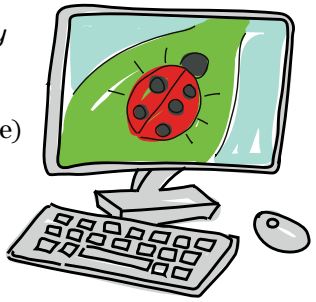
Introducing Theme 4: Power Off and Play!

During Theme 4, Healthy Kids Community Challenge communities will be working to encourage children and families to build a balanced day that is not filled with screen time.

'Screen time' is the time spent using a screen-based device, such as a smartphone, tablet, computer or television[1]. Not all screen time is unhealthy. Screens can offer an important way to learn and communicate in school and at work. They can also be used in an active way – like playing tennis, soccer, baseball or other sports games on a device.

Screens can also be used for recreational purposes such as watching movies and playing games. Kids may be sitting, reclining or lying down the whole time they are using their device. This is called sedentary screen time and many children are getting too much of it. This could interfere with and take time away from healthy activities in their day. It could even affect their health.



The focus of **Power Off and Play!** is on minimizing children's *recreational* and *sedentary* screen time. This theme helps children and families build a balanced day that includes:

- Staying within recommended screen time limits
- Putting screens away during important times of day (sleep time and meal and snack time)
- Replacing some screen time with other activities (physical activity, social interaction, and fun and educational activities)

It's all about powering off devices and playing more.

Why focus on screen time

Screen time affects many aspects of children's health. While research on screen time is still emerging[a], it suggests that screen time can harm their development and physical and psychosocial health.

- **Early development:** Higher screen time is linked to poor cognitive development, language development and attention skills in the early years[2].
- **Physical health:** Higher screen time is linked to lower levels of physical fitness, unhealthy weights and higher risks of cardio-metabolic disease (e.g. blood pressure, cholesterol, insulin)[3,4].
- **Psychosocial health:** Higher screen time is linked to behavioural issues, lower self-esteem and lower psychological well-being[5,6,7].

As you will read in this fact sheet, screen time is also a concern because it can interfere with and take time away from healthy activities in a child's day.

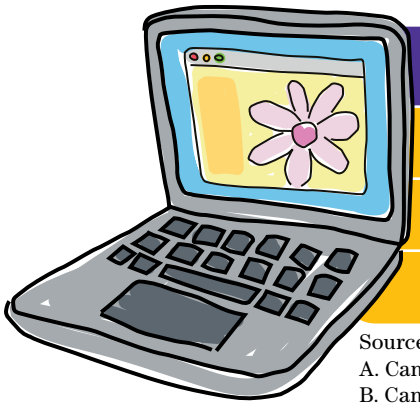
[a]Findings are based on very low- to moderate-quality evidence.

Three ways to address screen time

While research on screen time is still emerging, it supports minimizing screen time as part of a balanced day in three key ways.

1. Stay within recommended screen time limits

Health and health promotion experts in Canada recommend limiting children's exposure to screens. This can reduce the associated health risks and promote positive health outcomes.



Age	Recommended hours of screen time
Under 2 years	None[A,C]
2-4 years	Less than 1 hour a day[A]
5-17 years	No more than 2 hours of recreational screen time a day[A,B]

Sources:
A. Canadian Society for Exercise Physiology's Canadian Sedentary Behaviour Guidelines[8]
B. Canadian Society for Exercise Physiology's 24-Hour Movement Guidelines for Children and Youth[9,10]
C. Canadian Pediatric Society's Position Statement on Screen Time and Young Children[11]

Less than a quarter of children across Canada meet the national screen time guidelines. The 2016 ParticipACTION Report Card gave Canada a failing grade for sedentary behaviour. This is now an important area of focus across the country[12]. In Ontario, parents report that girls average over 2.5 hours and boys average over 3 hours of screen time each day[13]. In fact, the percentage of children in Ontario who meet the guidelines for screen time is low[14]:

Age	Percentage in Ontario who meet Canadian screen time guidelines[15]
1-4 years	15.3%
5-8 years	54.5%
9-12 years	37.7%
13-17 years	29.7%

2. Put screens away during important times of day

Screen time can interfere with important daily routines, making it difficult for children to stay healthy. In particular, it's vital to power off screens for sleep time and meal time.

Sleep Time
The *Canadian Pediatric Society* recommends young children avoid screens for at least one hour before bed time[16]. Some researchers recommend removing all screens from children's bedrooms[17].

Sound, uninterrupted sleep is important for children's health. Studies show that longer sleep duration is clearly linked to a number of benefits in children from age 5-17:

- Healthy weight
- Better emotional control
- Greater academic achievement
- Improved quality of life/well-being

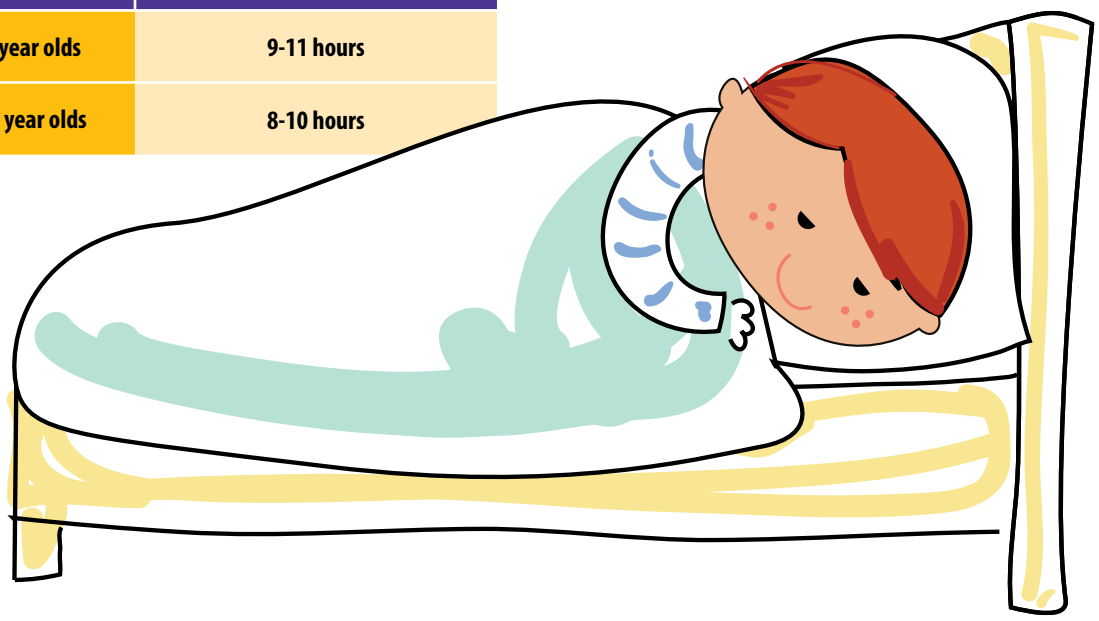
Shorter sleep duration is linked to negative physical and mental health outcomes[18]. For this reason, the *Canadian Society for Exercise Physiology's 24-Hour Movement Guidelines for Children and Youth* recommends the following sleep guidelines, along with consistent bed and wake-up times[19,20]:

Age	Hours of uninterrupted sleep per night
5-13 year olds	9-11 hours
14-17 year olds	8-10 hours

Did you know?

In Ontario, almost 90% of parents say they encourage their children to limit time spent looking at screens in their bedroom. More than 75% say they enforce rules about having screens in their child's bedroom[26].

Having screens in the bedroom appears to be a popular trend. More than one-third of children up to age 8 and almost half of 8-12 year olds in the U.S. have a TV in their bedroom[21,22]. A growing body of evidence shows that having screens, particularly TVs, in children's bedrooms is linked with poor sleeping habits and poor sleep quality[23,24]. This may be due to the bright lights and physiological/mental stimulation from screens, which can make it hard for children to fall asleep[25].



Meal and snack time
Health experts such as the *Canadian Pediatric Society* recommend screen-free family meals[27].

Where and what children eat and drink are important to their health.

Screen time can prompt children to eat unhealthy foods. On TV and the internet, children see lots of ads for food and beverages that are high in fat, sodium or sugar. These include cakes, cookies, ice cream and cereal[28]. Research[b] shows that during or shortly after being exposed to ads for unhealthy foods, children eat more and prefer less healthy food and beverages[29].

In fact, children who routinely eat meals while watching TV eat fewer vegetables and fruit, and more pizzas, snack foods and sodas[30,31,32]. Research further shows that screen time is linked to mindless overeating **even when there are no food ads**[33,34].

Eating meals away from screens and eating meals as a family, on the other hand, contribute to healthy eating in children. They eat more vegetables and fruit and drink fewer sugar-sweetened beverages[35,36,37].

A diet rich in vegetables and fruit may prevent certain types of cancer[38] and heart disease[39]. This kind of diet is also linked to healthy weights and a lower risk of obesity[40,41]. Canada's Food Guide recommends children aged 2-13 years eat 4-6 servings of vegetables and fruit each day[42].

Did you know?

In Ontario, almost 85% of parents report they eat meals as a family away from the TV. Those who do are over 65% more likely to report their child is meeting guidelines for eating fruit and vegetables[43].

3. Replace some screen time with other activities

When children spend time in front of screens, they have less time free for other healthy activities. A balanced day should be filled with learning, physical activity, social interaction and fun activities.

Physical activity
Health experts such as the *Canadian Pediatric Society* recommend we give kids ways to replace screen time with active outdoor play[44,45].

Physical activity has many health benefits. Research[c] suggests that it promotes physical, psychological/social and cognitive health in children aged 5-17 years[46]. The *Canadian Society for Exercise Physiology's 24-Hour Movement Guidelines for Children and Youth* in this age group recommends a mix of physical activities.

This includes:
- Moderate-to-vigorous physical activity adding up to at least 60 minutes a day
- Activities to strengthen muscle and bone at least 3 days a week
- A mix of structured and unstructured light physical activities for several hours each day[47,48]

Some forms of screen time, such as video games involving sports or dance games, give kids a chance to be physically active[49,50]. But screen time can take time away from physical activity. Screen time is often sedentary. It uses low energy and is done while sitting, reclining or lying down[51,52]. Research shows that time on screen activities (e.g. TV, computer, video game console) is linked to lower levels of moderate-to-vigorous physical activity[53].

[b,c] Findings are based on very low- to moderate-quality evidence.

Social interaction
Health experts such as the *Canadian Pediatric Society* recommend giving face-to-face interactions and family time priority over screen time[54].

Media and social media use can have a range of social benefits for children. It enables communication across distances. It promotes community participation and engagement. It connects kids to culture and enhances their access to valuable support networks. It also fosters connectedness[55]. This may be especially important for children facing social isolation.

Real-life social interactions are also good for children. Parent-child interactions are especially important for children's health because they help children:

- Build emotional connections
- Develop language
- Build mental and social skills
- Regulate their emotions[56]

Screen time, however, may take time away from important real-life social interactions. This can greatly affect a child's social well-being. In a U.S. survey, more than a quarter of parents indicated that media (e.g. video games, smartphones, tablets) contributes to them spending less time together as a family[57]. A large Canadian study found that increased TV time in early childhood is linked to experiencing victimization, social withdrawal and antisocial behaviour towards fellow students later on in middle school[58]. With social media in particular, there may also be concerns about cyber-bullying. There may also be negative impacts on relationships and on overall life-satisfaction.

Limiting the amount and content of children's screen use, including social media use, may improve kids' social interactions. One study found that substituting high quality pro-social and educational programming for violent programming can positively affect children's social competence and behaviour[59]. Another study found that after spending five days at an outdoor camp where screens were **not** allowed, children improve their ability to recognize nonverbal emotion cues[60].

Fun and educational activities
Health experts such as the *Canadian Pediatric Society* recommend choosing healthy alternatives to screen time such as reading and play[61].

In a school setting, screens can be used for learning and can enhance the student experience. However, too much recreational screen time may mean that children lose out on opportunities to learn from other activities like playing and reading[62]. It's important that parts of the school day, like recess and before and after school care, are filled with screen-free activities.

Play supports a child's development because it contributes to cognitive, physical, social and emotional well-being[63]. Play helps children develop creativity and imagination. It builds confidence and resiliency. Children learn how to work with others and gain independence[64].

However, passive entertainment such as watching TV or playing computer/video games may be taking time away from children's free and active play[65]. Studies show that TV viewing for babies disrupts their play[66]. One study found that even when a TV is on in the background, it reduces how long young children play and reduces their focus during play[67].

In Canada, half of children aged 6-8 years read books for fun between 5-7 days a week. As they get older, reading for fun starts to be replaced by screen activities such as going online for fun, watching videos, playing games or using apps on electronic devices, and using social media sites and apps[68]. While it is now possible to read on screens rather than in print, children are not likely to do so. They tend to use multi-purpose mobile devices, such as tablets, to play games, watch videos, or use apps, rather than to read e-books[69].

There is also evidence that the home environment influences children's reading habits. One study found that children with a TV in their bedroom are less likely to read[70]. A Canadian survey found that children who read often tend to have more books in the home than those who read less[71].

How communities can address children's screen time

There are many reasons why children engage in recreational and sedentary screen time. So, strategies need to be comprehensive. It works best to use a range of approaches across different settings. Studies suggest interventions to reduce screen time are more likely to succeed if they:

- Are part of a comprehensive approach (e.g. educational, behavioural, environmental, social support strategies, etc.)[72,73,74]. Combining actions that address a broad range of influencing factors are more likely to produce positive results.
- Invite parents to be role models[75,76,77,78].
- Give children opportunities to choose how to replace their screen time[79].

To learn more about the activities in our community or to get involved, contact your Healthy Kids Community Challenge project manager:

Name .....

Email .....

Telephone .....

Website .....

Learn more at ontario.ca/healthykids

References:

1 Tremblay, M., Aubert, S., Barnes, J.D., Saunders, T.J., Carson, V., Latimer-Cheung, A.E. (2017). Sedentary behavior research network (SBRN) – Terminology consensus project process and outcome. International Journal of Behavioural Nutrition and Physical Activity, 14: 75.

2 LeBlanc, A.G., Spence, J.C., Carson, V., Gorber, A.C., Dillman, C., Janssen, I., et al. (2012). Systematic review of sedentary behaviour and health indicators in the early years. Appl Physiol Nutr Metab, 37(4):753-72. http://www.nrcresearchpress.com/doi/full/10.1139/h2012-063#.WVULf_nysdU

3 LeBlanc, A.G., Spence, J.C., Carson, V., Gorber, A.C., Dillman, C., Janssen, I., et al. (2012). Systematic review of sedentary behaviour and health indicators in the early years. Appl Physiol Nutr Metab, 37(4):753-72. http://www.nrcresearchpress.com/doi/full/10.1139/h2012-063#.WVULf_nysdU

4 Carson, V., Hunter, S., Kuzik, N., Gray, C.E., Poitras, V.J., Chaput, J.P., et al. (2016). Systematic review of sedentary behaviour and health indicators in school-aged children and youth: An update. Appl Physiol Nutr Metab, 41:S24-S265. dx.doi.org/10.1139/apnm-2015-0630

5 LeBlanc, A.G., Spence, J.C., Carson, V., Gorber, A.C., Dillman, C., Janssen, I., et al. (2012). Systematic review of sedentary behaviour and health indicators in the early years. Appl Physiol Nutr Metab, 37(4):753-72. http://www.nrcresearchpress.com/doi/full/10.1139/h2012-063#.WVULf_nysdU

6 Carson, V., Hunter, S., Kuzik, N., Gray, C.E., Poitras, V.J., Chaput, J.P., et al. (2016). Systematic review of sedentary behaviour and health indicators in school-aged children and youth: An update. Appl Physiol Nutr Metab, 41:S24-S265. dx.doi.org/10.1139/apnm-2015-0630

7 Suchert, V., Hanewinkel, R., & Isensee, B. (2015). Sedentary behavior and indicators of mental health in school-aged children and adolescents: A systematic review. Prev Med, 76: 48-57.

8 Canadian Society for Exercise Physiology. (2011). Canadian Sedentary Behaviour Guidelines. http://www.csep.ca/view.asp?ccid=508

9 Tremblay, M.A., Carson, V., Chaput, J.P., Connor Gorber, S., Dinh, T., Duggan, M. et al. (2016). Canadian 24-hour movement guidelines for children and youth: An integration of physical activity, sedentary behaviour, and sleep. Appl Phsyiol Nutr Metab, 41 S311-S327. dx.doi.org/10.1139/apnm-2016-0151

10 Canadian Society for Exercise Physiology. (2016). 24-Hour Movement Guidelines. http://www.csep.ca/en/guidelines/canadian-24-hour-movement-guidelines

11 Canadian Pediatric Society. (2017). Screen time and young children: Promoting health and development in a digital world. http://www.cps.ca/en/documents/position/screen-time-and-young-children

12 ParticipACTION. (2016). Are Canadian kids too tired to move? The 2016 ParticipACTION Report Card on Physical Activity for Children and Youth. Toronto: ParticipACTION. https://www.participaction.com/en-ca/thought-leadership/report-card/2016

13 Pyper, E., Harrington, D.W., Manson, H.M. (2016). The impact of different types of parental support behaviours on child physical activity, healthy eating and screen time: A cross-sectional study. BMC Public Health, 16: 568. https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-016-3245-0

14 Pyper, E., Harrington, D.W., Manson, H.M. (2016). The impact of different types of parental support behaviours on child physical activity, healthy eating and screen time: A cross-sectional study. BMC Public Health, 16: 568. https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-016-3245-0

15 Pyper, E., Harrington, D.W., Manson, H.M. (2016). The impact of different types of parental support behaviours on child physical activity, healthy eating and screen time: A cross-sectional study. BMC Public Health, 16: 568. https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-016-3245-0

16 Canadian Pediatric Society. (2017). Screen time and young children: Promoting health and development in a digital world. http://www.cps.ca/en/documents/position/screen-time-and-young-children

17 Chaput, J.P., Leduc, G., Boyer, C., Belanger, P., LeBlanc, A.G., Borghese, M.M., et al. (2014). Electronic screens in children's bedrooms and adiposity, physical activity and sleep: Do the number and type of electronic devices matter? Canadian Journal of Public Health, 105(4): e273-279.

18 Chaput, J.P., Gray, C.E., Poitras, V.J., Carson, V., Gruber, R., Olds, T., et al. (2016). Systematic review of the relationships between sleep duration and health indicators in school-aged children and youth. Appl Physiol Nutr Metab, 41(6 Suppl 3): S266-82. https://www.ncbi.nlm.nih.gov/pubmed/27306433

19 Canadian Society for Exercise Physiology. (2016). 24-Hour Movement Guidelines. http://www.csep.ca/en/guidelines/canadian-24-hour-movement-guidelines

20 Tremblay, M.A., Carson, V., Chaput, J.P., Connor Gorber, S., Dinh, T., Duggan, M. et al. (2016). Canadian 24-hour movement guidelines for children and youth: An integration of physical activity, sedentary behaviour, and sleep. Appl Phsyiol Nutr Metab, 41 S311-S327. dx.doi.org/10.1139/apnm-2016-0151

21 Common Sense Media. (2013). Zero to eight: Children's media use in America 2013. A Common Sense Media research study. https://www.commonsensemedia.org/research/zero-to-eight-childrens-media-use-in-america-2013

22 Common Sense Media. (2013). The Common Sense census: Media use by tweens and teens. https://www.commonsensemedia.org/research/the-common-sense-census-media-use-by-tweens-and-teens

23 Chaput, J.P., Leduc, G., Boyer, C., Belanger, P., LeBlanc, A.G., Borghese, M.M., et al. (2014). Electronic screens in children's bedrooms and adiposity, physical activity and sleep: Do the number and type of electronic devices matter? Canadian Journal of Public Health, 105(4): e273-279.

24 Chaput, J.P. (2016). Is sleep deprivation a contributor to obesity in children? Eat Weight Disord, 21: 5-11.

25 Chaput, J.P. (2016). Is sleep deprivation a contributor to obesity in children? Eat Weight Disord, 21: 5-11.

26 Pyper, E., Harrington, D.W., Manson, H.M. (2017). Do parents' support behaviours predict whether or not their children get sufficient sleep? A cross-sectional study. BMC Public Health, 17: 432. https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-017-4334-4

27 Canadian Pediatric Society. (2017). Screen time and young children: Promoting health and development in a digital world. http://www.cps.ca/en/documents/position/screen-time-and-young-children

28 Potvin Kent, M. interview as cited in: Heart and Stroke Foundation of Canada. (2017). The Kids are not Alright: 2017 Report on the Health of Canadians. http://www.heartandstroke.ca/-/media/pdf-files/canada/2017-heart-month/heartandstroke-reportonhealth2017.ashx

29 Sadeghirad, B., Duhaney, T., Motaghipisheh, S., Campbell, N.R.C, Johnston, B.C. (2016). Influence of unhealthy food and beverage marketing on children's dietary intake and preference: A systematic review and meta-analysis of randomized trials.

30 Coon, K.A., Goldberg, J., Rogers, B.L. & Tucker, K.L. (2001). Relationship between use of television during meals and children's food consumption patterns. Pediatrics, 107(1). http://pediatrics.aappublications.org/content/107/1/e7

31 Liang, T., Kuhle, S., & Veugelers, P.J. (2009). Nutrition and body weights of Canadian children watching television and eating while watching television. Public Health Nutr, 12(12): 2457-63.

32 Avery, A., Anderson, C., & McCullough, F. (2017). Associations between children's diet quality and watching television during meal or snack consumption: A systematic review. Maternal and Child Nutrition. http://doi.org/10.1111/mcn.12428

33 Marsh, S., Ni Mhurchi, C. & Maddison, R. (2013). The non-advertising effects of screen-based sedentary activities on acute eating behaviours in children, adolescents, and young adults. A systematic review. Appetite, 71: 259-73.

34 de Jong, E., Visscher, T.L., HiraSing, R.A., Heymans, M.W., Seidell, J.C., Renders, C.M. (2013). Association between TV viewing, computer use and overweight, determinants and competing activities of screen time in 4- to 13-year-old children. https://www.ncbi.nlm.nih.gov/pubmed/22158265

35 Avery, A., Anderson, C., & McCullough, F. (2017). Associations between children's diet quality and watching television during meal or snack consumption: A systematic review. Maternal and Child Nutrition. http://doi.org/10.1111/mcn.12428

36 Feldman, S., Eisenberg, M. E., Neumark-Sztainer, D., & Story, M. (2007). Associations between Watching TV during Family Meals and Dietary Intake Among Adolescents. Journal of Nutrition Education and Behavior, 39(5), 257–263. https://doi.org/10.1016/j.jneb.2007.04.181

37 Gillman, M.W., Rifas-Shiman, S.L., Frazier, A.L., Rockett, H.R.H., Camargo, C.A., Field, A.E., et al. (2000). Family dinner and diet quality among older children and adolescents. Arch Fam Med, 9(3): 235-40. http://www.ncbi.nlm.nih.gov/pubmed/10728109

38 World Cancer Research Fund and American Institute for Cancer Research. (2007). Food, nutrition, physical activity, and the prevention of cancer: a global perspective. Washington, DC: AIRC.

39 Hung, H.C., Joshipura, K.J., Jiang, R., et al. (2004). Fruit and vegetable intake and risk of major chronic disease. J Natl Cancer Inst, 96(21): 1577-84.

40 Hall, J.N., Moore, S., Harper, S.B., Lynch, J.W. (2009). Global variability in fruit and vegetable consumption. Am J Prev Med, 36(5): 402-409, e5

41 Shields, M. (2005). Measured obesity: overweight Canadian children and adolescents. Nutrition: findings from the Canadian Community Health Survey. Ottawa, ON: Statistics Canada.

42 Health Canada. Canada's Food Guide. https://www.canada.ca/en/health-canada/services/food-nutrition/canada-food-guide/food-guide-basics/much-food-you-need-every-day.html

43 Pyper, E., Harrington, D.W., Manson, H.M. (2016). The impact of different types of parental support behaviours on child physical activity, healthy eating and screen time: A cross-sectional study. BMC Public Health, 16: 568. https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-016-3245-0

44 Canadian Pediatric Society. (2017). Screen time and young children: Promoting health and development in a digital world. http://www.cps.ca/en/documents/position/screen-time-and-young-children

45 Tremblay, M.S., Gray, C., Babcock, S., Barnes, J., Bradstreet, C.C., et al. (2015). Position statement on active outdoor play. Int J Environ Res Public Health, 12(6): 6475-505. https://www.ncbi.nlm.nih.gov/pubmed/26062040

46 Poitras, V.J., Gray, C.E., Borghese, M.M., Carson, V., Chaput, J.P., Janssen, I., et al. (2016). Systematic review of the relationships between objectively-measured physical activity and health indicators in school-aged children and youth. Appl Physio Nutr Metab, 41(6 Suppl 3): S197-239. http://doi.org/10.1139/apnm-2015-0663

47 Canadian Society for Exercise Physiology. (2016). 24-Hour Movement Guidelines. http://www.csep.ca/en/guidelines/canadian-24-hour-movement-guidelines

48 Tremblay, M.A., Carson, V., Chaput, J.P., Connor Gorber, S., Dinh, T., Duggan, M. et al. (2016). Canadian 24-hour movement guidelines for children and youth: An integration of physical activity, sedentary behaviour, and sleep. Appl Physiol Nutr Metab, 41 S311-S327. http://www.nrcresearchpress.com/doi/10.1139/apnm-2016-0151#.Wbk8u4TyuUk

49 Schmidt, M. E., Haines, J., O'Brien, A., McDonald, J., Price, S., Sherry, B. and Taveras, E. M. (2012), Systematic Review of Effective Strategies for Reducing Screen Time Among Young Children. Obesity, 20: 1338–1354. http://doi.org/10.1038/oby.2011.348

50 Ni Mhurchu, C., Maddison, R., Jiang, Y., Jull, A., Prapavessis, H., & Rogers, A. (2008). Couch potatoes to jumping beans: A pilot study of the effect of active video games on physical activity in children. International journal of Behavioral Nutrition and Physical Activity, 5: 8. https://ijbnpa.biomedcentral.com/articles/10.1186/1479-5868-5-8

51 Chaput, J.P., Saunders, T.J, Mathieu, M.E., Henderson, M., Tremblay, M.S., O'Loughlin, J. et al. (2013). Combined associations between moderate to vigorous physical activity and sedentary behaviour with cardio metabolic risk factors in children. Applied Physiology, Nutrition, and Metabolism, 38(5): 477-483. https://doi.org/10.1139/apnm-2012-0382

52 Tremblay, M., Aubert, S., Barnes, J.D., Saunders, T.J., Carson, V., Latimer-Cheung, A.E. (2017). Sedentary behavior research network (SBRN) – Terminology consensus project process and outcome. International Journal of Behavioural Nutrition and Physical Activity, 14: 75.

53 Serrano-Sanchez, J.A., Marti-Truijillo, S., Lera-Navarro, A., Dorado, Garcia, C., Gonzalez-Henriquez, J.J. & Sanchis-Moysi, J. (2011). Associations between screen time and physical activity among Spanish adolescents. PLoS ONE 6(9): e24453. https://doi.org/10.1371/journal.pone.0024453

54 Canadian Pediatric Society. (2017). Screen time and young children: Promoting health and development in a digital world. http://www.cps.ca/en/documents/position/screen-time-and-young-children

55 Chassiakos, Y., Radesky, J., Christakis, D., Moreno, M., Cross, C. et al. (2016). Children and Adolescents and Digital Media. American Academy of Pediatrics, 138 (5) http://pediatrics.aappublications.org/content/early/2016/10/19/peds.2016-2593

56 Chassiakos, Y., Radesky, J., Christakis, D., Moreno, M., Cross, C. et al. (2016). Children and Adolescents and Digital Media. American Academy of Pediatrics, 138 (5) http://pediatrics.aappublications.org/content/early/2016/10/19/peds.2016-2593

57 Common Sense Media. (2013). Zero to eight: Children's media use in America 2013. A Common Sense Media research study. https://www.commonsensemedia.org/research/zero-to-eight-childrens-media-use-in-america-2013

58 Pagani, L. et al. (2016). Prospective associations between televiewing at toddlerhood and later self-reported social impairment at middle school in a Canadian longitudinal cohort born in 1997/1998. Psychological Medicine. 46:16 https://www.ncbi.nlm.nih.gov/pubmed/27618949

59 Christakis, D. et al. (2013). Modifying Media Content for Preschool Children: A Randomized Controlled Trial. Pediatrics, 131:3 https://iths.pure.elsevier.com/en/publications/modifying-media-content-for-preschool-children-a-randomized-contr

60 Uhls, Y. (2014). Five days at outdoor education camp without screens improves preteen skills with nonverbal emotion cues. Computers in Human Behavior. 39 https://doi.org/10.1016/j.chb.2014.05.036

61 Canadian Pediatric Society. (2017). Screen time and young children: Promoting health and development in a digital world. http://www.cps.ca/en/documents/position/screen-time-and-young-children

62 Canadian Pediatric Society. (2017). Screen time and young children: Promoting health and development in a digital world. http://www.cps.ca/en/documents/position/screen-time-and-young-children

63 Ginsburg, K. (2007). The Importance of Play in Promoting Healthy Child Development and Maintaining Strong Parent-Child Bonds. Pediatrics, 119(1) http://pediatrics.aappublications.org/content/119/1/182

64 Ginsburg, K. (2007). The Importance of Play in Promoting Healthy Child Development and Maintaining Strong Parent-Child Bonds. Pediatrics, 119(1) http://pediatrics.aappublications.org/content/119/1/182

65 Ginsburg, K. (2007). The Importance of Play in Promoting Healthy Child Development and Maintaining Strong Parent-Child Bonds. Pediatrics, 119(1) http://pediatrics.aappublications.org/content/119/1/182

66 Kostyrka-Allchrone, K., Cooper, N., & Simpson, A. (2017). The relationship between television exposure and children's cognition and behaviour: A systematic review. Developmental Review, 44: 19-58. http://www.sciencedirect.com/science/article/pii/S0273229717300011

67 Schmidt M., Pempek T., Kirkorian H., Lund A., & Anderson D. (2008). The effects of background television on the toy play behavior of very young children. Child Development, 79(4):1137–1151. https://www.ncbi.nlm.nih.gov/pubmed/18717911

68 Scholastic Canada. (2017). Kids & Family Reading Report, Canadian Edition. scholastic.ca/readingreport

69 Common Sense Media. (2014). Children, teens and reading. A Common Sense Media research brief. https://www.commonsensemedia.org/research/children-teens-and-reading

70 Delmas, C., Platat, C., Schweter, B., Wagner, A. Oujaa, M., & Simon, C. (2007). Association between television in bedroom and adiposity throughout adolescence. Obesity, 15: 2495-2503. As cited in: Maitland, C., Stratton, G., Foster, S., Braham, R., & Rosenberg, M. (2013). A place for play? The influence of the home physical environment on children's physical activity and sedentary behaviour. International Journal of Behavioural Nutrition and Physical Activity, 10: 99.

71 Scholastic Canada. (2017). Kids & Family Reading Report, Canadian Edition. scholastic.ca/readingreport

72 Wahi, G., Parkin, P.C., Beyene, J., Uleryk, E.M., & Birken, C.S. (2011). Effectiveness of interventions aimed at reducing screen time in children: A systematic review and meta-analysis of randomized controlled trials. Arch Pediatr Adolesc Med, 65(11): 979-986. http://jamanetwork.com/journals/jamapediatrics/fullarticle/1107640

73 Gentile, D., Reimer, R., Nathanson, A., Walsh, D., and Eisenmann, J. (2014). Protective effects of parental monitoring of children's media use. JAMA Pediatr, 168(5):479. https://www.ncbi.nlm.nih.gov/pubmed/24686493

74 Biddle, S., Petrolini, I., and Pearson, N. (2014). Interventions designed to reduce sedentary behaviours in young people: A review of reviews. British Journal of Sports Medicine, 48: 182. http://bjsm.bmj.com/content/48/3/182

75 Marsh, S., Foley, L., Wilks, D., and Maddison, R. (2014). Family-based interventions for reducing sedentary time in youth: A systematic review of randomized controlled trials. Obesity Prevention, 15: 117. https://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0060369/

76 Biddle, S., Petrolini, I., and Pearson, N. (2014). Interventions designed to reduce sedentary behaviours in young people: A review of reviews. British Journal of Sports Medicine, 48: 182. http://bjsm.bmj.com/content/48/3/182

77 Marsh, S., Foley, L., Wilks, D., and Maddison, R. (2014). Family-based interventions for reducing sedentary time in youth: A systematic review of randomized controlled trials. Obesity Prevention, 15: 117. https://www.ncbi.nlm.nih.gov/pubmed/24102891

78 Downing, K.L., Hnatiuk, J.A., Hinkley, T., Salmon, J., & Hesketh, K.D. (2016). Interventions to reduce sedentary behaviour in 0–5-year-olds: a systematic review and meta-analysis of randomised controlled trials. Br J Sports Med, Published Online First: 06 October 2016. http://bjsm.bmj.com/content/bjsports/early/2016/10/06/bjsports-2016-096634.full.pdf

79 Biddle, S., Petrolini, I., and Pearson, N. (2014). Interventions designed to reduce sedentary behaviours in young people: A review of reviews. British Journal of Sports Medicine, 48: 182. http://bjsm.bmj.com/content/48/3/182

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