PARENTS AT AINLAY

The Adolescent Brain
("Now you see it...Now you don't")

"The teenage brain may, in fact, be briefly insane. But, scientists say, it is crazy by design. The teenage brain is in flux, maddening and muddled. And that's how it is supposed to be." (B. Strauch, The Primal Teen, 2003)

Impulsive … Moody… Passionate … Self-Conscious… Which of these words describes *your* teen? As parents, we live amongst a kaleidoscope of teenage emotions. It can make the world a colorful place! Where do all these emotions come from and how, as parents, do we manage to live with them during these high school years?

In the December 'Parents at Ainlay' article, we talked about how the front part of the adolescent brain, the frontal cortex, is responsible for reasoning and logic. Adults use this part of their brain to process information. In teenagers, on the other hand, this area is still very much a 'work in progress'. As a result, teens tend to not rely heavily on this part of their brain in their day-to-day life. Instead, another area found deeper inside the brain, called the "amygdala", is the area that researchers are finding our teenagers put to work. A closer look at this 'emotional' teenage brain tells an interesting story. The amygdala, or centre of emotion, is "highly excitable and passionate" and so, therefore, are our teens. And because teens *thinking* tends to rely more on this emotional center, their *behavior* choices, in turn, reflect a more emotional and impulsive quality, rather than being rational and adult-like.

Neuroscientists are also searching to better understand teenagers' emotional lives. Adolescent behavior and responses, and the ability to interpret other peoples reactions, has been studied by Dr. Yurgelun-Todd. Her research uses MRI technology to study teens' responses to a series of photographs. Teens were asked to identify the emotion on the face of an adult presented in a picture. Fifty percent of the time teenagers were unable to correctly identify the emotion. (Adults correctly identified the emotions *100%* of the time.) This research convincingly showed that adolescents are in fact, not able to accurately read all of the feelings they see in an adult face. *("You mean they don't really understand us?!" parents ask.*) As a result, teens misinterpret some of our feelings when we are interacting with them. After all, although we are their parents, our faces are those of adults …. on most days anyways. Miscommunication results not only in what the teenager *thinks* the adult/parent is feeling, but also how they *respond* to that emotion becomes confused. "Misunderstandings and misinterpretations are common occurrences behind much of the moodiness and temperamental behavior of teens." Add to this the fact that adolescents actually *feel* things before they can control or even express their emotions, and it's no wonder their behavior is unpredictable!

Adolescent literature repeatedly describes the teenage brain as remarkable and surprising, much like a day living with a teen – unique and unpredictable. Well-documented hormone changes that take place during adolescence "play an important role in the erratic behavior of teenagers by adding to the commotion of puberty". As well, researchers have uncovered another aspect of the "bewildering behavior" we can see in our teens. It relates to a substance found in the brain, called serotonin. This substance is partially responsible for our feelings of peacefulness and calmness. *DID YOU SAY PEACEFULNESS AND CALMNESS?!* It comes as no surprise to parents to learn that during the adolescent years, this 'serene serotonin', is naturally at lower levels. So, when you bring together teenagers' major use of the emotional centre in their brain, with this reduced level of serenity, the obvious result is a more reactive, excitable, temperamental teen. Significant mood swings and shifts in sleeping patterns also contribute to considerable unrest in some homes of teenage families.

Another significant chemical found in the teenage brain is dopamine. Unlike serotonin, "teenage dopamine levels are still considerably higher than levels found in most adults." Dopamine is largely involved in what is known as the "pleasure-and-reward circuit" in the brain. This substance produces intense feelings of pleasure. So what is dopamine's role when it comes to the teenage brain? The answer is *"thrills"*. Novelty or new experiences, especially pleasurable and exciting ones, stimulate dopamine. Dopamine is what kicks in when we have something we like or something that makes us feel good. The good feelings we get from higher levels of dopamine then pushes us to reach for more. Researchers have found that "novelty", especially when attached to the thrill of danger, is very attractive to adolescents and can tempt even cautious teens to dangerous experimentation." And so we see the origins of risk-taking, thrill-seeking behaviors in our teens. Once again, it's their brain's fault!

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So once again, the use of MRI technology has shed new light on the adolescent brain. The emotional being that enters our homes and lives with us during the high school years, has now been scientifically linked to the actual brain function and chemicals found in the adolescent brain. Our teen actually uses a different part of their brain to process information and emotions, which results in a unique pattern of behavior choices they make. So what does this all mean for parents and family who "share space" with these teens each day? Here's what the literature recommends:

- Be clear when communicating your emotions with your teenager. Research shows that the teenage brain doesn't always "get it", and that often our teen's response to us is based on this confusion.
- Adjust your expectations of your teen's emotional behaviors. Expect and recognize their mood swings as "part of the package". It is where their brain is at right now. Teen's hormone changes, chemicals found in their brains, along with the actual stage of their brain development, all contribute to teenagers' behavior choices and emotions. Sometimes being supportive means getting out of their way until they are ready to identify and express their feelings, and ask for what they need. Don't take it personally! You are NOT responsible for their moods and behavior.
- Once again, the literature is consistent in its message for parents to ***be involved*** in the daily life and activities of your teen. Be available to them at anytime. Late at night can often be the time when your teen feels most like talking. Don't miss those opportunities!
- Finally, remember that the teenage brain does *not* think or work the same as an adult brain. As a parent, remind yourself to not always expect reasonable, logical, mature patterns of thought and behavior from your teen. Their brain is not there yet! By changing our expectations to be more in sync with the actual stage of our teen's brain, many struggles can be sidestepped. Besides, who ever told us that the teenage years were meant to be *CALM* and *PEACEFUL*?

"Teens change emotions by the nanosecond, regularly blow situations out of proportion, and find something to be self conscious about at every turn."
Dr. Charles Nelson