

Early Brain and Child Development
(EBCD):
An Urgent call for Early Education
Initiatives

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Objectives

- Overview of the “Building Bridges” Grant
 - Primer on Toxic Stress
 - Initiatives: what can you and I do?

AAP Agenda for Children 2012-2013

DEDICATED TO THE HEALTH OF ALL CHILDREN™



Strategic Initiatives

Urgent child health and member priorities and initiatives that are national in scope. Each priority moves through 3 phases of AAP commitment (planning, implementation, and integration) over a 3-5 year period.

Building Bridges Among Health and Early Childhood Systems Project

- Establish collaborative leadership for Early Brain and Child Development
- Disseminating the EBCD message
- Emphasize the importance of “First 1000 Days” across all EC systems

EBCD in a nutshell...

The first 1,000 days offer a critical window for learning and social and emotional attachment, with rapid brain development that does not occur at any other time.

EBCD

- http://developingchild.harvard.edu/resources/multimedia/videos/three_core_concepts/brain_architecture/

Still Face Experiment

<http://www.zerotothree.org/child-development/early-childhood-mental-health/>

Child Well-Being

	Average Ranking	Material Deprivation	Health & Safety	Educational Well-Being	Relationships	Behaviours & Risks	Subjective Well-being
Netherlands	4.2	10	2	6	3	3	1
Sweden	5.0	1	1	5	15	1	7
Denmark	7.2	4	4	8	9	6	12
Finland	7.5	3	3	4	17	7	11
Spain	8.0	12	6	15	8	5	2
Switzerland	8.3	5	9	14	4	12	6
Norway	8.7	2	8	11	10	13	8
Italy	10.0	14	5	20	1	10	10
Ireland	10.2	19	19	7	7	4	5
Belgium	10.7	7	16	1	5	19	16
Germany	11.2	13	11	10	13	11	9
Canada	11.8	6	13	2	18	17	15
Greece	11.8	15	18	16	11	8	3
Poland	12.3	21	15	3	14	2	19
Czech Republic	12.5	11	10	9	19	9	17
France	13.0	9	7	18	12	14	18
Portugal	13.7	16	14	21	2	15	14
Australia	13.8	8	20	19	16	16	4
Hungary	14.5	20	17	13	6	18	13
U.S.	18.0	17	21	12	20	20	N/A
UK	18.2	18	12	17	21	21	20

In the US...

- America has the highest rate of prison inmates in the world and **five to ten times** that of European countries
- Children who read by the third grade seldom are ever involved with the criminal justice system
- **Several states forecast needed prison growth based on third grade reading scores.**

In Idaho...

- Only 32% of Idaho's fourth grade students scored at or above proficient in reading in 2009 according to the National Assessment of Education Progress (NAEP)
- School funding has been cut by 19% in the past 5 years
- Idaho is in the bottom 10 states for students going on and finishing a 4-year college degree

Stress



Stress

- Positive stress
- Tolerable stress: could affect brain architecture but is generally benign
- **Toxic stress**: strong, frequent or prolonged

Toxic Stress

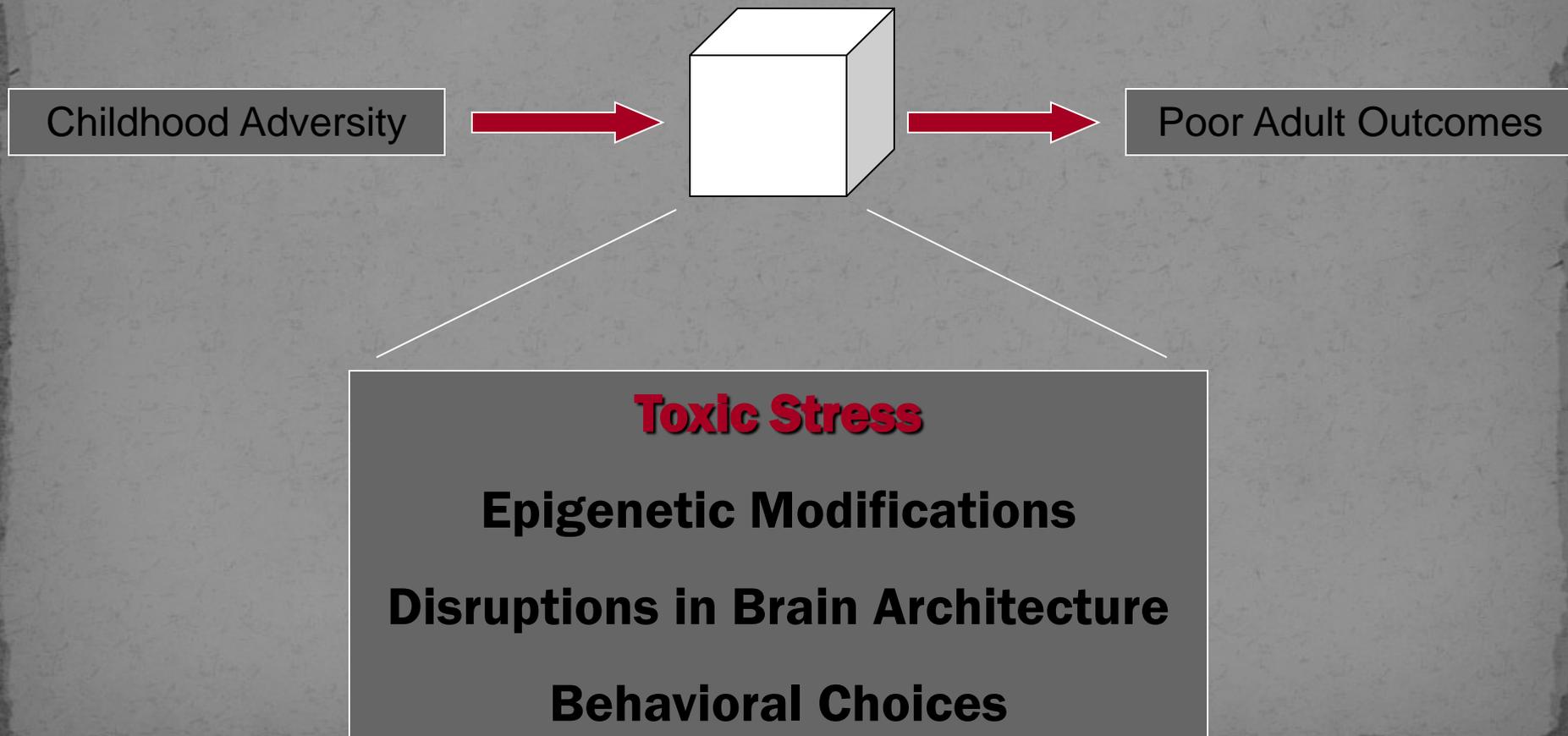
- http://developingchild.harvard.edu/index.php/resources/multimedia/interactive_features/gene-expression/

Toxic Stress



- **A physiologic stress response that is excessive or prolonged** (reflects an inability to “turn it off”)
- **Results in potentially permanent changes in:**
 - **Gene expression/epigenetics**
 - **Brain development**
 - **Behavior**

Linking Childhood Experiences and Adult Outcomes



The ACE Study

Defining Toxic stress

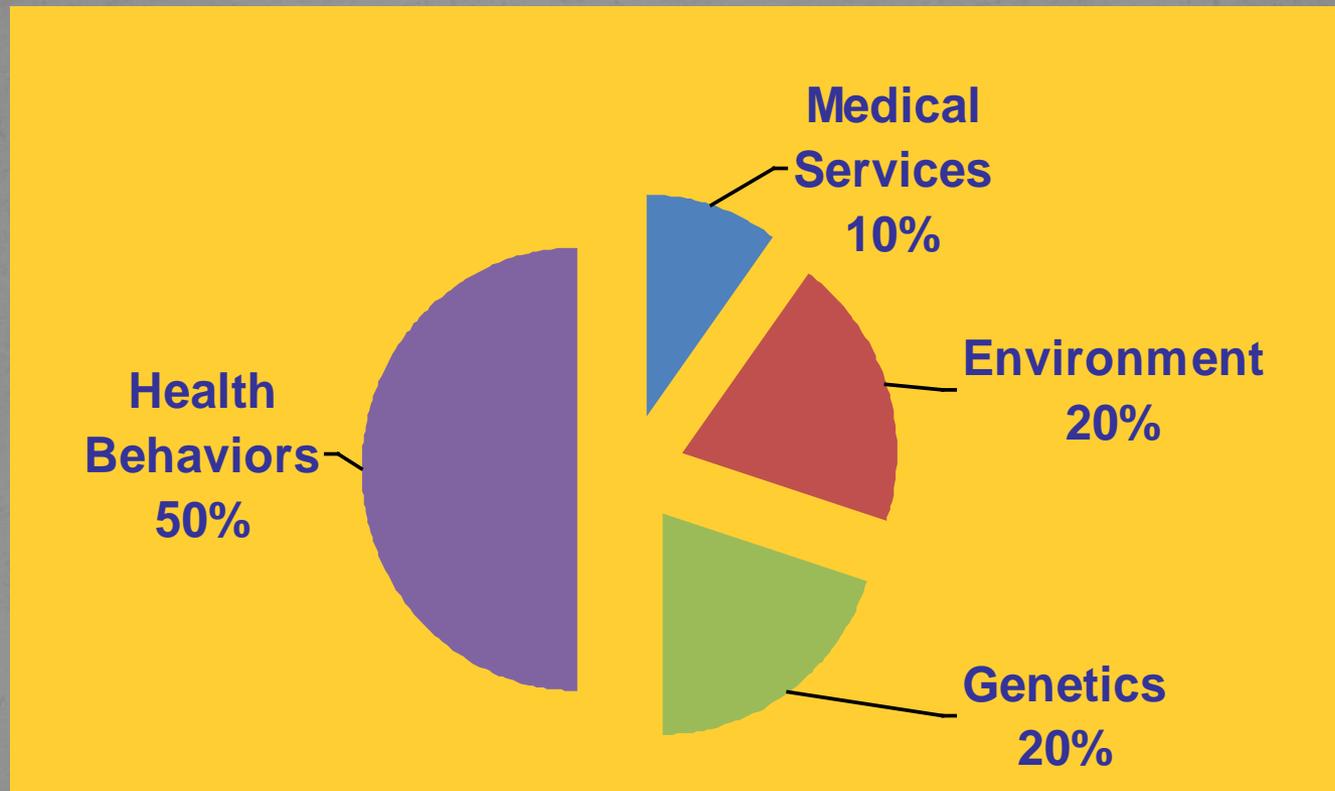


- This can be difficult to define, different for different people.
Resiliency factor
 - Long lasting, frequent, or strong intensity
 - Adverse Childhood Experiences or **ACEs**
 - More extreme precipitants of childhood stress
 - Physical, sexual, emotional abuse
 - Physical, emotional neglect
 - Household dysfunction

ACE study

- Over 17,000 patients participating in routine health screening volunteered to participate in the study.
- 10 questions: Most starting with “did you live with someone or did your parent or was a household member” then asked about being insulted/humiliated, physical/sexual abuse, hygiene, hunger, alcoholism, divorce/separation, mental illness, depression
- Data continues to be analyzed; thus far revealing staggering proof of the **health, social and economic** risks that result from childhood trauma

Factors Contributing to Healthy Child Development



Changing Human Behavior to Prevent Disease: The Importance of Targeting Automatic Processes

Theresa M. Marteau,^{1*} Gareth J. Hollands,¹ Paul C. Fletcher²

Much of the global burden of disease is associated with behaviors—overeating, smoking, excessive alcohol consumption, and physical inactivity—that people recognize as health-harming and yet continue to engage in, even when undesired consequences emerge. To date, interventions aimed at changing such behaviors have largely encouraged people to reflect on their behaviors. These approaches are often ineffectual, which is in keeping with the observation that much human behavior is automatic, cued by environmental stimuli, resulting in actions that are largely unaccompanied by conscious reflection. We propose that interventions targeting these automatic bases of behaviors may be more effective. We discuss specific interventions and suggest ways to determine whether and how interventions that target automatic processes can enhance global efforts to prevent disease.

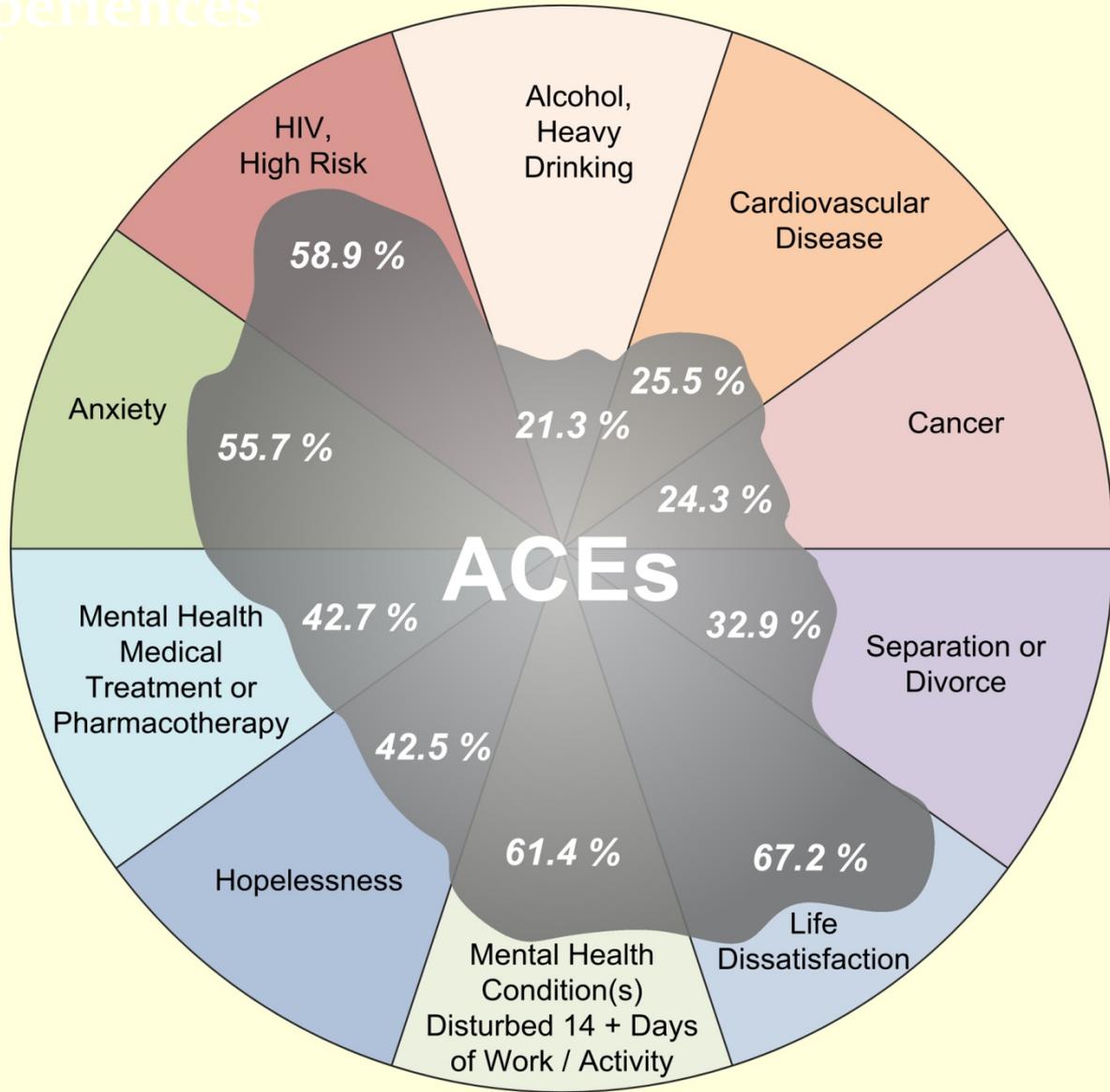
How do those automatic processes form in the first place!?

Adverse Childhood Experiences

POPULATION ATTRIBUTABLE RISK

A large portion of many health, safety and prosperity conditions is attributable to Adverse Childhood Experience.

ACE reduction reliably predicts a decrease in all of these conditions simultaneously.



Distal Causes of Death: Unhealthy Lifestyles

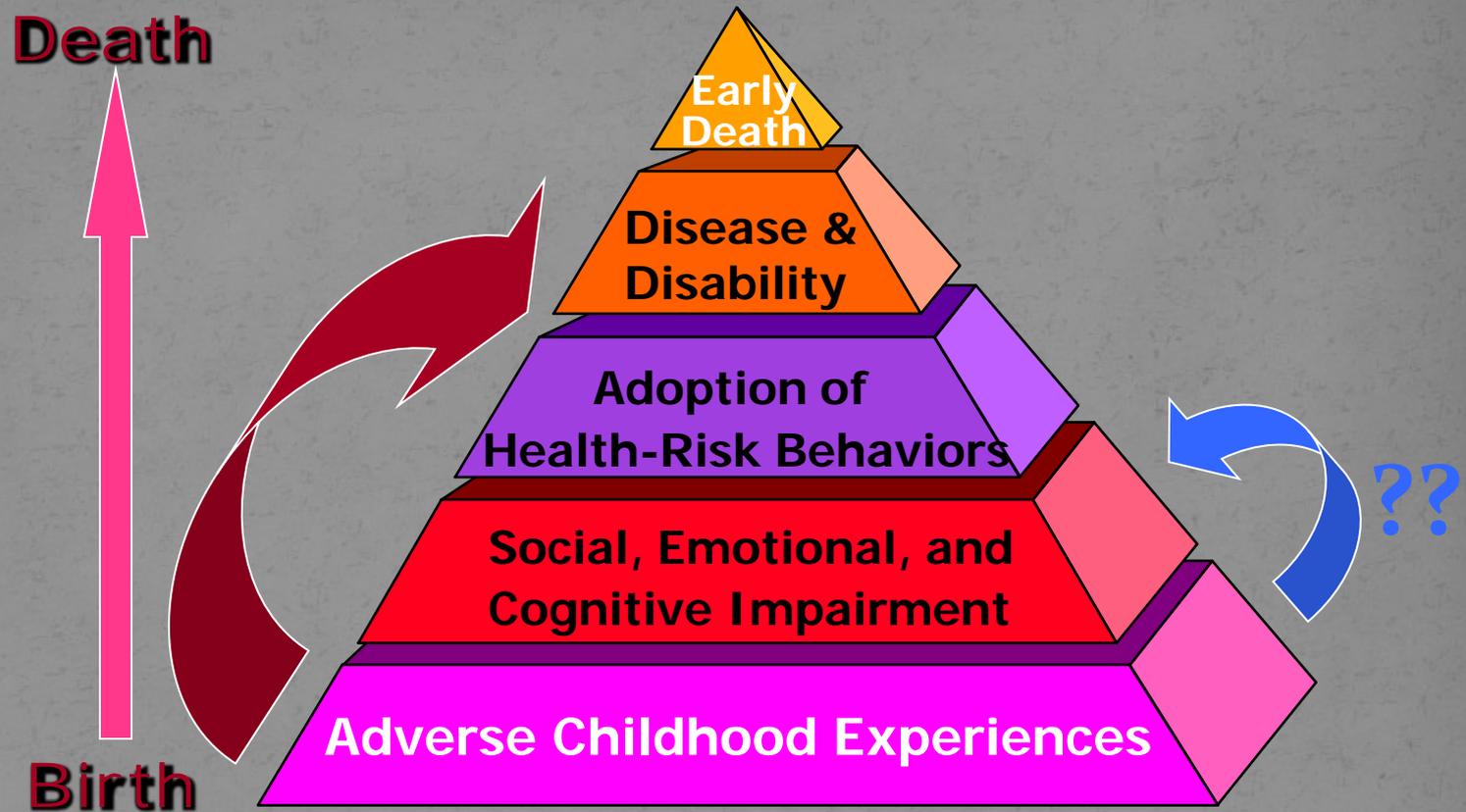
Table 2. Actual Causes of Death in the United States in 1990 and 2000

Actual Cause	No. (%) in 1990*	No. (%) in 2000
<u>Tobacco</u>	400 000 (19)	435 000 (18.1)
<u>Poor diet and physical inactivity</u>	300 000 (14)	400 000 (16.6)
<u>Alcohol consumption</u>	100 000 (5)	85 000 (3.5)
Microbial agents	90 000 (4)	75 000 (3.1)
Toxic agents	60 000 (3)	55 000 (2.3)
Motor vehicle	25 000 (1)	43 000 (1.8)
Firearms	35 000 (2)	29 000 (1.2)
<u>Sexual behavior</u>	30 000 (1)	20 000 (0.8)
<u>Illicit drug use</u>	20 000 (<1)	17 000 (0.7)
Total	1 060 000 (50)	1 159 000 (48.2)

*Data are from McGinnis and Foege.¹ The percentages are for all deaths.

One of the **FUNDAMENTAL** causes of early death can be **TOXIC STRESS!**

The True Nature of Preventive Medicine



Mechanisms By Which Adverse Childhood Experiences Influence Adult Health Status

Slide modified from V. J.

How we address **Toxic** Stress: Treatment



- **Treatment** of the consequences
 - **CBT** is evidence-based
 - **Reactive** – some “damage” already done!
 - Very **COSTLY**
 - Efficacy linked to age and chronicity
 - Declining **brain plasticity**?
 - Insufficient **number** of / **access** to providers
 - Limited reimbursements; carve-outs
 - Mental Health **Parity**?

Addressing **Toxic** Stress: Secondary Prevention



- **Secondary / Targeted Preventions**
 - Focused, targeted interventions for those deemed to be **“at high risk”**
 - Visiting Programs
 - Parenting Programs
 - More likely to be effective; minimize “damage”
 - Requires **screening**

Addressing **Toxic** Stress: **Primary / Universal Prevention**



- Proactive, universal interventions to make stress **positive**, instead of tolerable or toxic
- Acknowledges that preventing all childhood adversity is **impossible** and even **undesirable**
- **Actively building resiliency** (“immunizing” through positive parenting)
- **SE Buffers** allow the physiologic stress response to return to baseline

Baby Steps



- Build relationships between Early Childhood Programs and Health by learning each other's language
- Programs: Reach Out and Read, Oral Health Initiatives
- Build relationships with legislature and businesses

In Summary...

**Childhood Adversity has Lifelong
Social, Economic and Health
Consequences.**

Significant adversity in childhood is
strongly associated with
unhealthy lifestyles and
poor health decades later.

Reach Out and Read

- Trains doctors and nurses to advise parents about the importance of reading aloud, and to give books to children at the ten pediatric check-ups performed from six months to five years of age, with a special focus on children growing up in poverty
- When children are introduced to looking at books in infancy, they associate books with parental attention, time in a parent's lap and pleasure, all which we now helps develops important neuronal connections in the brain

Reach Out and Read

- Began as a collaboration between pediatricians and early childhood educators at Boston City Hospital in 1989
- Currently there are upwards of 5,000 program sites in all 50 states, District of Columbia, Puerto Rico and Guam
- 4.0 Million children reached with this program
- Begun at Duke University Pediatric residency in 1996
- Here in Idaho, there are already several ROR programs in place.

Reach Out and Read...

Proven to increase literacy

Reach Out and Read **delivers results**. Our program is a **proven intervention**, supported by **15 independent, published research studies**. During the preschool years, **children served by Reach Out and Read score three to six months ahead** of their non-Reach Out and Read peers on vocabulary tests, preparing them to start school on target.

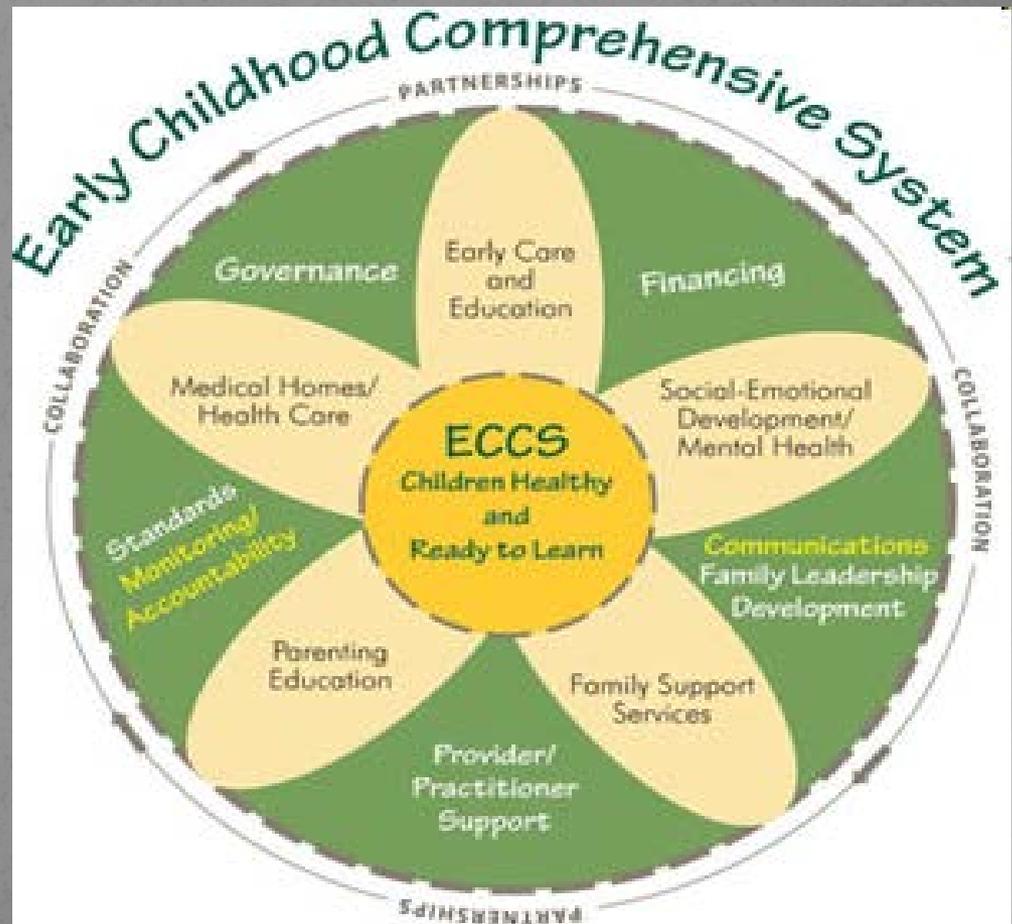
The 5 R's

- **Read** together every day with your child
- **Rhyme**, play and cuddle with your child every day
- Develop **routines**, particularly around meals, sleep and family fun
- **Reward** your child with praise for successes to build self-esteem and promote positive behavior
- Develop a strong and nurturing **relationship** with your child as the foundation for their healthy development

ECCS Critical Components

5 Critical Components

- Medical Homes/
Health Care
- Early Care and
Education
- Social-Emotional
Development/Mental
Health
- Family Support
Services
- Parent Education



The messages we carry with us...

- Broad, multiple early childhood systems integration is key to early childhood program success
- The emphasis on the **First 1000 Days** is necessary and foundational for building health and education readiness for the next generation of children
- Child development is the foundation for community and economic development
- Toxic stress disrupts the developing brain and has lifelong effects on learning, behavior and health
- Creating the right conditions in early childhood is more effective and less costly than addressing a multitude of problems later on in life

Spreading the EBCD Message

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YOU make the difference

“It is easier to build strong children than to repair broken men.”

Frederick Douglass

