

Tots, Toddlers & TV *The potential harm.....*

TV watching has been a common activity for several decades, however the more recent increase in viewing by very young children has been described as “a large uncontrolled experiment.”¹



Viewing Habits

Many young children are watching TV well before the end of their first year of life. The median age at which children begin watching television is 9 months,¹ with some as young as 3 months.²

The issue of a child's age is an important one, as what may be harmless or beneficial at one stage of development, may be detrimental at another. For example, while Sesame Street, has shown some benefits for 3-5 year olds, this is not the case for younger children.³

The average amount of time spent watching television for children under 3 years ranges from 1 to 3 hours per day. When one considers how much time young children are sleeping, this may equate to around 30% of their waking hours. Many young children are spending more time watching television than any other waking activity.⁴

Early viewing habits tend to persist and predict later viewing habits. Children watching greater amounts of TV before 3 years were more likely to protest about the television being turned off when they reached school age.¹

Recent Research

Advances in neuroscience have increased awareness of the remarkable plasticity of a child's brain during the early years of life and the associated impact of the child's environment on their development. As the figures above illustrate, TV has a significant presence in the lives of many young children.

Research emerging over the last few years suggests that screen time, particularly for children under 2 years, may have detrimental effects. These effects have been found in a number of areas, including parent-child interactions, play, language development, attentional difficulties, and anti-social behaviour.

Effects on Parent-Child Interactions

A study of infants and their parents and found that when a video was on, parents spoke less frequently to their children, and played with them for shorter periods.² Given the necessity for infants to have frequent, positive interactions with their parents to promote healthy development it is concerning that screen media would interfere with this.

Children need human interaction in order to learn, with a parent who is attuned to their ability level and responsive to their communicative attempts. It is in this context that they will begin to learn the “give and take” of language.⁵

Effects on Play

Television impacts children's play, with one study finding that the length of time 6-month olds looked at toys doubled when the video was turned off.² Unfortunately, children do not necessarily need to be focussed on watching television to be affected by it. Background TV significantly reduced the length of episodes of toy play, the amount of focussed attention during play, and the overall amount of play, even when children appear to be paying little attention to the TV.⁶ Play is vital to child development and the potential cumulative impact for children exposed to many hours of television is of concern.⁶



Effects on Language

Children who began watching television before 12 months of age, and who watched more than 2 hours each day, had a six times greater likelihood of language delay. This increased to an eight-fold risk for the children who watched television without a parent or caregiver.⁴

The effect of infant media on the learning of new words by 12–18 month olds was studied. Researchers found that despite extensive exposure to an infant DVD over a month they did not learn anymore words than those who had never seen the DVD.⁷ Interestingly parent perception of how much their child had learned was not related to their child's actual performance. Rather it seemed that the more a parent liked the DVD, the more they tended to believe that their child had learnt from it.

Effects on Attention

Exposure to TV at 1 and 3 years has been associated with attentional problems at 7 years.⁸ A New Zealand study found that the hours of viewing between the ages of 5 and 11 years were associated with attentional problems at 13 and 15 years.⁹ This suggests that the effects of early television viewing may be long lasting.

TV Violence

Watching violent programmes at 2-4 years of age significantly increased the risk of antisocial behaviour for boys at 7-9 years.¹⁰ This is particularly important because of links between early childhood aggressive behaviour and violence in adolescence. Yet, violent content is frequently found in children's viewing, as well as in advertisements screening during children's TV viewing.⁵

Theories on TV's Impact

There are a number of pathways through which TV exposure may impact a child's brain development. Firstly, it may be features of the medium itself, such as music, bright lights, and the fast pace of the program that over-stimulate a young child's brain.¹ TV moves at a much more rapid pace than real life with visual and auditory changes occurring approximately every 6 seconds.⁶ These frequent changes prompt the child's orienting reflex, compelling them to watch the screen and making it difficult to look away.² For children who have become accustomed to the pace of TV, this can make real life seem less interesting by comparison.

References

1. Christakis, D. A., & Zimmerman, F. J. (2009). Young children and media: Limitations of current knowledge and future directions for research. *American Behavioral Scientist*, 52(8), 1177-1185.
2. Courage, M. L., Murphy, A. N., Goulding, S., & Setliff, A. E. (2010). When the television is on: The impact of infant-directed video on 6- and 18-month-olds' attention during toy play and on parent-infant interaction. *Infant Behavior and Development*, 33, 176-188.
3. Christakis, D. A. (2008). The effects of infant media usage: What do we know and what should we learn? *Acta Paediatrica*, 98, 8-16.
4. Chonchaiya, W., & Pruksananonda, C. (2008). Television viewing associates with delayed language development. *Acta Paediatrica*, 97, 977-982.
5. Zimmerman, F. J., & Christakis, D. A. (2007). Associations between content types of early media exposure and subsequent attentional problems. *Pediatrics*, 120(5), 986-992.
6. Schmidt, M. E., Pempek, T. A., Kirkorian, H. L., Lund, A. F., & Anderson, D. R. (2008). The effects of background television on the toy play behavior of very young children. *Child Development*, 79(4), 1137-1151.
7. DeLoache, J. S., Chiong, C., Sherman, K., Islam, N., Vanderborght, M., Troseth, G. L., . . . O'Doherty, K. (2010). Do babies learn from baby media? *Psychological Science*, 21(11), 1570-1574.
8. Christakis, D. A., Zimmerman, F. J., DiGiuseppe, D. L., & McCarty, C. A. (2004). Early television exposure and subsequent attentional problems in children. *Pediatrics*, 113(4), 708-713.
9. Landhuis, C. E., Poulton, R., Welch, D., & Hancox, R. J. (2007). Does childhood television viewing lead to attention problems in adolescence? Results from a prospective longitudinal study *Pediatrics*, 120, 532-537.
10. Christakis, D. A., & Zimmerman, F. J. (2007). Violent television viewing during preschool is associated with antisocial behavior during school age. *Pediatrics*, 120, 993-999.
11. Okuma, K., & Tanimura, M. (2009). A preliminary study on the relationship between characteristics of TV content and delayed speech development in young children. *Infant Behavior and Development* 32, 312-321.

Secondly, the theory of displacement proposes that time spent watching TV results in less time for more developmentally enhancing activities, such as interacting with parents, reading, games, and pretend play.^{9, 5}

In terms of TV's effect on children's ability to pay attention, one mechanism may be a learned response, in that, as the television programme continues regardless of the child's attention to it, they may actually be learning that they don't need to pay attention. This can be problematic when generalised to other situations, such as attending to school work.⁹

Advice from the American Academy of Pediatrics

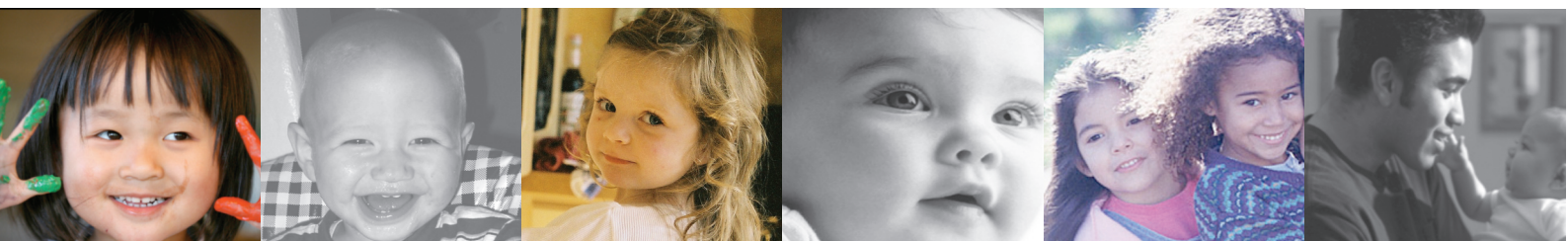
The American Academy of Pediatrics strongly discourages television viewing for children less than two years of age,¹¹ a recommendation further endorsed by Brainwave Trust Aotearoa.

The Real Thing

Brainwave Trustee and neonatal paediatrician Dr. Simon Rowley says that even the best documentary in the world on grass for example, isn't a patch on what a small child will learn by sitting on the back lawn, feeling the unfamiliar texture, smelling the grass, seeing the colour, listening to the sounds, especially if an adult is there to support the child's exploration.

Indeed, it is these experiences that are the essential building blocks of healthy brain development, not TV.

A more extensive article synthesis of this material is available on the Brainwave website www.brainwave.org.nz.



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2011