

THE Female Brain

BEAUTIFULLY COMPLEX



and you
education

live life.
· LIFE BALANCE COACHING ·

GREY MATTER *BRAIN'S PROCESSING CENTERS:*

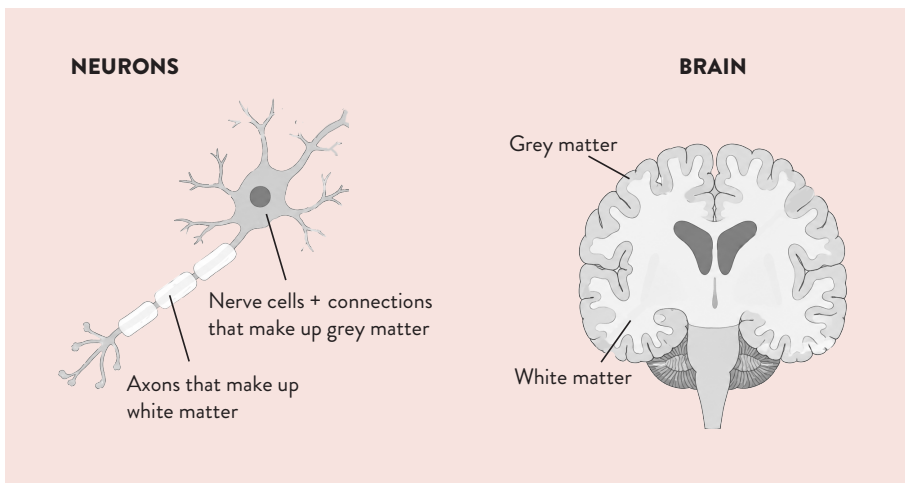
Made up primarily of neuron cell bodies and synapses (the connections between neurons). It is the part of the brain where information is processed, interpreted, and integrated.

WHITE MATTER *COMMUNICATION NETWORK:*

Made up mostly of myelinated axons, which help signals travel quickly between different brain regions.

NEUROPLASTICITY: Brain's ability to rewire and adapt in response to experience. Neurons that fire together, wire together.

HORMONES are signaling molecules that influence the entire body, including the brain. The receptors for estrogen and progesterone are found throughout the brain.



Neurons that fire together, wire together.

Think about a belief you have about yourself that has become stronger simply because you've repeated it so many times.

Examples:

- I'm not good enough.
- I'm always the responsible one.
- I have to do everything myself.
- I'm bad with technology.
- I'm resilient.

Now ask yourself: Is this an objective truth, or is it a pathway that has been strengthened through repetition?

One of the most exciting things about neuroplasticity is that if the brain can learn a pattern, it can also learn a new one.

The brain changes support social cognition, attachment, and responsiveness to infant cues.

Changes during pregnancy predict aspects of later mother-infant bonding.

What's happening in the brain?

- Gray matter changes → social cognition, theory of mind, and maternal attachment
- Default Mode Network changes → self-reflection, infant-focused attention, bonding, and empathy

AFTER PREGNANCY

(Up to 2 years later)

Decreases in grey matter volume in highlighted regions.



Social cognition

Understanding others' thoughts and intentions



Empathy & emotional processing

Greater sensitivity to others' emotions



Reward & motivation

Responding to baby cues, reinforcement for care



Attachment & bonding

Stronger maternal connection

References: Hoekzema et al. Nature Neuroscience 2016; Hoekzema et al. Nature Communications 2022; Pritschet et al. Nature Neuroscience 2024.

Identity Exercise

Part II

Choose one significant life transition:

Motherhood, menopause, divorce, illness, a career change, becoming a caregiver, or another turning point in your life.

Before _____ what mattered most to me was...

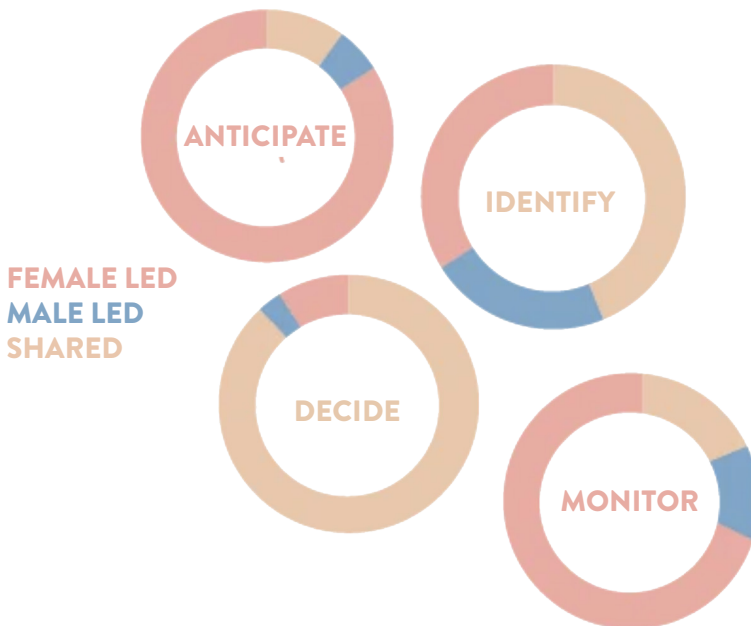
After _____ what matters most to me now is...

Parenthood reshapes the brain in ways that support caregiving, adaptation, and resilience across the lifespan.

What's happening in the brain?

- Oxytocin → bonding & caregiving
- Attention networks → vigilance and responsiveness
- Environmental enrichment → brain stimulation
- Cognitive reserve → resilience in later life

MENTAL LOAD TASKS



References: Orchard et al. Trends in Cognitive Sciences 2023; Fox et al. Alzheimer's Dementia 2026. Visual adapted from Daminger A. American Sociological Review. 2019.

Responsibility Exercise

Part III

Imagine your mind is a browser. How many tabs are currently open?
Write down 5-10 mental tabs.

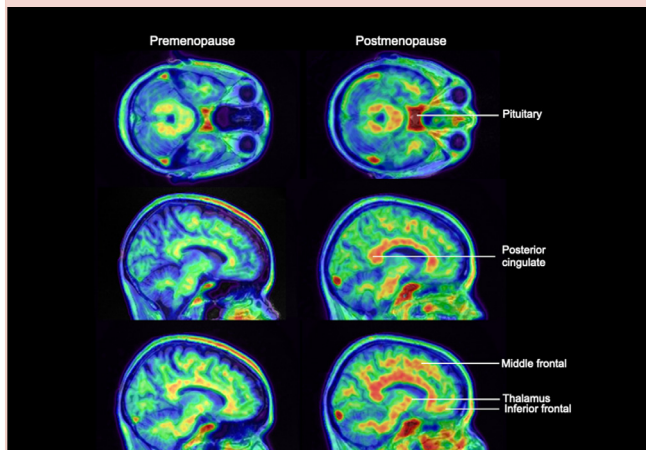
Which of these tabs are visible to other people?
Which ones are invisible?

Menopause is associated with changes in brain structure, function, and energy use. While some cognitive processes may feel less efficient during the transition, many changes stabilize over time and the brain continues to adapt.

What's happening in the brain?

- Estrogen decline → altered brain signaling
- Brain energy use → changes in attention, memory, and focus
- Estrogen receptors → widespread adaptation linked to symptoms such as hot flashes, sleep disruption, mood changes, and brain fog
- Network reorganization → compensation and adaptation
- Cognition → some abilities challenged, others strengthened

Changes in estrogen receptor density are associated with menopause-related cognitive and mood symptoms.



References: Mosconi et al. Nature 2022; Liao et al. eClinicalMedicine 2023; Gold et al. Am J Epidemiology 2000. Figure from Mosconi et al. Nature 2024; Mosconi et al. Nature 2024.

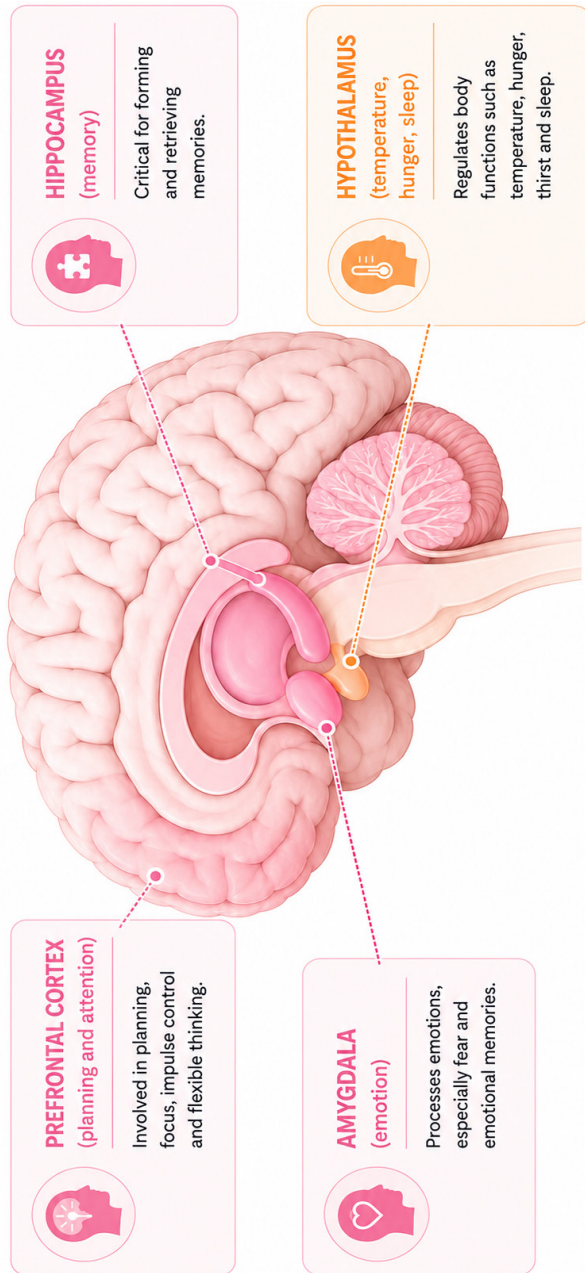
What have you been telling yourself about aging?

Which of those beliefs would you like to keep?

What would you like to let go of?

What life experience has challenged you the most?

Looking back, how did it strengthen you?



Glossary

PUBERTY: Hormonal cycling begins; menstrual periods start and the reproductive years begin.

REPRODUCTIVE YEARS: Regular ovulatory cycles; hormones fluctuate across the menstrual cycle each month.

PREGNANCY: Ovulation and menstrual cycles pause while hormone levels rise dramatically.

POSTPARTUM: Pregnancy hormones fall rapidly after birth as the brain and body adapt to caring for a newborn.

LACTATION: Breastfeeding hormones support milk production and may suppress ovulation for months.

PERIMENOPAUSE: Hormonal fluctuations become increasingly unpredictable; cycles may shorten, lengthen, or become irregular, but pregnancy is still possible.

MENOPAUSE: Defined as 12 consecutive months without a menstrual period; ovarian cycling has ceased.

POSTMENOPAUSE: The years after menopause, during which the brain and body continue adapting to a new hormonal environment.

Takeaways

One thing I understand better about myself:

One thing I want to be more compassionate about:

One thing I want to do differently moving forward:

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Contact

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Thank you.