

# An Integrative Review of Early Life Adversity and Cortisol Regulation in Pregnancy

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# Early life adversity

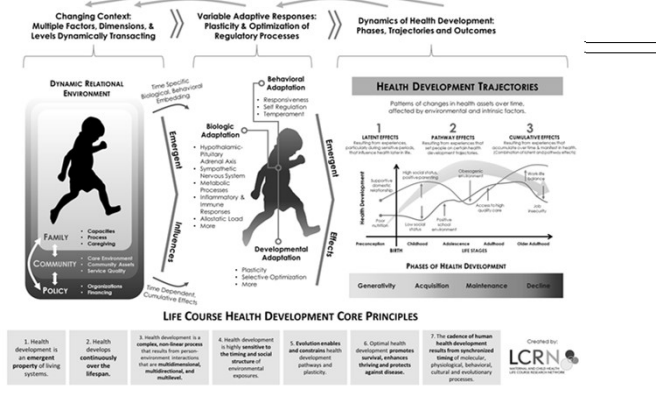


## Adverse Childhood Experiences



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# LIFE COURSE HEALTH DEVELOPMENT MODEL

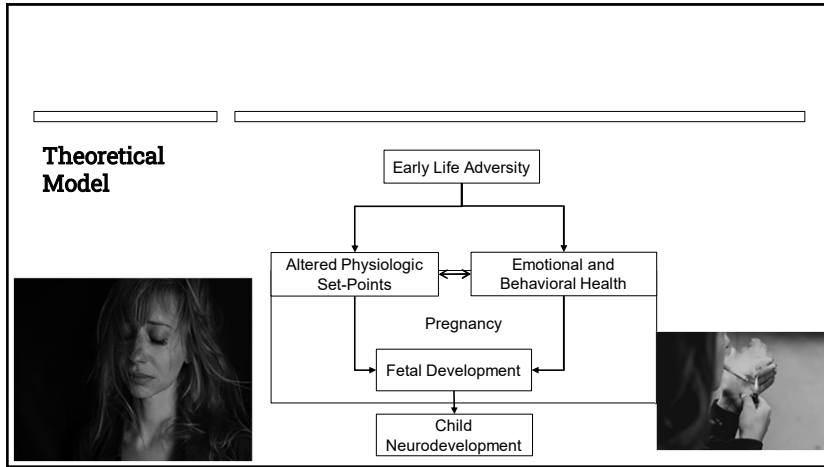


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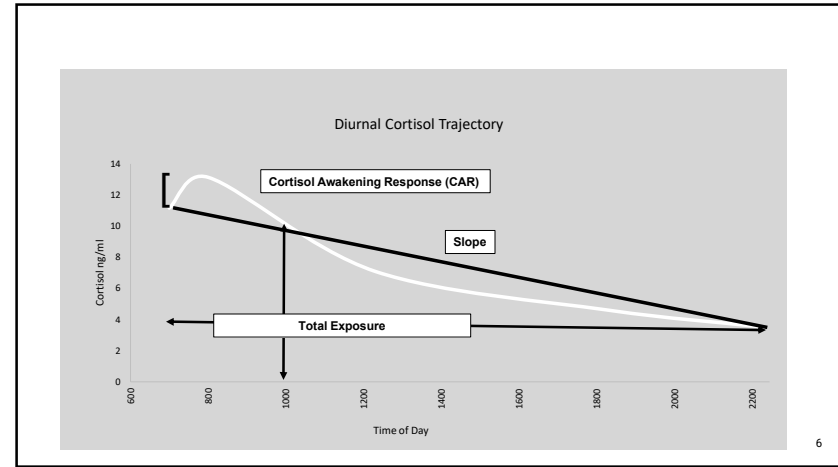
# Objective

To synthesize published findings on the relationship between early life adversity and hypothalamic-pituitary-adrenal (HPA) cortisol parameters in pregnant women

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**Results**

N = 25 articles

Cortisol Measures: 48% saliva, 40% hair, 8% plasma & 4% amniotic fluid

Cortisol Parameters

- 1) Diurnal
- 2) Phasic
- 3) Tonic
- 4) Pregnancy-related changes

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**Results**

Diurnal: daytime circadian variation

- o Elevated cortisol awakening response (CAR) (4/5)

Phasic: response to an acute stressor

- o Blunted phasic cortisol response (2) and delayed/prolonged phasic cortisol (1)

Pregnancy-related changes

- o Progressive increase in CAR (1) and steepening of diurnal cortisol slope (1)

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**Results**

- Tonic: increased baseline levels→
- Current Social Stress
  - Low social support (1)
  - Low socioeconomic status (1)
  - Adulthood trauma (1)
  - Black race / racism (3)
- Current Psychological Symptoms
  - Psychological distress (1)
  - PTSD symptoms (1)
  - Dissociative symptoms (1)

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**Takeaway**

*The cumulative effect of life course adversity in women is associated with altered cortisol regulation → evident during pregnancy*

Implications for Women’s Health

- Resilience to stress and trauma
- Emotional and behavioral health
- Intergenerational transmission of trauma

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**Thank you!**




**Integrative Review of Early Life Adversity and Cortisol Regulation in Pregnancy**

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**ABSTRACT**  
**Objective:** To synthesize published findings on the relationship between early life adversity and hypothalamic-pituitary-adrenal axis cortisol parameters in pregnant women.  
**Data Sources:** We searched PubMed, CINAHL, and PsycINFO databases using various and combinations of the keywords: “early life adversity,” “pregnancy,” “cortisol,” “adversity,” and “risk.”  
**Study Selection:** We screened articles that included pregnant participants, included measures of cortisol and early life adversity, were published in English in a peer-reviewed journal, and were of sufficient methodologic quality. One of 14 articles was eliminated through this process.  
**Data Extraction:** Twenty-five articles met the inclusion criteria and were evaluated for quality and risk of bias. Sources of cortisol included saliva, hair, placenta, and amniotic fluid.  
**Data Synthesis:** This integrative review according to four physiologically distinct cortisol output parameters: diurnal (daily) cortisol, cortisol in response to an acute stimulus, free cortisol levels, and pregnancy-related change. The primary evidence suggests that early adversity may be associated with elevated cortisol awakening response (CAR) and basal cortisol response in some adverse groups, irrespective of other psychological symptoms or current stress. For women with high levels of current stress or psychological symptoms, early adversity was associated with higher baseline cortisol levels.  
**Conclusion:** Early life adversity in women is linked with alterations in cortisol regulation that are apparent during pregnancy. Researchers should explore how variations in each cortisol parameter differentially predict pregnancy

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