The Science of Early Childhood Development and the Opportunity for Innovation

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Experiences Build Brain Architecture

http://youtu.be/VNNsN9IJKws
The Ability to Change Brains Decreases Over Time

Source: Levitt (2009)
The Ability to Change Brains Decreases Over Time

Normal Brain Plasticity Influenced by Experience

Source: Levitt (2009)
The Ability to Change Brains Decreases Over Time

Normal Brain Plasticity Influenced by Experience

Physiological “Effort” Required to Enhance Neural Connections

Age (Years)

Source: Levitt (2009)
Toxic Stress Derails Healthy Development

http://youtu.be/rVwFkcOZHJw
Early Life Experiences Are Built Into Our Bodies (For Better or For Worse)

Stable and supportive relationships, language-rich environments, and mutually responsive, “serve and return” interactions with adults promote healthy brain architecture and adaptive regulatory systems.
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Stable and supportive relationships, language-rich environments, and mutually responsive, “serve and return” interactions with adults promote healthy brain architecture and adaptive regulatory systems.

Excessive or prolonged activation of stress response systems and reduced availability of the buffering protection of supportive relationships can weaken brain architecture and disrupt the development of other organ systems.
Increasing the Impact of Current Policy and Practice Requires Three Strategies
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Enhance quality and access to services
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- Enhance quality and access to services
- Expand effective models
Increasing the Impact of Current Policy and Practice Requires Three Strategies

- Enhance quality and access to services
- Expand effective models
- Build, test, and promote new theories of change
Current Conceptual Framework Guiding Early Childhood Policy and Practice

Parenting Education, Sound Nutrition, Stimulating Experiences, and Health-Promoting Environments
Current Conceptual Framework Guiding Early Childhood Policy and Practice

Healthy Developmental Trajectory

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Significant Adversity

Healthy Developmental Trajectory

Parenting Education, Sound Nutrition, Stimulating Experiences, and Health-Promoting Environments
Significant Adversity

Impaired Health and Development

Parenting Education, Sound Nutrition, Stimulating Experiences, and Health-Promoting Environments
Building an Enhanced Theory of Change that Balances Enrichment and Protection

Healthy Developmental Trajectory

Parenting Education, Sound Nutrition, Stimulating Experiences, and Health-Promoting Environments
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New Protective Interventions

Healthy Developmental Trajectory

Parenting Education, Sound Nutrition, Stimulating Experiences, and Health-Promoting Environments

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Building an Enhanced Theory of Change that Balances Enrichment and Protection

Significant Adversity

New Protective Interventions

Healthy Developmental Trajectory

Parenting Education, Sound Nutrition, Stimulating Experiences, and Health-Promoting Environments
Opportunities to Build Executive Function Skills Present an Extended Developmental Window

Weintraub, et al., (2011)
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