

Teen Drivers: Risk Taking and Brain Development

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Outline

The Science

- Adolescent Driving Statistics
- Adolescent Risk-taking Behaviors
- Adolescent Brain Development Updates

Putting it all together

How to use our new knowledge in driver
education settings

The Science: Adolescent Driving Statistics

➤ **5,000 deaths ages 16-19 in 2002
(CDC)**

➤ **\$40.8 billion estimated costs of accidents ages 15-20 in 2003 (NHTSA)**

➤ **18% of all high school age adolescents report EVER wearing seat belts in 2004 (CDC)**

➤ **25% of deaths of drivers ages 15-20 involved BAC of 0.08% or higher in 2004 (CDC)**

➤ **Adolescents represent 10% of population but 14% of all motor-vehicle deaths in 2004 (IIHS)**

Adolescent Risk-taking Behavior

The 4 ‘I’s of adolescence

Erin’s 5th ‘I’ of adolescence

**Basic changes during adolescence:
physical, social, emotional**

The 4 “I”s of adolescence

Invincibility

Invulnerability

Immortality

Immunity

Erin's 5th "I" of adolescence

Infallibility

Basic changes during adolescence: physical, social, emotional

- 1. Increased time with peers, decreased time with parents and family**



2. Increased risk-taking and exploration.

**3. Increased conflicts with authority,
including parents.**

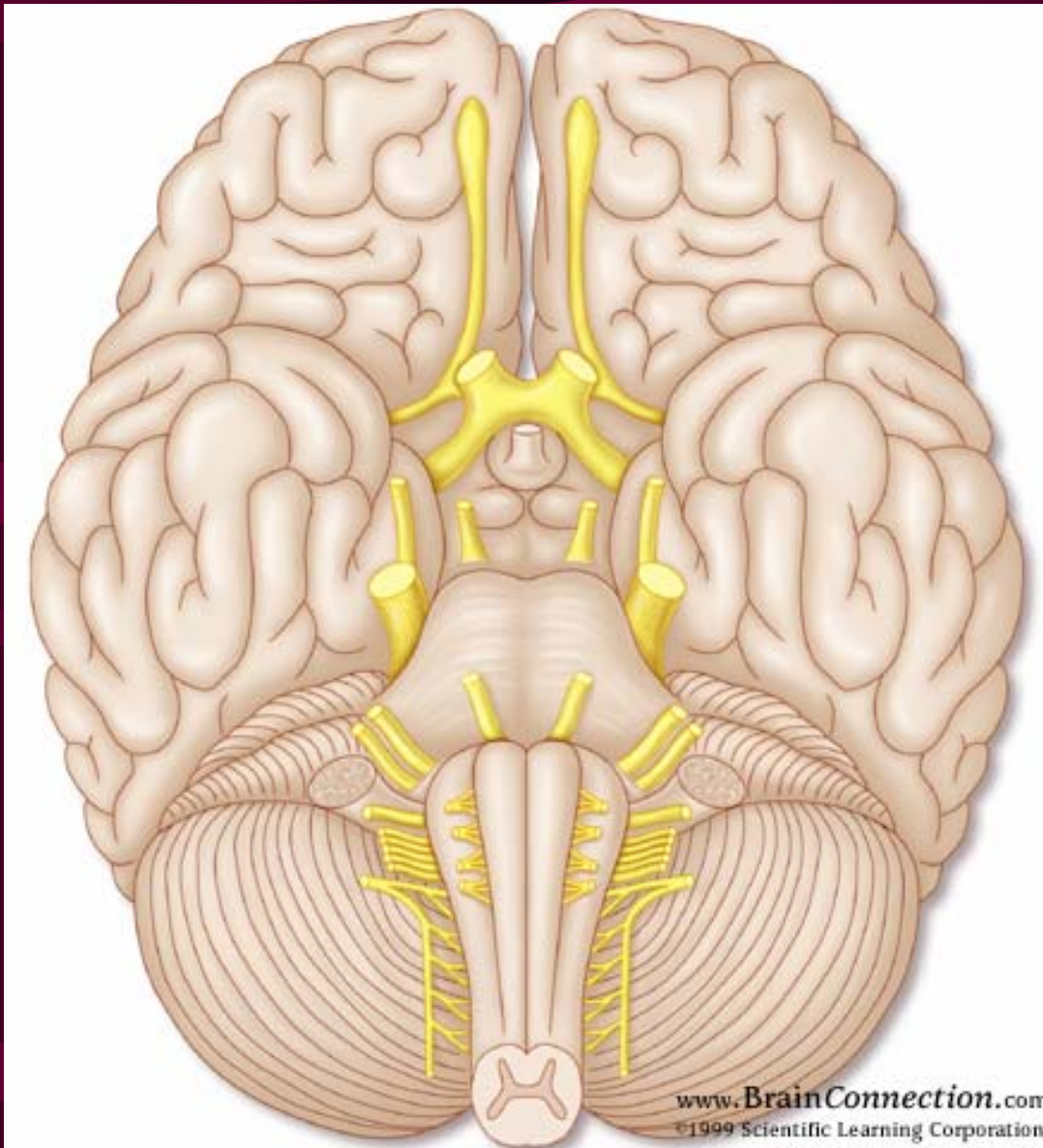
4. Changes in sleep patterns, including going to sleep and waking up later.

5. Puberty (sexual maturation)

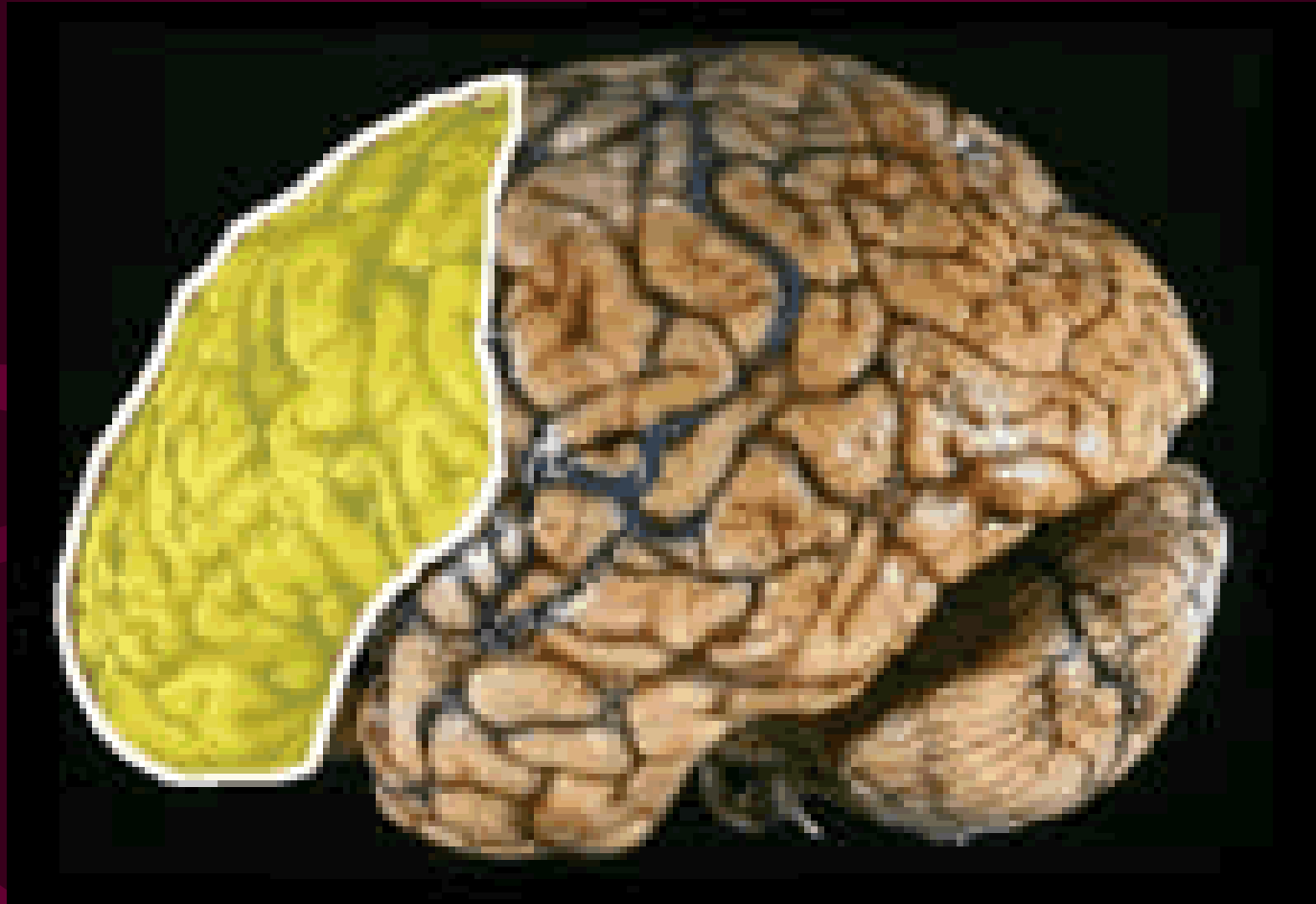
Adolescent Brain Development: Updates

The concept of “plasticity”

Inferior overhead view of adult brain



Highlight of adult frontal lobe





**Other changes occurring in
adolescent brains.**

Putting it all together

So, what do we know?

- 1. Adolescent behavior is NOT arbitrary.**
- 2. They react and respond NORMALLY for their stage of development.**
- 3. Adolescents behave and think DIFFERENTLY from adults or children because of biology.**

How can we use this knowledge in driver education settings?

- **Review your curriculum**
- **Review your class requirements**
- **Consult local expertise**
- **Become creative**
- **Share what you know with others**

Closing Thoughts

“In their own words”

Demographics of focus group

- 4 female, 4 male
- 5 are 17 years old, 1 is 18 years old, 1 is 16 years old
- 6 currently have driver's license, two have a driver's permit
- 5 were trained at school, 2 were trained by parents, 1 was trained at a private, for-profit driver education school

“What they said”

- **“We’re bored”**
- **“We’re not driving enough, or in enough different situations”**
- **“There isn’t enough technology to help us learn”**
- **“We want online textbooks”**

Further Study

The science is available today that allows us a unique insight into how the brain works at various stages during the lifespan.

Together with proven methods of teaching and a relentless focus on quality driver education and timeliness of curriculum, we can engage our teens in their driving training.

Well-designed studies that rigorously test the way that brain development affects learning and processing of driver training information should be encouraged and monetarily supported.