



SCREEN TIME
VS

GREEN TIME



Executive Summary

Excessive screen time is having negative health impacts on Canadian children. This report summarizes the available research in an accessible format, together with recommendations for parents.


We have seen a dramatic shift in the way children spend their time, with less time playing outside and more time spent indoors, sedentary and screen-based. A growing body of research is sounding the alarm about the amount of time Canadian children and youth are spending sitting in front of screens. More than half of Canadian children are exceeding the recommended guidelines and it is negatively associated with their physical, mental and emotional health.

The Ontario Student Health survey reports that students in grades 7 to 12 are spending up to 7 hours a day on screens, more than *three and a half times the recommended limit of 2 hours per day*. Spending so much time on smartphones, video games, tablets, computers and televisions significantly affects eating habits, displaces physical activities, limits children's opportunities to interact with each other, and increases the incidence of mental health issues such as anxiety and depression.

The Canadian 24 hour Movement Guidelines for Children is the world's first evidence-based set of movement recommendations for a whole day in the life of a child, including recommendations for screen time, physical activity and sleep. The Guidelines are produced by the Canadian Society for Exercise Physiology and endorsed by the Canadian Paediatric Society. 87% of pre-school children and 85% of school-aged children are not meeting the 24-hour guidelines, primarily due to too much sedentary behaviour linked to screen time.

Simultaneously, researchers agree that spending time in nature and being active outdoors is beneficial to children's physical and mental health, and helps improve their resiliency, academic performance and social skills. Physicians in Scotland, America and Canada have started prescribing time in nature, which can reduce symptoms of stress, depression, anxiety, aggression, Attention Deficit Hyperactivity Disorder, diabetes and high blood pressure, and improve cognition and immune function.

Time spent exploring in nature evokes curiosity and a sense of wonder. With less time spent outside in nature, children are losing opportunities to learn, explore, discover and understand our natural environment.



The good news is that the solution can be as simple as walking out the front door.

Introduction



Canadian children and adolescents are now spending so much time on screens – video games, smartphones, tablets, computers and television – that public health and paediatric experts report that it is negatively impacting their physical, mental and social health.¹

More than half (55%) of children aged 5-17 exceed the screen time recommendations, and the number is even higher for preschoolers, at 76%.² The 2015 Ontario Student Drug Use and Health Survey (OSDUHS), the longest-running Canadian survey that shows trends in student mental and physical health, examined self-reported behaviours of Grade 7-12 students in Ontario and found they are spending up to 7 hours a day on recreational screen time.³

A conservative estimate based on these studies is that Canadians children aged 5-17 years are spending an average of 3.4 hours per day on screens, or 23 hours per week.⁴

Recreational screen time Recommendations as outlined by the Canadian Guidelines⁵ and endorsed by the Canadian Paediatric Society⁶:

- Under 2 years - no screen time
- 2 - 4 year olds - 1 - hour daily maximum –less is better
- 5 - 17 year olds – 2 - hour daily maximum –less is better

The 24 hour Movement Guideline is the world's first evidence-based set of guidelines to address the whole day in the life of a child or young person.⁷ Leaders from the Canadian Society for Exercise Physiology convened experts from national organizations and stakeholders and developed recommendations for physical activity, sleep and sedentary behaviour. It sets daily targets for sleep, physical activity and sedentary screen time. For optimal health, children and youth aged 5 - 17 years should engage in high levels of physical activity, reduced levels of sedentary behavior - especially screen time - and sufficient sleep each day.

Unfortunately, the vast majority of Canadian children are spending more time on screens than is recommended by the Guidelines.

In fact, 85% of children aged 5-17 do not meet the guidelines for adequate sleep, physical activity and screen time.^{8,9} The percentage is even higher for pre-school children (87%), driven primarily by excessive use of digital screens.^{10,11}

The Impacts of Physical Activity



Being active is an essential part of a child's health, yet Canadian children are spending more and more time sitting, usually linked to screen time.

They are not getting enough physical activity. In fact, *The 2018 ParticipACTION Report Card on Physical Activity for Children and Youth* assigned a D+ for overall physical activity, with over half (65%) of children aged 5 - 17 who do not meet the physical activity recommendations.¹²

Physical activity is closely linked to a child's physiological health, cognitive function and mental health.¹³ A team of experts in paediatric neuroscience and exercise science developed the *Expert Statement on Physical Activity and Brain Health in Children and Youth*; the statement emphasize the positive benefit of aerobic exercise on brain health.¹⁴ For example, physical activity improves cognitive functions such as behaviour regulation, attention and planning, and improves mental health. Physical activity in children helps minimize depressive symptoms and feelings of anxiety.¹⁵ In addition, higher levels of physical activity in children are associated with lower stress and better resilience.¹⁶ Developing healthy exercise habits in childhood and adolescence can set the foundation for a lifetime of good physical and mental health.

Researchers link screen time with the increasing prevalence of metabolic and cardiovascular issues in Canadian youth.¹⁷ The research demonstrates that more frequent and/or longer duration screen time - particularly television viewing - can significantly affect eating habits (unhealthy snacks), physical activity (lower fitness levels) and sleep, and is associated with increased prevalence of diabetes.¹⁸

The 2015 OSDUHS revealed that only 22% of students met the recommended daily physical activity guideline.¹⁹

SLEEP AND KID'S HEALTH

Adequate sleep is an essential component to the healthy development of children, and is required for general physical and mental health. Sleep is essential for children's physical health, to support adequate weight control, cardiovascular health, efficient immune response, and to help with the prevention of injuries.²⁰ Sleep also supports a child's cognitive function, ability to cope with stress, regulate emotions, socialize and be productive.²¹ Growth hormone, a critical hormone that leads to increased bone mass and growth during development, and assists with body repair overall,

is released in the highest quantities during the night.²² The 24 Hour Movement Guidelines recommends that children aged 5 - 17 years should get 8 - 11 hours of uninterrupted sleep per night, with consistent bed and wake-up times.²³

Sleep deprivation and disorders are highly prevalent among Canadian children due in large part to electronics and excessive light exposure late at night from electronics.²⁴ Children with electronic devices in their bedrooms reported sleeping less and having more sleep difficulties.²⁵

Another result in the 2015 OSDUHS showed that less than half of students reported that they get eight or more hours of sleep on an average school night.²⁶

EFFECTS ON VISION

Myopia, or nearsightedness may be consequence of excessive screen time, at the expense of time outdoors. A study in the journal *Ophthalmology* found that children who play outdoors more frequently have a lower prevalence of myopia.²⁷

In 2017, The Canadian Association of Optometrists and the Canadian Ophthalmological Society released a joint position statement outlining the effects of screens on children's vision and recommendations of safe use.²⁸ In addition to supporting the Canadian Guidelines for screen time, they suggest outdoor activity be encouraged over screen time.



Anxiety and Mental Health Issues

A report published in *Clinical Psychological Science* found that adolescents who spent more time on social media and smartphones were more likely to report mental health issues than adolescents who spent more time on non-screen activities such as face-to-face interaction, sports and exercise, homework, and reading books.²⁹

The U.S. study found an increase in adolescents' depressive symptoms, suicide-related outcomes, and suicide rates between 2010 and 2015, particularly among girls.³⁰

A similar study found a direct correlation between the amount of time spent on electronics and unhappiness.³¹ Happiness was highest among kids who participated in sports and in-person socializing. Kids who spent more time playing online computer games scored the lowest level of happiness.³²

The recent *Canadian Community Health Survey* showed that exceeding screen time guidelines was associated with poorer self-reported mental health in both girls and boys.³³ Higher durations of screen time were linked with poorer behavioural conduct and lower self-esteem.³⁴

Longer television or computer use was related to greater psychological distress for children aged 10 - 11 years, irrespective of physical activity or sedentary time.³⁵ In Ontario, there has been a 10% increase in the number of students in Grades 7 - 12 who report high levels of psychological distress (from 24% in 2013 to 39% in 2017).³⁶ Currently more than one in three students report experiencing psychological distress.³⁷

A report released in 2018 by Ottawa Public Health noted that over 80% of high school students use electronic screen devices for more than two hours each day, and almost half (48%) show signs of problematic use, such as not being able to control their time spent on them, neglecting homework, losing sleep, feeling anxious about not using them.³⁸

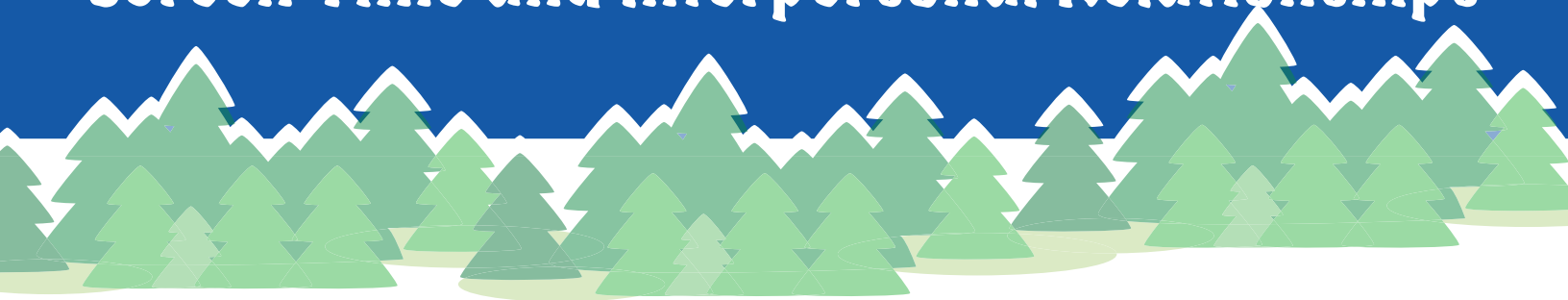
92% of teenage girls report going on social media daily and 24% say they go online "almost constantly".

- 2015 Pew Research Center survey³⁹

60% of Canadian teenage girls feel pressure from media or social media to conform to unrealistic beauty standards.

- 2017 Ipsos survey for Girl Guides of Canada⁴⁰

Screen Time and Interpersonal Relationships



Dr. Michael Cheng, a professor at the University of Ottawa and a psychiatrist at the Children's Hospital in Eastern Ontario is sounding the alarm as mental health professionals are noting that excessive use of technology appears linked to increased demands for mental health services to help with anxiety and depression.⁴¹

Children and youth need connection to activities and people that bring a sense of belonging, purpose, hope and meaning. They need, face-to-face time with people, physical activity, sleep, and nature. Face-to-face contact is essential for not only brain development, cognitive and emotional development, but also empathy, a sense of security and stronger resiliency, and emotional connection.⁴² When children and youth spend much of their free time on digital screens, it leaves little time for social contact, physical activity, sleep, nature.

As many professionals, including Cheng, are now discovering, one solution to the epidemic of anxiety and depression is not simply prescribing medications, but helping families rediscover the most powerful antidepressant - putting down their devices; spending time with each other face-to-face; doing meaningful activities.⁴³ In other words - getting outside and connecting with each other.

GAMING ADDICTION, CYBER-BULLYING, AND ONLINE PREDATORS

In addition to mental and physical health impacts, excessive screen time increases the likelihood of exposure to direct or indirect harms such as cyber-bullying, violence, gaming addiction and online predators.

The more time spent on social media sites, watching or playing violent games, the greater the exposure to harmful elements including:

- **Cyber-bullying:** One-in-five students report being bullied over the internet in the past year. This estimate represents just under 200,000 students in Ontario alone.⁴⁴
- **Gaming Addiction:** One-quarter of students play video games daily or almost daily, with 10% playing for five hours or more per day. The percentage of students indicating a video gaming problem rose to 13% in 2015 from 9% in 2007.⁴⁵ In 2018 the World Health Organization added "Gaming Disorder" to its International Classification of Diseases as a mental disorder due to its addictive behaviours. Gaming Disorder is defined as "a pattern of persistent or recurrent gaming behaviour, characterized by impaired control over gaming, increasing priority given to gaming over other activities to the extent that gaming takes precedence over other interests and daily activities, and continuation or escalation of gaming despite the occurrence of negative consequences."⁴⁶
- **Exposure to Violence:** Research has shown that violent imagery on television, video, and computer games is consistently associated with an increased likelihood of violent or fearful behaviour, particularly among young children.⁴⁷
- **Online Predators:** In 2012, there were 543 cases in Canada of luring a child through the Internet that were reported to the police.⁴⁸

Nature, Play, and Health



Spending time being active outdoors in nature is important for children’s health and overall wellbeing. It helps them manage stress, and encourages mental and emotional wellness.

Specifically, research has found that spending time in nature can be an important contributor to:

- **Physical Health:** When kids play outdoors they get more cardiovascular exercise and sleep better.⁴⁹ Playing outdoors in nature also helps to prevent the onset and development of myopia.⁵⁰
- **Mental Health:** Playing in nature can improve moods, and reduce stress and anxiety. In fact, outdoor active play in nature is essential for healthy child development.⁵¹ Physical activity from outdoor play supports mental health and minimizes depressive symptoms in children and youth.⁵²
- **Resiliency:** Outdoor “risky play” is associated with increased physical activity, social skills risk management skills, resilience and self-confidence.⁵³ Through risky play, children test their boundaries, and figure out by themselves their own level of risk – from climbing trees, to building forts, to roaming the neighbourhood with their friends.⁵⁴
- **Healthy Development, Including Cognitive Function:** When children play in nature, they have improved memory, are able to focus and concentrate, and do better in school. Outdoor play helps kids develop stronger motor skills, be more creative, and have better self-esteem.
- **Social Development:** Playing in nature is a way to make friends, and feel a sense of belonging. Playing outside allows children to take more risks, and research shows that children develop stronger skills in socialization, conflict resolution and problem solving. They feel more connected to their peers, the community and the environment.⁵⁵

In addition to positive health outcomes, children who spend time in nature are more likely to develop a lifelong love and appreciation for nature.⁵⁶

Children who spend time in nature are more likely to:

- Be more creative and confident;
- Value nature as part of their identity;
- Become stewards and champions for nature;
- Grow up to respect and protect the natural world;
- Recognize the benefits of nature as they become the next generation of scientists, policy makers, environmentalists, teachers, physicians, artists, urban planners and parents.



Recommendations for Parents

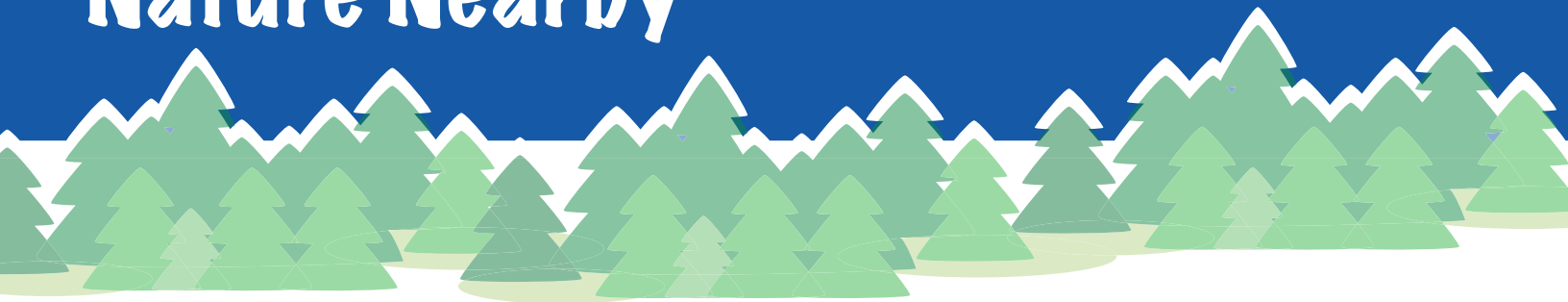
Excessive digital screen time is an emerging public health issue, and agencies will be increasingly challenged to respond. For parents, life is busier than ever and it can feel overwhelming to navigate a healthier relationship between their children and screens. Setting shared family limits at an early age can help.

Ways to limit screen time at home:

- Lead by example and limit your own screen use when around your kids;
- Set limits on screen time and set a schedule;
- Create “screen-free zones” that work for your family, like the dinner table or bedroom;
- Turn off digital devices at least 1 hour before bedtime;
- Encourage outdoor play time or other non-screen activities;
- Plan nature time together, such as an after-dinner walk or weekend nature hike.



Nature Nearby



Nature can be found all around us. The majority of Canadians live within a kilometre of a public park. Connecting with nature is as easy as stepping out your door.

Ways to help kids connect to nature:

- Set up a bird feeder on the balcony or in the back yard
- Collect some colourful fall leaves and pinecones for crafts
- Discover the local nature trails and explore them year-round
- Join a local nature club – check out Nature Canada’s NatureHood partners
- Use NatureHood’s DIY NatureBlitz Toolkit to identify species close to home
- Older kids can plan a scavenger hunt, join a geocaching group, enroll in outdoor education, volunteer with a nature organization, or submit nature photos to contests outlets

Time in nature reduces stress, improves immune function and exposure to nature is correlated with improved wellbeing and a stronger sense of belonging. It is a great way to connect as a family, get moving and reap the health benefits. Spending time in nature is good for our mind, body and spirit, and will help evoke a child’s natural curiosity, sense of wonder, and a lifelong love of nature.

For more ideas go to Nature Canada’s resource sheet, *Tips for Parents to reduce screen time and get into nature.*



About Nature Canada



Nature Canada is a national charitable organization that works to connect people to nature and in doing so protect and conserve wildlife and habitats. Nature Canada is the oldest national nature conservation charity in Canada. Over the past 75 years, Nature Canada has helped protect over 63 million acres of parks and wildlife areas in Canada and countless species that depend on this habitat. Today, Nature Canada works with a network of over 80,000 supporters and more than 750 nature organizations across the country.

Nature Canada's NatureHood program works to engage urban Canadians, particularly young people, to connect with nature right where they live - nearby nature. NatureHood is any place in which you connect with the natural world, from watching a bee pollinate, to watching birds at a backyard feeder, to witnessing the trees change with the passing of seasons.

For more information contact Nature Canada at:
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Appendix A- Reviews on Nature and Children's Health

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