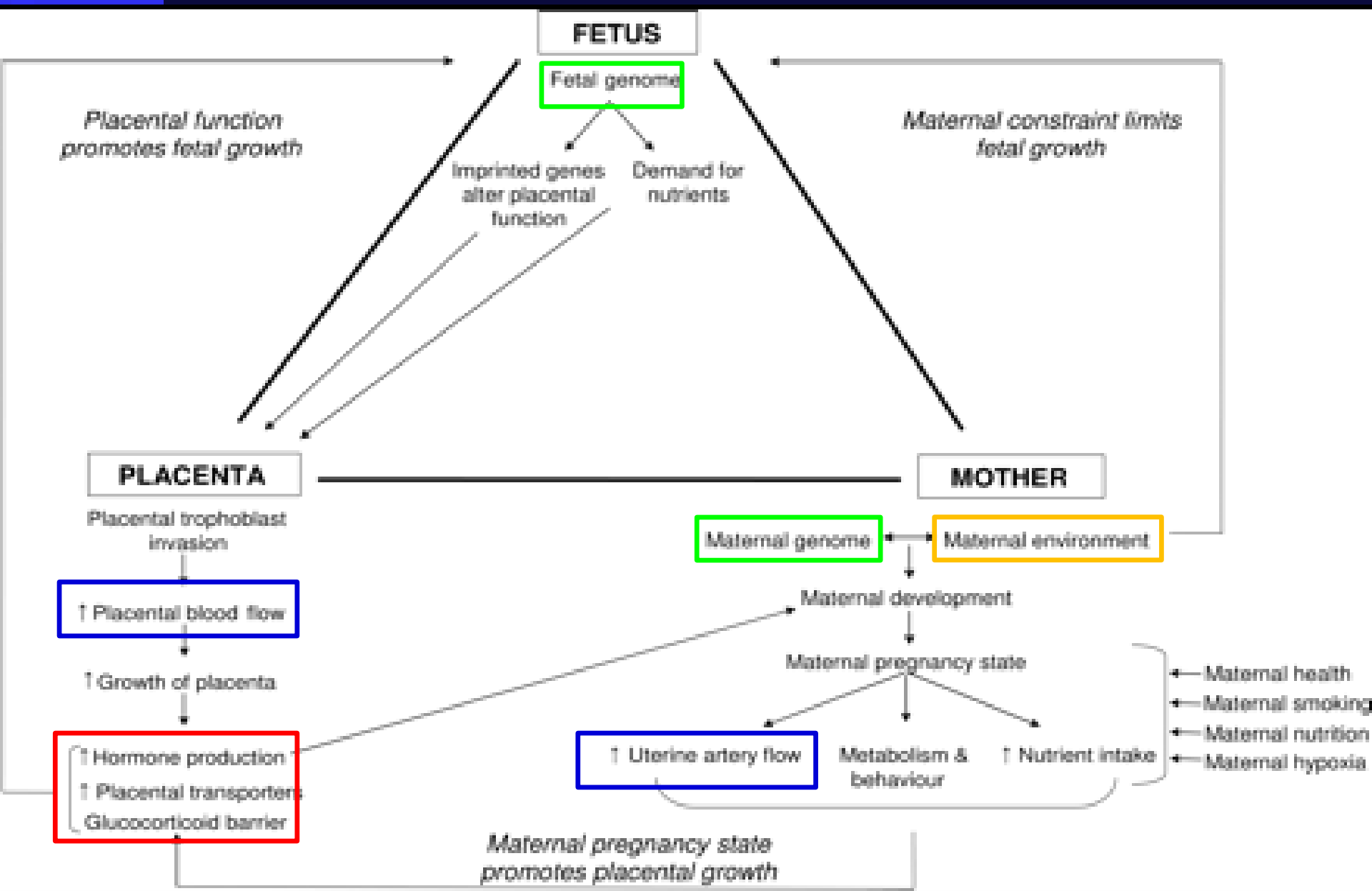


# The cortisol environment in pregnancy

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**ARETAIEION Hospital**  
**Faculty of Medicine**  
**NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS**

# The interaction of the triad *mother-placenta-fetus*



**Maternal  
Adipose tissue**

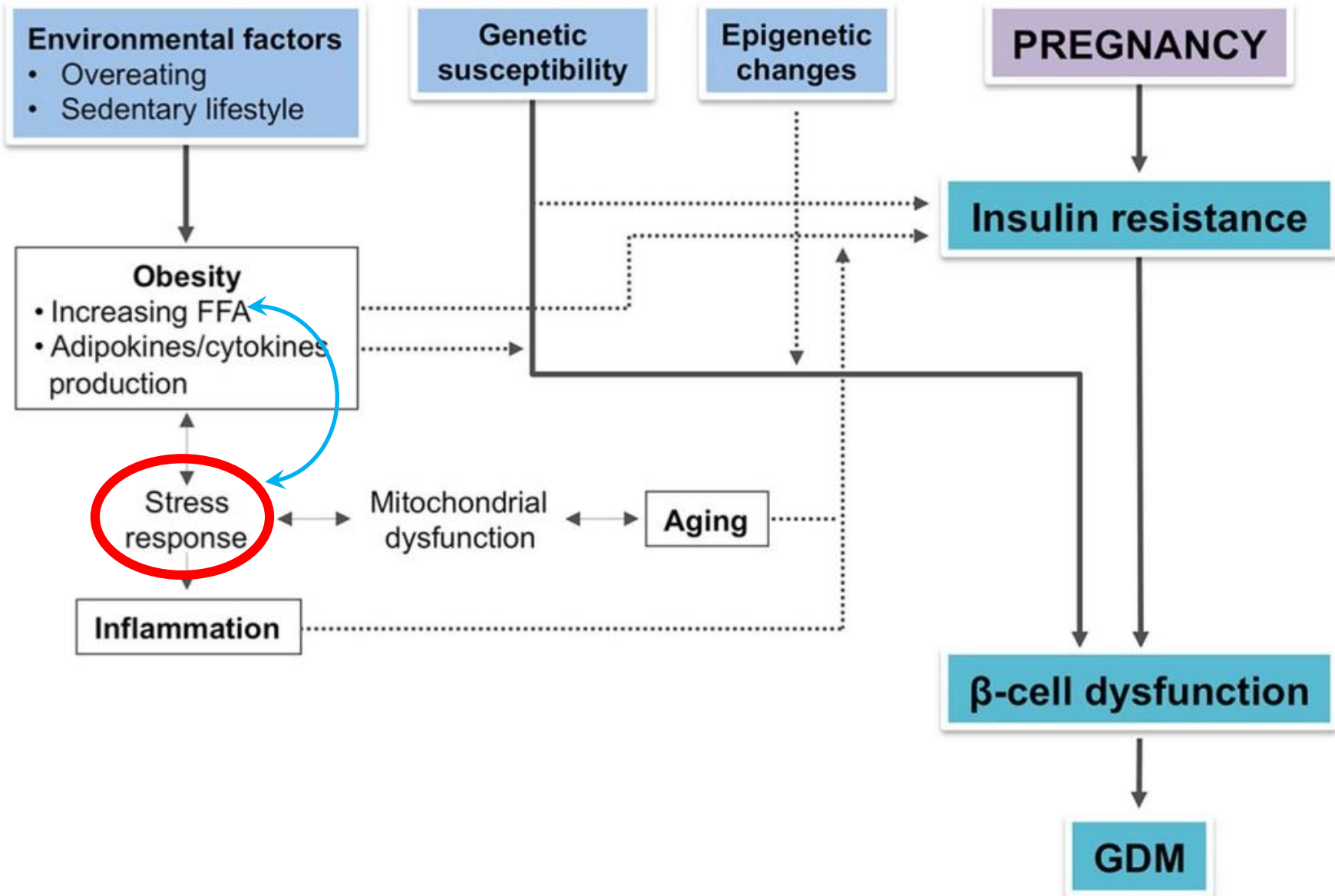
**Maternal stress**

**Maternal  
insulin resistance\***

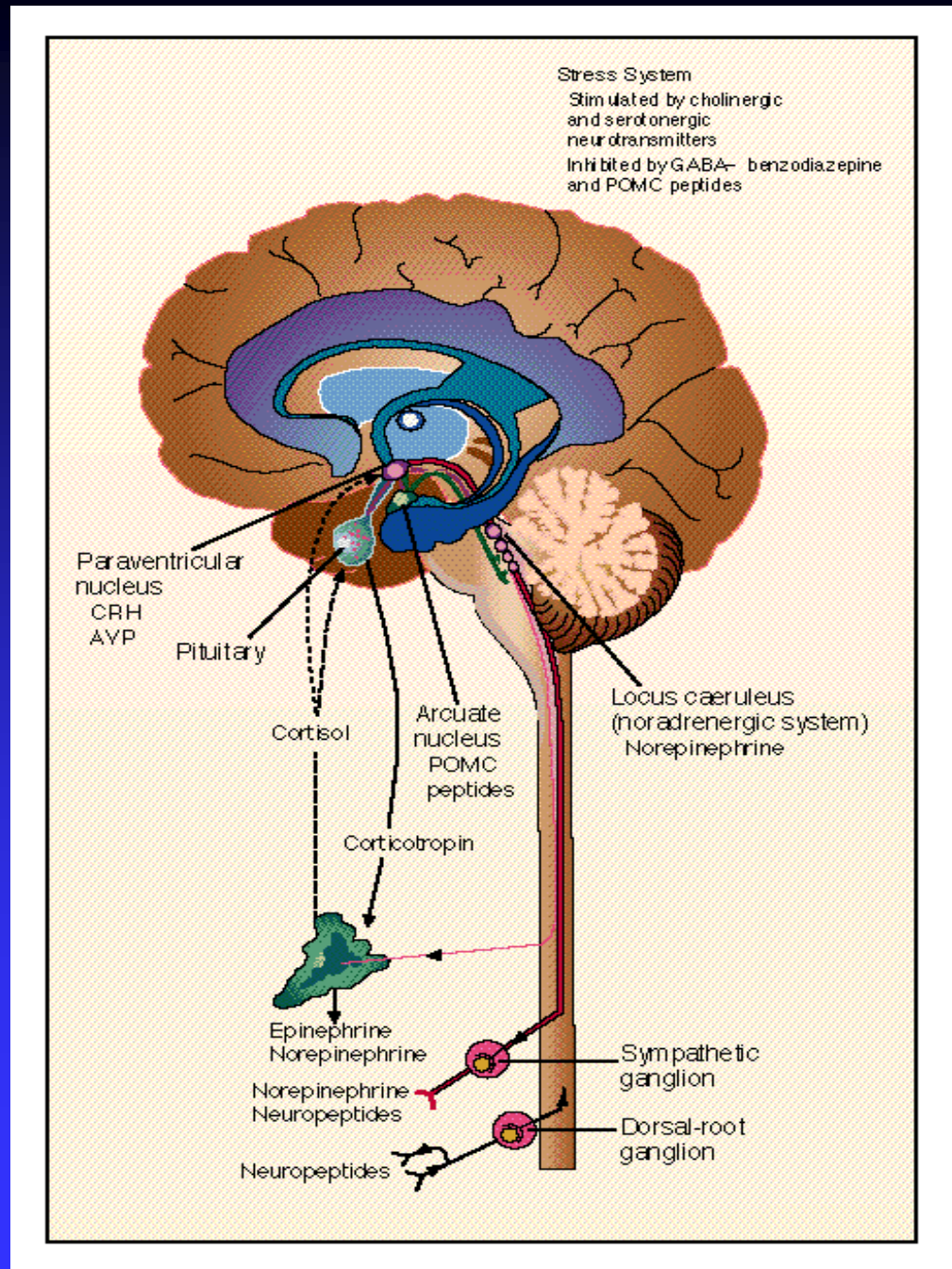
**\*Common denominator in this presentation**

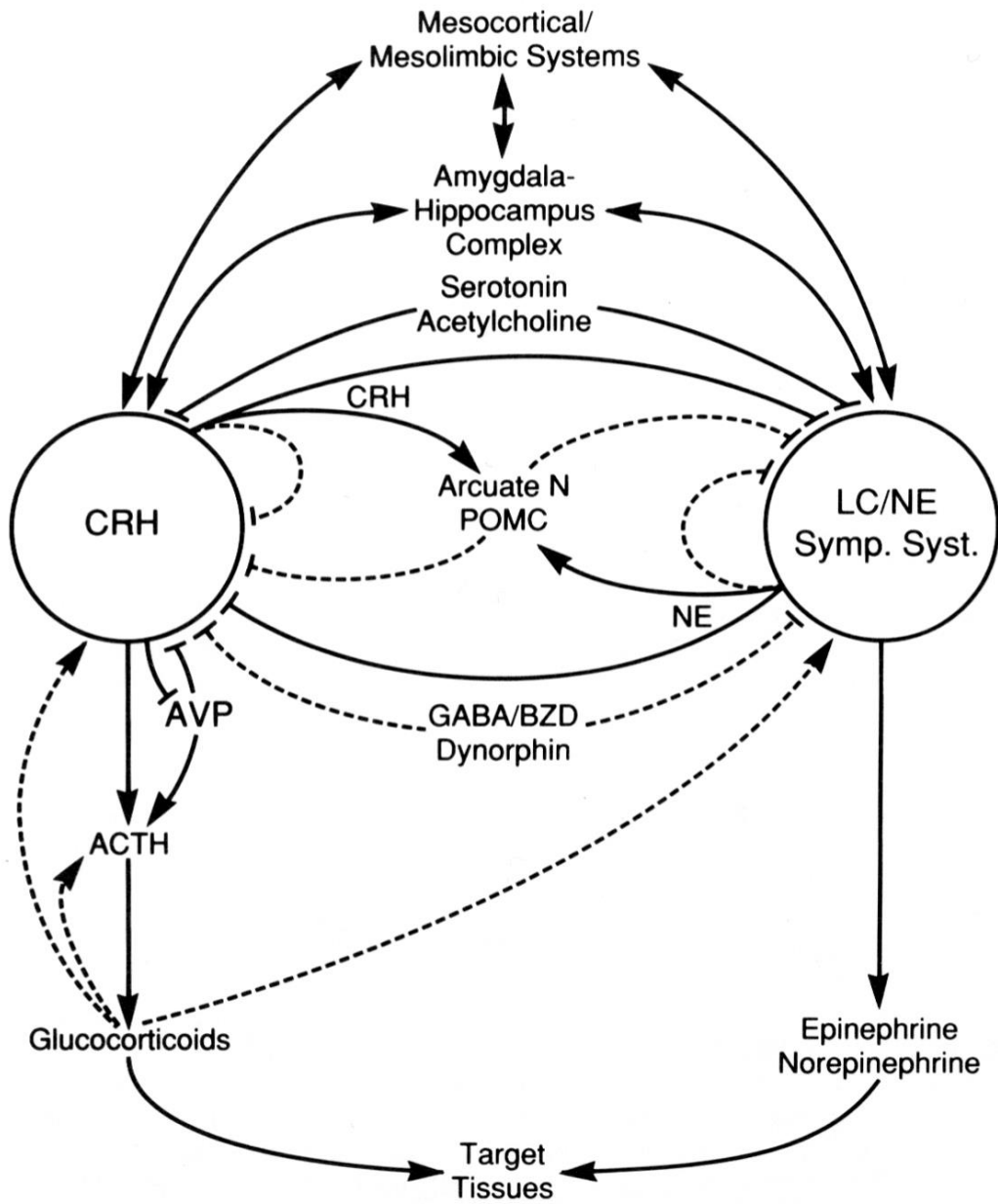
# Factors affecting the endometrial environment

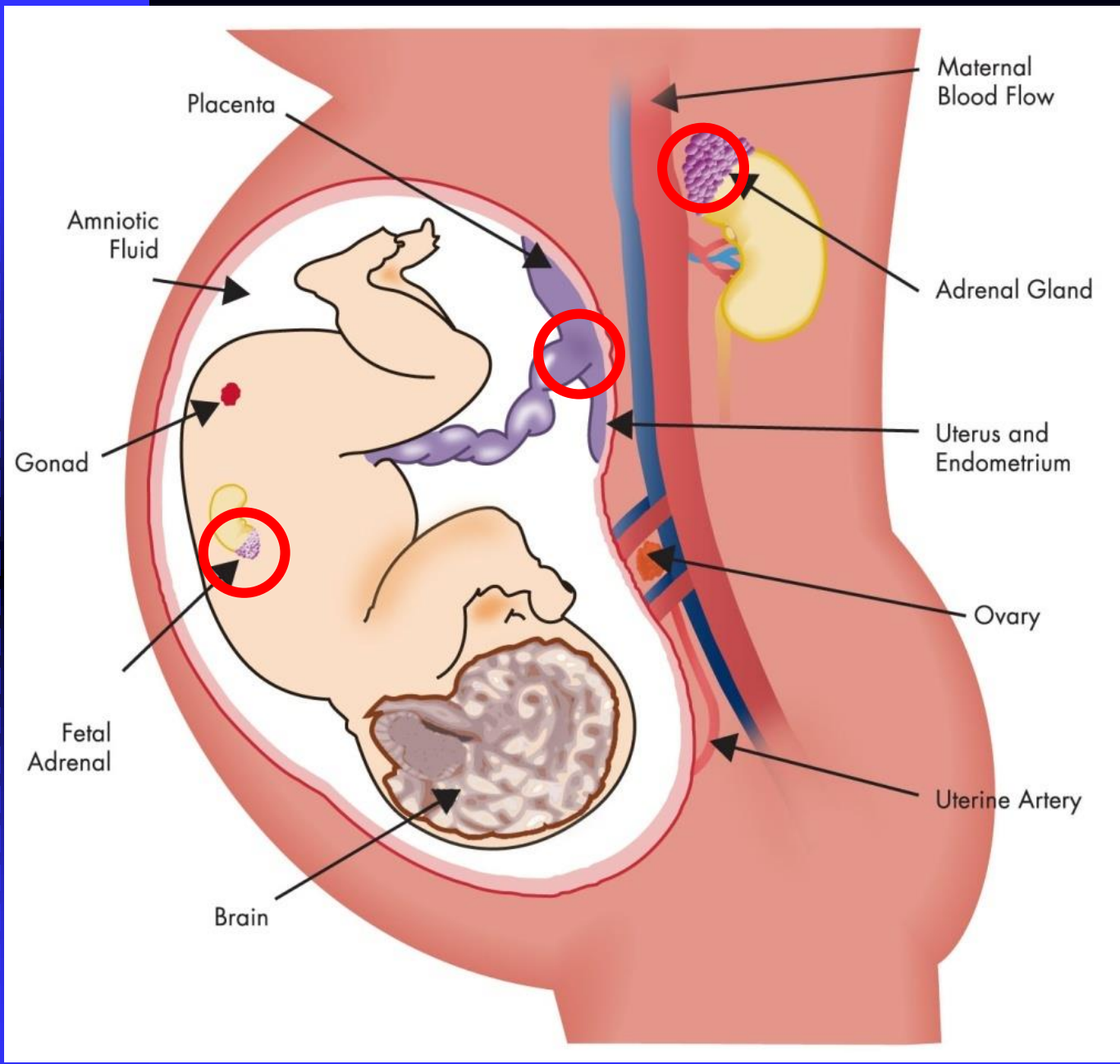
- **Maternal:** metabolism, dietary habits, anthropometrics, **psychological, behavioral and personality** factors.
- **Placental** growth and function.



# The hypothalamic-pituitary-adrenal axis (HPA)

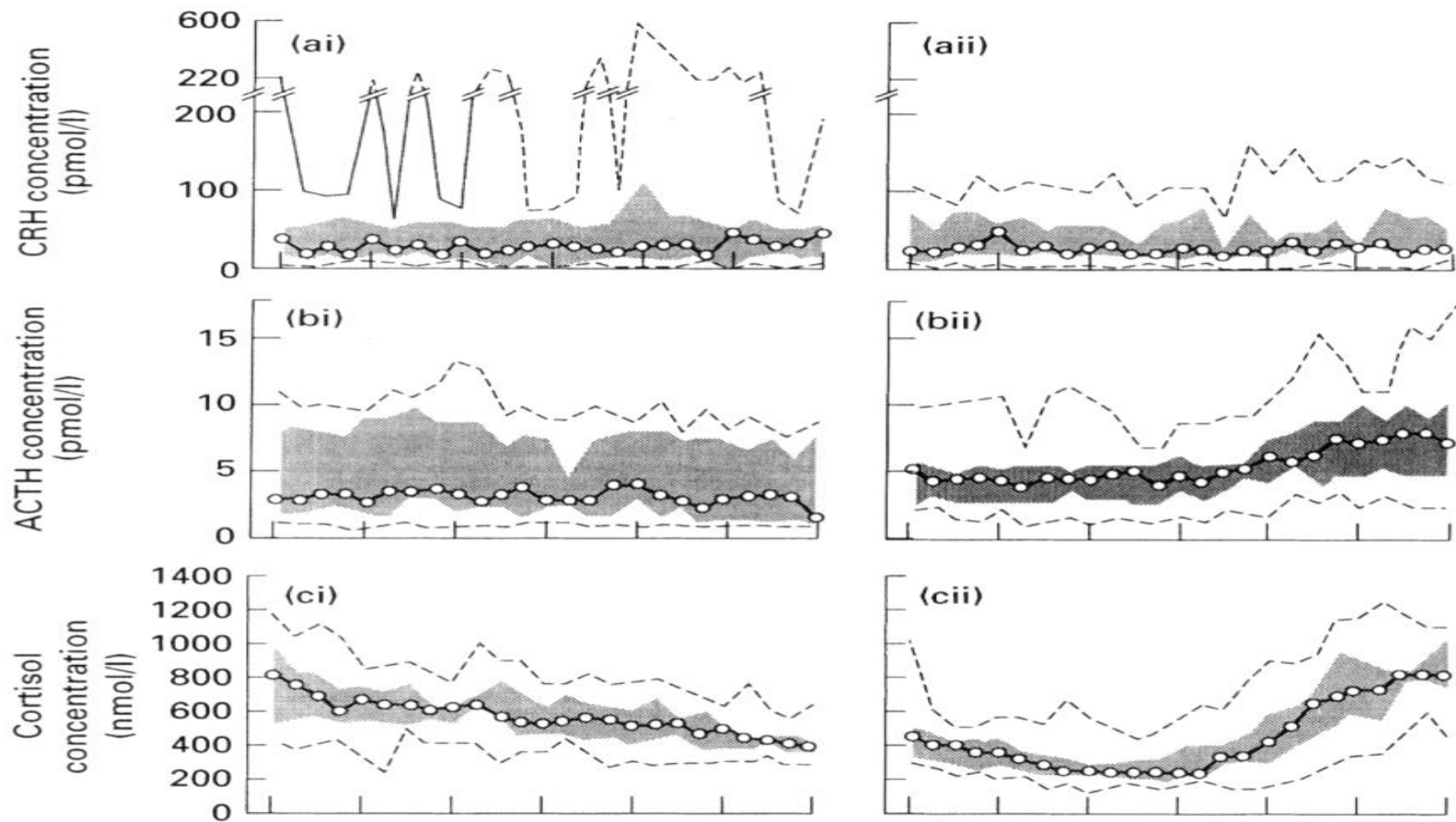




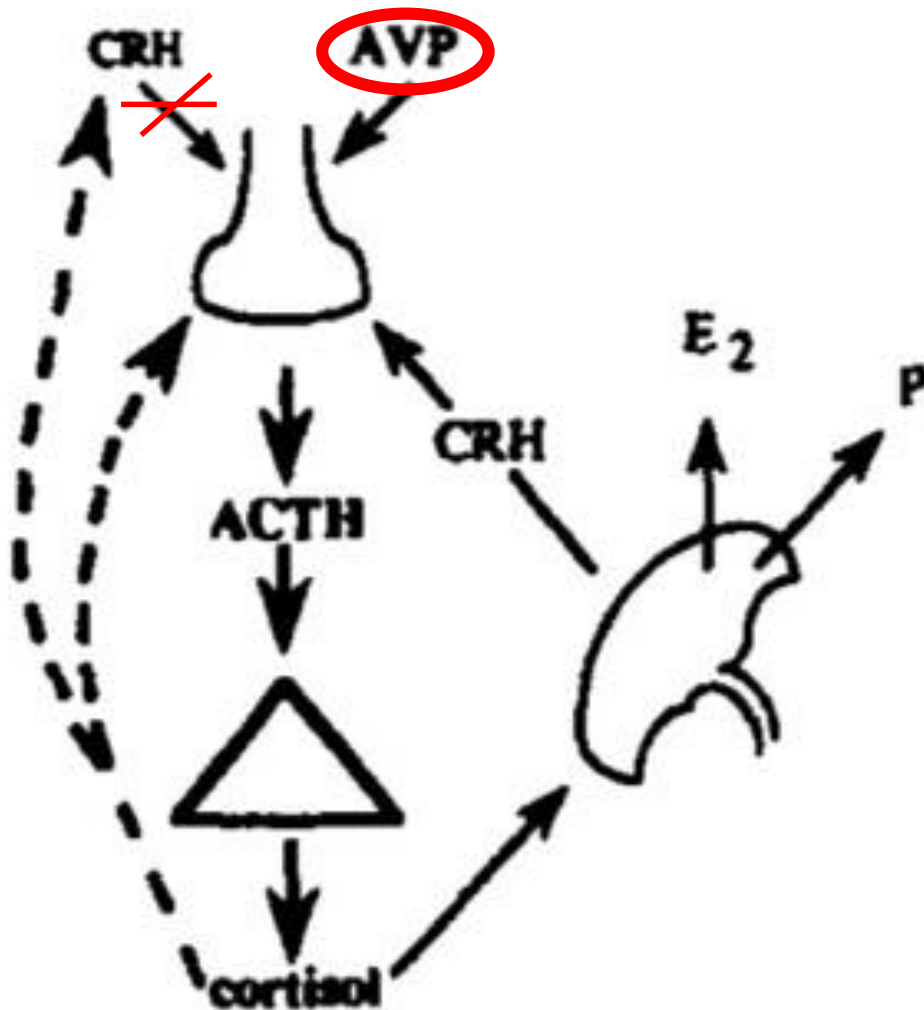


**Magiakou MA, Mastorakos G, Webster E, Chrousos GP. Ann N Y Acad Sci. 1997**

# CRH, ACTH and Cortisol in maternal peripheral blood during pregnancy



# PREGNANT STATE

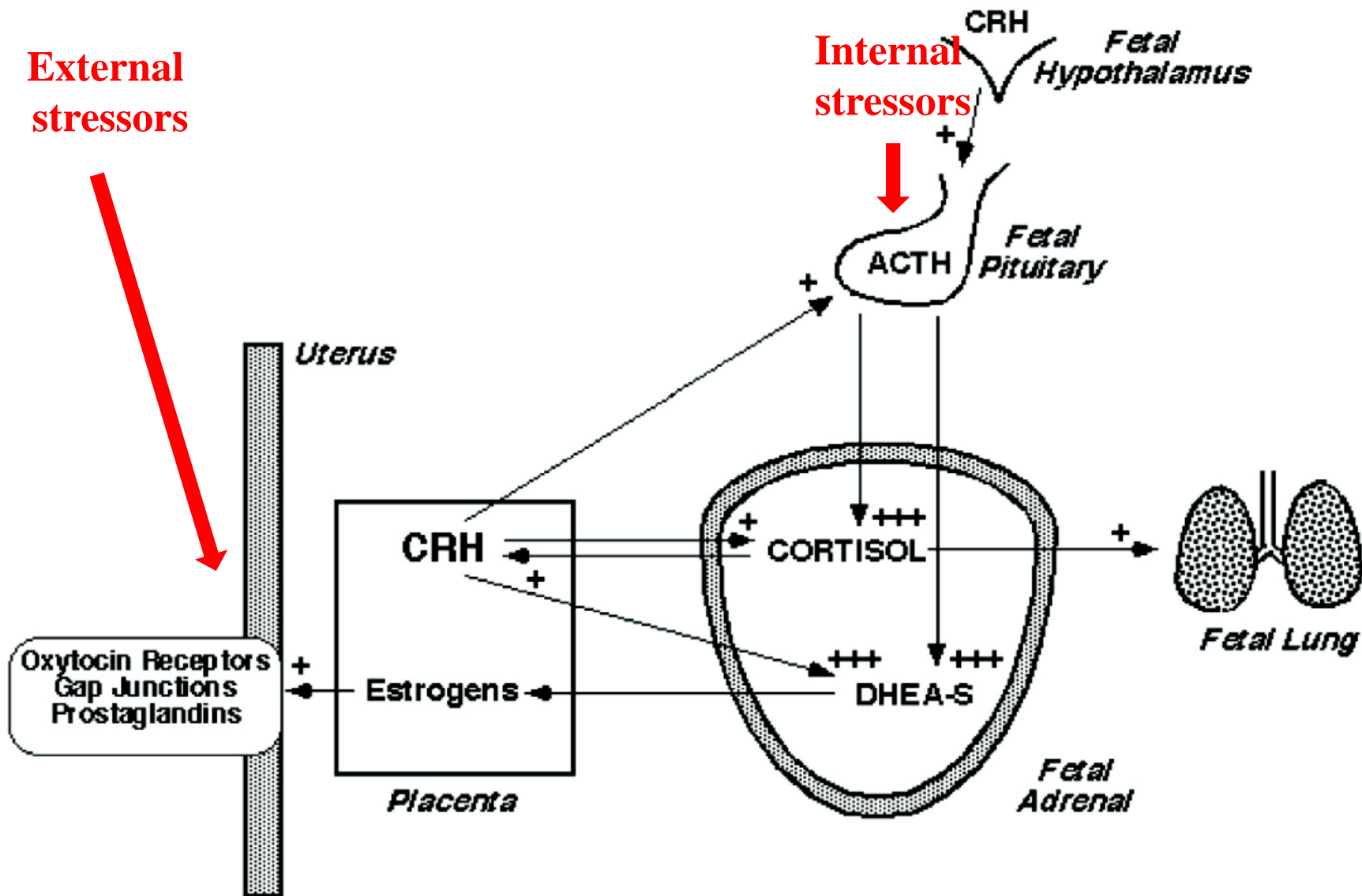


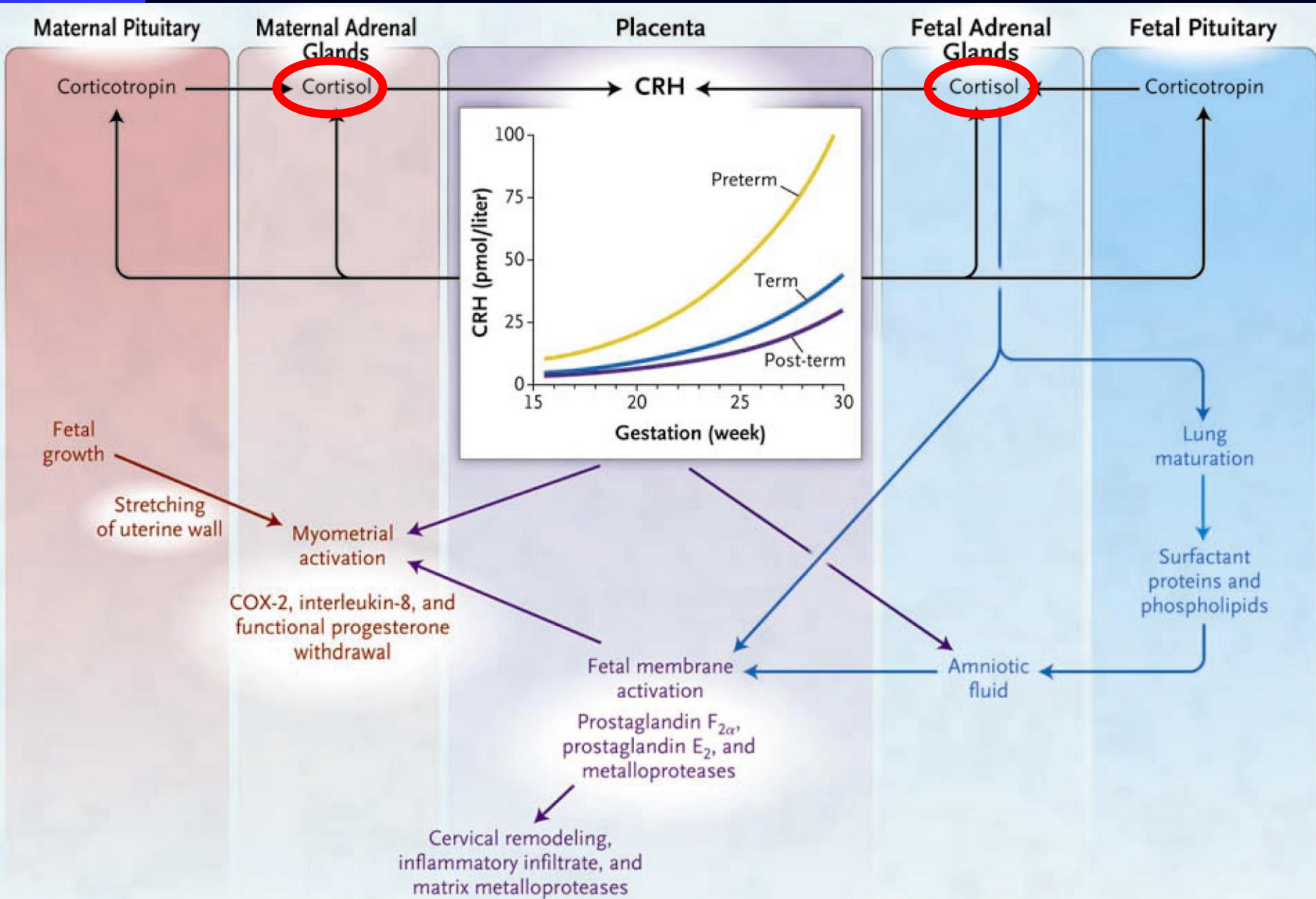
# Βιολογικός Ρόλος Πλακουντιακής CRH

- Έκκριση ACTH από την εμβρυική υπόφυση και ωρίμαση των νευρικών οργάνων.
- Παραγωγή DHEA-S από τα εμβρυικά επινεφρίδια.
- Παραγωγή Κορτιζόλης (υπερκορτιζολισμός δευτέρου μισού κύησης).

**External stressors**

**Internal stressors**



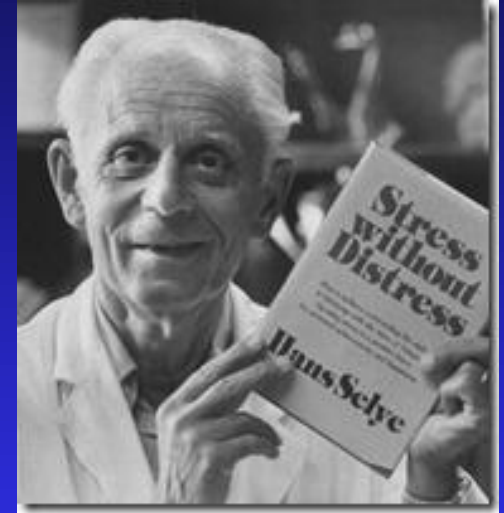


- **Insulin resistance in pregnancy**
- **The adipose tissue in pregnancy**
- **Adipocytokines in pregnancy**
- **Adipocytokines and insulin resistance in pregnancy**
- **HPA axis in pregnancy**
- **Stress and HPA axis reaction in pregnancy**
- **Stress in pregnancy and insulin resistance**
- **Summary**
- **Conclusions**

# STRESS: An adaptation process

The term “stress” was borrowed from physics and set to mean the mutual actions of (“**damage**” vs **resistance**) forces that take place across any section of the body.

(Hans Selye 1907-1982)



# Stressors

Everyday life's nuisance

Life changes

Natural and other disasters

Starvation, overnutrition

Excessive exercise

Chronic diseases

Socioeconomic situation

Loss of job; Loss of life's control

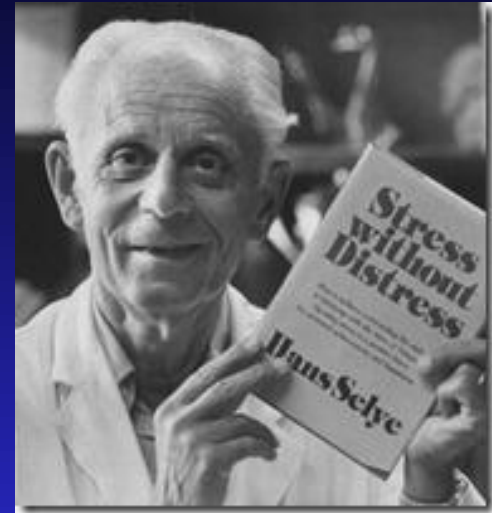
Responsibility for other persons

Substance abuse

Inflammation (Septic, aseptic)

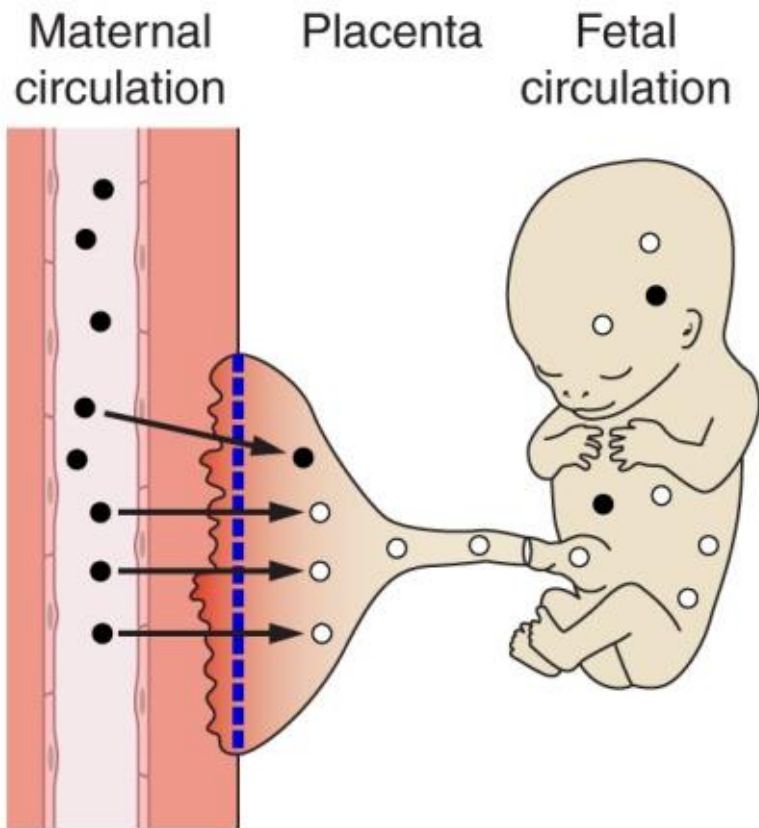
**Anxiety; Depression (typical, atypical); personality disorder**

[Attention: Chronicity vs Acuity]



# Intrauterine Stress

## Normal placental $11\beta$ -HSD2



## Deficient placental $11\beta$ -HSD2

