

# Understanding the Mysteries of the Teenage Brain

Victoria Tennant, M.Ed.

360-705-3009

[vtennant@verizon.net](mailto:vtennant@verizon.net)

Victoria is an educational consultant with 36 years of teaching experience, including 10 years as a classroom teacher. Her current workshops and curriculum materials reflect a synthesis of 27 years of studying and presenting implications and applications of brain/mind research. She is the author of *Healthy Beginnings - Nurturing Children's Growing Minds™*, and *Calming Ourselves in Stressful Moments™*, both published by Comprehensive Health Education Foundation. Victoria has presented information on Teen Brain Development since 2004 to schools, state organizations and parent groups. She is a licensed Brain Gym™ Instructor/Consultant and a certified Resonance Repatterning™ Practitioner in Olympia, WA.

©Victoria Tennant Consulting  
2007

# Understanding the Mysteries of the Teenage Brain

## Presentation Overview

For more detailed information and/or information on scheduling a presentation, contact Victoria Tennant at 360-705-3009 or [vtennant@verizon.net](mailto:vtennant@verizon.net)

*Developing Teen Brain* diagram (separate document)  
Refer to this diagram for functions of the following brain areas.

### Prefrontal Cortex (CEO) - Thinking Brain

Recent neuroscience research reveals that the prefrontal cortex of the brain is undergoing dramatic upheaval and change in adolescence. Throughout the teen years, the vulnerability of the developing brain presents risks and challenges coupled with tremendous capacity for growth.

#### **Key Ideas**

- A teen brain's CEO is under construction. The circuitry often goes "off line" making it unreliable.
- Experience sculpts the brain – neural networks are formed through use. How teens spend their time is crucial for "hard wiring" the brain.

### Limbic System - Feeling Brain

Beginning with puberty, dramatic increases in hormones drive teen behavior. The limbic system is highly active, causing strong, spontaneous reactions to emotions.

#### **Key Ideas**

- Teens want to feel love from adults and independent from them at the same time.
- Teens have trouble modulating their emotional responses and controlling impulses.
- Teens often misread emotional cues, causing them to be over-sensitive and exaggerated in their reactions to another's communication.
- Teen behavior is often driven by the pursuit of pleasure.
- Teen brains are wired to seek out risky experiences that create big emotional reactions.

### Brain Stem - Survival Brain

Teens quickly shift into survival mode when stressed. Defensive behaviors take charge and the thinking brain shuts down.

#### **Key Ideas**

- Stress and the risk of depression increase during adolescence.
- Teens need a safe, nurturing environment and strategies to calm themselves.
- To manage stress (and for healthy brain development) teens need at least 9 hours of sleep, good nutrition, and exercise.

## Impact of drugs on the development of the prefrontal cortex:

- Dramatic changes make the adolescent brain more vulnerable than the adult brain.
- Drugs disrupt the prefrontal brain's capacity for reason & other CEO functions.
- Substance abuse interferes with natural interests and healthy activities.
- This can result in missing prime opportunities to develop the neural pathways for learning and successful life skills.

## Impact of drugs on the emotional brain:

- Artificially stimulates the brain's pleasure pathways by changing the chemistry of the brain.
- Drug abuse interferes with the natural feedback loop of the brain's reward system – requiring increased stimulation of the drug to feel good.
- Overrides natural healthy pleasures – disrupts motivation.
- Limits neural pathways involved in impulse control.
- Increases dangerous risk taking; can establish a pattern of trouble.

## Impact of drugs on the survival brain:

- Overly stressed teens are more likely to smoke, drink, or abuse other drugs in an attempt to self-medicate.
- Stress reactions are exacerbated, creating a vicious cycle.

## Addiction and the teen brain

*A teen's nature makes them especially vulnerable to experimenting with and becoming addicted to drugs.*

1. Meet a teen's basic needs to feel safe, secure and loved.
  - Be a coach – offer guidance and support.
  - Help them manage stress.
  - Be a positive role model.
2. Recognize risk factors & warning signs of addiction.
3. Get help – addiction is a disease.
4. Be patient and consistent.
5. Don't lose hope. It is never too late – the brain is remarkable in it's ability to heal and form new connections.