with them than when playing with conventional toys or looking at books.

The World Health Organisation frequently employs the 'precautionary principle', preferring not to recommend an intervention unless it has been definitely proved to do no harm, even if some studies suggest a positive effect. Many countries are, in fact, erring on the side of caution when it comes to small children and digital technology, and publishing guidelines that recommend no screen time at all for babies and toddlers under two; in France, the cut-off age is three. The French guidelines even suggest that toddlers are kept out of any room in which a TV is on. In the UK the NHS publishes guidelines but these are both less strict and less visible: they merely recommend that screen time is

'limited' for all children, except older ones doing homework, and that screens should be kept out of children's bedrooms.

One problem with screens that is often cited is that children engaged in digital activities are, self-evidently, doing very little physical exercise. Excessive TV viewing has certainly been linked to inactivity and the health problems it brings: it has been estimated that the incidence of type 2 diabetes in England could be reduced by about a quarter by limiting TV use. Furthermore, to quote the *European Journal of Epidemiology*, 'all forms of being lazy are not equal', and inactive children who favour reading or playing quiet traditional games are found to be at significantly less risk of health problems than those who are glued to their iPad or the TV.

Attention deficit hyperactivity disorder (ADHD) is a growing concern in many countries. Predisposition to this disorder is largely genetic, but environmental factors, mediated through 'epigenetic' changes to the genes and thus to the way their code is read, can also be important. Excessive screen use by young children has been linked to the development of ADHD in later childhood through this mechanism.

The obsessive way in which some children play computer games looks like, and can be thought of as, an addiction. Addictive behaviour – gambling or sex as much as tobacco or alcohol – is known to give affected individuals a 'rush' of the so-called 'pleasure hormone', dopamine, and this has also been observed when some children play computer games. Some evidence has been published suggesting that neurological changes not unlike those in adult addicts are found such children when they are playing them. Screen use in younger children has also been associated with sleep deprivation, which, in turn, has been linked to depression and to an increased risk of ADHD.

The exact mechanisms through which screen use – but not activities that may seem superficially similar, like reading – affect our children's brains are not yet fully understood. However, screen use has been found to increase the concentrations of some chemicals in the brain, including the 'stress hormone' cortisol and a protein called interleukin-6 that promotes inflammation. Encouragingly, however, depriving children and teenagers of screens for even a short time can reverse these effects. Several recent studies have suggested that pre-teens' and teenagers' cortisol levels drop, and their ability to read emotions improves, if they are voluntarily deprived of their phones for as little as a few days.

Sigman concluded by referring back to the precautionary principle and to the fundamental principle of medical ethics, 'first do no harm'. Unless we can prove that screen use is harmless to small children, which evidence so far does not suggest, it should be discouraged as strongly as possible. Ultimately, there will be a time and a place in all children's lives for them to begin to explore the digital world that they will inhabit, but infancy is not that time, and, throughout childhood, a child's bedroom is not that place.

Summary written by Dr Clare Sansom