The Psychobiology of Trauma and Resilience in Families: Strengths in Immigrant and Refugee Communities

Sarah Enos Watamura, Ph.D.
Plan for Today

PART 1 The Science of stress and health (9:15-9:45 am)
1) Who am I, what lens am I working from?
2) Early adversity can have life-long consequences for individuals and society
3) How does stress affect health?
4) Practical Stress management Techniques

PART 2 Trauma, biology and behavior (9:45-10:15 am)
5) Inequity and Health
6) Adversity Under the Skin
7) Activity on Implicit Bias and Change

PART 3 Neurobiology of infants/children, and of parenting (10:15-11:15 am)
8) Early Brain Development
9) The Parenting Brain
10) The Power of Parents

PART 4 Building Resilience, Seeing Strength (1:30-2:30 pm)
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Who am I? – What lens am I working from?

• Licensed preschool teacher
• 41 years as a appreciative observer of infants and young children
• Developmental psychobiologist
• 18 years as a dedicated researcher
• Applied focus
• Life long interest in the stress-health link
• Special focus on early childhood, caregiving environments and on strengths within families facing adversity
• Translator
• Advocate
Our mission is to advance **SEED Science**, an approach to understanding stress, early experiences and development that promotes intergenerational health, wellbeing and resilience by fostering rigorous interdisciplinary, policy-relevant research with collaborative community partners.
What comes to mind as the most important thing that shapes a child?
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Long-term Effects of Chronic Stress

- influences susceptibility to or progression of a number of diseases:
  - cardiovascular disease (Smith & Ruiz, 2002)
  - diabetes (Mooy, 2000)
  - infectious illness (Cohen & Williamson, 1991)

- increases the risk of “risk”:
  - obesity (Brunner et al., 2007)
  - decreases immune function (Segerstrom & Miller, 2004)
  - Increased metabolic syndrome (Chandola, Brunner, Marmot, 2006)

- can impair cognitive functioning:
  - memory (Lupien et al., 1998)
  - attention (Liston, McEwen, & Casey, 2009)

- increases risk for mental health problems:
  - depression (Siegrist, 2008)
  - anxiety (Eisenberg, 2007)

- can accelerate aging:
  - shorter telomere length, less telomerase activity (Epel et al., 2004)
Cellular Aging
Risk Factors’ Effect on Life Expectancy

- Smoking 10 years\(^1\)
- Obesity 6-7 years\(^2, 3\)
- High blood pressure 5 years\(^4\)
- Diabetes 7-8 years\(^5\)


Risk Factors’ Effect on Life Expectancy

- Smoking 10 years\(^1\)
- Obesity 6-7 years\(^2, 3\)
- High blood pressure 5 years\(^4\)
- Diabetes 7-8 years\(^5\)
- Childhood Stress 20 years

Childhood Stress Effects: Evidence from the ACE Study

Mechanism by Which Adverse Childhood Experiences Influence Health and Well-being Throughout the Lifespan

For more information: http://www.cdc.gov/ace/
ACES CAN HAVE LASTING EFFECTS ON BEHAVIOR & HEALTH...

Simply put, our childhood experiences have a tremendous, lifelong impact on our health and the quality of our lives. The ACE Study showed dramatic links between adverse childhood experiences and risky behavior, psychological issues, serious illness and the leading causes of death.

The following charts compare how likely a person with 1, 2, 3, or 4 ACEs will experience specified behaviors than a person without ACEs.

*Having an ACE score of zero does not imply an individual could not have other risk factors for these health behaviors/diseases.
When do experiences shape a child?  
How early? How late?
Prenatal Stress Hormone Exposure & Newborn Stress Responsivity

![Graph showing infant behavioral state over time for low and high prenatal maternal cortisol](image)

- Low Prenatal Maternal Cortisol
- High Prenatal Maternal Cortisol

Infant Behavioral State vs. Time (min)
Prenatal Stress Hormone Exposure & Later Development

Anxious/Depressed

- Low Prenatal Cortisol
- High Prenatal Cortisol
Even While Sleeping, Infants Track Family Conflict

What does it feel like to be stressed? Threatened?
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Stress Management Systems
• Analogy: Your immune response to an infection

– It's how you manage the infection (fever, malaise, sickness behavior, swelling, activated lymph nodes etc.)
– AND its what can be observed in your body as a reaction to the infection
– AND it can be the way an illness takes a toll on you
Experienced Stress (& its Consequences) are the Result of Your Body’s Defense Efforts

• **Stress: your physiologic response**
  – (to events, situations, illnesses, physical perturbations, feelings etc.)
  – This physiologic response is how you manage the challenge
  – Also causes short and long term observable body changes and implications for health
Physiologic Stress
How Does Stress Get “Under the Skin”?
Physiologic Stress
How Does Stress Get “Under the Skin”?
Function of the Stress Response

► Physiologic stress is largely about energy
  – Handling a threat is metabolically very costly, whether the response is to fight or to flee

► Our stress systems divert energy from long-term processes to the immediate threat

• **Away from**
  – digestion
  – reproduction
  – growth
  – repair
  – long-term immune processes (making antibodies for a secondary infection)

• **Toward**
  – respiration
  – glucose to burn
  – increased heart rate to move energy to muscles
  – short-term immune processes (trafficking white blood cells to the site of infection)
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STRATEGIES FOR STRESS MANAGEMENT & SELF CARE

Stress Management & Self Care

Mental Strategies
- Mindset
- Acceptance
- Reappraisal
- Visualization
- Mental Distancing

Self-Care / Wellbeing
- Sleep
- Exercise
- Mindfulness
- Nutrition

Behavioral Strategies
- Engage & Connect
- Problem Solve
- Make Changes
- Work toward Goals
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US Life Expectancy: 43rd and Declining
Rates of suicide and drug overdoses have continued to climb

**SUICIDE**

Deaths per 100,000

<table>
<thead>
<tr>
<th>Year</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>17.8</td>
<td>4</td>
</tr>
<tr>
<td>2017</td>
<td>22.4</td>
<td>6.1</td>
</tr>
</tbody>
</table>

**DRUG OVERDOSE DEATHS**

<table>
<thead>
<tr>
<th>Year</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>3.9</td>
<td>8.2</td>
</tr>
<tr>
<td>2017</td>
<td>29.1</td>
<td>14.4</td>
</tr>
</tbody>
</table>

Source: Centers for Disease Control and Prevention
Life Expectancy Disparities by Race, Ethnicity & Gender (1975-2011)

As life expectancy rises in the United States, gaps between whites and blacks are decreasing.

Life Expectancy at Birth (Years)

- **White Females**: 77.3 in 1975, 81.3 in 2011
- **Black Females**: 71.3 in 1975, 76.6 in 2011
- **White Males**: 69.5 in 1975, 72.2 in 2011
- **Black Males**: 62.4 in 1975, 72.2 in 2011
- **Hispanic Females**: 83.7 in 2011
- **Hispanic Males**: 78.8 in 2011

(Increasing) Health Disparities by Socio-Economic Position

Figure 4. Odds ratio for income variables, adults 18–74.

Income Inequality Gradients and Health

Health Disparities in Childhood; The Legacy of Early Adversity

[Graph showing health gradients by family income and age categories (Age 0-3, Age 4-8, Age 9-12). The graph illustrates the trend of health status decreasing with lower family income, with a notable disparity for younger age groups.]
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The “Toxic Stress” Framework

• A framework offered by:
  – pediatrician Jack Shonkoff
  – pediatrician and researcher Tom Boyce
  – basic science researcher Bruce McEwen
  – (Shonkoff, Boyce & McEwen, 2009)
Positive, Tolerable, Toxic

- **Positive Stress:** Moderate, short-lived increases in heart rate, blood pressure, and stress hormone levels
Positive, Tolerable, Toxic

- **Positive Stress:** Moderate, short-lived increases in heart rate, blood pressure, and stress hormone levels

- **Tolerable Stress:** A physiological state that could potentially disrupt brain architecture but is buffered by supportive relationships that facilitate adaptive coping.
Positive, Tolerable, Toxic

• **Positive Stress:** Moderate, short-lived increases in heart rate, blood pressure, and stress hormone levels

• **Tolerable Stress:** A physiological state that could potentially disrupt brain architecture but is buffered by supportive relationships that facilitate adaptive coping.

• **Toxic Stress:** Strong, frequent, and/or prolonged activation of the body’s stress-response systems in the absence of the buffering protection of adult support.
What is “Toxic Stress”?  

- When chronic or significant stressors happen (particularly in childhood)....  

AND, buffering relationships are not available
THE MOST IMPORTANT RESOURCE?

• Buffering Relationships
ACEs & Toxic Stress
How to Talk About Toxic Stress?
Stress is What your Brain and Body Do
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When is physiologic stress good vs. bad?

- When is it adaptive, helpful, necessary?
- When is it maladaptive, costly, and leading to physical and mental illness?
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Why are the first few years so important?
Fetal (and Early Life) “Programming”

- Humans have big, under-developed (and therefore plastic) brains in early life
  - open to experience
  - allows us to create, innovate, build
  - allows us to layer complex skills (like reading) onto basic neurocognitive capacities
  - allows us to adapt to a wide range of environmental conditions
Newborn Mammals
Human Motor Development
Benefits of Underdevelopment?
Little Scientists – Learning Begins in the Womb!

- Pregnant women (7.5 months through birth) read the story out loud twice a day (De Casper & Spence, 1986).
- Babies tested for memory right after birth
Example: Infants Hear Languages Adults Don’t!
Top Evidence for Early Life as a Sensitive Period

- Sensitive Period

![Graph showing sensitivity over years with categories Vision, Hearing, Habitual ways of responding, Language, Emotional Control, Symbol, Peer social skills, Numbers](image)
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Recognition of the Importance of Brain Development in Adolescence

Substantial structural and functional remodeling within:

- Limbic and cortical regions
- Hippocampus
- Amygdala
Focus is often on Limitations.....

- Decision making
- Risk taking
- Emotion regulation...
Focus is often on Limitations.....BUT!

- Decision making
- Risk taking
- Emotion regulation...

- Adolescence is also a positive, sensitive period!
Stress in Early Life & Adolescence: Adulthood Health

- Minnesota Longitudinal Project of Risk and Adaptation
- Age 32 health especially impacted when stress occurred both in early life and in adolescence
- Positive parenting reduced these effects

Two Open Windows:
Infant & Parent Neurobiologic Change

Supported and released by Ascend at the Aspen Institute
http://b.3cdn.net/ascend/4b320c7ff0e86d8fb51_gqm6btprrv.pdf
The Framework

First & Most Important Sensitive Period

The social, emotional & educational environment

The agent of change

A changing agent
The Framework

First & Most Important Sensitive Period

The social, emotional & educational environment

The agent of change

A changing agent
Neural Changes in Support of Parenting

- Work from animal models and human mothers and fathers reveals major structural and important functional neural changes that:
  - Change the way stress is handled
  - Promote positive emotions and bonding
  - Increase parental motivation
  - Promote caregiving behaviors

- Changes have been documented in the reward circuit, the emotion regulation circuit and the social information processing circuit

Pilyoung Kim, Ph.D.
Example: Changes in the Reward Circuit
Changes in the Reward Circuit

• New mothers and fathers during the first few months postpartum exhibit structural growth of the reward circuit.
Changes in the Reward Circuit

- New mothers and fathers during the first few months postpartum exhibit **structural growth** of the reward circuit.

- The amount of the growth is associated with **positive feelings** mothers reported about their baby (e.g. beautiful, perfect).
Changes in the Reward Circuit

- New mothers and fathers during the first few months postpartum exhibit structural growth of the reward circuit.

- The amount of the growth is associated with positive feelings mothers reported about their baby (e.g., beautiful, perfect).

- More functional brain activity in this region also occurs when looking at pictures of one’s own vs. other infants.
The Social Information Circuit
Changes in the Social Information Circuit

- New mothers and fathers exhibit neural plasticity in the circuit including **structural increases** [Kim, Leckman, Mayes, Feldman, et al., 2010; Kim et al., 2014]

- New parents also exhibit **heightened responses** in this circuit to infant cries and images of their infant [Swain et al., in press]
Emotion Regulation Circuits
Changes in the Emotion Regulation Circuits
Neural Associations in Stressed Parents

- Decreased responses to infant cries and images is associated with chronic stress, depression and substance abuse among parents.
Neural Differences in Parents with Trauma History?
Brains Change!

Consider Timing - Consider Relationships – Consider Context

- Of adversity
- Of inequity
- Of opportunity
- Of intervention
- Of prevention

Sensitive Periods
Windows of opportunity
Windows of vulnerability

TWO OPEN WINDOWS
INFANT AND PARENT NEUROBIOLOGIC CHANGE
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The Power of Parents
Stress and Illness

Social & Maternal Buffering

Cumulative Stress

Heightened Stress Reactivity

Stress-related Illness
Mediation via Changes to Stress Reactivity

- Cumulative Stress
- Social & Maternal Buffering
- Heightened Stress Reactivity
- Stress-related Illness
Adult Typical Diurnal Cortisol Patterning

![Graph showing Normal Diurnal Cortisol (Salivary)]
Child Typical Diurnal Cortisol Patterning


Badanes & Watamura, 2009.
Adults with PTSD Show Dampened Diurnal Patterns

Diurnal Cortisol in Infants & Toddlers Experiencing Adversity

Cortisol Level

- Low
- High

Differs by family risk, maternal adversity, and very early problem behaviors.
Moderation via Buffering

Social & Maternal Buffering

Cumulative Stress

Heightened Stress Reactivity

Stress-related Illness
Fig x. Stress Reactivity Protocol and Saliva Sampling Times. Simple differences significant at p<.05 are indicated with an asterisk for illustrative purposes. Conventional understanding suggests that salivary cortisol levels reflect evaluation of events occurring 15-22 minutes previously. Thus, the first two samples that differed for children who experienced more vs. less supportive parenting as rated during minutes 6-18, (taken at 26 and 32 minutes respectively), likely reflects HPA-activation during the play session with the parent, while the largest difference, (at 39 minutes), likely reflects the response to the stress tasks. See Figure 2 for graphical representation of the statistical models used for formal analyses.

Brown, S., Schlueter, L., Hurwich-Reiss, E., Barrow, E. & Watamura, S.E. *under review.
Lunch!
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Putting together the pieces:
Contextual stress, families, risk and protection, prevention & intervention
What are resilient people like? What builds resilience?
The ACE Story

Lifetime prevalence of depression by ACE Score

<table>
<thead>
<tr>
<th>0 ACES</th>
<th>5+ ACES</th>
</tr>
</thead>
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<tr>
<td>![Green Figures]</td>
<td>![Red Figures]</td>
</tr>
</tbody>
</table>
The Other Side of the ACE Story

Lifetime prevalence of depression by ACE Score

- O ACES
- 5+ ACES
Resilience
Better than expected outcomes, given assessments of risk
Largest Groups of Migrant Families to the U.S.

- Immigrant families
- Refugee Families

Five Largest Foreign-Born Groups in the United States, 2010

(percent of the total foreign-born population)

**Note:** Data do not include special immigrant visas and certain humanitarian parole entrants.


**PEW RESEARCH CENTER**
Background

• Currently, there are 68.5 million displaced persons, refugees, asylum-seekers globally

• Syrians comprise the largest group:
  – 6.3 million refugees
  – 6.2 million internally displaced
  – 263,800 pending asylum-seekers

(UNHCR, 2018)
Background

• 52% of all refugees are children (UNHCR, 2018).

• Parents are the key mediator and moderator of child experience (Masten, Narayan, Silverman, & Osofsky, 2015).

• Impact of the refugee experience on caregiver wellbeing has been minimally investigated.
SYSTEMATIC REVIEW

**method**
- Three databases
  - PsycInfo, PubMed, Anthropology Plus
  - Reference lists of included articles
  - Grey literature
- Keywords and variants:
  - Perimigration, pre-migration, displacement, refugee, Syrian
  - Caregiver, parent, family
- Last ten years

**results**
- 14 quantitative, 14 qualitative, 6 mixed-methods
- 31,806 children, 10,522 adults, 5,398 caregivers
- 15 focus on Syrian refugees, 13 other regions

*(Miles, Narayan, & Watamura, in press)*
STRESS DOMAINS

• poor living conditions \((n = 25 \text{ studies})\)

• decreased or insufficient opportunities, resources, and services \((n = 24)\)

• trauma, victimization, and security concerns \((n = 23)\)

• ongoing migration and family separation \((n = 19)\)

• discrimination \((n = 9)\)

• detention and asylum-seeking \((n = 7)\)
Parent-Child Outcomes

- child mental health problems ($n = 24$)
- caregiver mental health problems ($n = 15$)
- child physical health problems ($n = 13$)
- child maltreatment or harsh parenting ($n = 13$)
- child exploitation such as labor, trafficking, or increased rates of child marriage ($n = 13$)
- parenting stress or changes in parenting ($n = 9$).
Poor living conditions

Housing
Crowding
Poor sanitation
Lack of food and drinking water
Decreased opportunities, resources, and services

Employment

School

Medical care
Trauma, victimization, and security concerns

- Assault and victimization during transit and in camps
  - Host community
  - Between ethnic groups

- Sexual and physical abuse of children because of security problems in detention facilities, camps, etc.
Ongoing migration and family separation

20% of Syrian parents in a German refugee camp had experienced separation from a child (Soykoek et al., 2017)

Additional displacements → rising feelings of panic (Lafta et al., 2016)
Discrimination

- Very common in intermediate countries
- Youth are attacked on their way to school
- Families report being verbally harassed
Detention and Asylum-seeking

Asylum-status uncertainty $\rightarrow$ psychological distress (Haynes, 2013; Ryan, Bensen, & Dooley, 2008).

A. Climate of insecurity and fear (Haynes, 2013).
B. System perceived to be hostile and opaque (Haynes, 2013).

Detained and waiting on a decision $\rightarrow$ higher levels of distress (Robjant, Robbins, & Senior, 2009).
By definition, migrant families are resilient.
What do we see, behaviorally, in resilient parents?

- Grit
- Agency
- Forgiveness
- Flexibility
- Higher Purpose
- Helping Others
- ...

...
What Would a Public Health Solution Look Like?

• Examples
  – Vaccinations
  – Routine Screening (vision, hearing)
  – Enhanced Early Detection (well-child visits)
  – Fluoride in Water
  – Vitamin D in commonly consumed products
  – Cigarette tax, Earned Income Tax Credit
  – Education campaigns (seatbelts, shaken baby syndrome)
  – Legislation (car seats, public education)
How do We Get from Here to a Public Health Solution?
Step 1. Believe in Change

GROWTH MINDSET

“Failure is an opportunity to grow”
“I can learn to do anything I want”
“Challenges help me to grow”
“My effort and attitude determine my abilities”
“Feedback is constructive”
“I am inspired by the success of others”
“I like to try new things”

FIXED MINDSET

“Failure is the limit of my abilities”
“I’m either good at it or I’m not”
“My abilities are unchanging”
“I don’t like to be challenged”
“My potential is predetermined”
“When I’m frustrated, I give up”
“Feedback and criticism are personal”
“I stick to what I know”
Making Change
Age 1 Risk Profiles

- Low Risk - 44%
- High Risk-High Instability - 9%
- High Risk-Lower Instability - 47%
## Age 1 to Age 3 Risk Profiles

<table>
<thead>
<tr>
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<th>Low Risk</th>
<th>High Risk-High Instability</th>
<th>High Risk-Lower Instability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Risk - 44%</td>
<td>90%</td>
<td>3%</td>
<td>6%</td>
</tr>
<tr>
<td>High Risk-Lower Instability - 47%</td>
<td>.99</td>
<td>.00</td>
<td>.01</td>
</tr>
<tr>
<td>High Risk-High Instability - 9%</td>
<td>.87</td>
<td>.04</td>
<td>.09</td>
</tr>
<tr>
<td>High Risk-High Instability - 9%</td>
<td>.56</td>
<td>.20</td>
<td>.24</td>
</tr>
</tbody>
</table>
Examine these Assumptions & Their Logical Conclusions

- The inverse rule
- Normal development derailed
- Intervention should encourage shaping toward behaviors and circumstances observed in low adversity conditions
Implicit Assumption of Irrationality

- Individuals with adversity history act irrationally and against their own best interest
Let’s Look at that Evidence: Rational or Irrational?

– Eat the marshmallow
– Watch for threat, bias toward seeing it vs. missing it
– Accelerate maturation
– Store fat, don’t worry about chronic disease
– Reproduce early and often
– Stay vigilant
– Maximize short term gain, minimize long-term delayed return investment
– Cope vs. initiate change
Evo-Devo Theory and Adaptation to Stress

• “Thus, from an evolutionary–developmental perspective, stressful rearing conditions, even if those conditions engender sustained stress responses that must be maintained over time, should not so much impair neurobiological systems as direct or regulate them toward patterns of functioning that are adaptive under stressful conditions”


Options

• 1. Adapt environments to maximize the utility of the skills and traits developed under conditions of adversity

• 2. If you want to “rewire” the person, it might help to:
  – Approach them as rational
  – Work with them to change the value proposition
We want to optimize this
The Child in Context

First & Most Important Sensitive Period

The targeted agent of change

The social, emotional & educational environment
Where is Individual and Family Risk & Protection Situated?
First, Prevention

CDC Prevention Strategies

<table>
<thead>
<tr>
<th>Strategy</th>
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<tbody>
<tr>
<td>Economic supports for families</td>
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<tr>
<td>Changing social norms: support families &amp; positive parenting</td>
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<tr>
<td>Provide early high quality care &amp; education</td>
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<tr>
<td>Enhance parenting skills</td>
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<tr>
<td>Intervene to lessen harms &amp; prevent future risk</td>
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<tr>
<td>Sector involvement</td>
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<tr>
<td>Monitoring &amp; Evaluation</td>
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</table>

What is the Economic Pressure and its Effects?

- Absolute Income
- Resource Inequity
- Opportunity (strong economy, jobs, training, retraining)
- Wealth
- Stability/Possibility for Growth
Infant Brain Volume & Family SEP

http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0146434
Whole Brain Cortical Surface Area (Ages 3-20) & Family Income

CASH TRANSFER
EMPath© & The Intergenerational Mobility Project

Poverty is complex, so EMPath thinks differently.

https://www.empathways.org/

https://developingchild.harvard.edu/innovation-application/innovation-in-action/intergen-mobility-project/
Changing Trajectories: Beginning in the womb
Empowering Women and their Families to Thrive

MotherWise

- Need and Mission: Healthy relationships = safer homes for babies
- Current Federal Funding: Through 2020
- Evidenced Based Program: WITHIN My REACH®
- Service: 400 women/families per year, low income, high risk
- Research: Rigorous clinical trial
- Sustainability: Community partnerships, foundations, private philanthropy, social enterprise, research
- Opportunities: Volunteer, student, faculty collaborations

Galena Rhoades, Ph.D., Department of Psychology
Treating Depression Prenatally

NEURODEVELOPMENTAL RESEARCH PROGRAM

Current Projects

DOES REDUCING MATERNAL PRENATAL DEPRESSIVE SYMPTOMS BENEFIT CHILD BRAIN AND BEHAVIORAL DEVELOPMENT?

Maternal depression is one of the most common prenatal complications, affecting 13-40% of pregnant women, and has profound implications for the developing child. Children whose mothers experience depression during pregnancy are three to five times more likely to experience depression in their lifetime. Prenatal maternal depression bestows risk for later child psychopathology through effects on the developing fetal brain, leading to altered neural development, increased stress reactivity, greater negative emotional reactivity, and reduced cognitive control in childhood.

The Care Project is a large randomized control trial funded by the NIMH (R01MH109662) that will break new ground by testing whether reducing maternal depressive symptoms during pregnancy affects the development of infants' pathophysiological risk mechanisms for later emerging anxiety and depression.

After an initial study visit consisting of psychological and biological measures, women will be randomly assigned to one of two groups:

Maternity Support Services (usual standard of care for prenatal depression)

or

MOMcare (interpersonal therapy, an empirically supported intervention for prenatal depression)

Maternal biological and psychological measures will be collected longitudinally from pregnancy through 12 months postpartum. Infants will be evaluated at birth, 2-weeks, 6-months, and 12-months. Infants will be assessed across four units of analysis: 1) brain circuitry (MRI, DTI, EEG), 2) physiology (cortisol reactivity and regulation), 3) behavior (eye-tracking attention tasks and observation), and 4) maternal report.

To learn more about the CARE project or to inquire about participation, visit our brochure.
Intervention Target

• Child
• Parenting
• Parent Well-being
• Family
Attachment Biobehavioral Catch-up: Foster Care


Figure 1. Mean cortisol values (and standard errors) as a function of intervention group and time.
Attachment Biobehavioral Catchup: Early Head Start

Early Detection

ABOUT US

Our Vision

Recalibrate Solutions works to prevent the lifelong adverse consequences of toxic stress exposure by developing and deploying a home-based system to objectively detect clinically-relevant deviations in stress system functioning. Our quantitative, reliable and efficient system will be deployed for screening and as a tool to monitor the effectiveness of behavioral interventions.
SEEDLINGS MODEL OF CHANGE:

Breaking the Intergenerational Transmission of Toxic stress

Parental History of Toxic Stress → Intergenerational Transmission of Toxic Stress
Seedlings Model of Change:

Breaking the Intergenerational Transmission of Toxic stress

SEEDLINGS MODEL OF CHANGE
Seedlings Model of Change:

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SEEDLINGS MODEL OF CHANGE
Seedlings Model of Change:

Breaking the Intergenerational Transmission of Toxic stress

Parental History of Toxic Stress → Processing of Experienced Trauma → Identification of parenting goals → Building Social Connections → Intergenerational Transmission of Toxic Stress
Seedlings Model of Change:

Breaking the Intergenerational Transmission of Toxic stress

[Diagram showing the Seedlings Model of Change with steps such as Parental History of Toxic Stress, Identification of parenting goals, Processing of Experienced Trauma, Building Social Connections, Building Knowledge, and Inter-generational Transmission of Toxic Stress]
Seedlings Model of Change:

Breaking the Intergenerational Transmission of Toxic Stress

Parental History of Toxic Stress

Identification of parenting goals

Processing of Experienced Trauma

Building Social Connections

Building Knowledge

Building Skills: Self-care Parenting

Inter-generational Transmission of Toxic Stress

SEEDLINGS MODEL OF CHANGE
Seedlings Model of Change:

Breaking the Intergenerational Transmission of Toxic stress

Parental History of Toxic Stress

Identification of parenting goals

Processing of Experienced Trauma

Building Social Connections

Building Knowledge

Building Skills: Self-care Parenting

Making Commitments

Inter-generational Transmission of Toxic Stress
No changes to negative coping styles, trend (p=.06) for increases in planning
PRE POST

Reduced anxiety

GAD7

No reductions in depression

$p=.031$
REDUCED PARENTING STRESS

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
<th>Pre</th>
<th>Post</th>
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</thead>
<tbody>
<tr>
<td>Defensive responding</td>
<td>14.8824</td>
<td>12.5882</td>
<td>24.5294</td>
<td>20.8824</td>
</tr>
</tbody>
</table>

*p = .037\n
*p = .023*
IMPROVED PARENTAL EFFICACY

PRE

POST

PARENTAL EFFICACY

39.4706

41.8235

p = .04
Roots©

• A new complimentary intensive workshop experience for direct service providers as well as anyone working on programming or policy for adversity exposed populations
What other interventions might work?

(Almost)

Everything I Need to Know About Being a Parent in 25 Words or less

- *Always*: be BIGGER, STRONGER, WISER, and KIND.
- *Whenever possible*: follow your child’s need.
- *Whenever necessary*: take charge.

© Cooper, Hoffman, Marvin, & Powell – 1998  circleofsecurity.org
Child-Parent Psychotherapy

Alicia F. Lieberman

Alicia F. Lieberman, PhD, is the Irving B. Harris Endowed Chair in Infant Mental Health; Professor and Vice Chair for Academic Affairs at the University of California, San Francisco, Department of Psychiatry; Director of the Child Trauma Research Program at San Francisco General Hospital; and a former Board Member and President of ZERO TO THREE.

Contributions to the Field

Dr. Lieberman is the developer of Child-Parent Psychotherapy, an evidence-based treatment for traumatized children from birth-5 years old that has shown efficacy in five randomized controlled studies. She has made major contributions to the field’s understanding of attachment, toddler development, and cross-cultural perspectives on early development through her research, writing, training, and consultation.
Other Ideas?
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Questions?

Now, or later – I’m easy to find!

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