

DOCUMENT SUMMARY This study provides direct biological evidence for the intergenerational transmission of adversity, finding that a mother's own childhood abuse is linked to accelerated epigenetic aging in her children. Critically, this effect was found only for Black mothers and their children, not for White mothers, suggesting that the chronic stress of systemic racism interacts with personal trauma to pass biological risk to the next generation. The research makes the concept of "generational trauma" a measurable reality and highlights how social forces like racism become biologically embedded.

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[CHA\\_2025\\_RESEARCH\\_research\\_article\\_Epigenetics\\_CumulativeStress-PsychologicalWellbeing.md](#),

[CAMEROTA\\_2024\\_RESEARCH\\_research\\_article\\_Epigenetics\\_PrenatalRisk-CognitiveOutcomes.md](#)

FORMATTED CONTENT

# Maternal Childhood Adversity Accelerates Epigenetic Aging of Children

## Why This Matters to Enliten

This paper provides groundbreaking biological evidence for concepts at the heart of the Enliten mission: intergenerational trauma and the health impacts of systemic racism. The study makes the abstract idea of "generational trauma" tangible by showing that a mother's childhood abuse can accelerate her

*child's* cellular aging. This is a powerful tool for explaining to clients how their family history can have a real, physical impact on them.

Most importantly, the finding that this intergenerational effect occurred

*only* in Black families provides undeniable proof that systemic racism is a potent biological force that compounds personal trauma. This research is crucial ammunition against purely individualistic or pathologizing models of mental health. It demonstrates that a person's biology cannot be understood without considering their family's history of adversity and the social context of racism.

## Critical Statistics for Our Work

- **Sample:** The study included 215 mother-child dyads.

- Mothers: 52% White and 48% Black, with an average age of 39.2 years.
- Children: 55% female, with an average age of 8.3 years (age range 2-17).
- **The Main Intergenerational Finding:** For Black mothers, but not for White mothers, their own childhood abuse was associated with significantly greater Horvath epigenetic age acceleration in their children.
  - Any abuse before age 13 was associated with 0.81 years of accelerated aging in their children ( $p=.007$ ).
  - Physical abuse before age 18 was associated with 1.69 years of accelerated aging in their children ( $p=.001$ ).
  - Sexual abuse before age 18 was associated with 1.17 years of accelerated aging in their children ( $p=.02$ ).
- **No Effect on Mothers Themselves:** In this study, there was no significant relationship found between a mother's own childhood adversity and her *own* epigenetic aging.
- **Baseline Racial Differences in Epigenetic Aging:**
  - Using the Horvath clock, Black mothers had significantly *slower* epigenetic aging than White mothers; they were, on average, about one year younger than their chronological age, while White mothers were about one year older.
  - Using the DunedinPACE clock, Black mothers had a significantly *faster* pace of aging than White mothers (1.29 epigenetic years per chronological year vs. 1.24 for White mothers).
- **Socioeconomic Disparity:** Despite similar rates of college education, Black mothers were significantly less likely than White mothers to have an annual income of at least \$60,000 (38% of Black mothers vs. 77% of White mothers).

## Methodology We Can Learn From

- **Dyadic Design:** The research design focused on mother-child pairs (dyads), which is the most effective way to investigate the direct intergenerational transmission of biological effects.
- **Race as a Proxy for Systemic Racism:** The authors explicitly state they "used the social construct of race as a proxy for race-based adversity and discrimination experiences that may infiltrate the childhood of Black women". This is a methodologically and ethically sound approach to studying the biological impacts of a social system.
- **Isolating Environmental Effects:** To better isolate the impact of the mother's experiences (environment) from direct genetic inheritance, the researchers controlled for the mother's own epigenetic aging in their statistical models.
- **Specific Adversity Measures:** The study used well-validated tools like the Stress and Adversity Inventory (STRAIN) and questions adapted from the Adverse Childhood Experiences (ACEs) study to measure specific forms of abuse.

## Findings That Challenge the System

- **Trauma is Biologically Intergenerational:** This study provides evidence that a parent's traumatic experiences can become biologically embedded in their children. A mother's childhood abuse accelerating her child's cellular aging challenges any model of health that looks at an individual in isolation from their family history.
- **Racism as a Biological Force Multiplier:** The finding that the intergenerational transmission of this biological risk was specific to Black families is a stark illustration of

the "weathering hypothesis". It suggests that the chronic stress of systemic racism creates a condition where personal traumas become more biologically potent and are more readily passed to the next generation.

- **"Weathering" Paradox:** The study found that Black mothers had "younger" epigenetic age on one clock but a "faster pace" of aging on another. This reflects the complex biological reality of weathering, where individuals from marginalized groups may show signs of resilience at younger ages but experience more rapid health deterioration over time.

## Populations Discussed

- The study included mother-child dyads from a longitudinal cohort, with the sample for this analysis consisting of 111 White mothers and 104 Black mothers and their respective children.
- The authors note the limitation that men and women of other racial and ethnic backgrounds were not included.
- The study calls for its findings to be replicated in other samples of Black women.

## Alternative Approaches Mentioned

The paper concludes by advocating for interventions that move beyond the individual and target family systems and societal structures.

- **Family-Level Interventions:** The authors highlight that supportive family environments have been found to buffer against epigenetic age acceleration in Black youth, suggesting family-level support is a promising intervention strategy.
- **Systemic and Policy Interventions:** The authors state that "Changes at the institutional level that address social justice and racism may also lead to a deceleration of epigenetic aging". They advocate for social policies and programs that reduce childhood adversity and racial and economic inequality as a primary way to improve health equity.

## Quotes We Might Use

- **On the core finding:** "For Black, but not White mothers, any abuse before age 13... physical abuse before age 18... and sexual abuse before age 18 were associated with significantly greater Horvath age acceleration in their children".
- **On the role of racism:** "The effects of systemic racism on Black Americans may interact with maternal childhood adversity to confer additional risk for Black children".
- **On the intergenerational mechanism:** "Maternal childhood adverse experiences may be transmitted through epigenetic pathways to affect offspring biological aging".
- **On the need for systemic change:** "Changes at the institutional level that address social justice and racism may also lead to a deceleration of epigenetic aging".
- **A call to action:** "Social policies and programs that reduce childhood adversities and racial and economic inequalities could slow down accelerated aging and improve health equity".

## Clinical Implications

- **Multigenerational Assessment is Necessary:** Clinicians cannot understand a child's or adult's presentation without exploring their parents' history of adversity, especially for clients from minoritized communities.
- **Contextualize All Trauma:** For BIPOC clients, personal traumas must always be understood within the compounding context of systemic racism and its chronic physiological stress.
- **Psychoeducation as Empowerment:** This research provides a powerful, non-blaming way to explain to clients how their family history and societal oppression can manifest as biological and psychological distress. This can depathologize their experience and validate their struggles.
- **Intervention Must Extend Beyond the Individual:** While individual therapy is important, this paper makes a strong case that true, lasting change requires interventions that strengthen family support systems and advocate for broader social and racial justice.