



Reaching out to vulnerable pregnant women and their partners, preventing early life stress

Hilmar Bijma MD PhD

Department of Obstetrics, Erasmus MC

Rotterdam, The Netherlands

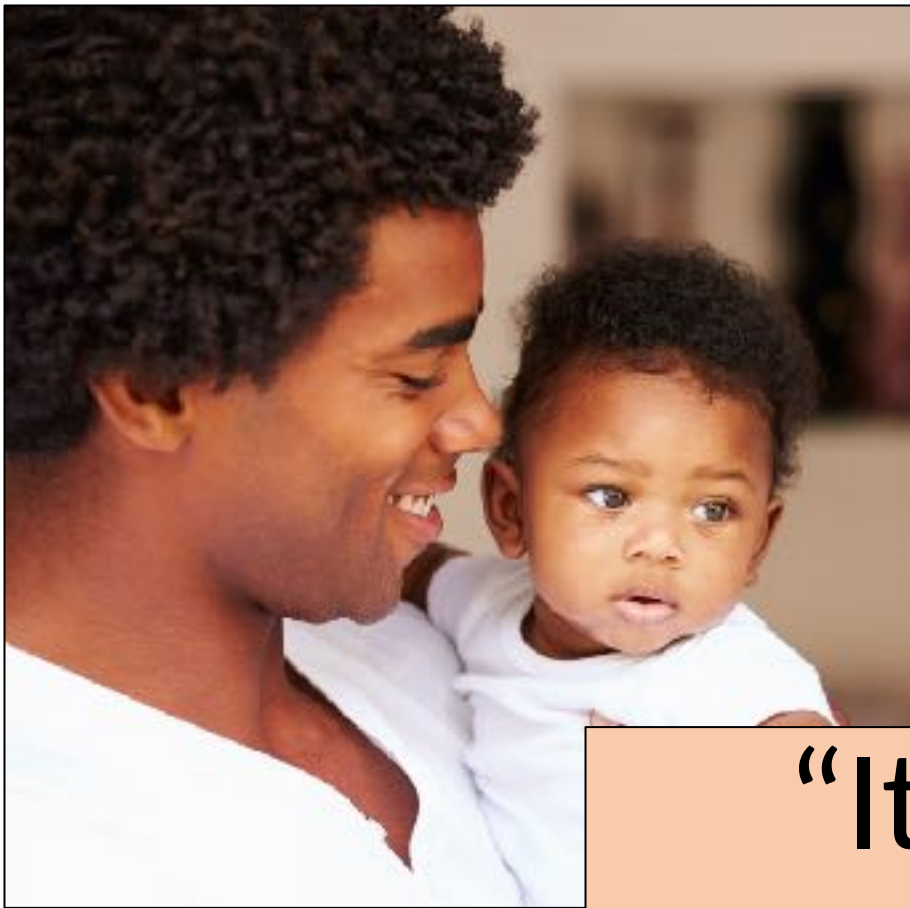


Outline



- Key message
- What is (toxic) Early Life Stress (ELS)?
- Impact ELS on development
- Dutch example: Connect2Grow
- What can you do?
- Take home messages

- Additional sources



Key message



“It is easier to build strong children than to repair broken men.” Frederick Douglass (1819–1895)

Erasmus MC



Developmental Origins Health and Disease (DOHaD)



The inextricable link between maternal, perinatal and early childhood factors and the risk of developing heart disease, diabetes, obesity, cancer and many other non-communicable diseases (NCDs) in later life.



Toxic early life stress

derails

development, health,
and well-being

life-long





Connection
supports
resilience, development, health,
and well-being
life-long

The difference between



Thriving



Surviving



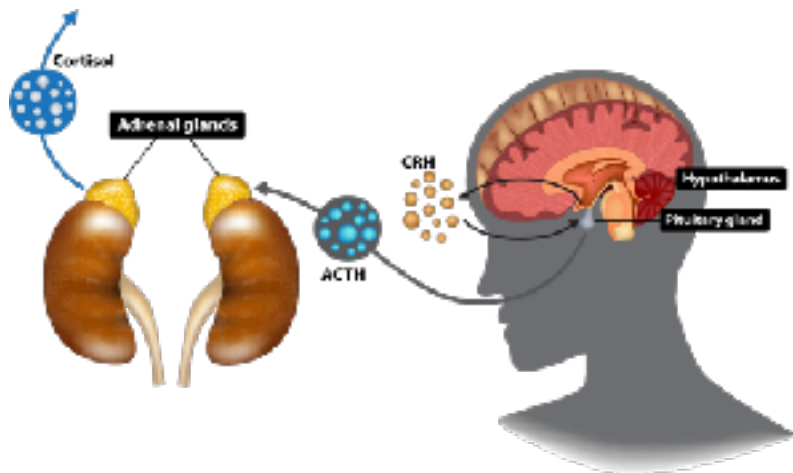


What is (toxic) early life stress?

Stress



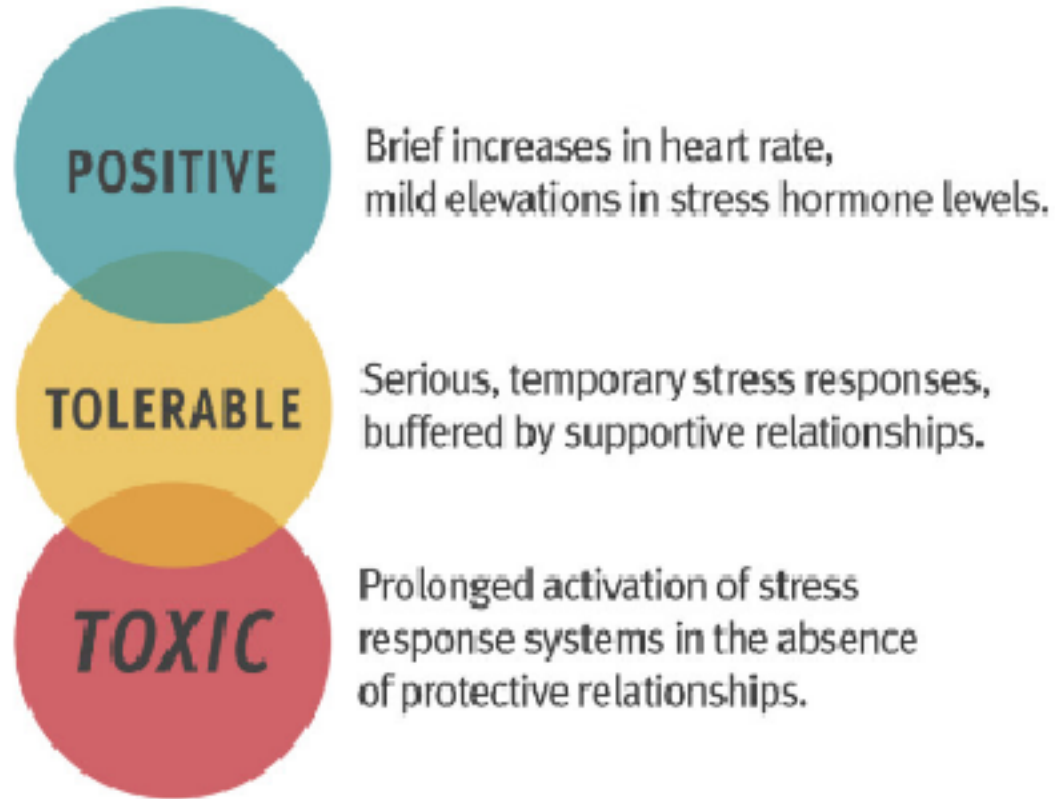
A nonspecific response of the body to any demand



Hypothalamu
s
Pituitary
Adrenal

Tan SY, Yip A. Hans Selye (1907-1982): Founder of the stress theory. *Singapore Med J.* 2018;59(4):170-171.

Toxic stress



Stress without relief

Toxic stress



Video

<https://www.youtube.com/watch?v=rVwFkcOZHJw>

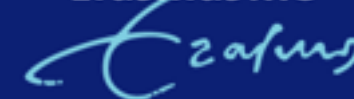
Erasmus MC





What is the impact of Early Life Stress on early and long-term development?

Erasmus MC



Fetal and long-term impact



Prenatal

Postnatal

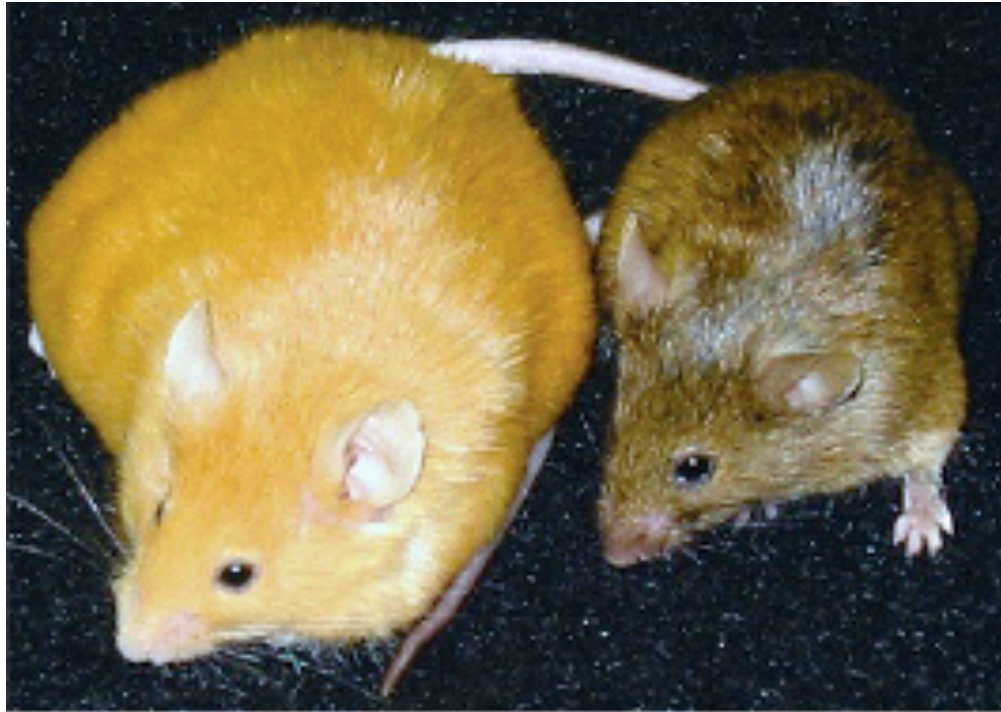
Maternal
Stress

Impact on early development



- **Epigenetics**
- HPA-axis
- Brain development

Epigenetics



Early development

Environment impacts DNA

Agouti-mice

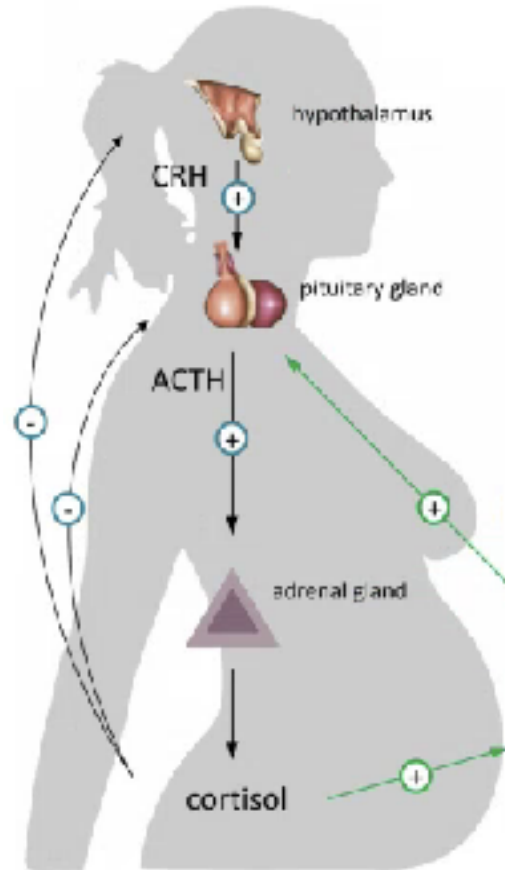
Dolinoy, D. C., et al. Maternal nutrient supplementation counteracts bisphenol A-induced DNA hypomethylation in early development. *Proceedings of the National Academy of Sciences* **104**, 13056-13061 (2007)

Impact on early development



- Epigenetics
- **HPA-axis**
- Brain development

HPA-axis pregnancy

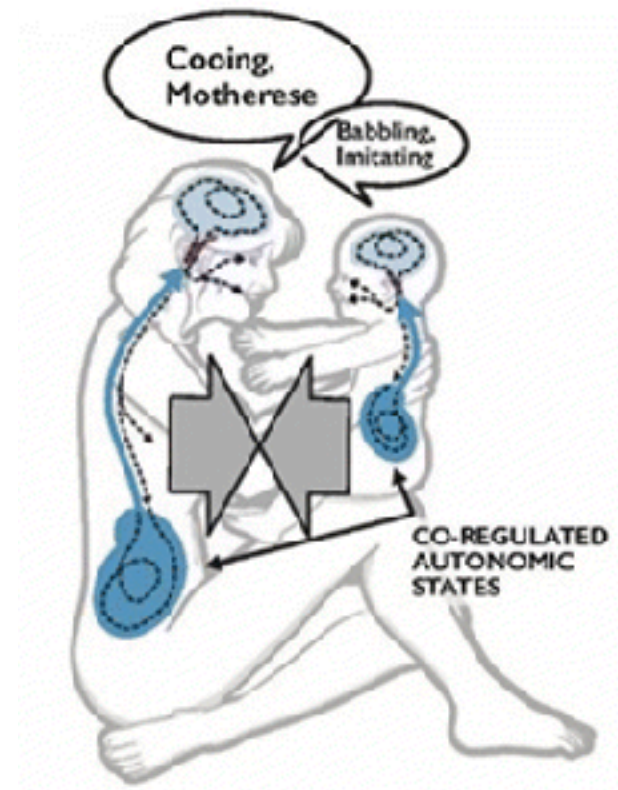


Hypothalamus
Pituitary
Adrenal

HPA-axis infancy



EMOTIONALLY CONNECTED



Dyadic regulation
Normal HPA-axis
Serve and Return

Welch M.G., Ludwig R.J. (2017) Mother/Infant Emotional Communication Through the Lens of Visceral/Autonomic Learning. In: Filippa M., Kuhn P., Westrup B. (eds) Early Vocal Contact and Preterm Infant Brain Development. Springer, Cham.

Impact on early development

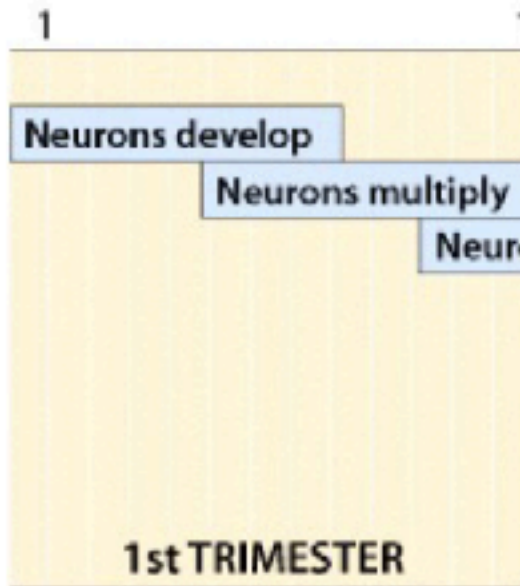


- Epigenetics
- HPA-axis
- **Brain development**

Brain development



1 million neuronal connections /second



<https://sites.duke.edu/aep/module-5-alcohol-and-babies/explore-more/normal-brain-development/>

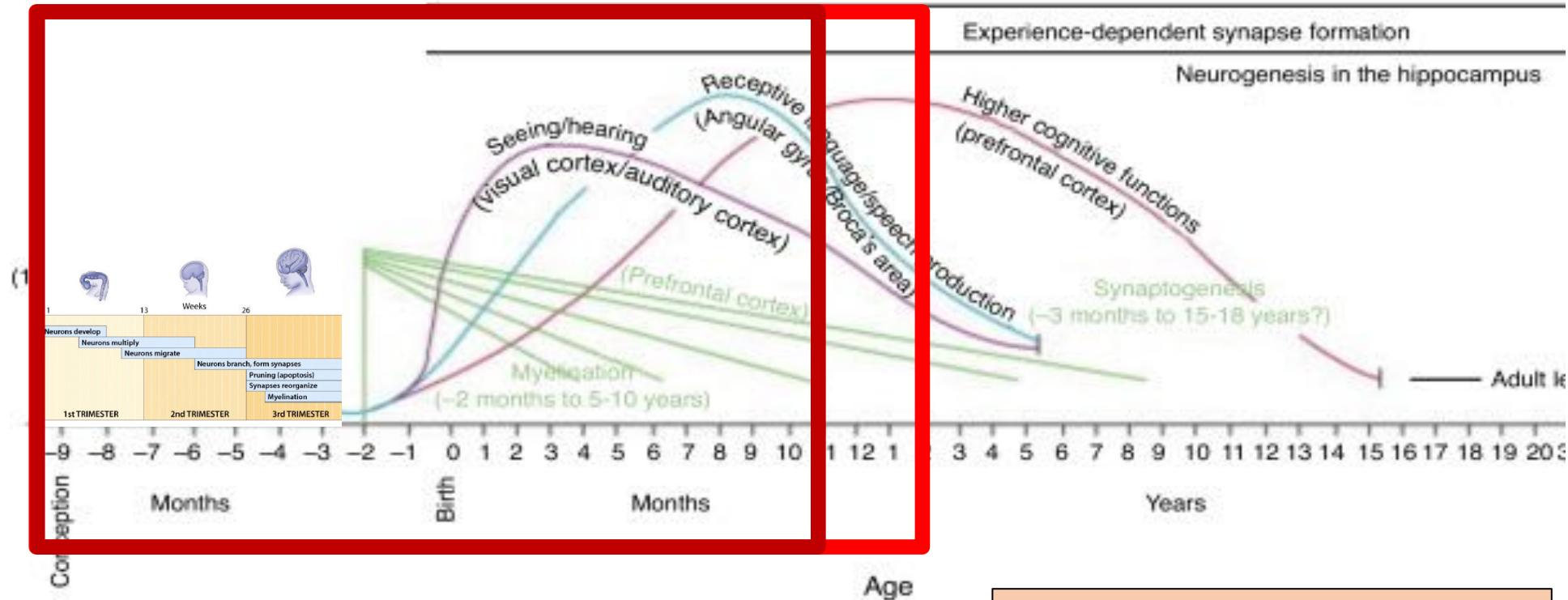
Brain development

- Hierarchical structural foundation



- Starts with 'the rooms of the house'
- Experience based
- Stress alters brain development

Brain development



Experience- dependent
Derailed in case of stress

Thompson RA, Nelson CA. Developmental science and the media. Early brain development. Am Psychol. 2001 Jan;56(1):5-15





The importance of Connection



What makes stress toxic?

Stress without sufficient buffer

Prolonged activation of stress

system in the absence of protective
relationships.

Infant-parent relationship



- Buffers stress
- Serve and return

HPA-axis

Brain architecture



Development and Health

Embodied meaning-making



‘The default state of our autonomic nervous system determines our interaction, meaning-making and perception of all our experiences’

‘The autonomic nervous system is the foundation upon which our lived experience is built’

How to start?



Dutch example: Connect2Grow



- Reaching pregnant women in vulnerable situations
- Buffering stress in (future) parents
- Serve and return in (future) parents
- Monitoring and referral for intervention



People, not programs, change people



B.D. Perry, [The Boy Who Was Raised As a Dog: And Other Stories from a Child Psychiatrist's Notebook](#)

What can you do? Buffering stress

- Trauma-sensitive communication
- Authenticity and presencing
- Open curiosity
- Fostering connection
- Include and create the narrative
- Think of the brain





What can you do? Serve and Return

- Serve: (deep) listening to (future) parents
- Return: mentalisation

support self-regulation

support self-efficacy

lower stress

empower

Take home messages



- Toxic early life stress derails development before and after birth
- Promote Connection and Serve and Return
- Dutch example : Connect2Grow
- You can start now



Additional sources



Harvard Center on the Developing Child <https://developingchild.harvard.edu/>

The Child trauma academy <https://www.childtrauma.org/>

World Association Infant Mental Health <https://waimh.org/>

World Health Organisation who.int

Connect2Grow <https://www.connect2grow.info/>



Thank you!



Questions?

h.bijma@erasmusmc.nl



Erasmus MC

