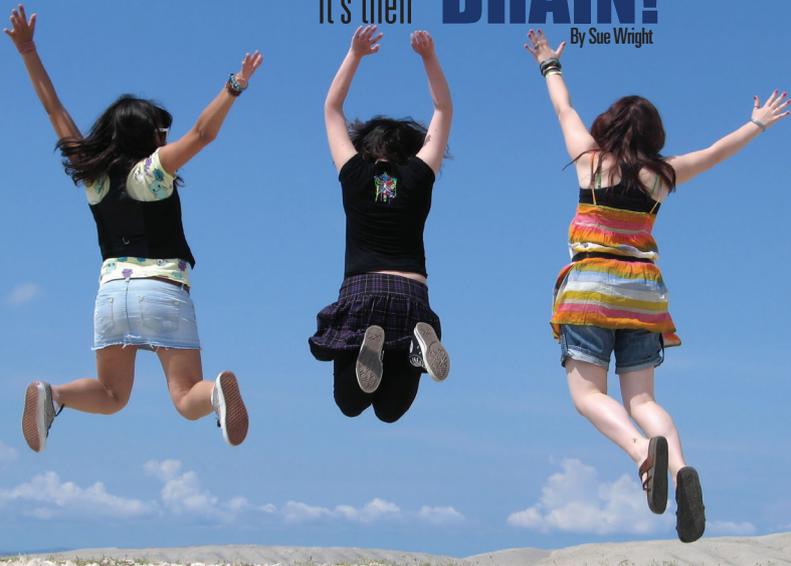




## Teenagers: it's not just their hormones - it's their **BRAIN!**

By Sue Wright



**M**oody, impulsive, doing crazy things and when you ask you get the answer “I don't know”! Adolescence, a period of around 15 years, is and always has been a challenging period of life for both adults and teenagers.

Scientists have now started to unravel the mystery of adolescence and it all comes back to the brain. Just over a decade ago researchers first identified that during adolescence parts of the brain literally undergo reconstruction. The years from conception through the first few years of life build the foundation for the rest of our lives - how we think, feel and behave. The brain changes during adolescence build on these foundations.

This is period full of amazing development and drive. As Daniel Siegel describes in his latest book, *Brainstorm*, it is a period where we can build the essence of living well for the rest of our adult life. He describes the four key changes - novelty seeking, social engagement, increased emotional intensity and creative explorations. These changes affect how teens seek rewards in trying new things, connect with their peers in different ways, feel more intense emotions and push back on the existing way of doing things to create new ways of being in the world.

Adolescence starts with puberty, when our bodies start changing, usually around 8 to 10 years old and ends in the mid 20's when the brain has fully formed its adult structure and function. During this time the young person transitions from full dependence on their family for food, clothing, support and care to interdependence, where they have their own relationships and with their own skills to support and care for themselves and their offspring. To achieve this adolescents have to learn how to relate to a wider (non-family) circle of people, learn new skills and take control of their own lives, making decisions and choices that may stay with them forever.

To leave the familiarity of the home setting adolescents need the drive to seek out new experiences, a willingness to take risks and take actions that may seem to be impulsive behaviour, all strongly influenced by their social group.

At the front of our brain, just above our eyes and behind the forehead is a region that plays a critical role in memory, impulse control, decision-making and planning for the future and stops us taking actions that may cause harm. This area is literally being reconstructed during these years; it is being structured and wired up as a result of our experiences and learning.

In the meantime, the 'emotional' regions of the brain have a greater effect on our decisions and actions. Some areas in the brain make us feel really good; when stimulated they make us feel great about ourselves, sometimes exhilarated and give us a desire to do whatever caused that feeling again and again and again. These 'reward' centres are more sensitive during adolescence and are not yet strongly wired up to the "don't do it" frontal region. This can lead to impulsive, crazy, apparently careless actions. When asked "Why did you do it?" the common answer is "I don't know" and the reality is adolescents genuinely often do not know why they did it, it just felt good!

Interestingly studies have found that adolescents are able to describe risks as accurately as any adult, it's just that they are more likely to take those risks than adults. Why? Two reasons - the first is that often the gain from feeling the fear and just doing 'it' outweighs the perceived risk of harm. The second is the social peer group influences adolescents to take more risks as the feeling of reward and exhilaration is so much greater.

Adolescence is a unique and special time full of both risk and opportunity. The experiences they have shape their learning and their brain. It is also a time when parents are sometimes needed to perform some of the functions of the front part of the brain!

If you would like to know more, please contact Brainwave [info@brainwave.org.nz](mailto:info@brainwave.org.nz) to organise a presentation or workshop on "Unravelling the Adolescent Brain".

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