

The teenage brain

Dr. Paul Martiquet, Medical Health Officer

Parents can be forgiven for asking themselves “what were you thinking” when considering the behaviour of their teenagers. They might think their child has morphed from a normal child into a completely different person. But this is just a stage of development where what they think is not the story, but how they think is.

A teenager’s brain is not the same as an adult’s. While some will have come to that judgement already, there is proof. For years the brain has been assumed to be pretty much fully grown by about age 10, and that a teen brain was the same as an adult’s, but with less ‘mileage’ or experience. Not so. In teens, a crucial part of the brain called the frontal lobes have not fully developed, and won’t do so until their mid-20s.

The frontal lobes are responsible for judgement. It’s the part of the brain that asks “is this a good idea?” or “what are the consequences?” Because the frontal lobes are not fully connected in a young brain, communication is much slower between them. If your teen seems surly, rude or selfish it is because they are still developing and do not have good insight. And yes, insight develops as the frontal lobes become fully connected.

Young brains are very excitable, from childhood to adolescence. This means they are great tools for learning. Unfortunately, some learning is negative. Take addiction: it has been shown to be a form of ‘learning’ meaning teens have a more robust ability to form habits. This takes us to teen drinking.

Consuming alcohol as a teen is not the same as doing so as an adult. The not-fully-grown brain of adolescents can be damaged by alcohol. A recent study from the University of California, San Diego examined teens using brain scans, comparing those of teens who drank heavily with those of teens who do not. They found damaged tissue in the brains of teens who drank.

Study looked at 12- to 14-year-olds before they had used any alcohol or drugs. Over time, some began to drink including some quite heavily. Teens who drank did so as few as one or two times per month, but they consumed four-to-five drinks per instance, classic teen binge drinking.

Testing showed that the binge drinkers did worse on thinking and memory tests. The scans also found damage to the hippocampus, a key area of the brain for memory.

Adolescents (and children of all ages) growing up need to take risks, behaviour we used to think was a way to rebel against parents, but it is not about rebellion. Growing up is all about exploring and testing personal limits and establishing identity.

What does this tell us about helping our teens navigate the perils of teenage? First, we should teach them to take healthy risks. This might be sports for one child, and stage performance for another. It might be as simple as asking someone out — but all are good risks. Healthy risk-taking teaches decision-making and provides tools for teens to take into adulthood. And we can help.

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