Maryland Screen Time in Schools Bill

Are Digital Devices Damaging Our Kids?

Lisa Cline   *Rockville Macaroni Kid*   January 8, 2017

https://rockville.macaronikid.com/articles/5876c397f53cfe13722f97df/are-digital-devices-damaging-our-kids

"One Maryland mom, Cindy Eckard, has been advocating for screen safety in public schools, and is urging lawmakers to regulate digital devices for students. Medical professionals and parents around the country are joining in that effort; a bill will be introduced to the Maryland General Assembly in the coming weeks. The bill seeks to protect kids from the following digital device-related health risks."

All eyes on Maryland bill to study screen safety in schools

Cheri Kiesecker   *Missouri Education Watchdog*   February 20, 2017

http://missourieducationwatchdog.com/all-eyes-on-maryland-bill-to-study-screen-safety-in-schools/

"Parents send their children to school under the expectation that their children will be safe.   There is mounting evidence that exposure to screens and wireless digital devices have very concerning health risks. Parents are concerned about the increase in screen time in schools. There many well documented studies showing extended screen time leads to "rapid proliferation of myopia", concern of macular degeneration from UV blue light emissions generated by screens, with children being more susceptible to this blue light damaging the back of their eyes,   sleeplessness because the blue light from the digital devices suppresses melatonin, behavior changes (increase in ADHD, irritability) and even screen addiction. There needs to be study, measuring amounts of exposure and radiation emitted from multiple wireless devices in the classroom."

ODs support Maryland digital device use law for public schools

Healio Primary Care Optometry News   February 24, 2017

https://www.healio.com/optometry/pediatrics/news/online/%7Ba7e70f34-2ca1-4c96-8e6c-99ab6d303791%7D/ods-support-maryland-digital-device-use-law-for-public-schools?platform=hootsuite

"The Occupational Safety and Health Administration (OSHA) has regulations governing the use of computers for office workers since the 1990s, but schools have no medical oversight, the group continued. The bill has substantial support from the state's medical community, including the Maryland State Medical Society."

State Bill on Safe Use of Digital Devices in Classrooms Makes Progress in Legislature

Bethany Rodgers   *Bethesda Magazine*   March 3, 2018

https://bethesdamagazine.com/Bethesda-Beat/2018/State-Bill-on-Safe-Use-of-Digital-Devices-in-Classrooms-Makes-Progress-in-Legislature/#.Wr0XljM1LX0.twitter

"This bill will do what the school system cannot do. This bill will pull the health experts in on the conversation. Our Board of Education and all of our fantastic educators have a job of educating the kids. They are not the health experts," said Cline, who helps lead a subcommittee on safe technology for the Montgomery County Council of Parent-Teacher Associations. Cline pointed to concerns about the health effects of exposure to blue light emissions from screens and said there is insufficient evidence that technology improves academic performance for most children. Cindy Eckard, a parent advocate from Queen Anne's County, cited evidence that digital devices might harm students' eyesight and has been linked to childhood obesity."

Maryland Schools May Tell Children When It's Time to Log Off

Natasha Singer   *New York Times*   April 18, 2018

https://www.nytimes.com/2018/04/18/technology/maryland-computers-schools.html?platform=hootsuite

"Several pediatricians warned that heavy digital device use in schools or for homework could have unintended physical and emotional consequences for students, including vision problems, interrupted sleep and device compulsion. In particular, they noted that some classroom learning apps used powerful, video-game-like reward systems to engage and stimulate students, making it difficult for some children to turn them off. The concern is that many programs students use in school are entertainment and gamified," said Dr. Scott Krugman, a pediatrician in Baltimore County who supported the school device bill. "We felt these are things that should be tracked and monitored.""

Eye Care Activism Gets Digital Device Bill Passed in Maryland

Review of Optometry   April 27, 2018

https://www.reviewofoptometry.com/news/article/eye-care-activism-gets-digital-device-bill-passed-in-maryland

"In speaking with optometrists and doing her own research, Ms. Eckard amassed a wealth of knowledge on blue light and its effect on sleep, myopia, the association between screen time and reduced blinks, which can lead to dry eye, and even concerns as dire as early macular degeneration."

Myopia, Dry Eye, Retinal Damage, Macular Degeneration, Eye Strain

Samsung Safety Screen

Samsung Gulf   June 15, 2016

https://www.youtube.com/watch?v=jIeIPk3hjx8#action=share

"Half the planet will need glasses in a few years because of screens."

For Better Vision, Let the Sunshine In

Gretchen Reynolds   *New York Times*   January 19, 2017

https://www.nytimes.com/2017/01/19/well/live/for-better-vision-let-the-sunshine-in.html?platform=hootsuite

"Some experts connect the elevated rates of myopia to the many hours young people stare at computers and other screens. But a recent study published in JAMA Ophthalmology suggests that a greater factor may be a side effect of all that screen-watching — it's keeping children inside. This new study joins a growing body of research indicating that a lack of direct sunlight may reshape the human eye and impair vision."

Light emitted from digital screens can cause irreversible damage to eyes, research shows

News-Medical Life Sciences   January 27, 2017

https://www.news-medical.net/news/20170127/Light-emitted-from-digital-screens-can-cause-irreversible-damage-to-eyes-research-shows.aspx

"The University Complutense of Madrid (UCM), one of the oldest Universities in the world, presents the results of its latest research confirming the irreversible damage to animals' eyes caused by light emitted from digital screens. This groundbreaking report analyzes and compares the results of a study exposing the retina of rats to tablet screens emitting white LED light with and without filters, proving that light causes cell death in the retina, and can lead to loss of vision."

Virtual Reality Headsets May Come With Health Risks to Eyes

Bianca Castro   *NBC Dallas Fort Worth*   January 12, 2017

https://www.nbcdfw.com/news/local/Virtual-Reality-Headsets-May-Come-With-Health-Risks-to-Eyes_Dallas-Fort-Worth-410565745.html?utm_content=buffer9318a&utm_medium=social&utm_source=facebook.com&utm_campaign=buffer

""If children are alternating times between the computer and headsets, parents really need to be aware of long term problems that could be brought on by this new technology," said Hoelscher."

Myopia, dry eye, macular degeneration are linked to digital device use

Thomas Aller, OD, FBCLA   *Healio Primary Care Optometry News*   May, 2017

https://www.healio.com/optometry/pediatrics/news/print/primary-care-optometry-news/%7Ba7c5f86e-f0d7-498f-bb43-1be6224ecaf1%7D/myopia-dry-eye-macular-degeneration-are-linked-to-digital-device-use?platform=hootsuite

"The evidence that digital device usage may be contributing to dry eye syndrome and MGD is much stronger than the refractive error story. It is well established that their usage leads to decreased blink frequency as well as incomplete blinking (Cardona et al.). Other studies suggest any detailed near work will decrease blink rate, while others suggest that visual and eye discomfort symptoms are greater with digital device use (Benedetto et al.)."

Generation specs: FIVE TIMES as many British over-40s suffer vision problems than in 1960s as we swap outdoor pursuits for staring at a screen

Sheri Miller   *Daily Mail*   January 15, 2017

http://www.dailymail.co.uk/news/article-4121678/Generation-specs-FIVE-TIMES-British-40s-suffer-vision-problems-did-1960s-swap-outdoor-pursuits-staring-screen.html?utm_content=buffereea3d&utm_medium=social&utm_source=facebook.com&utm_campaign=buffer

"Five times as many over-40's need glasses to correct their vision than 50 years ago - with experts claiming myopia is now one of Britain's fastest growing health problems. New research suggests people are more likely to stay indoors to watch television, tablets and smart phones than enjoy being outdoors in the sun, meaning less exposure to UV light, which could help reduce the risk of developing sight issues."

Preschool children face increasing vision problems

Sherri Snelling   *USC News*   May 4, 2017

https://news.usc.edu/121161/preschool-children-face-increasing-vision-problems/?utm_content=buffer92bac&utm_medium=social&utm_source=twitter.com&utm_campaign=buffer

"This research is a bellwether that visual impairment in young children can be prevented or treated with low-cost solutions if we intervene at an early age," Varma said. "If we don't, the long-term effects of impaired vision at early childhood that can adversely impact academic and social achievements will put our future generations at a distinct disadvantage. This is a population health transformation imperative."

Stop abusing your eyes—put down that phone or tablet and get outside

Mechelle Mcmahon   *Medical Press June*   26, 2017

https://medicalxpress.com/news/2017-06-abusing-eyesput-tablet.html

"Is our tech-laden modern world wearing out your eyes? QUT eye health researcher and optometrist Associate Professor Scott Read says it's a case of not just stopping to smell those flowers, but having a good look at them too. Spending more time outdoors is one of his top five everyday tips (see below) for keeping your eyes healthy. "There's two known benefits to being outside in today's world – it gives your eyes a chance to focus on things further away and have a rest from close-up work, and it also exposes our eyes to brighter outdoor light which appears to reduce our risks of developing short sightedness," Professor Read, pictured above, said."

Lutein and zeaxanthin isomers benefits during high screen exposure

EurekAlert   July 10, 2017

https://www.eurekalert.org/pub_releases/2017-07/oht-la071017.php

"High-energy blue light reaches deep into the eye and can harm the macula -- the region of the eye responsible for highest visual acuity- by promoting the production of free radicals. Short-term effects can cause eye fatigue while long-term exposure can lead to a progressive loss of visual function."

More evidence that outdoor time may help prevent nearsightedness

Anne Harding   *Business Insider*   July 11, 2017

https://www.businessinsider.com/r-more-evidence-that-outdoor-time-may-help-prevent-nearsightedness-2017-7

""Basically this study adds very nicely to the evidence that we already see from many other studies and many other countries that there is definitely a connection between outdoor activity and myopia in children," said Susan Vitale at the U.S. National Eye Institute."

New study focuses on scope of dry eye disease in U.S.

American Optometric Association   August 7, 2017

http://www.aoa.org/news/clinical-eye-care/new-study-dry-eye-disease?sso=y

"More than 16 million Americans-including twice as many women than men-endure dry eye disease (DED), according to a recently released study."

Minimizing Myopia – Confronting an Oncoming Epidemic

Maria Pribus   *Ocular Prime*   September 7, 2018

http://ocularprime.com/myopia-control-and-confronting-an-oncoming-epidemic/?platform=hootsuite

"Myopia's actual development can be affected by how a person uses his/her eyes. Individuals who spend considerable time reading, working at a computer, or doing other intense close visual work may be more likely to develop myopia."

Myopia: A close look at efforts to turn back a growing problem. NEI funds research to slow the increase in nearsightedness

National Eye Institute   October, 3 2017

https://nei.nih.gov/content/myopia-close-look-efforts-turn-back-growing-problem

"Projections suggest that almost 50 percent of the world will be myopic by 2050." "Although genetics play a role in myopia, the abrupt increase points to environmental factors. Several studies have shown a link between near work and myopia in children."

Canadian Study Finds Children's Eyesight Worsening Earlier

Canadian Association of Optometrists   October 27, 2016

https://opto.ca/news/canadian-study-finds-childrens-eyesight-worsening

""Historically, myopia started at age 12 or 13, but now it is showing up more often in kids six or seven years old," said Dr. Mike Yang, lead investigator and clinical scientist with the Centre for Contact Lens Research (CCLR), Waterloo. "Our eyesight as a population is deteriorating and at a much younger age.""

Screentime is detrimental to whole child health and vision

Amber Freeland   *The Cooper Institute*   January 24, 2019

https://www.cooperinstitute.org/2019/01/24/screentime-is-detrimental-to-whole-child-health-and-vision?utm_source=twitter&utm_medium=blog&utm_campaign=vision&utm_term=screentime

"In 2010, just over 28 percent of the world's population was affected by nearsightedness. Current trends indicate that this will rise to nearly 50 percent by 2050. According to All About Vision, computer vision syndrome is a real problem. Kids under age 8 now spend more than two hours a day viewing digital devices. Kids 8-10 years old are spending nearly six hours per day on screens while 11-14 year-olds jump to nearly nine hours per day."

Eye Strain

Optometrists weigh in on avoiding computer vision syndrome

Dawn White   *NBC News Harrisburg, PA*   January 27, 2017

https://www.abc27.com/news/optometrists-weigh-in-on-avoiding-computer-vision-syndrome/1037096505

"Many people get blurred vision, dry eyes, headaches, and neck pain after being in front of a computer screen for too long. Those are the symptoms of computer vision syndrome (CVS), and optometrists say it's becoming more common with the overuse of technology. Dealing with people's vision problems is something Dr. Kimberly Zimmerman of Premier Eye Care Group knows all too well. "It affects pretty much everybody. It's becoming more common with teens," Zimmerman said. People can get the syndrome sitting a computer, tablet, or cell phone. "A lot of times, you end up having eye strain," Zimmerman said. "There's a lot of dryness that can happen to the eyes, as well as headaches and just overall discomfort around the eyes.""

Computer Vision Syndrome Affects Millions

Jane E. Brody   New York Times   May 30, 2016

https://well.blogs.nytimes.com/2016/05/30/computer-vision-syndrome-affects-millions/?action=click&contentCollection=Well&module=RelatedCoverage&region=EndOfArticle&pgtype=article

"Studies have indicated 70 percent to 90 percent of people who use computers extensively, whether for work or play, have one or more symptoms of computer vision syndrome. The effects of prolonged computer use are not just vision-related. Complaints include neurological symptoms like chronic headaches and musculoskeletal problems like neck and back pain."

Do You Have Digital Eye Strain or Computer Vision Syndrome? The scary side of what all that screen time is doing to your eyes.

Lauren Mazzo   *Shape Magazine*   February 17, 2017

https://www.shape.com/lifestyle/mind-and-body/digital-eye-strain-computer-vision-syndrome-symptoms

"You know how sleepy and "blah" you feel after a long workday? There's a chance that's from computer vision syndrome, aka having tired, sore, often irritated eyes and blurry vision from sitting in front of a computer for hours on end. But you don't need to be parked at a desk to get hit with this condition. This physical eye discomfort may be felt after two or more hours of *any* screen use per day, and is generally referred to as digital eye strain, says Justin Bazan, O.D., optometrist and medical advisor to The Vision Council. Digital eye strain (the general term) is super common, with 31 percent of Americans (and a whopping 68 percent of millennials!) reporting experiencing eye strain—22 percent experience dry eyes, headaches, and/or vision problems, and 30 percent have neck and shoulder pain after two-plus hours of

screen time per day, according to a report by The Vision Council. Not all that surprising, considering 52 percent of people admit to using two devices simultaneously each day. "

You Asked: What's the Best Way to Stare at Screens All Day?

Markham Heid   *Time Magazine*   May 24, 2017

http://time.com/4789208/screens-computer-eye-strain/?platform=hootsuite

"There are blue light-sensitive molecules in the retina that help to set our body's circadian rhythms," he explains. While some research has linked too much blue light exposure at night to insomnia, even daytime exposure could be a problem. "There are some animal studies showing blue light can damage the retina when light is very intense," Dunaief says. "Whether that translates to the lower levels in screens isn't clear, but just to be on safe side, I think it's better that the screen light not be predominantly blue."

Management of digital eye strain

Chantal Coles-Brennan OD FAAO , Anna Sulley BSc MCOptom FAAO FBCLA, Graeme Young FCOptom MPhil PhD DCLP   *Wiley Online Library*   May 23, 2018

https://onlinelibrary.wiley.com/doi/pdf/10.1111/cxo.12798

"As many as 90 per cent of digital device users experience symptoms of digital eye strain. Many studies suggest that the following factors are associated with digital eye strain: uncorrected refractive error (including presbyopia), accommodative and vergence anomalies, altered blinking pattern (reduced rate and incomplete blinking), excessive exposure to intense light, closer working distance, and smaller font size."

Musculoskeletal Discomforts

You asked: How do I improve my posture?

Markham Heid   *Time Magazine*   March 9, 2016

http://time.com/4251425/improve-posture-text-neck/

""Your head weighs 10 or 12 pounds," says Dr. Mary Ann Wilmarth, former chief of physical therapy at Harvard University and now CEO of Back2Back Physical Therapy in Andover, Mass. Holding it straight engages lots of muscles in your neck and shoulders. But when you spend all day with your head hanging forward, then come home from the office and plop a tablet or phone into your lap, all of those support muscles languish and weaken, she explains."

Checking social media can sometimes be a pain in the neck--literally

Deana Carpenter   *Pittsburg Post-Gazette*   August 24, 2017

http://www.post-gazette.com/news/health/2017/08/24/High-tech-neck-pain-texting-Shaka-Walker-teens-posture/stories/201707210005

""If you are bending your neck forward 15 degrees, it is like your head weighs 27 pounds," he said. If the head is bent at a 60 degree angle, it is like the head weighs 60 pounds, and that 60 degree angle is usually how a person's neck is bent while checking a phone. "That's a five to sixfold increase on the neck," Dr. Walker said. Multiply the increased weight by the number of hours a person spends on a smartphone, and symptoms of text neck start to occur."

Keep Your Head Up: How Smartphone Addiction Kills Manners and Moods

Adam Popescu   New York Times   January 25, 2018

https://www.nytimes.com/2018/01/25/smarter-living/bad-text-posture-neckpain-mood.html?smid=tw-share

"The average human head weighs between 10 and 12 pounds, and when we bend our neck to text or check Facebook, the gravitational pull on our head and the stress on our neck increases to as much as 60 pounds of pressure. That common position, pervasive among everyone from paupers to presidents, leads to incremental loss of the curve of the cervical spine. "Text neck" is becoming a medical issue that countless people suffer from, and the way we hang our heads has other health risks, too, according to a report published last year in The Spine Journal."

Sleeplessness, Melatonin, Circadian Rhythms

Association Between Portable Screen-Based Media Device Access or Use and Sleep Outcomes. A Systematic Review and Meta-analysis

JAMA Pediatrics   December, 2016

https://jamanetwork.com/journals/jamapediatrics/article-abstract/2571467#.WFBLZuAgRAU.facebook

"The deleterious association between screen-based media use and sleep in children and adolescents is a major public health concern. Given the evolving technological landscape and the replacement of textbooks with media devices in schools, screen-based media device access and use are likely to rise. It is imperative that teachers, health care professionals, parents, and children are educated about the damaging influence of device use on sleep."

Doing this before bed is damaging your health

Ramin Zaheed   *Keck Medicine of USC*

http://snip.ly/l33da?utm_content=buffercafa6&utm_medium=social&utm_source=twitter.com&utm_campaign=buffer#http://www.keckmedicine.org/doing-this-before-bed-might-be-killing-you/

"…being exposed to a screen light can seriously disrupt natural sleep patterns and can even be more harmful to our health. "Blue light from screen time suppresses melatonin," says Raj Dasgupta, MD, assistant professor of clinical medicine at the Keck School of Medicine of USC."

Blue light has a dark side

Harvard Health Publishing   August 13, 2018

https://www.health.harvard.edu/staying-healthy/blue-light-has-a-dark-side

"While light of any kind can suppress the secretion of melatonin, blue light at night does so more powerfully. Harvard researchers and their colleagues conducted an experiment comparing the effects of 6.5 hours of exposure to blue light to exposure to green light of comparable brightness. The blue light suppressed melatonin for about twice as long as the green light and shifted circadian rhythms by twice as much (3 hours vs. 1.5 hours)."

Artificial Light from Digital Devices Lessens Sleep Quality

Chris Stipes   *University of Houston*   July 24, 2017

http://www.uh.edu/news-events/stories/2017/july/07242017bluelight.php#.Wej7ORSL3bE.twitter

"The largest source of blue light is sunlight, but it's also found in most LED-based devices. Blue light boosts alertness and regulates our internal body clock, or circadian rhythm, that tells our bodies when to sleep. This artificial light activates photoreceptors called intrinsically photosensitive retinal ganglion cells (ipRGCs), which suppresses melatonin."

Decreases in self-reported sleep duration among U.S. adolescents 2009–2015 and association with new media screen time

Jean M. Twenge, Zlatan Krizan, Garrett Hisler   *Sleep Medicine Journal*   November, 2017

https://www.sleep-journal.com/article/S1389-9457%2817%2930350-7/fulltext#.WfIGlubSixo.twitter

"Increased new media screen time may be involved in the recent increases (from 35% to 41% and from 37% to 43%) in short sleep among adolescents. Public health interventions should consider electronic device use as a target of intervention to improve adolescent health."

Evening use of light-emitting eReaders negatively affects sleep, circadian timing, and next-morning alertness

Anne-Marie Chang, Daniel Aeschbach, Jeanne F. Duffy, Charles A. Czeisler   *Proceedings of the National Academy of Sciences of the United States of America*   January 27, 2015

http://www.pnas.org/content/112/4/1232

"We found that the use of these devices before bedtime prolongs the time it takes to fall asleep, delays the circadian clock, suppresses levels of the sleep-promoting hormone melatonin, reduces the amount and delays the timing of REM sleep, and reduces alertness the following morning. Use of light-emitting devices immediately before bedtime also increases alertness at that time, which may lead users to delay bedtime at home. Overall, we found that the use of portable light-emitting devices immediately before bedtime has biological effects that may perpetuate sleep deficiency and disrupt circadian rhythms, both of which can have adverse impacts on performance, health, and safety."

Evening screen time can sabotage sleep

Ashley Yeager   *Science News for Students*   November 1, 2017

https://www.sciencenewsforstudents.org/article/evening-screen-time-can-sabotage-sleep

"Screentime before bedtime may leave people feeling groggy in the morning. Cell phones, computers and TVs emit blue light. And exposure to that bluish light during the two hours before bed can keep us from getting a good night's rest, a new study finds."

Dim That Light: Settling Your Child to Sleep

The Family Institute at Northwestern University   July 17, 2018

https://www.newswise.com/articles/dim-that-light#.W1DGkggLHhE.twitter

"Recent research suggests that the amount of exposure children have to bright light in the hour leading up to bedtime — whether emanating from light bulbs or electronic devices — can have a big impact on sleep-related behavior."

Hearing

Study: Headphones Designed for Children May Not Be Safe for Their Ears

NBC News   January 10, 2017

https://www.nbcnews.com/nightly-news/video/study-headphones-designed-for-children-may-not-be-safe-for-their-ears-851963971906?v=railb

"A consumer product's website's recent analysis of 30 children's headphones found that nearly half of the products advertised as having volume limits actually allowed sounds to play above safe levels."

Psychological and Cognition Issues

Increases in Depressive Symptoms, Suicide-Related Outcomes, and Suicide Rates Among U.S. Adolescents After 2010 and Links to Increased New Media Screen Time

Jean M. Twenge, Thomas E. Joiner, Megan L. Rogers, Gabrielle N. Martin   *Association for Psychological Science*   November 14, 2017

http://journals.sagepub.com/doi/abs/10.1177/2167702617723376?journalCode=cpxa

"Adolescents who spent more time on new media (including social media and electronic devices such as smartphones) were more likely to report mental health issues, and adolescents who spent more time on nonscreen activities (in-person social interaction, sports/exercise, homework, print media, and attending religious services) were less likely. Since 2010, iGen adolescents have spent more time on new media screen activities and less time on nonscreen activities, which may account for the increases in depression and suicide."

Excessive Screen Time Linked to Increased Suicide Risk

Dave Heller   *Neuroscience News*   December 1, 2017

https://neurosciencenews.com/screen-time-suicide-8088/?utm_campaign=crowdfire&utm_content=crowdfire&utm_medium=social&utm_source=twitter#3056829926-tw#1512395197404

"A new study backs previous research which found a correlation between the rise in teenage mental health issues and smartphone usage. Researchers report excessive screen time is linked to increased risks of depression and suicide in teens."

Vision and Hearing Loss Are Tied to Cognitive Decline

Jane E. Brody   *New York Times*   September 9, 2017

https://www.nytimes.com/2017/09/25/well/vision-and-hearing-loss-are-tied-to-cognitive-decline.html?smid=tw-share

"The latest study, published in August in JAMA Ophthalmology, found that among a representative sample of nearly 3,000 older Americans and a second sample of 30,000 Medicare beneficiaries, poor vision was associated with poor cognition. The two data sets used different measurements of cognitive abilities like memory, orientation and planning, and the consistency of their findings suggests that the association between vision impairment and compromised brain function is real, the researchers concluded."

Addiction:

Hooked on our smartphones

Jane E. Brody   *New York Times*   January 9, 2017

https://www.nytimes.com/2017/01/09/well/live/hooked-on-our-smartphones.html?smid=tw-share

"Without open spaces and downtime, the nervous system never shuts down — it's in constant fight-or-flight mode," Ms. Colier said in an interview. "We're wired and tired all the time. Even computers reboot, but we're not doing it."

Gaming addiction classified as disorder by WHO

Jane Wakefield   *BBC News*   January, 2018

https://www.bbc.com/news/technology-42541404

"Gaming addiction is to be listed as a mental health condition for the first time by the World Health Organization. Its 11th International Classification of Diseases (ICD) will include the condition "gaming disorder". The draft document describes it as a pattern of persistent or recurrent gaming behaviour so severe that it takes "precedence over other life interests".

Going 24 Hours without Media

The World Unplugged

https://theworldunplugged.wordpress.com/

"College students around the world are strikingly similar in how they use media – and how 'addicted' they are to it, according to a global study of university students by the International Center for Media & the Public Agenda (ICMPA) in partnership with the Salzburg Academy on Media & Global Change."

These Statistics on Our Cellphone Addiction Are Terrifying and More Alarming Than Ever

Christopher Young   *Lifehack*

https://www.lifehack.org/518794/these-statistics-our-cellphone-addiction-are-terrifying-and-more-alarming-than-ever

"Recent research, collected by Android app Locket, monitored how many times its 150,000 users checked their phone in a day. They found that users did this a staggering 110 times a day,[1] whilst another study carried out by Kleiner Perkins Caufield and Byers found the average user checks their phone nearer to 150 times per day."

Why We Can't Look Away from Our Screens

Claudia Dreyfus   *New York Times*   March 6, 2017

"If you're on the phone for three hours daily, that's time you're not spending on face-to-face interactions with people. Smartphones give everything you need to enjoy the moment you're in, but they don't require much initiative. You never have to remember anything because everything is right in front of you. You don't have to develop the ability to memorize or to come up with new ideas. I find it interesting that the late Steve Jobs said in a 2010 interview that his own children didn't use iPads. In fact, there are a surprising number of Silicon Valley titans who refuse to let their kids near certain devices. There's a private school in the Bay Area and it doesn't allow any tech — no iPhones or iPads. The really interesting thing about this school is that 75 percent of the parents are tech executives."

Irresistible' technology is making our kids miss social cues

Heidi Stevens   *Chicago Tribune*   March 13, 2017

"There's a critical period of maturation, when kids stop parallel play and start engaging with other kids, where they pick up the social skills they'll use and hone throughout their lives," he said. "If you aren't sitting face-to-face, you never really learn what works and what doesn't and how to discover subtle differences between emotions." When kids are asked to detect people's emotions — happy, sad, angry, surprised — based on nonverbal cues, those who spend a lot of time on tech struggle to decipher one emotion from another at a much higher rate than kids who spend more time interacting in the real world, Alter said."

Smartphones 'biggest challenge' facing teachers, many students 'addicted'

Gordon Hunt   *Silicon Republic*   May 23, 2017

"Questionnaires were sent to 200,000 children across 42 countries, analysing their general health both in terms of their diets and the amount of physical activity they do each day. Worryingly, the WHO makes the link towards children being in serious danger of developing unhealthy lifestyles that could one day lead to conditions such as type 2 diabetes or cardiovascular disease. Between 2002 and 2014, the report found that two-thirds of kids from the age of 11 were spending at least two hours a day browsing the internet or chatting with friends through social media. Broken down between genders, the study showed that these figures are exceeded by 80pc of 15 year-old-boys and 70pc of 15-year-old girls, meaning only a small minority of teens are within healthy limits."

What is Brain Hacking? Tech Insiders on Why You Should Care

Anderson Cooper   *CBS News*   April 9, 2017

https://www.cbsnews.com/news/brain-hacking-tech-insiders-60-minutes/

"According to a former Google product manager you are about to hear from, Silicon Valley is engineering your phone, apps and social media to get you hooked. He is one of the few tech insiders to publicly acknowledge that the companies responsible for programming your phones are working hard to get you and your family to feel the need to check in constantly. Some programmers call it "brain hacking" and the tech world would probably prefer you didn't hear about it. But Tristan Harris openly questions the long-term consequences of it all and we think it's worth putting down your phone to listen."

Phone Addiction Is Real -- And So Are Its Mental Health Risks

Alice G. Walton   *Forbes*   December 11, 2017

https://www.forbes.com/sites/alicegwalton/2017/12/11/phone-addiction-is-real-and-so-are-its-mental-health-risks/#6c4294ef13df

"Though it's only a correlation, the team found a tight relationship between mental health issues and a rise in "new media screen activities." About 48% of those who spent five or more hours a day on their phones—a lot of time by any measure—had thought about suicide or made plans for it, vs. 28% of those who spent only one hour per day on their phones. No other variables—like household financial issues, homework, or school pressure—could account for the rise in mental health issues over that time."

Here's the evidence Apple shareholders used to show that smartphones are addictive for kids

Chris Weller   *Business Insider*   January 11, 2018

Jan. 11,

https://www.businessinsider.com/evidence-apple-shareholders-used-to-show-iphones-are-addictive-2018-1

"Studies have also shown big leaps in empathy and mental health when kids stop using their smartphones and other devices. Psychology experts tend to view these effects as signs that technology dampens kids' natural tendency to feel compassion for others. In addition to a wide body of research on smartphones affecting sleep quality, there were three main studies the authors of the recent Apple letter leaned on to make their case."

Blue Light

Blue light - Our world has changed

Gary L. Morgan, OD   *Healio*   December 2, 2014

https://www.healio.com/optometry/news/blogs/%7B3f2a7a54-5357-4ab2-b13a-ab58445d2f6c%7D/gary-l-morgan-od/blog-blue-light---our-world-has-changed?page=1

"A preponderance of evidence links cumulative lifetime exposure to blue light to risk of AMD (Age-related Macular Degeneration) development."

Screen Time Hurts More Than Kids' Eyes

Kristen Fischer   *Healthline*   October 12, 2015

https://www.healthline.com/health-news/screen-time-hurts-more-than-kids-eyes-101215

"This light can affect vision and cause premature aging of the eyes. Early research shows that overexposure to blue light can contribute to eyestrain and discomfort. It also can trigger serious conditions later in life such as age-related macular degeneration, which can lead to blindness."

Seeing Blue: The Impact of Excessive Blue Light Exposure

Heather Flint Ford, OD   *Review of Optometry*   April 15, 2016

https://www.reviewofoptometry.com/article/seeing-blue-the-impact-of-excessive-blue-light-exposure#footnotes

"As our patients (particularly our school-age and young adult patients) become more and more dependent on their use of computers in all walks of life, they are exposed to more blue light than any generation before. It is vital to consider the potential hazards of such exposure and to educate our patients about its risks, including the loss of antioxidant and anticancer functioning, disruption to the circadian rhythm and sleep cycle, and potential vision loss from AMD (Age-Related Macular Degeneration)."

Health Watch: Eye Doctors Concerned About Blue Light From Electronic Devices

CBS New York   May 10, 2018

https://newyork.cbslocal.com/2018/05/10/health-watch-eye-doctors-concerned-about-blue-light-from-electronic-devices/#.WvSkfCVV6Fs.twitter

""We're raising this generation of kids, of young adults and even older adults who are spending hours and hours and hours of time staring at these devices," optometrist Dr. Michael Cross said. The blue light emitted from the screens is in the exact range where it does the most harm. "Shorter wavelength but higher in energy…it penetrates through the lens, the cornea to get to the back of the eye to the retina," Dr. Cross said."

Blue light from phone screens accelerates blindness, study finds

The Guardian   August 9, 2019

https://www.theguardian.com/society/2018/aug/09/blue-light-from-phone-screens-accelerates-blindness-study-finds?CMP=share_btn_tw

"Research by the University of Toledo in the US has revealed that prolonged exposure to blue light triggers poisonous molecules to be generated in the eye's light-sensitive cells that can cause macular degeneration – an incurable condition that affects the middle part of vision. Blue light, which has a shorter wavelength and more energy compared with other colours, can gradually cause damage to the eyes. Dr Ajith Karunarathne, an assistant professor in the university's department of chemistry and biochemistry, said: "We are being exposed to blue light continuously and the eye's cornea and lens cannot block or reflect it.""

Blue light filtering glasses: The one back-to-school item you probably haven't thought to buy. Yet.

Kate Etue   *Cool Mom Tech*   August 8, 2018

https://coolmomtech.com/2018/08/childrens-blue-light-filtering-glasses-bluwinx/

"Blue light from our computers, iPads, and every other device we have — especially at night — can cause serious eye strain, headaches, and even reduce your melatonin production so you don't sleep as well."

Being Sedentary

Too Much Screen Time Raises Kids' Diabetes Risk

Newsmax Health   March 15, 2017

https://www.newsmax.com/Health/Health-News/screen-time-television-video/2017/03/15/id/778813/

"Kids who get too much screen time may be more likely to have risk factors that increase their chances of type 2 diabetes, new research says. Watching television, playing video games or sitting in front of a computer or other device for more than three hours each day was linked to more body fat and insulin resistance. Those factors mean the body is less able to keep blood sugar levels under control, the British researchers said. They said limiting children's screen time could be necessary to prevent health issues later on."

Screen Media Exposure and Obesity in Children and Adolescents

Thomas N. Robinson, Jorge A. Banda, Lauren Hale, Amy Shirong Lu, Frances Fleming-Milici, Sandra L. Calvert, Ellen Wartella   *American Academy of Pediatrics News and Journals*   November, 2017

http://pediatrics.aappublications.org/content/140/Supplement_2/S97

"However, many of the hypothesized mechanisms linking screen media exposure to obesity, such as concurrent eating, advertising, and insufficient sleep, lead us to hypothesize that most emerging digital media, with their increased abilities for interactivity, immersion, involvement, mobility, and timely feedback, could have similar or even more profound effects on causing weight gain in children."

Heart Group Reinforces Screen Time Limits as Use Among Kids Soars

Amy Orciari Herman   *Massachusetts Medical Society*   August 6, 2018

https://www.jwatch.org/fw114437/2018/08/06/heart-group-reinforces-screen-time-limits-use-among-kids

"We want to reinforce the American Heart Association's long-standing recommendation for children and teens to get no more than 1–2 hours of recreational screen time daily. Given that most youth already far exceed these limits, it is especially important for parents to be vigilant about their child's screen time, including phones."

Augmented Reality

The very real health dangers of virtual reality

Sandee LaMotte   *CNN*   December 13, 2017

https://www.cnn.com/2017/12/13/health/virtual-reality-vr-dangers-safety/index.html

""Looking at tablets, phones and the like, there's pretty good evidence that doing near work can cause lengthening of the eye and increase risk for myopia," Banks said. "We're all worried that virtual reality might make things worse." A good many people who use virtual reality complain of eye strain, headaches and, in some cases, nausea. Experts say that's due to the way VR affects the eye-brain connection."

What Researchers Want Teachers to Know About Virtual Reality's Health Risks

Jenny Abamu   *EdSurge*   February 16, 2018

https://www.edsurge.com/news/2018-02-16-what-researchers-want-teachers-to-know-about-virtual-reality-s-health-risks

"What the researchers found in the third phase of the study, published last October, was that usage of VR headsets could impact a child's vision, balance and spatial awareness—concerns they say educators should consider before adopting VR technology."

Parent, Student, Educator Concerns: The Overall Health and Well-being of Children

Look Up From Your Screen: Children learn best when their bodies are engaged in the living world. We must resist the ideology of screen-based learning

Nicolas Tampio   *Aeon*   August 2, 2018

"If the move to digital learning continues, children will spend much, if not most, of their waking hours in front of screens. They will use apps before they go to school, spend their days in front of computers, do their homework online, and then entertain themselves with digital media. Children are losing opportunities to experience the world in all its richness."

Students' request for screen-free time included in Cumberland schools' new strategic plan

Ethan Shorey   *Valley Breeze*   September 20, 2017

http://www.valleybreeze.com/2017-09-20/cumberland-lincoln-area/students-request-screen-free-time-included-cumberland-schools-new#.W5KmnOhKjIV

"Students said in their responses to a strategic plan committee that they love their schools but need a break from technology, said Mitchell. The opinion has been reinforced lately with studies showing that too much screen time has a direct link to increased anxiety and depression."

If Parents Won't Limit Kids' Screen Use, Schools Should

Joy Pullman   *The Federalist*   October 26, 2016

http://thefederalist.com/2016/10/26/if-parents-wont-limit-their-kids-screen-use-schools-should/#.Wcz mYwRKMl4.twitter

"I fundamentally reject the notion you need technology aids in grammar school," Alan Eagle of Google told the *Times*. "The idea that an app on an iPad can better teach my kids to read or do arithmetic, that's ridiculous." He and the school's teachers emphasized that education is a human endeavor built on personal relationships."

Too Much Screen Time in Schools?

Kipp Bentley   *Center for Digital Education*   March 14, 2018

http://www.govtech.com/education/k-12/too-much-screen-time-in-schools.html

"So, as educators, we must ask ourselves if we are contributing to a growing problem, or are we instead modeling a reasonable way for our students and families to embrace technology, but without becoming overwhelmed by its negative side effects. Because even the casual observer knows that schools are making significant efforts to increase the amount of technology they put into the hands of their students. From one-to-one computing initiatives to digital textbooks, the growth of technology in schools — powered by a burgeoning ed tech marketplace — represent a substantial shift in K-12 education."

Don't like your kids tethered to screens at school? Why not ask questions?

Jay Mathews   *Washington Post*   October 15, 2017

https://www.washingtonpost.com/local/education/dont-like-your-kids-tethered-to-screens-at-school-w hy-not-ask-questions/2017/10/15/f1c37e78-aecf-11e7-9e58-e6288544af98_story.html?noredirect=on& utm_term=.cc37888b2a0f

"Citing much research, they concluded, "the new digital world is a toxic environment for the developing minds of young people. Rather than making digital natives superlearners, it has stunted their mental growth.""

Online Homework Conflicts with Parental Limits on Kids Screen Time

Cait Etherington   *ELearning Inside*   January 9, 2019

https://news.elearninginside.com/online-homework-conflicts-with-parental-limits-on-kids-screen-time/

"If John and Megan are frustrated and feel like they don't have any choice but to give in to their local schools' online homework demands, they aren't alone. Despite a growing number of studies linking excessive child and teen screen time to lower levels of academic achievement and higher levels of anxiety and depression, helping your children limit their screen time is often impossible due to educators' growing reliance on online learning."

Worried about classroom screen time? Ask the right questions

Cindy Eckard   *Screens and Kids*   October 29, 2018

http://www.screensandkids.us/

"It becomes evident very quickly that "screen time" is only part of the problem. How the devices are configured, the lighting in the room and the glare of the screens, the lack of recess and sunlight (which profoundly increases myopia risks in growing kids who are already predisposed for nearsightedness) and homework on a device (running sleep, and adding to obesity, anxiety and related conditions like diabetes) play just important a role in negatively impacting our children's health as the amount of time they're on the devices."

Get Outside

https://www.washingtonpost.com/national/health-science/playing-outside-seems-to-help-kids-vision/2017/11/10/b3b66f42-adcf-11e7-a908-a3470754bbb9_story.html?utm_term=.c6f6d1f8869c

https://www.bbc.com/news/health-42238691

http://www.chicagotribune.com/news/opinion/editorials/ct-eyes-myopia-nearsighted-glaucoma-cataract-edit-0411-bd-20150410-story.html

http://thehill.com/opinion/healthcare/395773-dont-turn-a-blind-eye-to-nearsightedness-in-kids

Decline in Fine Motor Skills

http://www.raepica.com/2017/11/early-childhood-keynote-speaker-part-3/?utm_content=bufferffdfd&utm_medium=social&utm_source=twitter.com&utm_campaign=buffer

https://www.theguardian.com/society/2018/feb/25/children-struggle-to-hold-pencils-due-to-too-much-tech-doctors-say?CMP=share_btn_tw

Tips on Screen Viewing/Mitigate Harm From Screens

https://www.allaboutvision.com/cvs/ergonomics.htm

https://www.centreforsight.com/blog/computer-vision-syndrome-eye-strain

https://www.preventblindness.org/computers-and-your-eyes

You can help prevent eyestrain by making changes to your workspace and by visiting your eye doctor. Here are a few suggestions on how to make your workspace more comfortable:

- Place your screen 20 to 26 inches away from your eyes and a little bit below eye level.

- Use a document holder placed next to your screen. It should be close enough so you don't have to swing your head back and forth or constantly change your eye focus.
- Change your lighting to lower glare and harsh reflections. Glare filters over your digital screens can also help.
- Get a chair you can adjust.
- Choose screens that can tilt and swivel. A keyboard that you can adjust is also helpful.
- Computer glasses with yellow-tinted lenses that block blue light can help ease digital eye strain by increasing contrast.
- Anti-reflective lenses reduce glare and increase contrast and also block blue light from digital devices.

Digital Divide

https://www.nytimes.com/2018/02/11/opinion/america-digital-divide.html?smid=tw-share

Organizations:

American Academy of Optometry

http://www.aoa.org/news/advocacy/preventable-vision-loss-unacceptable?sso=y&ct=145d931b2f39040f8952e4cebfbdbceeeb6ebec6aa037b395f6601e9d6a4ad718140975ee485b56d75bb0d23aa4d916af49b595365cd8b187ff7c954dcba6430

All of the issues

Cindy: http://www.bamradionetwork.com/edwords-blog/first-do-no-harm

Silicon Valley Pushback

https://www.nytimes.com/2018/01/08/technology/apple-tech-children-jana-calstrs.html?smid=tw-share

https://www.deseretnews.com/article/900007160/apple-just-announced-it-plans-to-help-parents-manage-their-kids-cellphone-use-heres-why.html

https://www.businessinsider.com/evidence-apple-shareholders-used-to-show-iphones-are-addictive-2018-1

https://www.nytimes.com/2018/02/04/technology/early-facebook-google-employees-fight-tech.html?smid=tw-share

https://www.cbsnews.com/news/truth-about-tech-campaign-against-tech-addiction/

https://www.ft.com/content/7ad7d6ec-5393-11e8-84f4-43d65af59d43