

# Prenatal Programming of Stress Sensitivity

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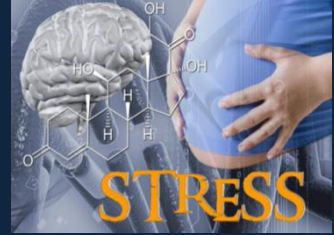
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**Background I:** Prenatal exposure to maternal stress increases risk for

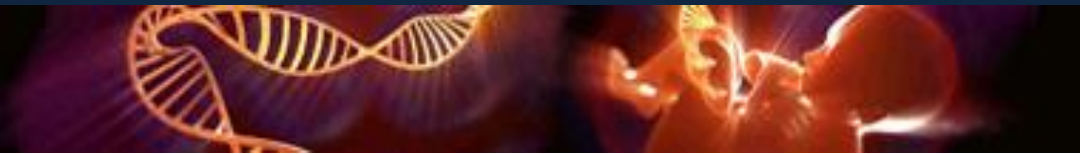
- stress-related diseases
- dysregulation of major stress response systems



➤ *Maternal glucocorticoids (GC) as potential mediators?*

**Background II:** Women at risk of preterm delivery are routinely treated with synthetic GCs to accelerate fetal lung maturation

➤ *Valid model to study long-term consequences of high stress hormone levels during pregnancy*



**Sample:** 209 term-born children (6-11 years)

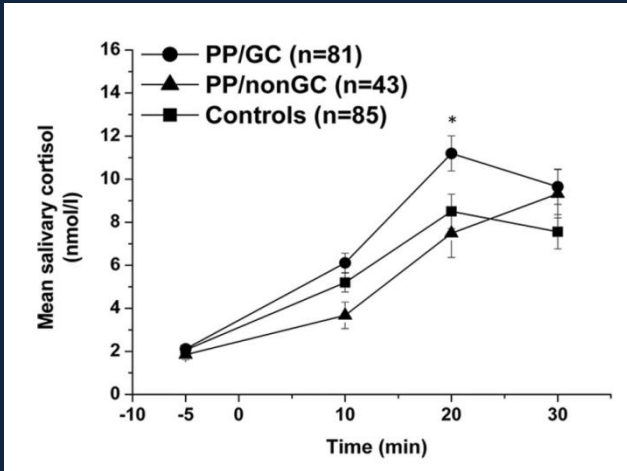
- **PP/GC group:** children of mothers with a pathological pregnancy treated with sGCs
- **Controls:** children of mothers without pregnancy complications/no hospital stay
- **PP/nonGC group:** children of mothers who had been hospitalized due to pregnancy complications, but had never received sGC therapy

**Study Aim I:** to evaluate long-term effects of antenatal sGC therapy on cortisol stress reactivity in childhood

- Method: Trier Social Stress Test

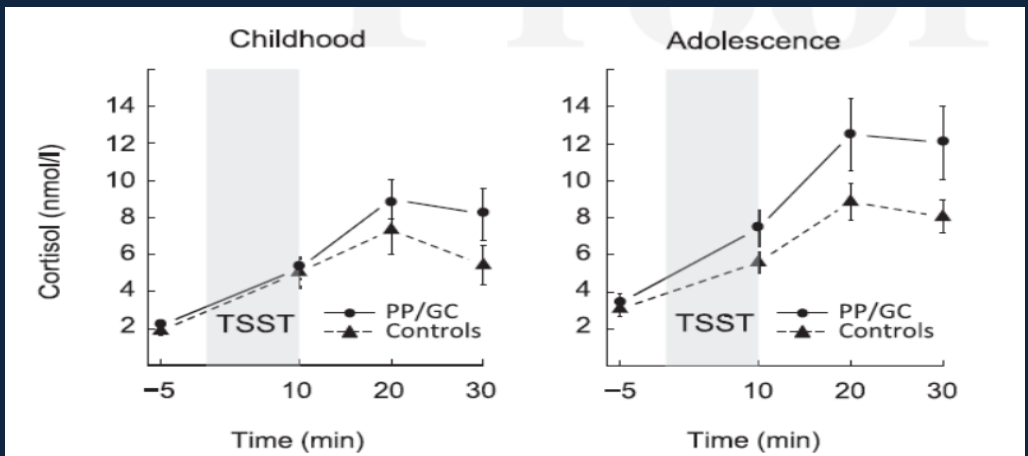


**Results I:** increased cortisol stress reactivity in children treated with antenatal sGCs compared to controls ( $F_{(3.4,345.9)} = 5.8; P < 0.001$ )



**Study Aim II:** to longitudinally evaluate the stability of observed effect into adolescence

**Results II:** increased cortisol stress reactivity in participants exposed to antenatal sGCs compared to controls in both developmental stages ( $F_{1,40} = 4.99; P < 0.05$ )



**Conclusion:** Antenatal sGCs yield long-term changes of major stress response systems that persist into adolescence

- Potential risk factor for stress-related disorders