

# Technology and Mental Health



We all use technology to make our lives easier to some degree, but most people are shocked at how much time they spend exposed to stimulating technology. Studies have shown that adults can spend an average of 11 to 17 hours/day in front of a screen. Between smartphones, computer monitors, televisions, and handheld video game consoles, those hours of screen time add up.

While technology makes many aspects of life easier, it is important to consider the ways in which technology may be detrimental. Consider the following ways in which using technology may be impacting your mental health.

## 1 You're dependent on your smartphone.

This one device is often responsible for how you communicate with family, friends, and colleagues, take and store photos and videos, banking information, schedules, music...the list goes on. Millions of people around the world rely on their smartphone to perform so many daily tasks that they cannot imagine living without it.

## 2 For many, dependency has led to digital addiction - an intentional move by tech companies.

Digital addiction can be defined by whether or not an individual's devices, like a smartphone, are preventing them from performing their job well, building or maintaining relationships, being present, or able to enjoy activities outside of the digital space. Beyond this, if an individual's physical health or sense of self-

worth is negatively impacted by the use of devices, a digital addiction is likely present. Digital addiction can happen to anyone, of any age, and in any life stage. Similar to substance use, using devices releases the neurotransmitter dopamine, allowing an escape from reality to make us more comfortable. Tech companies understand this; the dopamine surge is purposeful to keep people checking their smartphone or social media timeline. These are referred to as compulsion loops - the process of repeatedly checking one's device for the dopamine spike that comes along with the constant stream of stimulation the device provides. Receiving 'likes' on social media trigger the same dopamine burst that happens when eating chocolate or receiving money. Further, tech and media companies know that when we see shocking or scary information, stress is induced and quickly mitigated by looking for more information, creating the compulsion loop.

### 3 Whether you're addicted or not, technology is likely making you more anxious, depressed, stressed, lonely, and insecure.

Stating it bluntly, tech can worsen existing mental health issues. Constantly comparing ourselves to others based on carefully curated posts and images increases insecurities and self-esteem concerns, regardless of how manipulated they may be. Additionally, the more time we spend on social media, the less time we have for other things. Consider your own life and how often you spend on hobbies or socializing in person, relative to how often you are in front of a screen. Many people feel they are spending less time with friends and family, and more time on their devices. Without being grounded in more meaningful, in person activities, it is possible to begin losing touch with reality, and more likely for individuals to experience depression, anxiety, and loneliness. Beyond social media, being exposed to news stories repeatedly throughout the day begins a cycle of negativity and fear, triggering the body's nervous system to engage the fight or flight response, releasing cortisol and adrenaline, increasing anxiety. This interferes with the ability to make decisions and behave appropriately.

### 4 Technology may be worsening your brain fog, ADHD, memory loss, or poor attention span.

Are you losing things more than you used to? Or having difficulty focusing during conversations? Often, these symptoms are attributed to age, or a busy lifestyle, but studies have shown that concentration issues in adults has increased 43% since 2007. What happened in 2007 that could have contributed to this huge surge in brain fog and ADHD? The introduction of the iPhone. The ability to check our email, text messages, social media, and other applications 24 hours per day, 7 days per week has complicated our relationship with technology. The cognitive decline that many people have experienced in the last 15 years has much to do with our digital dependency. Studies have shown that using a smartphone for as little as 5 minutes has a significant impact on memory impairment. While we no longer need to memorize phone numbers or addresses, and can search the internet for any information we are looking for, smartphones also serve to distract us from the present moment. Clicking, scrolling, and streaming for long periods of time stimulates the brain, getting it accustomed to new information every couple of seconds. Over time, the brain's ability to focus for longer periods will dull, and eventually will deteriorate. The more reliant one is on technology, the more at risk they are for developing attention disorders and

impaired thinking. Those who find themselves unable to focus and complete tasks can experience increased stress and frustration. Conversely, those who are able to be present, and fully immerse themselves in tasks, often experience less stress and more happiness. Studies show that these changes can be seen in the actual structure of our brains, too, not just felt. Consuming too much technology, spending significant amounts of time in front of screens, can shrink parts of the brain responsible for logic and decision making. Additionally, screen time can result in diminished communication between different areas of the brain, slowing cognitive function and increasing risk for depression, anxiety, and mental fatigue.

### 5 Technology is seriously screwing with your sleep—and for reasons that go beyond blue light.

Many people in North America, some studies showing up to 1/3 of adults, have difficulty getting quality sleep. Without getting enough sleep, anxiety, depression, and other mood disorders can worsen. Many different things can cause someone to have poor sleep, but the stimulation our brains receive from using technology with screens is a major contributor to poor sleep. Blue light is the screen time enemy we have all been warned about, for good reason, too. Exposure to blue light can interfere with the body's production of melatonin, the hormone that makes us feel sleepy. Besides this exposure to blue light, staring at a screen right before falling asleep engages the compulsion loop discussed earlier. The body may be tired, but with the interference of technology it is in hyperarousal, making it difficult to fall asleep and have quality sleep. Sleep is a state the body has to be primed to enter. Giving the body the appropriate internal and external cues will allow it to begin entering the sleep state — the body's internal temperature lowers, heart rate slows, and melatonin production increases. Screen time prevents these steps from happening which prevents the body from being able to enter a state in which it can sleep. Beyond screen time, other technology, like LED and fluorescent lighting, also take a toll on the quality and quantity of sleep we experience. Artificial light is incredibly stimulating to the nervous system, which can interfere with the natural sleep-wake cycle that the presence and absence of sunlight causes. While you may fall asleep with the television on, the stimulation your brain is receiving may be preventing you from experiencing uninterrupted deep sleep. By exposing yourself to technology immediately before or while you sleep, the natural sleep cycles that our body is designed to experience may be disrupted, and contribute to felt anxiety and depression.