

ADOLESCENCE:

The period between the onset of sexual maturation & the attainment of adult roles & responsibilities.

Teens are in the healthiest and most resilient time of life...

YET their morbidity and mortality increases 200-300 times this period.

Why is that?

- Pressure to be self-reliant
- Peer group formation
- Increased academic demands
- Increased responsibility
- Money
- Romantic desires
- Identity formation (figuring out who you are)
- Other reason

**INFLUENCE
IN ACTION**



Juggling Changes the Brain's Physical Structure

Oxford's Department of Clinical Neurology recruited 24 students for a study in which 12 were trained in juggling for six weeks while the other 12 did not receive the training. None of the students had ever juggled before so they were learning a new skill. All 24 had their brains scanned – using a diffusion MRI – before and after the six-week period. Those who did the juggling showed a 5% increase in white matter (tissue that helps speed up signal transmission in the brain) while the brain of those who did not receive training remained unchanged. The growth occurred in the region of the brain that contains nerves related to reaching and grasping for objects in our peripheral vision.

White matter is the nerve fibre cabling that conducts electrical signals between nerve cells in the brain. The more white matter, the speedier the communication and therefore, the quicker the reactions.

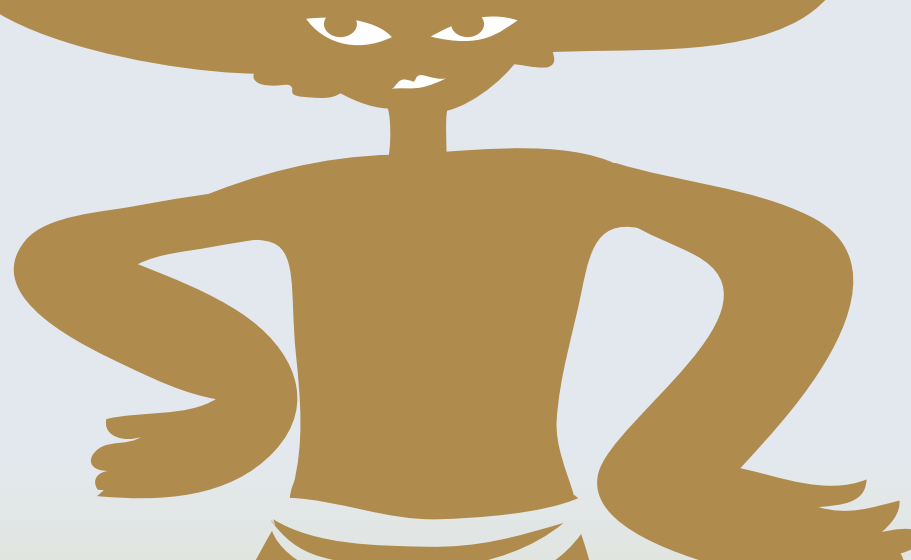
Oxford University: http://www.ox.ac.uk/media/news_stories/2009/091012_2.html

Juggling photos courtesy of Draitude – from his Youtube juggling tutorials.



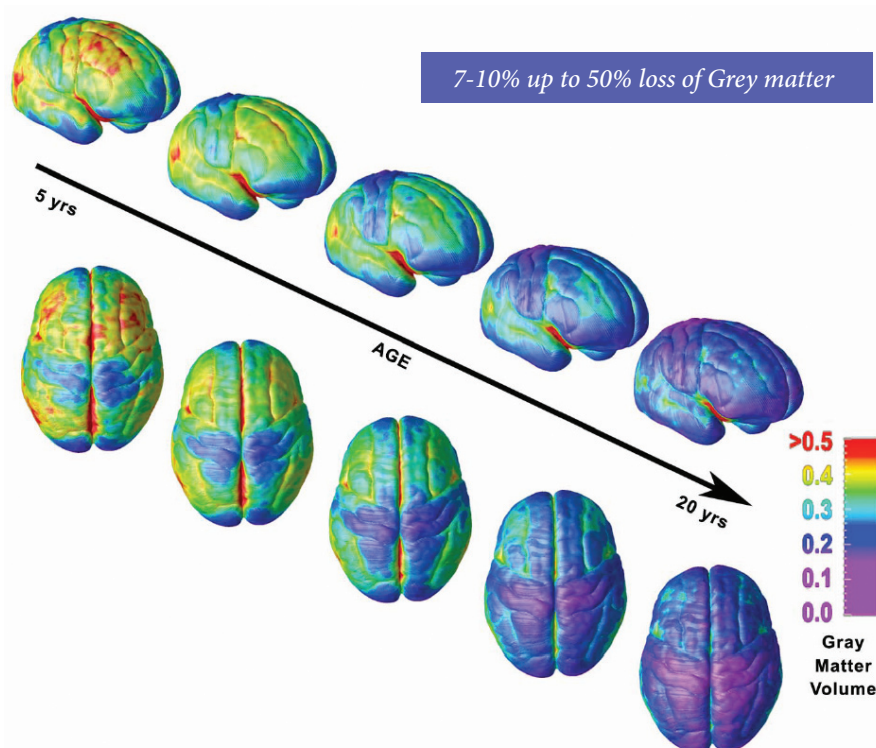
Teen Brains

undergo dramatic changes throughout adolescence. As a result of this transitioning they are more sensitive to injury.



The Brain's Make up Changes

(from Grey matter to White matter)



Grey matter is made up of all the brain's neural cell bodies.

White matter is the neural cabling that conducts electrical impulses from one part of the brain another. More cabling creates more neural pathways that help make the brain more resilient to injury (i.e. from substance use, physical injury, aging, etc).

Youth take more risks in groups than they do alone.¹



Changing Level of Risk Taking

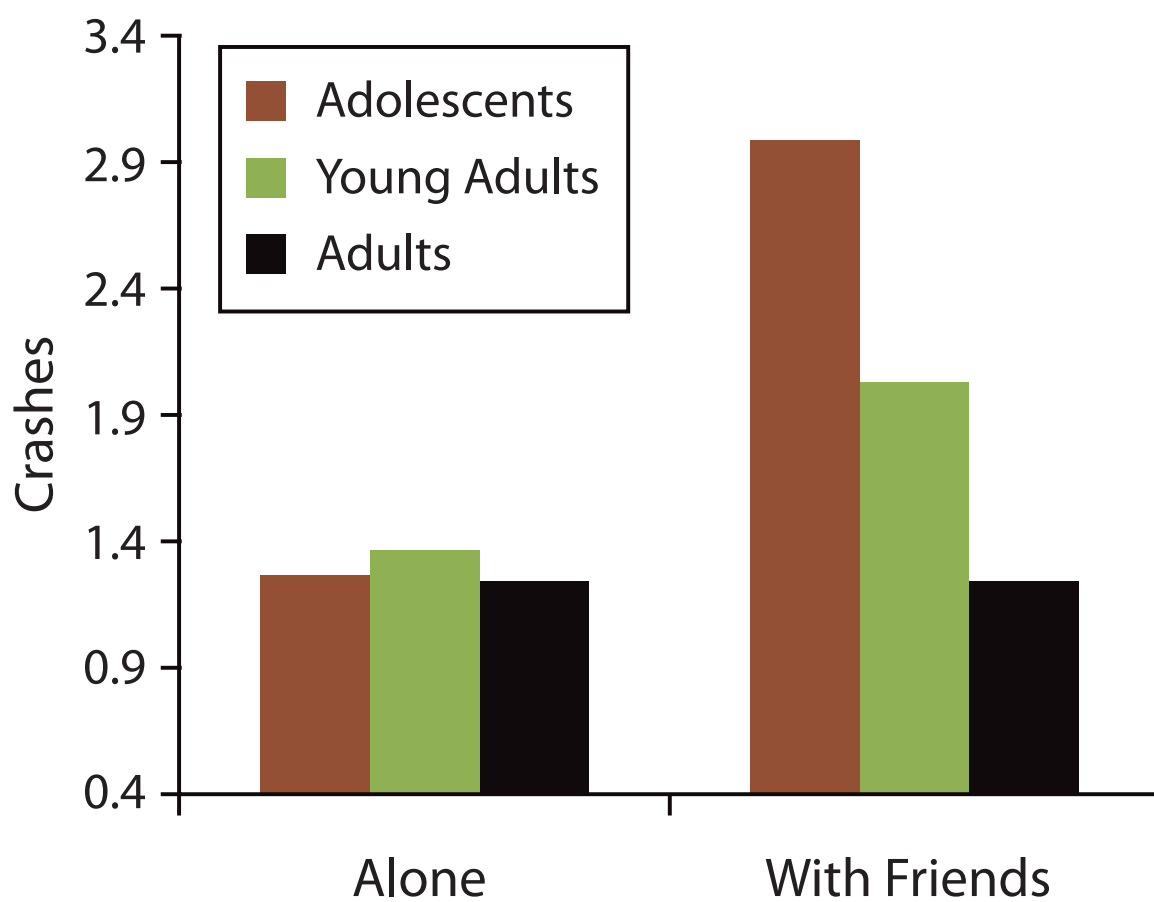


Fig. 2. Risk taking of adolescents, young adults, and adults during a video driving game, when playing alone and when playing with friends. Adapted from Gardner & Steinberg (2004).

Source: 1. Jean M. Clinton B.MusMD FRCP(C), McMaster University and Children's Hospital, Offord Centre for Child Studies



RIGHT NOW!

What was I thinking?



THINK IT OVER

...Weigh Pros and Cons



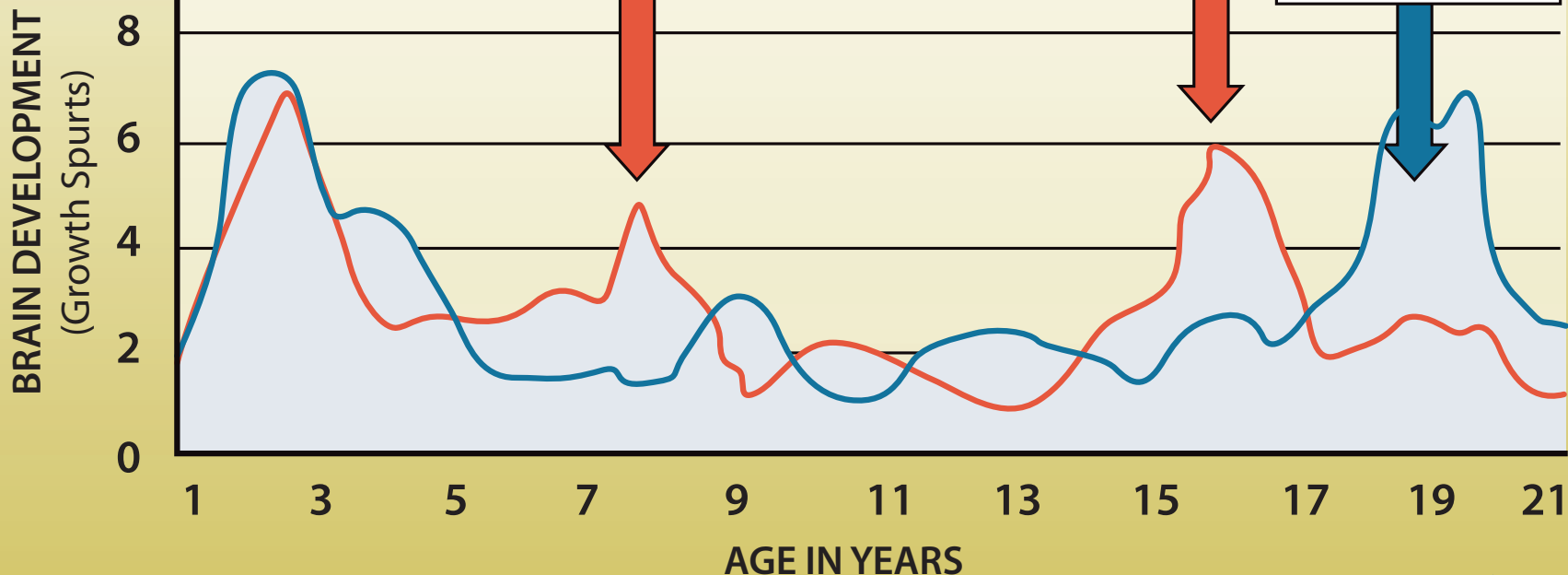
EMOTIONAL BRAIN
(Limbic System)

- Gut reponses
- Pleasure seeking
- Risk taking
- Excitement

develops before

LOGICAL BRAIN
(Frontal Cortex)

- Logical thinking
- Problem solving
- Regulates emotions
- Excitement



Source: Jean M. Clinton B.MusMD FRCP(C), McMaster University and Children's Hospital, Offord Centre for Child Studies

