

**Bridging the Gap: Improving Outcomes for
All Youth
A PUBLIC HEALTH APPROACH: Applying a
Therapeutic Service Model**

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JRI/DYS Programs

- 4 Staff Secure Facilities
- Middleton Juvenile Detention Center
 - Hardware Secure Facility: located in the corn fields of Middleton Ma, across the field from the adult correctional facility and an active Shooting Range
 - Male youth: 13-21yrs
 - Revocation, Detention, Committed Youth
 - 4 General Nurse Practitioners, 1 MH NP
 - On site Primary Care/Dentistry/Psychopharmacology

National Commission on Correctional Health Care (NCCCHC) 1991 study

- 46% Urgent Care 70% Mental Health (ADHD, Anxiety, PTSD)
- 1,801 youth from 39 short term or long-term correctional facilities in US:
 - Substance abuse
 - Trauma
 - Unprotected sexual activities
 - h/o STI
 - Suicide ideation
 - Reported violence

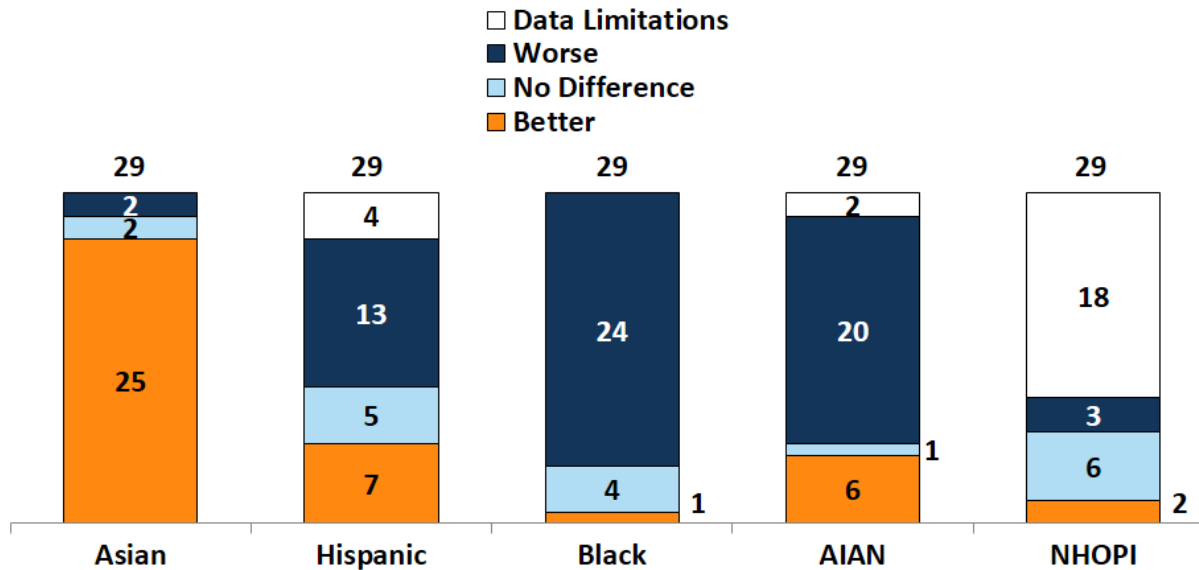
JJS – ACJS Pipeline

- 13 Million youth enter the Juvenile Justice System (JJS) via arrests/year
- **80% are re-arrested as adults and enter the Adult Criminal Justice System (ACJS)**
- Currently there are 6.8 Million adults (2.8% of the adult population at large) in the ACJS. The risk of incarceration is:
 - **1:17 White**
 - **1:3 Black**
 - **1:6 Latino(x)**

Adult Health Outcomes

Exhibit 3.1

Number of Health Status and Outcome Measures for which Groups fared Better, the Same, or Worse Compared to Whites



Note: Better or Worse indicates a statistically significant difference from White population at the $p < 0.05$ level. No difference indicates there was no statistically significant difference. Data limitations indicates data are not available separately for a racial/ethnic group, insufficient data for a reliable estimate, or comparisons not possible to Whites due to overlapping samples. AIAN refers to American Indians and Alaska Natives. NHOPI refers to Native Hawaiians and Other Pacific Islanders. Persons of Hispanic origin may be of any race but are categorized as Hispanic for this analysis; other groups are non-Hispanic.









Implicit Bias

- Confronting the reality of our racial implicit bias as service and enforcement providers is key to moving us closer to a more equitable justice AND healthcare system
- The Implicit Association Test (IAT) is a validated tool that is used to examine unconscious racial attitudes and should be incorporated in all staff and provider trainings.
- <https://implicit.harvard.edu/implicit/>


Adverse Childhood Experiences

ADVERSE CHILDHOOD EXPERIENCES - ACES

What are Adverse Childhood Experiences (ACEs)?
ACEs are potentially traumatic events that occur in a child's life:

			
Physical Abuse	Emotional Abuse	Sexual Abuse	Domestic Violence
			
Parental Substance Abuse	Mental Illness	Suicide or Death	Crime or Imprisoned Family

Causing lifelong medical, mental & social suffering

 American SPCC
American Society for the Positive Care of Children

americanspcc.org
The Nation's Voice for Children
*Center for Disease Control

POTENTIAL ACE RELATED ILLNESSES

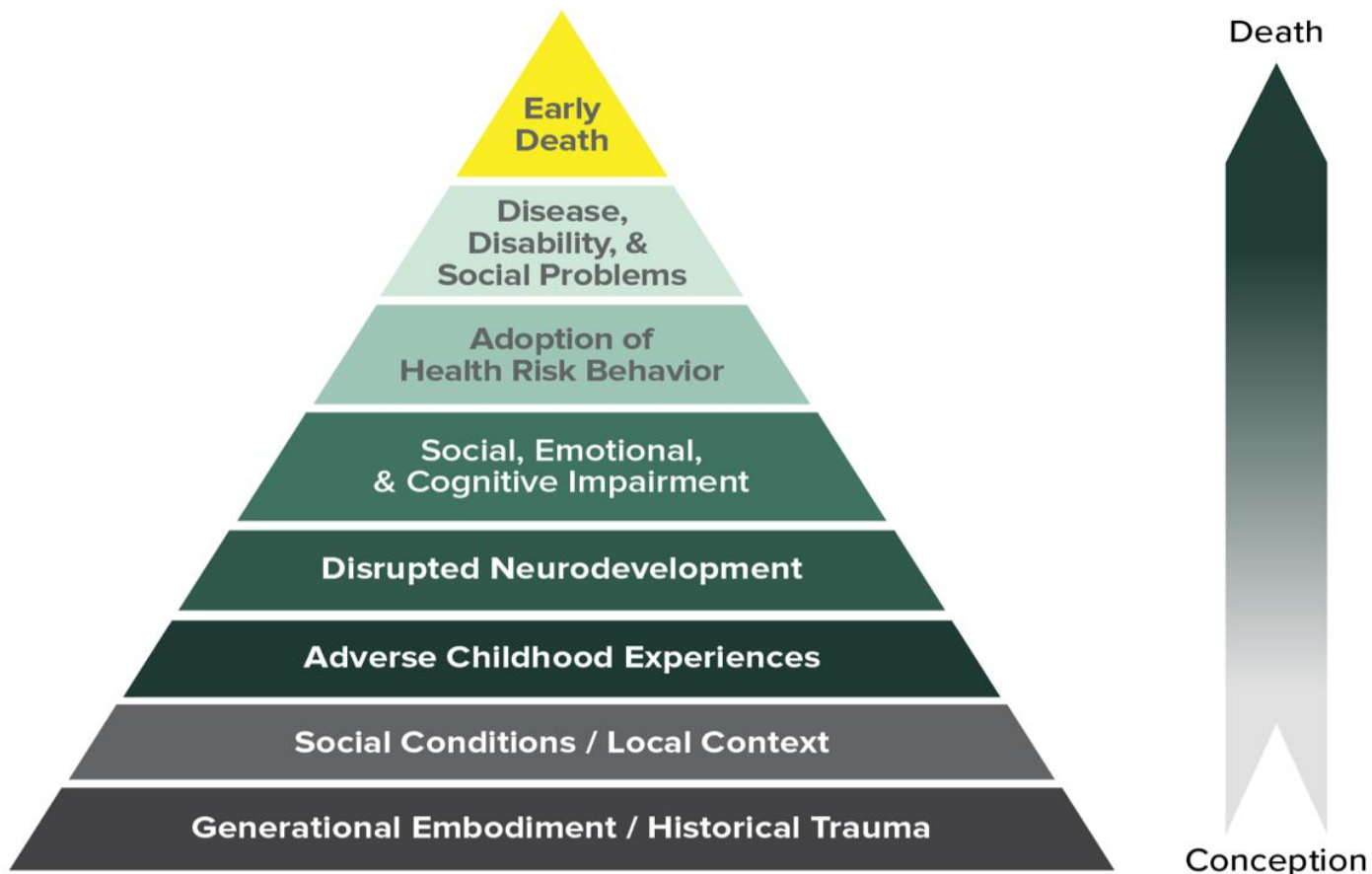
Early Adversity has Lasting Impacts



Health Outcomes



GENERATIONAL EFFECTS OF ACE



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

THE SCIENCE OF EPIGENETICS

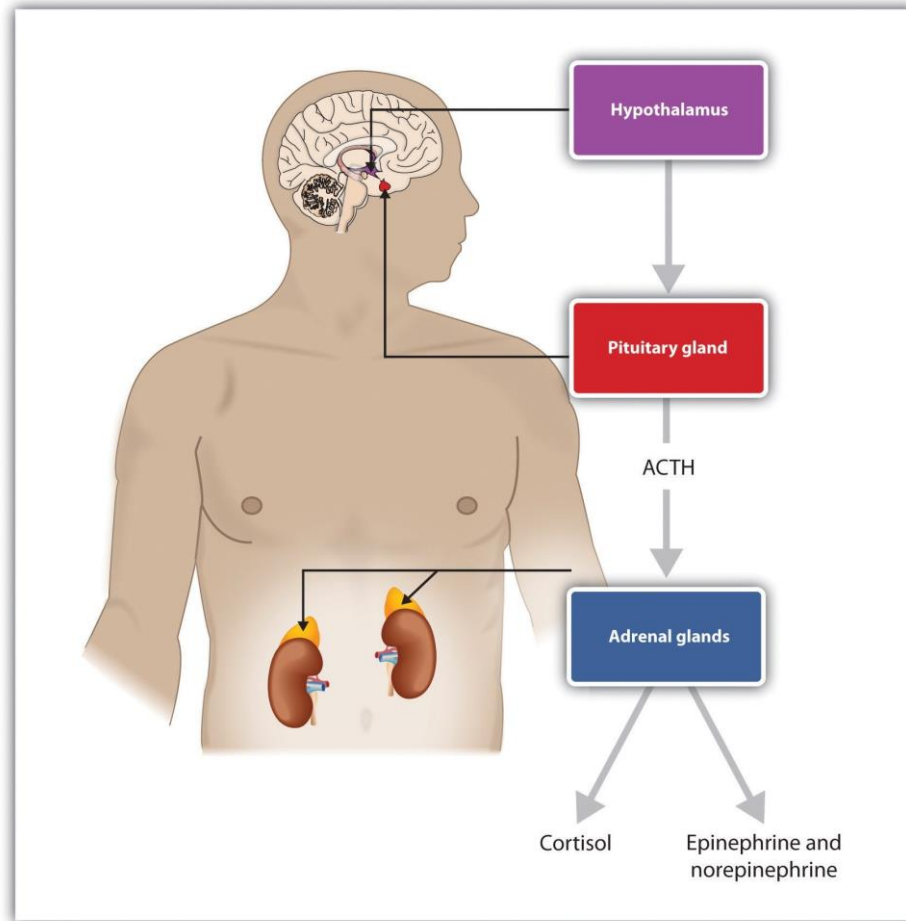
Definition: The study of changes in organisms brought about by modification of **gene expression** rather than by alteration of the genetic code in the form of DNA.

Gene expression is what produces the enzymes and chemicals and hormones (cortisol) in our metabolic system that make us all function (stress response).

Primary Mechanisms of Epigenetic Modification

- **Methylation of DNA:** example is the decreased expression of the Glucocorticoid Receptor (GR) gene, leading to changes in the function of hypothalamic-pituitary-adrenal-axis, which impacts a child's ability to negotiate stress.
- Histone Modification: These proteins ultimately change the 3-D structure of genes and thereby turning them off or on, resulting in some cancers.
- Noncoding RNA: prevents protein production

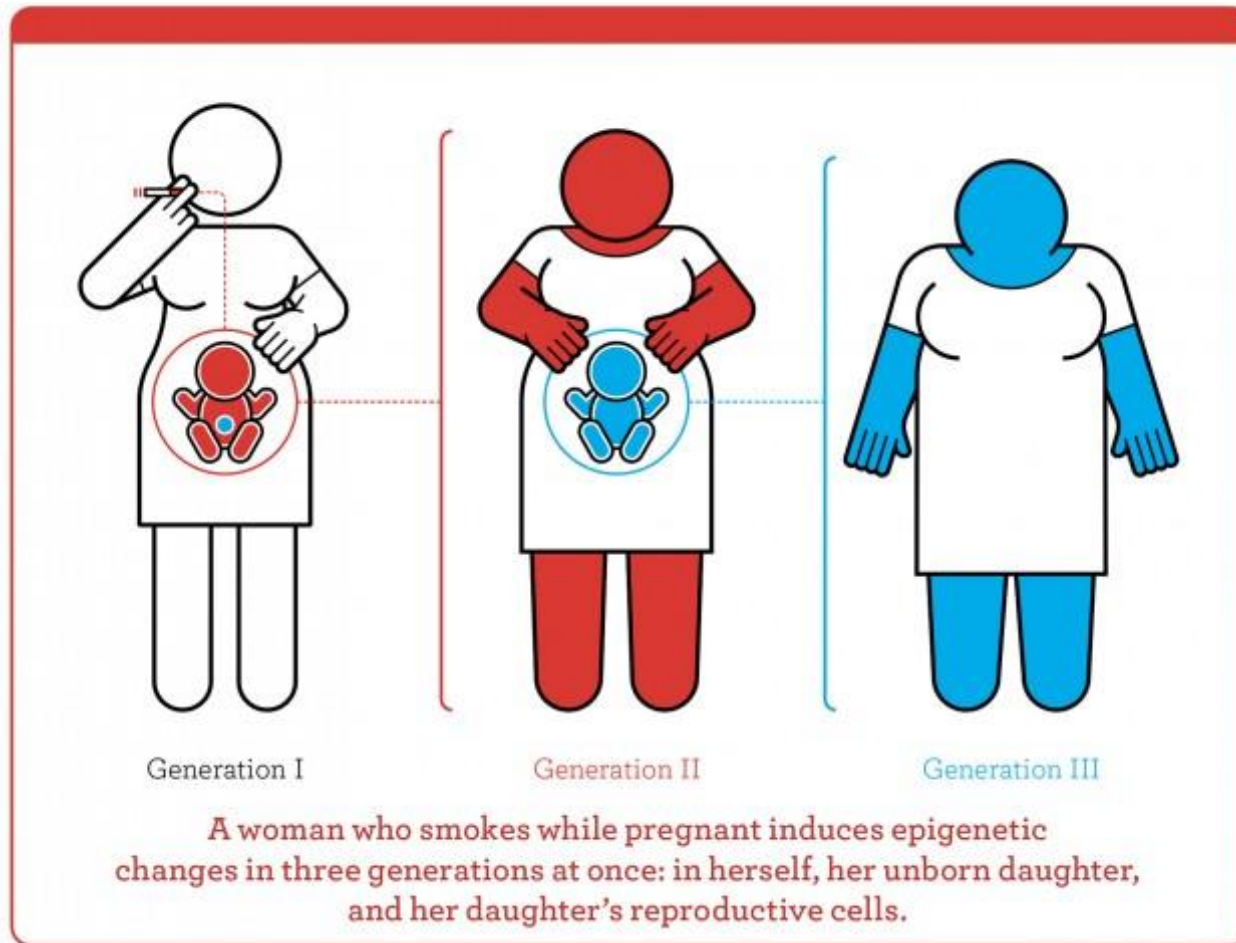
The Stress Response



Epigenetic Triggers (Epigenome)

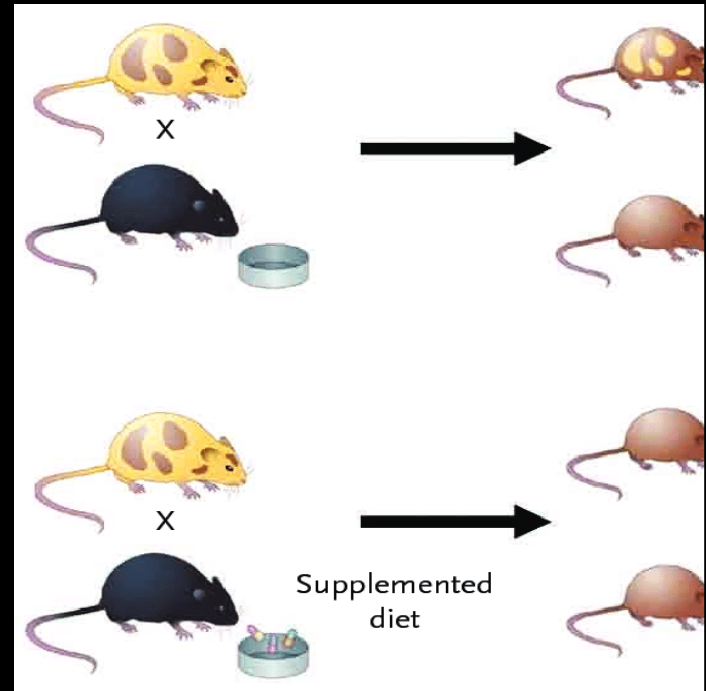
- NUTRITION (Microbiome; Methyl rich foods)
- EXERCISE (Interval Training)
- AGE (Chromosomal Telomeres)
- ENVIRONMENT (TOXINS, Chronic STRESS)
- **Adverse Childhood Experiences**
- These triggers have unequal impact based on susceptible periods for epigenetic changes along the Developmental Life Cycle.

Generational Impact of Epigenetic Changes



Are You what Your Mother Ate?

Randy Jirtle, Duke University, 2000



Ecology of Confinement

- Sleep disturbances
- Nutritional deficiencies
- Minimal exercise
- Household disruption
- Trauma: youth on youth altercations/assaults and restraints; sexual trauma
- Poor relational health: limited access to consistent contact with caring adults/mentorship)

PARENTAL NURTURING HEALS

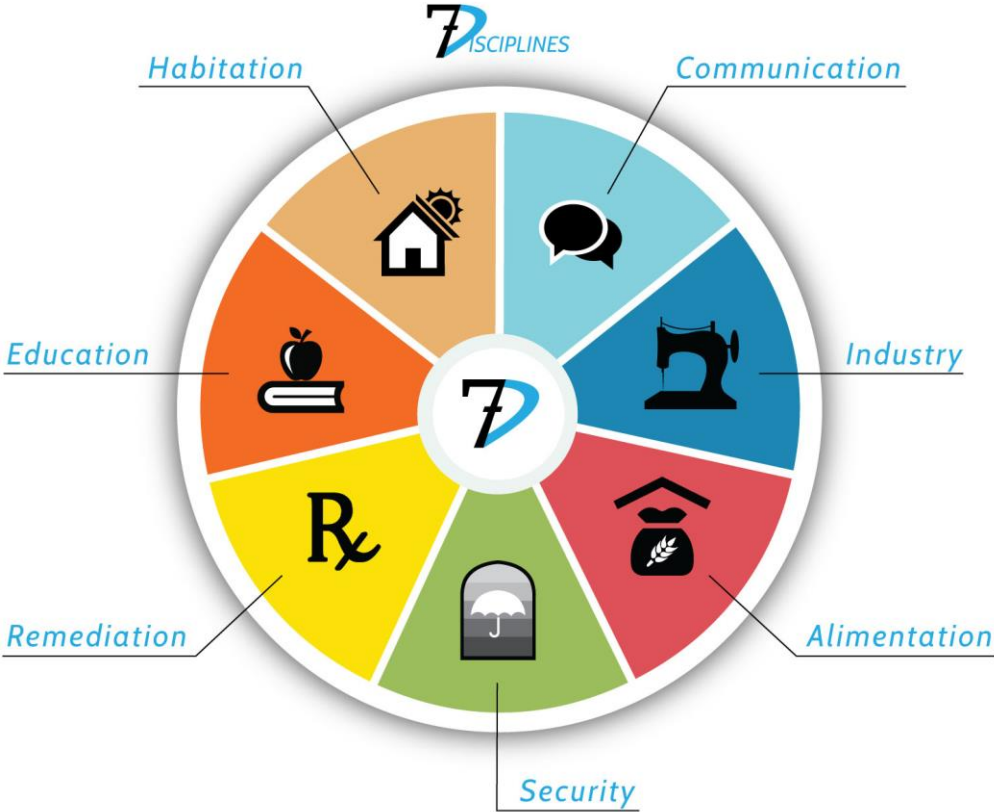
The Licking Mother Rat Phenomenon

- Some mother rats spend a lot of time grooming their pups. Others ignore them.
- Highly licked/nurtured pups grew up to be calm rats, while little nurtured rats grew up to be anxious and sexually aggressive.
- The nurturing behavior during the first week of life shapes her pups' epigenomes.

DNA IS NOT DESTINY

- Epigenetic changes can be induced after birth, through NURTURING behavior (Michael Meaney, McGill University). The epigenetic code is sensitive to changes in environment like food availability or threat from predators. Remediation is possible.
- **EmPath:** Mobility Mentoring program for women uses brain science to design interventions to move women out of poverty. “Areas of brain affected by social bias, poverty and trauma remain plastic well into adulthood and through proper coaching, may be strengthened and improved” (Crittenton Women’s Union)

The 7-DISCIPLINES OF WELLNESS



Re-Entry Program Goals

- Incarceration and all other forms of Punitive Confinement are Adverse Childhood Experiences (ACE). ACE have a direct effect on prognosticators of health increasing risk of cardiac disease, obesity, diabetes, HTN and cancer.
- Primary goal is to prevent contact with JJS: Restorative Justice Diversion Programs (Restorative Response Baltimore) and secondarily, disrupt the JJS to AJS pipeline.
- HC goals for justice involved youth is to help mitigate potential downstream health effects of confinement. Focused disruptive multi-systemic interventions informed by Brain Science, Developmental Epigenetics, Resiliency.



Strengthen economic supports to families

- Strengthening household financial security
- Family-friendly work policies



Change social norms to support parents and positive parenting

- Public engagement and enhancement campaigns
- Legislative approaches to reduce corporal punishment



Provide quality care and education early in life

- Preschool enrichment with family engagement
- Improved quality of child care through licensing and accreditation



Enhance parenting skills to promote healthy child development

- Early childhood home visitation
- Parenting skill and family relationship approaches



Intervene to lessen harms and prevent future risk

- Enhanced primary care
- Behavioral parent training programs
- Treatment to lessen harms of abuse and neglect exposure
- Treatment to prevent problem behavior and later involvement in violence

TAKE HOME POINTS

- Nutrition and relational health directly impacts the adolescent brain due to both cognitive and synaptic plasticity during this stage of development. Alterations in thought and behavioral processes can be reshaped by way of diet and lifestyle changes.

TAKE HOME POINTS

- Move away from the disease model of care. Instead of asking “What’s wrong with you?” ask “What has happened to you?” and “How can we work together to help to restore you?”
- Practice a restorative **Ecobiodevelopmental** model of care.

TAKE HOME POINTS

- Embrace the antidotal power of relational health and provide multiple sources of frequent and consistent caring adult interactions and mentorship. Implement a family based, youth centered multidisciplinary care model that targets 2 generations.