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**News**

Have you noticed what seems like an epidemic of people who are glued to their smartphone's soft glow?

Unfortunately, you are not alone. Over 1.8 billion people own smartphones and use their devices on a daily basis. Some studies estimate that an average person checks their screen 150 times a day.

This widespread use of technology trickles down to the youngest members of our society. Data from Britain shows almost 70 percent of "11- to 12-year-olds use a mobile phone and this increases to close to 90 percent by the age of 14."

In a recent publication, it was noted that 56 percent of children between the ages of 10 to 13 own a smartphone. While that fact alone may come as a shock, it is estimated that 25 percent of children between the ages of 2 and 5 have a smartphone.

It should come as no surprise that smartphones and tablets have now replaced basketballs and baby dolls on a child's wish list. Elementary school-aged children start asking, or let's say begging, for these forms of technology before they can even tie their shoes.

This raises the question of how mobile technology, typically found in smartphones, affects [childhood](#) brain development. This topic has been creating a lot of debate among parents, educators, and researchers. Unfortunately, smartphones are relatively new and a lot of the gathered evidence is unclear or inconsistent.

That means that is important for parents to consider the potential effects smartphones can have on childhood psychology and development.

A lot of research has been conducted over the years to understand how children learn. There are many theories circulating, but Jean

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Piaget might be the most respected in the education field. He was one of the first people to study how a child's brain develops.

His cognitive development theory basically explains how learning is a mental process that reorganizes concepts based on biology and experiences. He deduced that children learn the same way — their brains grow and function in similar patterns, moving through four universal stages of development.

Educators have been implementing a variety of techniques and methods into their lessons that build on Piaget's principles. Children need to experience the world around them to accommodate new ideas. Children "construct an understanding of the world around them" and try to understand new ideas based on what they already know and discover.

For children, face-to-face interactions are the primary ways they gain knowledge and learn.

Dr. Jenny Radesky of Boston Medical Center, became concerned when she noticed the lack of interaction between parents and children. She had observed that smartphones and handheld devices were interfering with bonding and parental attention.

Radesky said, "They (children) learn language, they learn about their own emotions, they learn how to regulate them. They learn by watching us how to have a conversation, how to read other people's facial expressions. And if that's not happening, children are missing out on important development milestones."

Screen time takes away from learning and physically exploring the world through play and interactions. It can be noted that doctors and educators are worried how the overexposure to touch-screen technology can impact developing brains.

Radiation from cellphones has long been a primary fear of how smartphones can affect a brain. However, the radiation theory hasn't been proven and many professionals claim cellphones do not expose us to enough radiation to cause harm. That may provide parents a little relief, but it appears that the radio frequencies emitted from a smartphone might actually harm a developing brain.

The temporal and frontal lobes of the brain are still developing in a teen and they are closest to the part of the ear where teens tend to hold their device. In fact, "research has shown that both the temporal and frontal are actively developing during adolescence and are instrumental in aspects of advanced cognitive functioning."

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Besides exposing developing brains to radio waves or harmful radiation, researchers are looking into how smartphones and the Internet can hinder or enrich brain function. Dr. Gary Small, head of UCLA's [memory](#) and aging research center, performed an experiment that demonstrates how people's brains change in response to Internet use.

He used two groups: those with a lot of computer savvy and those with minimal technology experience. With brain scans, he discovered that the two groups had similar brain functions while reading text from a book. However, the tech group showed "broad brain activity in the left-front part of the brain known as the dorsolateral prefrontal cortex, while the novices showed little, if any, activity in this area."

As a child ages it often feels like they need to practice technology to stay on top of the modern advancements. However, Dr. Small's experiment shows that after a few days of instruction, the novices were soon showing the same brain functions as the computer-savvy group.

Technology and screen time had rewired their brains. It appears that increased screen time neglects the circuits in the brain that control more traditional methods for learning. These are typically used for reading, writing, and concentration.

Smartphones and the Internet also affect communication skills and the emotional development of humans. If a child relies on electronics to communicate, they risk weakening their people skills. Dr. Small suggests that children can become detached from others' feelings.

If a human's mind can be easily molded, imagine the connections and wiring that is happening in a brain still developing.

However, there is no concrete proof that mobile technology is linked to adverse outcomes. Smartphones and technology do offer benefits to our children. Here is a quick rundown of the benefits technology can offer our youth:

- A child is more capable of: handling rapid cybersearches, making quick decisions, developing visual acuity, and multitasking.
- Games help develop peripheral vision.
- Visual motor tasks like tracking objects or visually searching for items is improved.
- Internet users tend to use decision-making and problem-solving brain regions more often.

Many experts and educators feel that interactive media has a place in a child's life. Smartphones and tablets can foster learning concepts, communication, and camaraderie.

Here are a few recommendations to make the most of time spent on a smartphone:

- Children under two should not be using screens or electronic devices.
- Play alongside your children and interact with them face-to-face.
- Make sure smartphones don't interfere with opportunities for play and socializing.
- Limit screen use to one or two hours a day. This includes smartphones, TV, computers, etc.
- It is all right to use a smartphone as an occasional treat.
- Model positive smartphone use.
- Encourage family meals and communication.
- Look for quality apps that promote building vocabulary, mathematical, literacy, and science concepts.
- Keep smartphones out of the bedrooms.

Health officials seem unable to agree on the impact smartphones and similar devices have on developing brains. Studies contradict each other and new benefits to technology are uncovered regularly.

Obviously, parents do need to stay informed. They should be aware of the possible side effects a smartphone can harbor. All of this inconclusive evidence can lead a parent to question when they should allow their children access to smartphones or technology. However, one thing all the experts seem to agree on is that moderation is key.

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