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## **Investing in Our Most Precious Assets: Making the Economic Case for Investment in Early Childhood**

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## **The Importance of Viewing the Well-Being of Children in a Broad Context**

The healthy development of all children benefits all of society by providing a solid foundation for economic productivity, responsible citizenship, and strong communities.



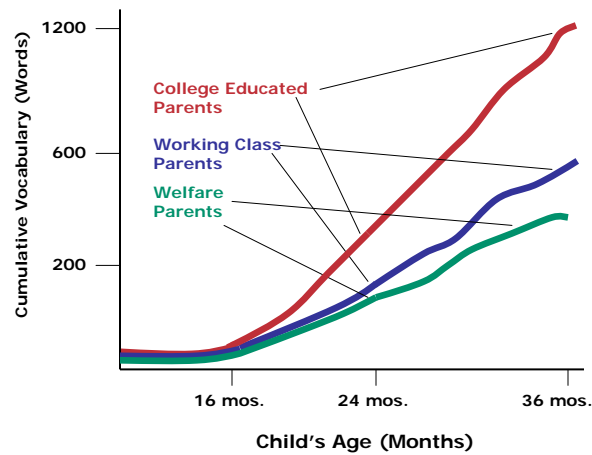
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## Science Tells Us that Early Life Experiences Are Built Into Our Bodies



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### Barriers to Educational Achievement Emerge at a Very Young Age

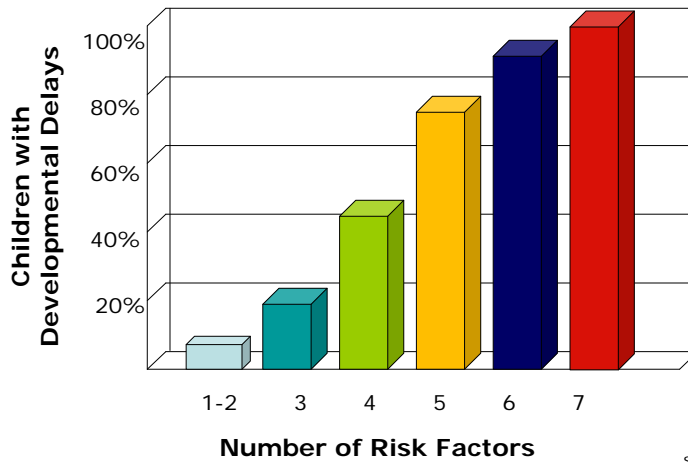


Source: Hart & Risley (1995)



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### Significant Adversity Impairs Development in the First Three Years



Source: Barth et al. (2008)

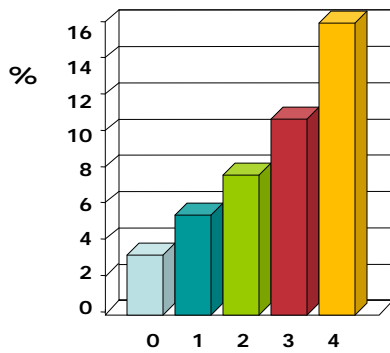


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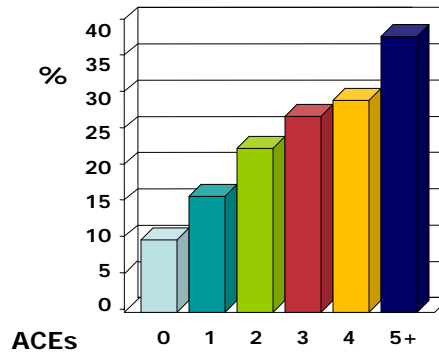
### Risk Factors for Adult Substance Abuse are Embedded in Adverse Childhood Experiences

Self-Report: Alcoholism

Self-Report: Illicit Drugs



Source: Dube et al, 2002

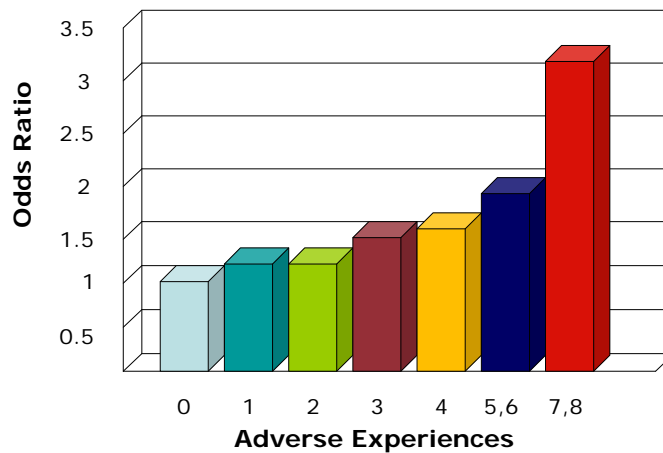


Source: Dube et al, 2005



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## Risk Factors for Adult Heart Disease are Embedded in Adverse Childhood Experiences



Source: Dong et al, 2004



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## Core Concepts of Development

Brains are built over time, from the prenatal period through adulthood.

Neural circuits are wired in a bottom-up sequence.

The capacity for change decreases with age.



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## Experience Shapes Brain Architecture by Over-Production Followed by Pruning

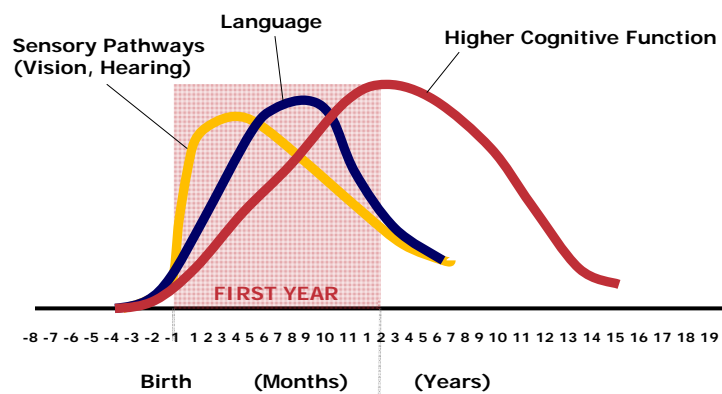


birth



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## Human Brain Development Synapse Formation Dependent on Early Experiences (700 per second in the early years)



Source: C. Nelson (2000)



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## Core Concepts of Development

The interaction of genes and experience shapes the architecture of the developing brain.

The “serve and return” nature of children’s relationships with the important adults in their lives is the active ingredient in realizing their genetic potential.



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## How “Serve and Return” Builds Brains and Skills





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## Core Concepts of Development

The development of emotion and cognition involves highly inter-related circuits in multiple brain areas, including the amygdala, hippocampus, and prefrontal cortex.

When emotions are well regulated, cognitive performance is enhanced. When feelings are not well managed, learning and behavior are likely to be impaired.



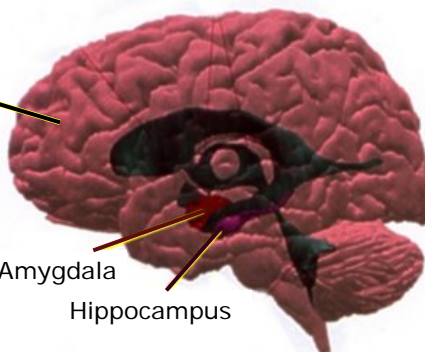
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## Specialized Areas of Function Are Integrated Within the Architecture of the Brain

Prefrontal Cortex

Amygdala

Hippocampus





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## **Understanding the Long-Term Impacts of Significant Adversity Early in Life**

Research on biological stress response systems illustrates how adversity raises heart rate, blood pressure, and stress hormone levels, which can impair brain architecture, immune status, metabolic systems, and cardiovascular function.

These scientific findings help explain how poverty, maltreatment, and discrimination can “get under the skin” and have life-long impacts on learning capacity, behavior, and physical and mental health.



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### **Positive Stress**

Brief increases in heart rate / blood pressure and mild elevations in stress hormone levels that are moderated by stable, supportive relationships.

### **Tolerable Stress**

Stress responses that *could* disrupt brain architecture, but are buffered by supportive relationships.

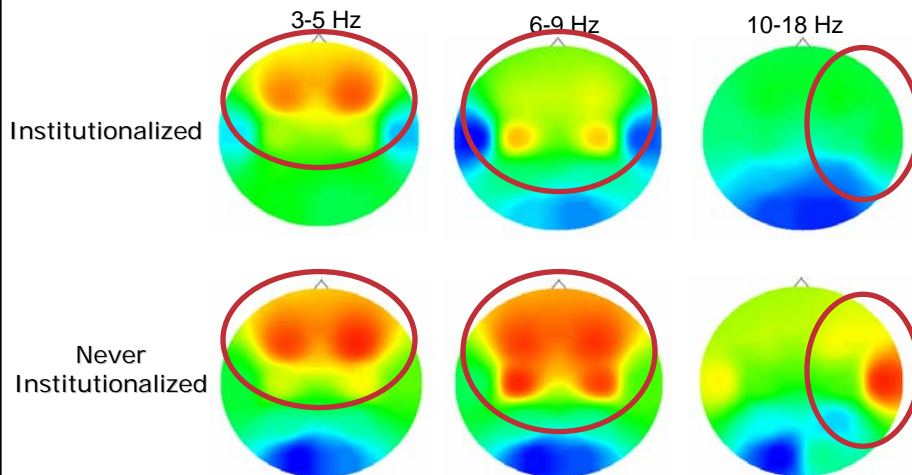
### **Toxic Stress**

Prolonged activation of stress response systems in the absence of protective relationships, which can produce physiological changes that lead to lifelong problems in learning, behavior, and health.



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### Extreme Neglect Diminishes Brain Power



Source: C. Nelson (2008)



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## Implications for Policy



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## **There Are No Magic Bullets**

Supportive relationships and positive learning experiences begin at home but can also be provided through a range of evidence-based services.

A balanced approach to emotional, social, cognitive, and language development will best prepare all children for success in school and later in the workplace and community.

Highly specialized interventions are needed as early as possible for children experiencing tolerable or toxic stress.



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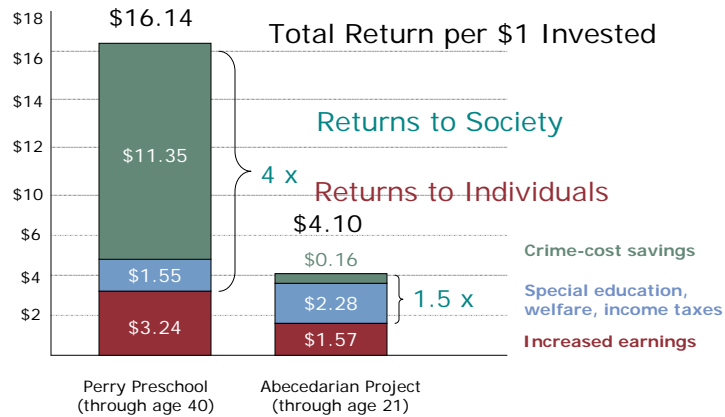
## **Maximizing Return on Investment**

The basic principles of neuroscience indicate that later remediation will be less efficient and produce less favorable outcomes than preventive intervention.

Responsible investments focus on services that incorporate evidence-based effectiveness factors and pay attention to quality of implementation.



### Cost/Benefit for Two Early Childhood Programs (Dollars returned for each dollar invested)



### The Science of Development Applies to Multiple Domains of Social Policy

- Early care and education
- Primary health care
- Child protective services
- Welfare reform
- Adult mental health services
- Economic development policies
- Crime prevention programs



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## Advancing an Effective Policy Agenda

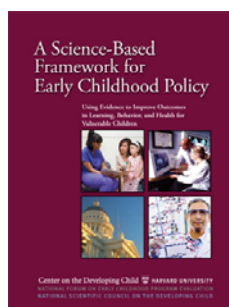
Investing in an appropriately skilled early childhood workforce whose expertise matches the needs of the children and families it serves.

Leveraging the power and sustainability of committed bipartisanship and public-private sector partnerships.

Viewing the expansion of opportunities for all children as both a moral responsibility and a wise social and economic investment.



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