Promise and pitfalls of using neuroscience research to inform adolescent health policy

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Overview

- Neurodevelopment in adolescence
- The promise
- The pitfalls
- Implications for social policy: understanding environmental influences on development

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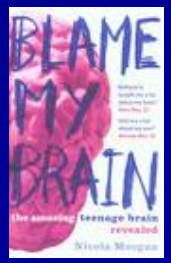
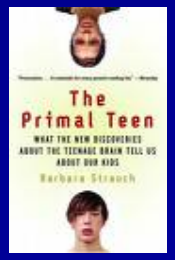
Why all the fuss about the teen brain?

- New finding, contradicts previous understandings
- Explanation for teen behavior?
- Media attention, court cases, books





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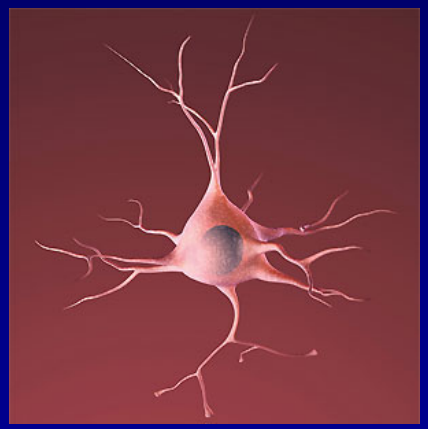
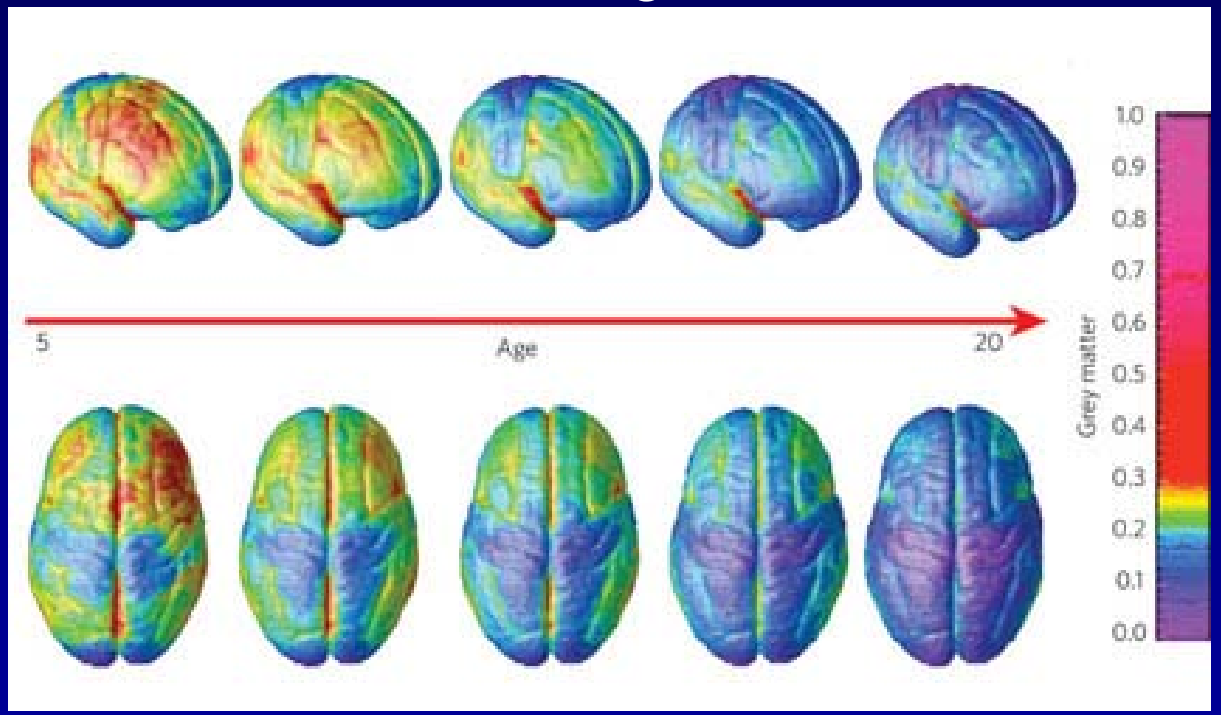
Brain development in adolescence

I. Overproduction



ADERC, NIH 2006

II. “Pruning”



Giedd J. 2006.*Nature* 442(24); 865

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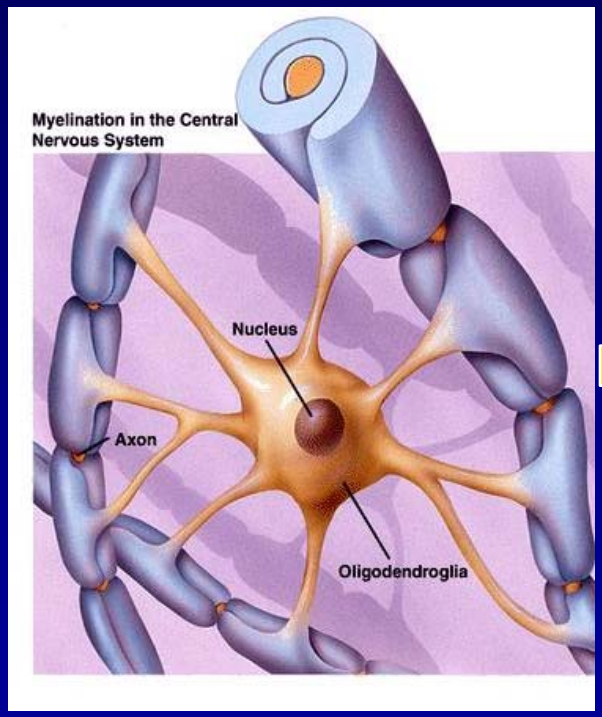
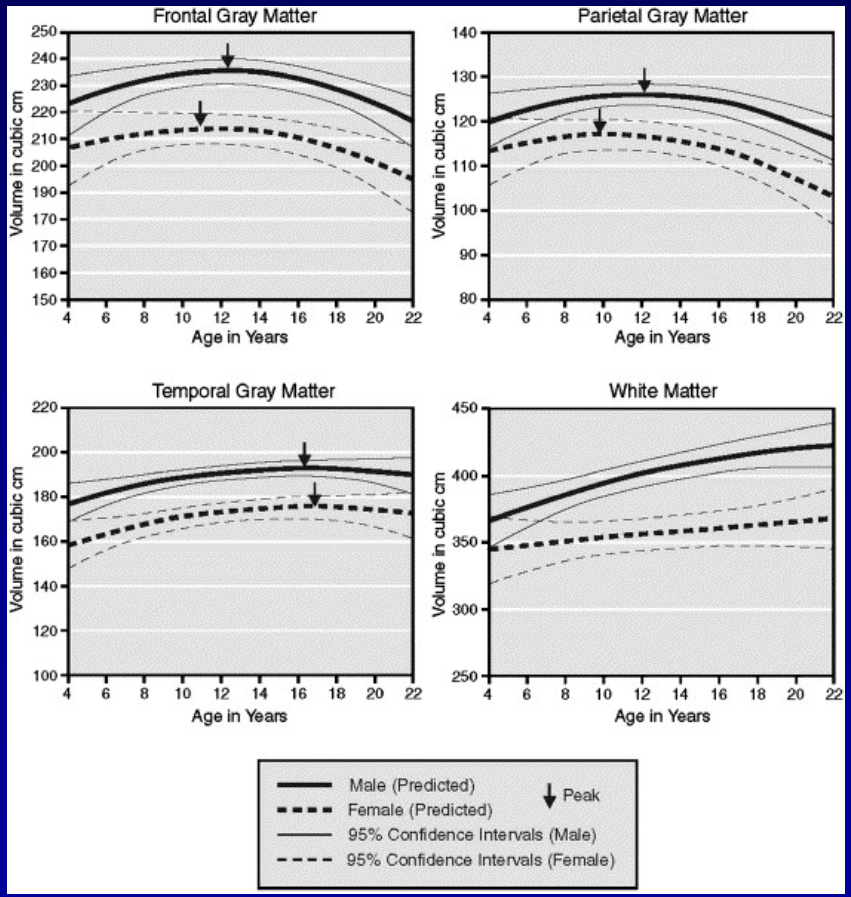
Brain development in adolescence

III. Myelination





Lenroot & Giedd, 2006

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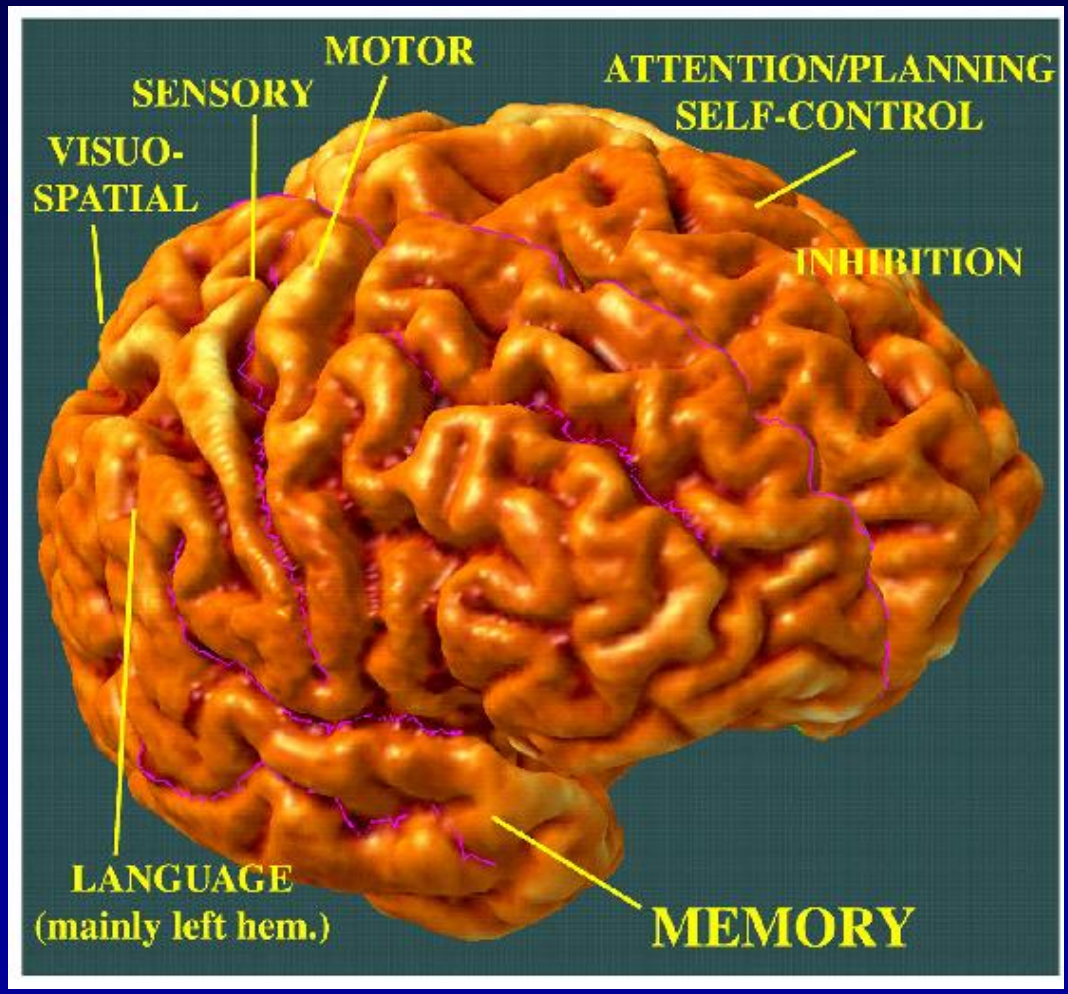
“Judgment is last to develop”



P. Thompson, UCLA Laboratory on Neuro Imaging

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Harnessing research for policy

- Brakes of brain come online late
- Risk-taking & immature decision-making developmental imperatives
- Role of public health policy: create a safety net
  - ✓ Reduce consequences of poor decisions
  - ✓ Phase in risk over time

Johnson, 2005.

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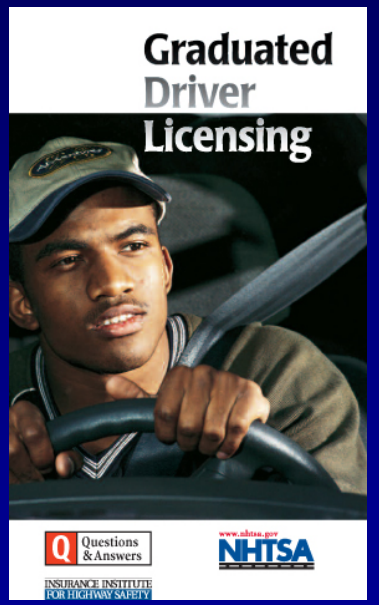
The promise of developmentally appropriate health policy…



"Be careful, or else"

Phase in risk over time

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Pitfalls: are we getting ahead of ourselves?

- Developmental neuroscience in its infancy
  - Debate over generalizability of structure to behavior
- Policy precedes science
  - Juvenile death penalty
  - Parental notification for abortion

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A broader perspective on the implications of neuroscience research for policy: the consequences of failing our youth

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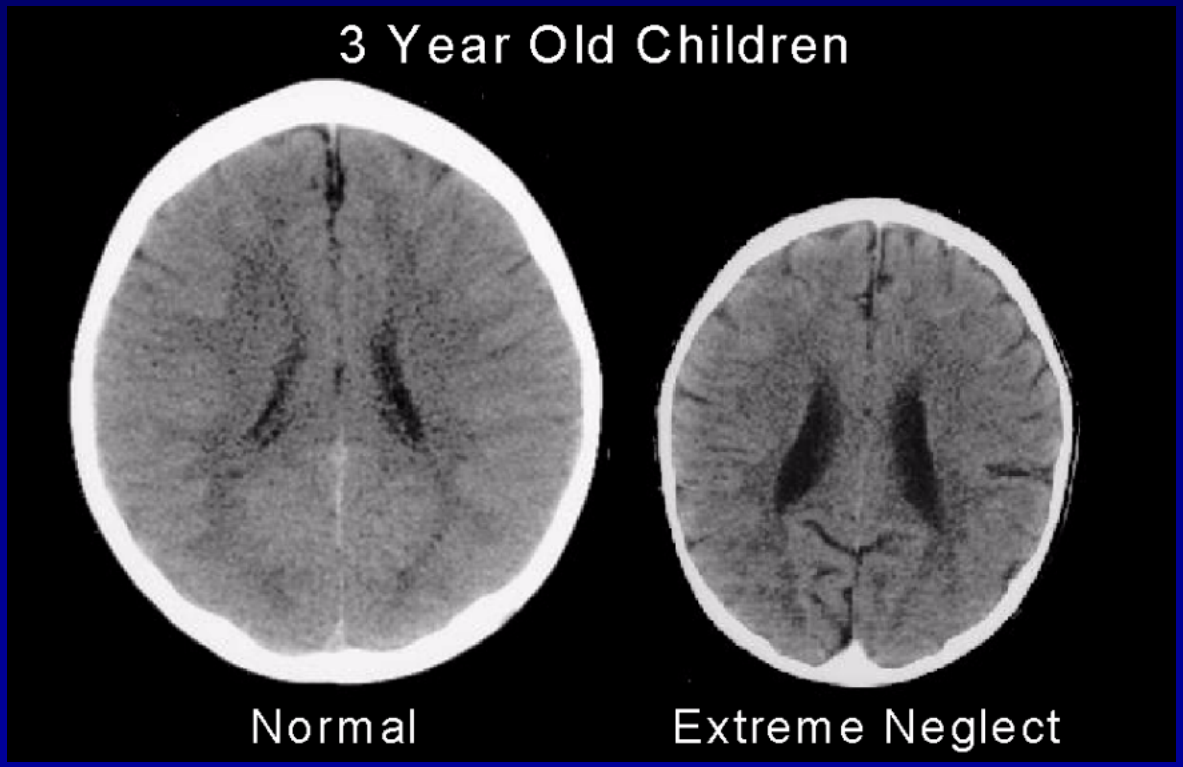
The brain reflects its environment

- Lifecourse consequences



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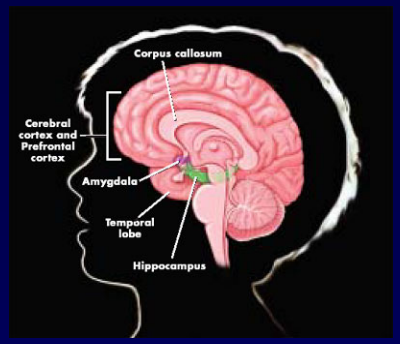

Example: youths in violent neighborhoods in L.A.

- Brains similar to combat veterans (Carrion 2007)
- Deficiencies in EF, physiological hyper-arousal (Perry 2005; Beers 2002)
- Developmental delays, problems with social relationships and academic achievement (Carrion 2002)
  - Failure of social policy to protect vulnerable kids and ensure healthy development

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Implications for health policy

- Risk-taking and immature judgment are part of adolescence, neural basis or not
- Need provide surrogate frontal lobes
  - Reduce severity of consequences, phase in risk over time
- Neurodevelopment undergirded by basic social policy
  - Shore up social ecology of adolescence

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