HJERNEUTVIKLING

Motivasjon og fysisk læring

Marte Roa Syvertsen
Lege PhD

VVKN
VESTRE VIKEN KLINISK NEVROVITENSKAP

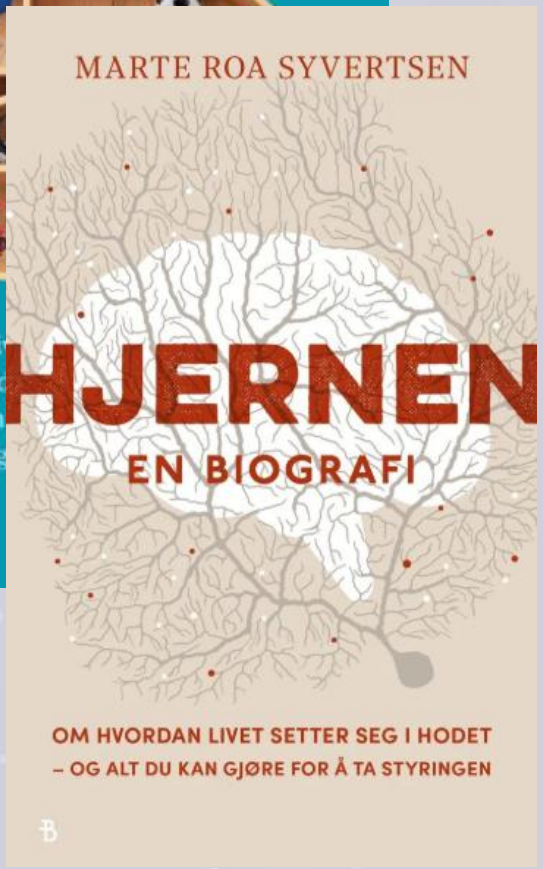


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Treningsleir Nørresundby juli 1996



ØESK stafettlag langbane NM Tøyen 1996





Poseidon Cup mars 1996



Aalborg Cup des 1996



Aalborg Cup des 1996

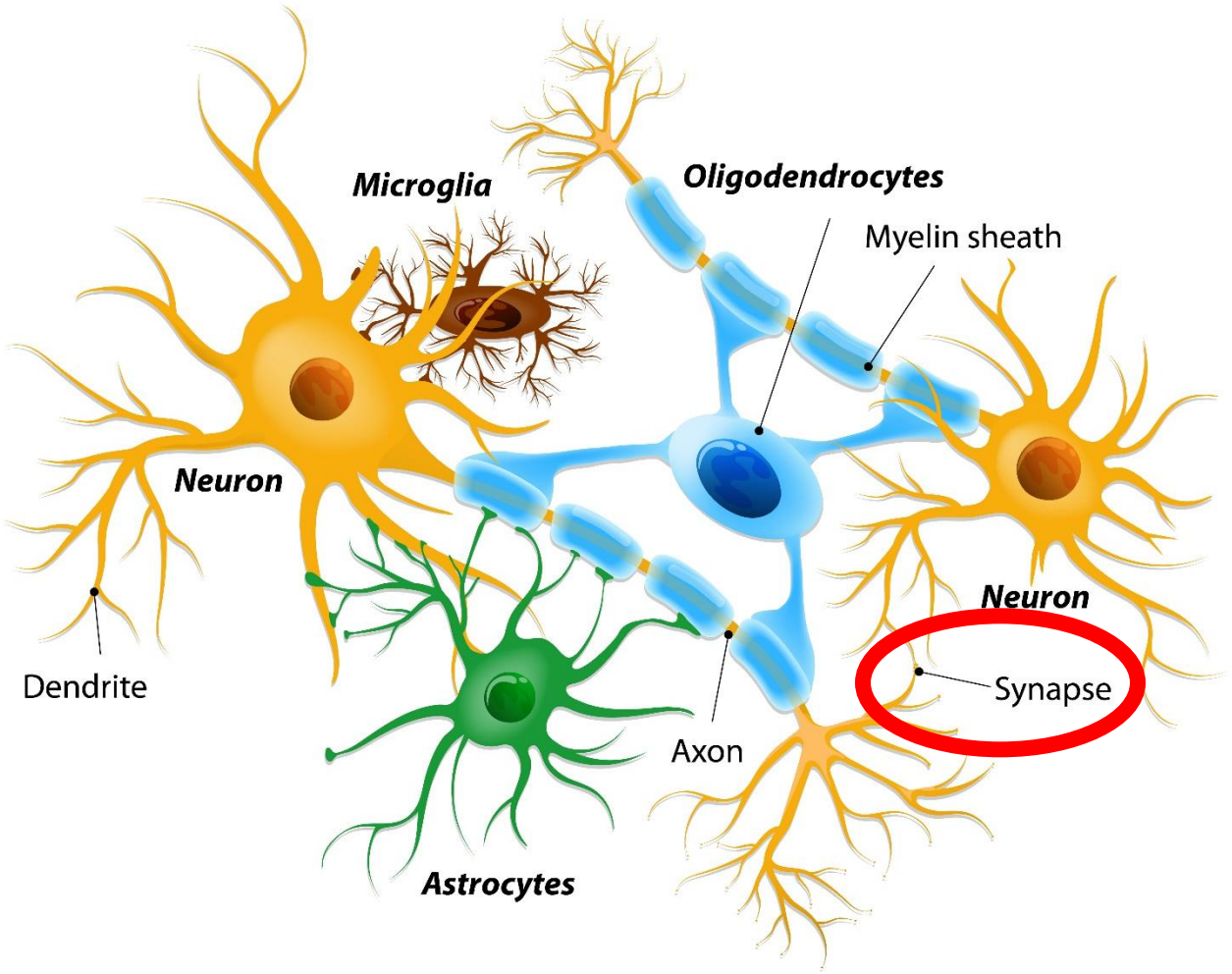
PLAN

- Hva er læring?
- Hva er motivasjon?
- Det unike ved ungdomshjernen
- Hva skal til for å sikre god fysisk læring?



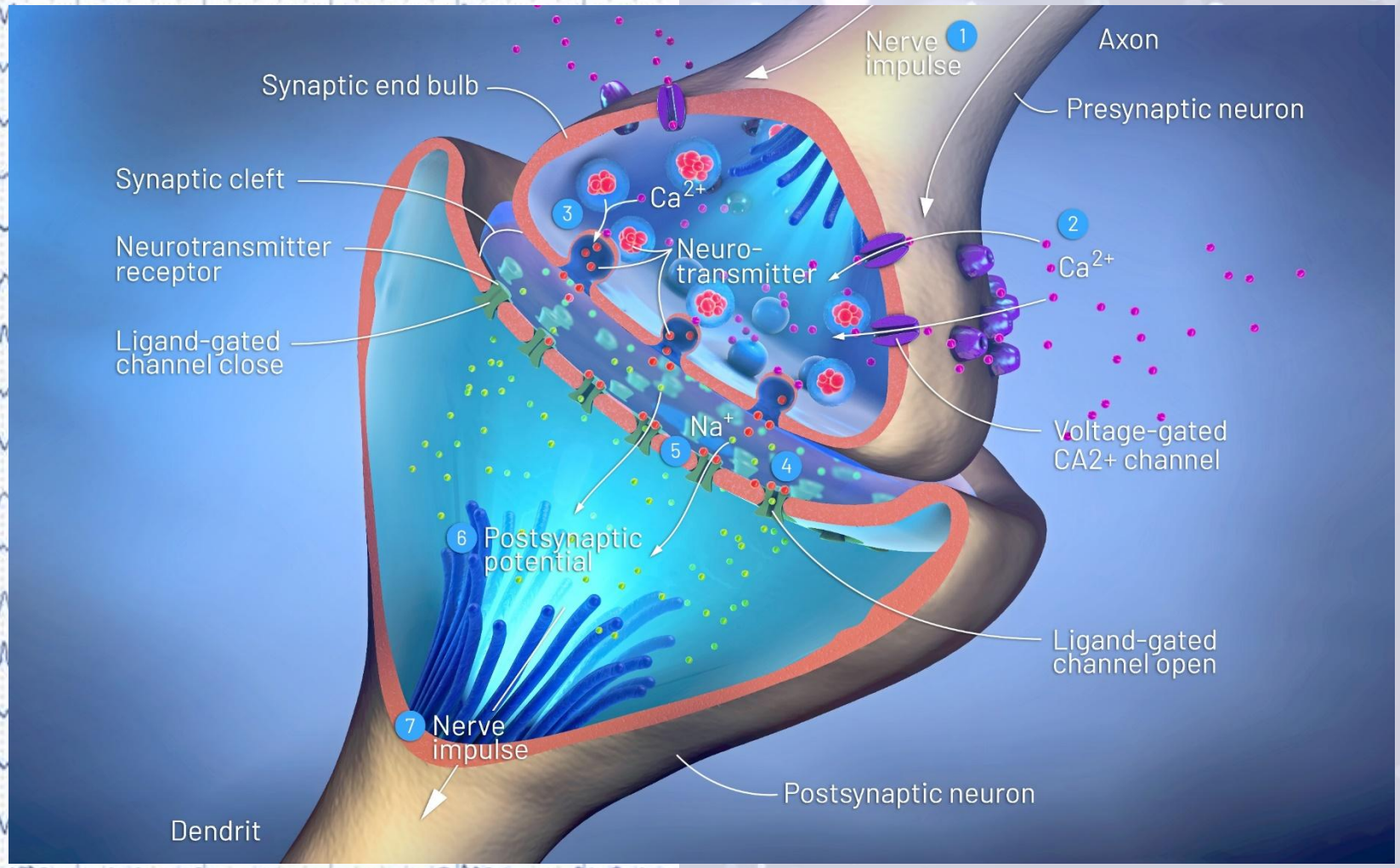
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HJERNECELLER



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SYNAPSEN



Illustrasjon fra Shutterstock

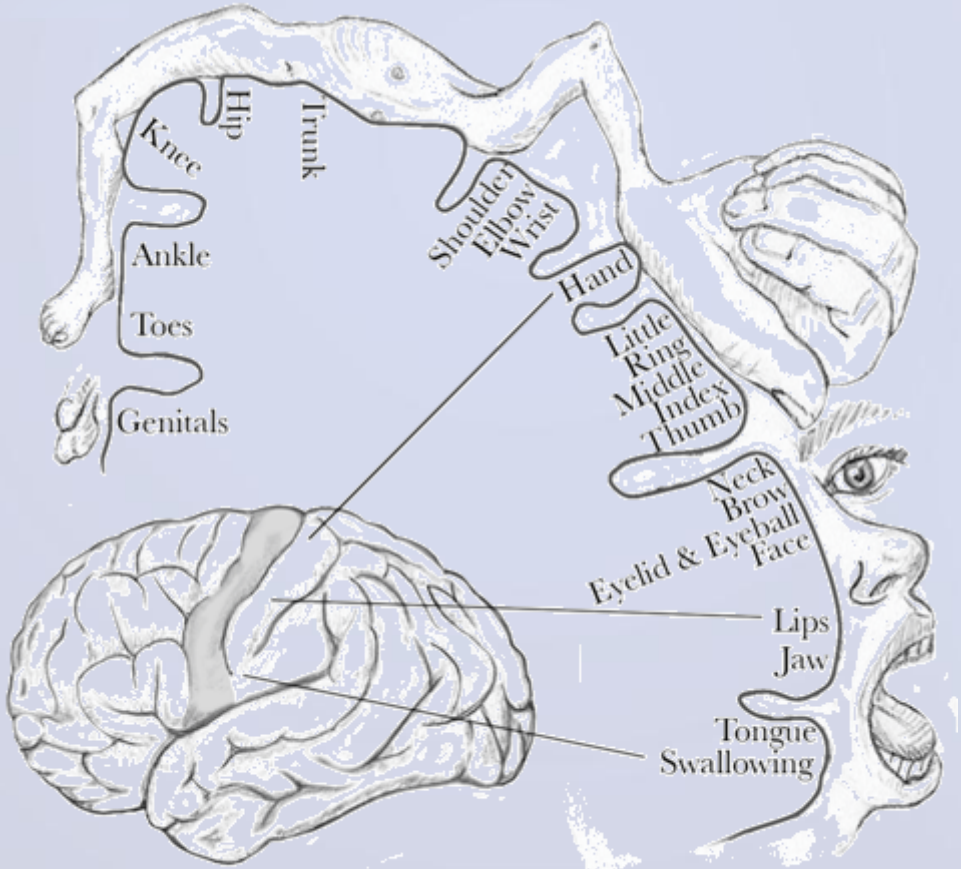
NETTVERK

90 milliarder x 15 000



Greg Dunn
www.gregadunn.com

HJERNEN FORMES GJENNOM BRUK



Illustrasjon: EBM Consult, LLC



Foto: Privat

HVILKE STIER?



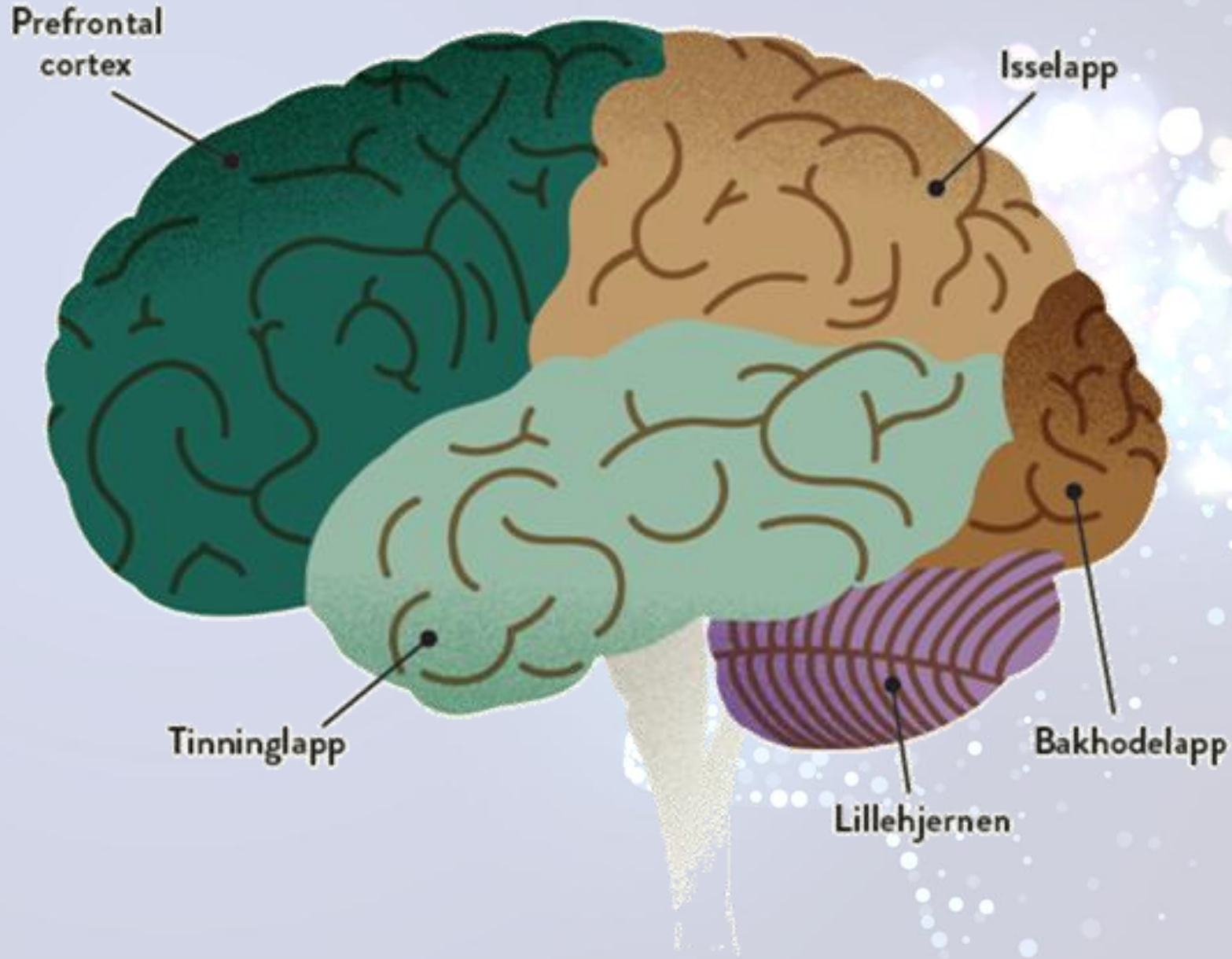
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Hva kan du?

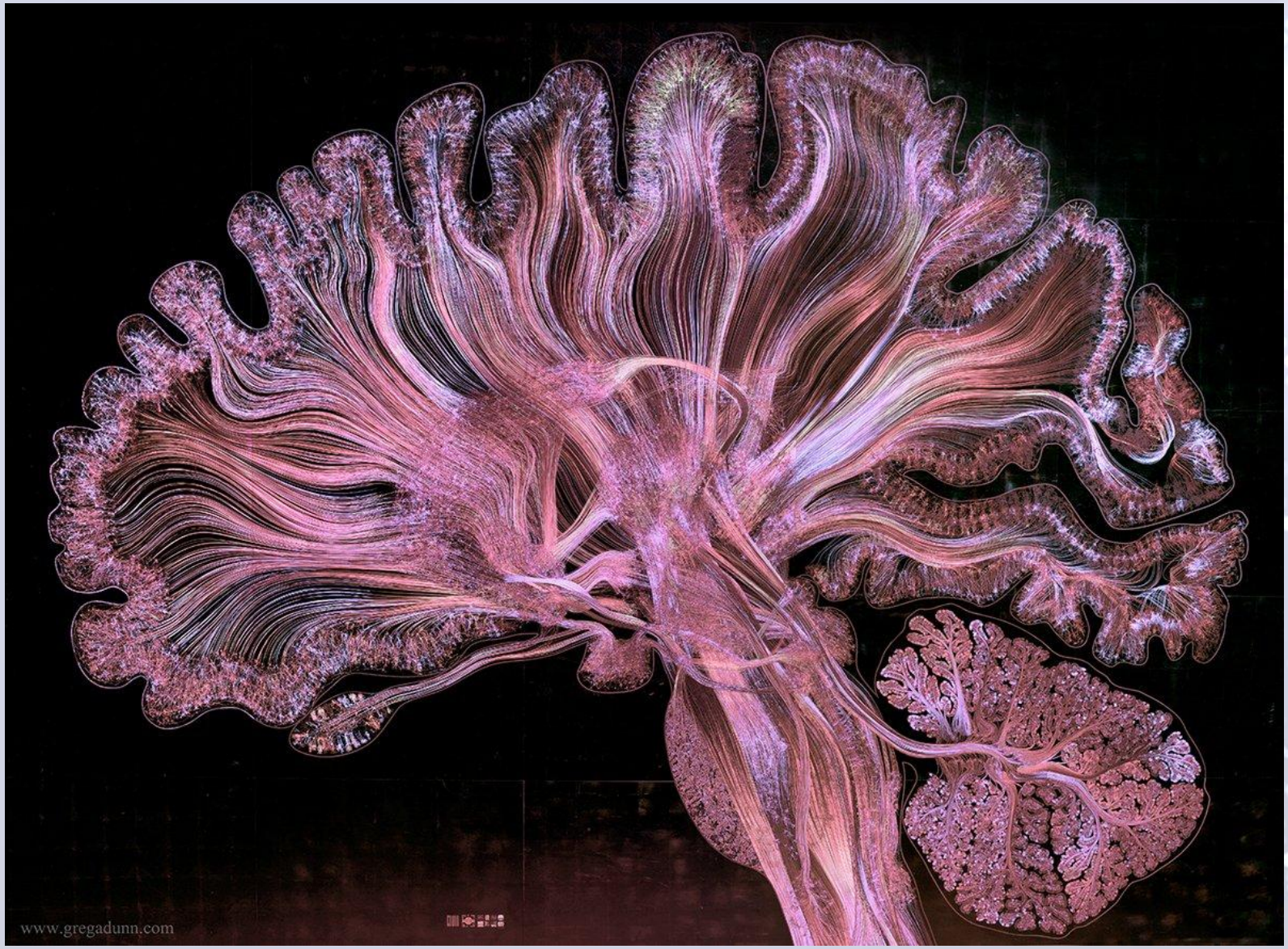
Hva husker du?

Hva liker du?

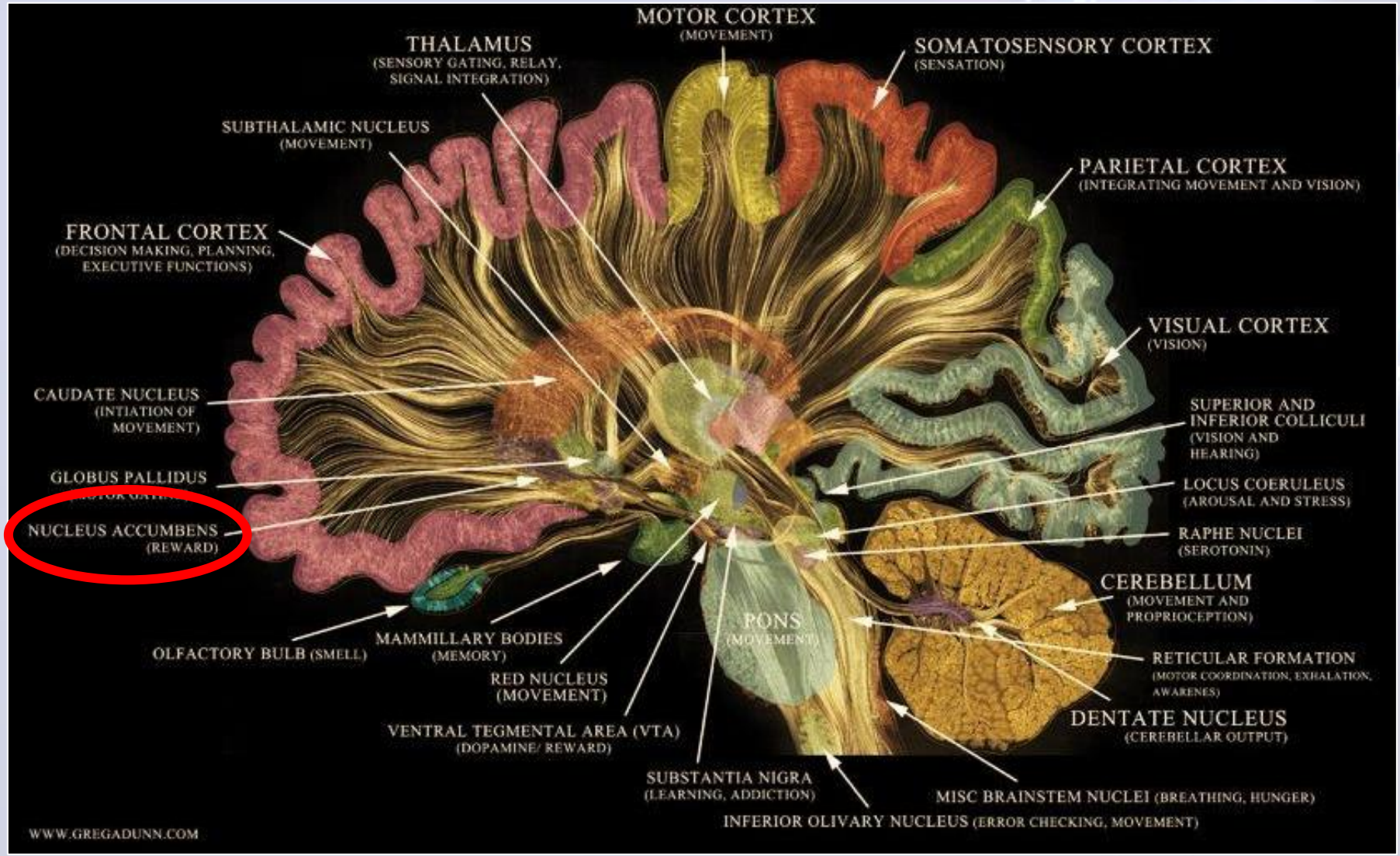
Hvem er du?


Prefrontal cortex
Isselapp
Tinninglapp
Bakhodelapp
Lillehjernen

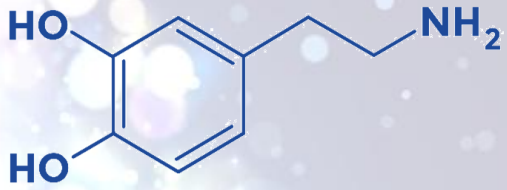
AUTOMATISERING



MOTIVASJON


MOTOR CORTEX
(MOVEMENT)
THALAMUS
(SENSORY GATING, RELAY, SIGNAL INTEGRATION)
SOMATOSENSORY CORTEX
(SENSATION)
SUBTHALAMIC NUCLEUS
(MOVEMENT)
PARIETAL CORTEX
(INTEGRATING MOVEMENT AND VISION)
FRONTAL CORTEX
(DECISION MAKING, PLANNING, EXECUTIVE FUNCTIONS)
VISUAL CORTEX
(VISION)
CAUDATE NUCLEUS
(INTIATION OF MOVEMENT)
SUPERIOR AND INFERIOR COLLICULI
(VISION AND HEARING)
GLOBUS PALLIDUS
LOCUS COERULEUS
(AROUSAL AND STRESS)
NUCLEUS ACCUMBENS
(REWARD)
RAPHE NUCLEI
(SEROTONIN)
CEREBELLUM
(MOVEMENT AND PROPRIOCEPTION)
PONS
(MOVEMENT)
OLFACTORY BULB (SMELL)
MAMMILLARY BODIES
(MEMORY)
RETICULAR FORMATION
(MOTOR COORDINATION, EXHALATION, AWARENES)
RED NUCLEUS
(MOVEMENT)
DENTATE NUCLEUS
(CEREBELLAR OUTPUT)
VENTRAL TEGMENTAL AREA (VTA)
(DOPAMINE/ REWARD)
SUBSTANTIA NIGRA
(LEARNING, ADDICTION)
MISC BRAINSTEM NUCLEI (BREATHING, HUNGER)
INFERIOR OLIVARY NUCLEUS (ERROR CHECKING, MOVEMENT)
WWW.GREGADUNN.COM

DOPAMIN



Jeg vil ha
Mat, drikke, sex, anerkjennelse, tilhørighet, felleskap

(Skjerm, rusmidler)

1. Motivasjon
2. Beslutning
3. Bevegelse
4. Atferd

Jeg fikk tak i det
Ah – god følelse

Dopamin i belønningskjernen

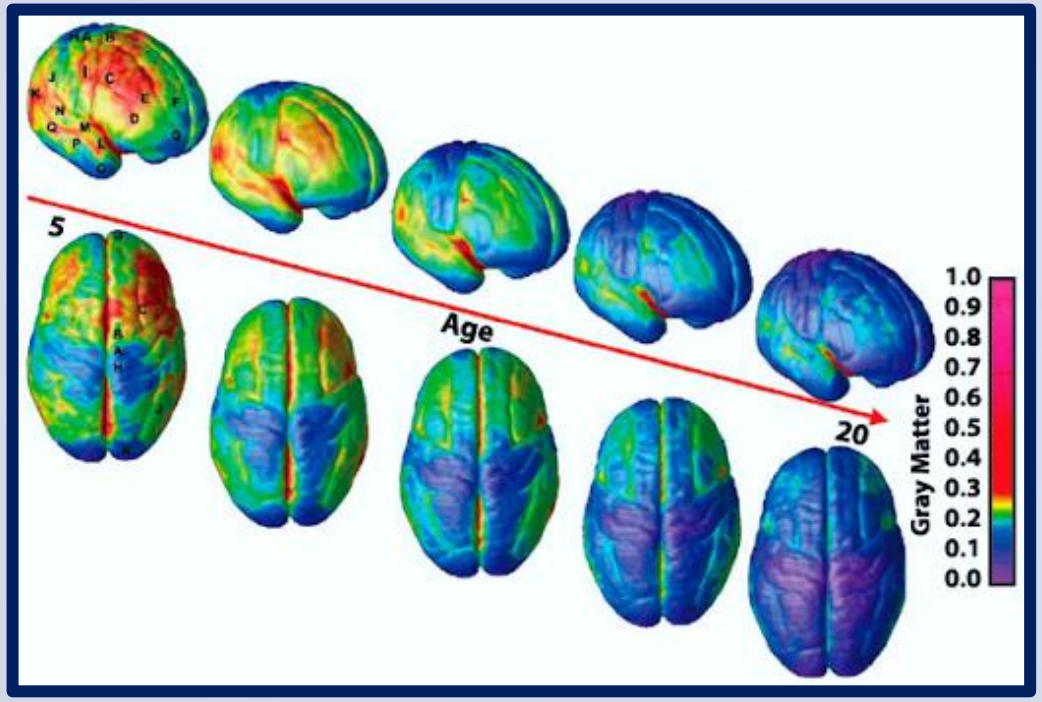
Må huskes!
Læring kobler god følelse, situasjon, det du fikk tak i

Nye stier og nettverk dannes

Må ha mer
Ikke alltid bevisst

Craving ofte satt i gang av påminnelser

UNGDOMSHJERNEN



Gogtay og Thompson. Mapping gray matter development: implications for typical developtment and vulnerability to psychopathalogy. Brain and cognition 2010;72(1):6-15



Darling Clementine/Menneskehjernen

EKSEKUTIVE FUNKSJONER

- Planlegging
- Oppmerksomhet
- Arbeidsminne
- Beslutningstaking
- Selvevaluering
- Inhibisjon og impulskontroll

J. M. Fuster,The Prefrontal Cortex,
Academic Press 2015



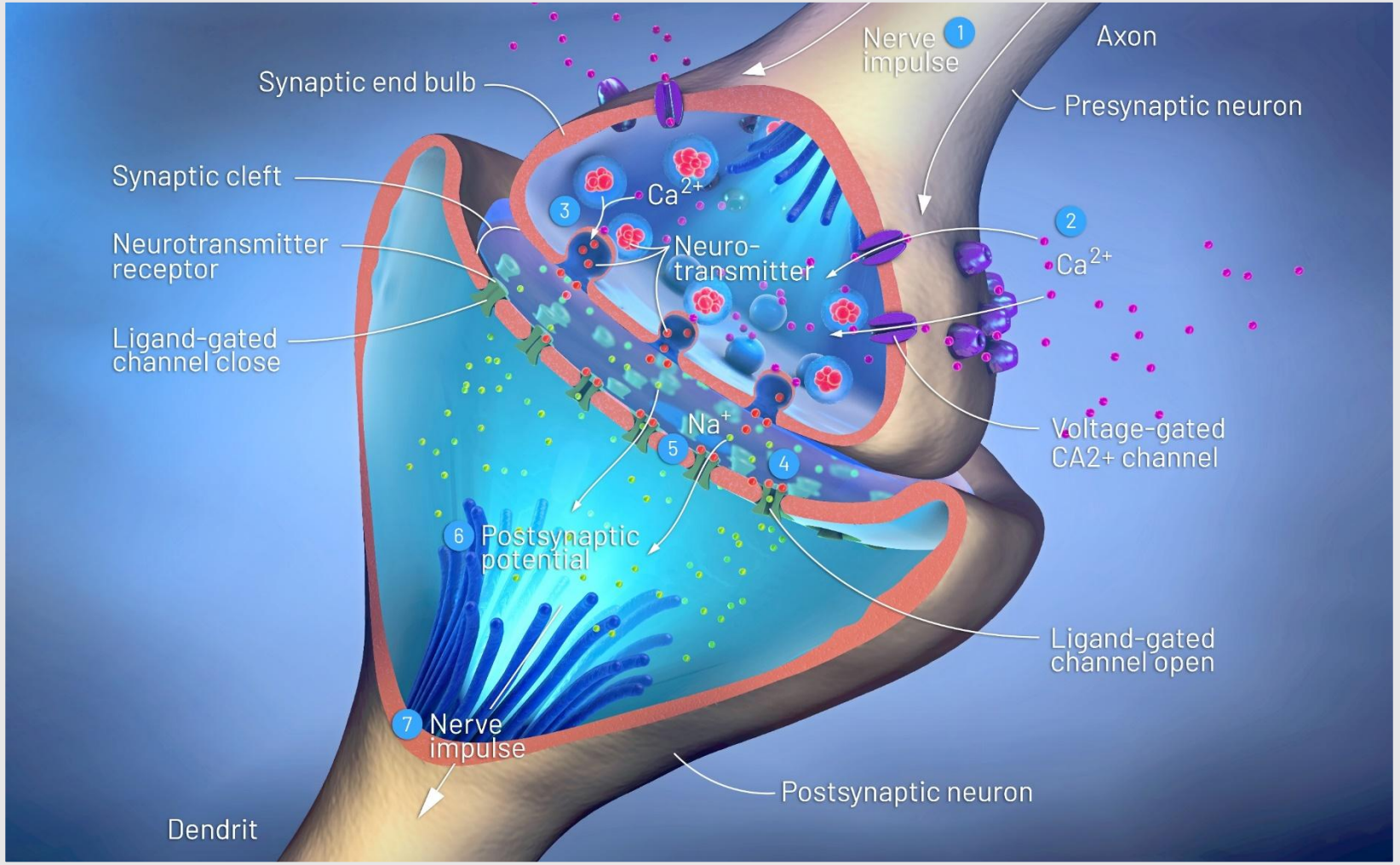
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Evnen til å tilpasse atferd her og nå for å oppnå et større mål *i fremtiden*

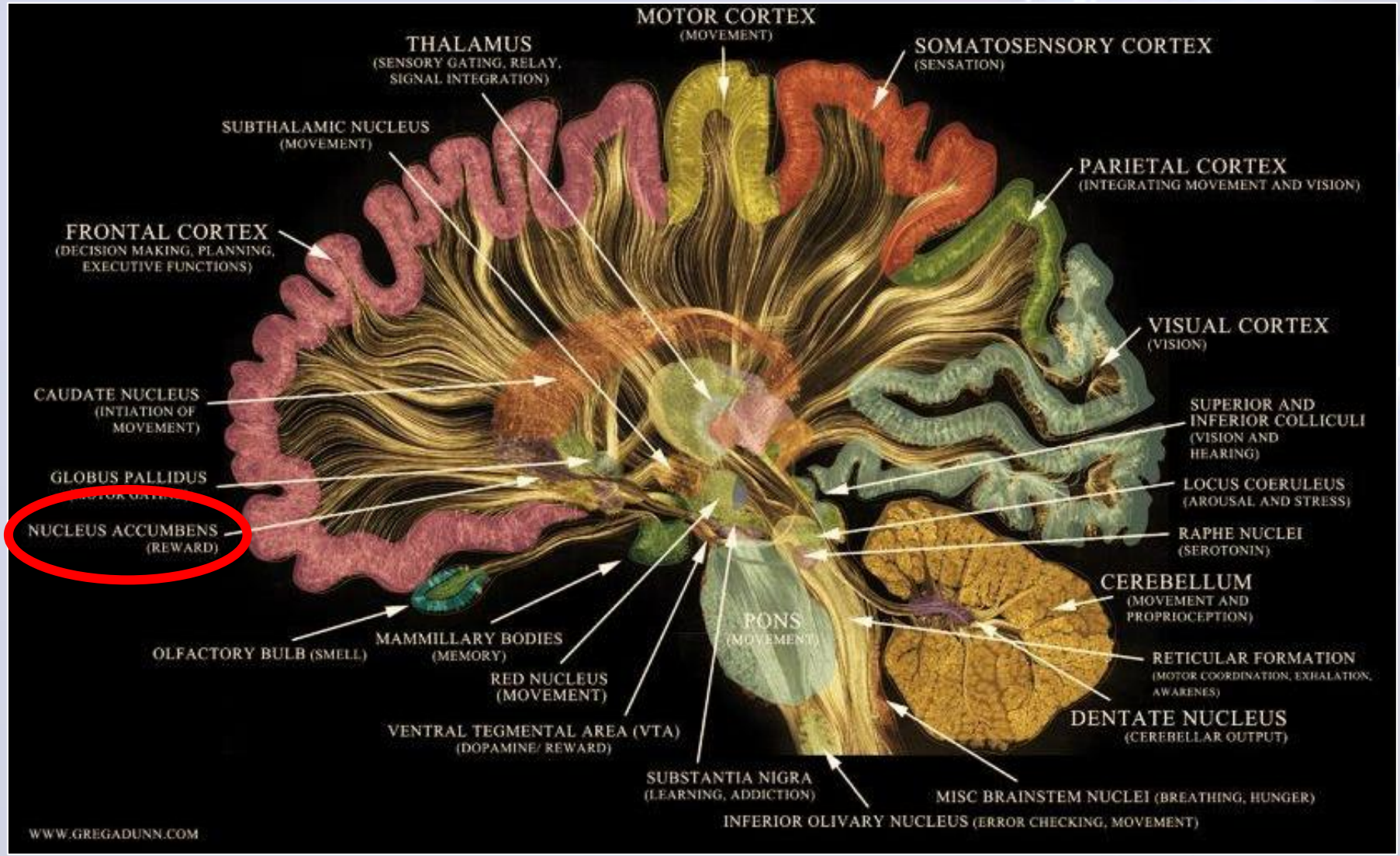


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SYNAPSENE DANNES RASKERE



BELØNNINGSSENTERET ER MER AKTIVT

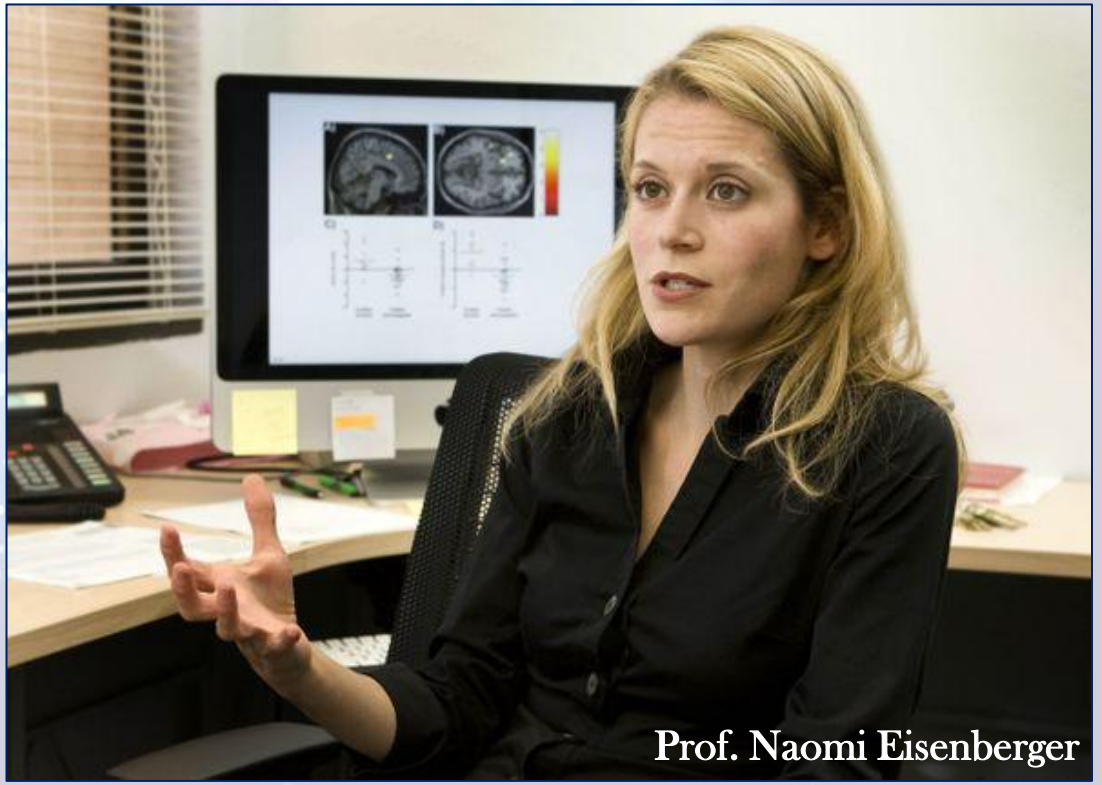


TILHØRIGHET



Prof. Sarah-Jayne Blakemore

Foto: The Irish News 120219



Prof. Naomi Eisenberger

Foto: Reed Hutchinson, UCLA

Den største av alle risikoer er å bli værende alene

MENNESKEFLOKKEN

Hvor hører du til?





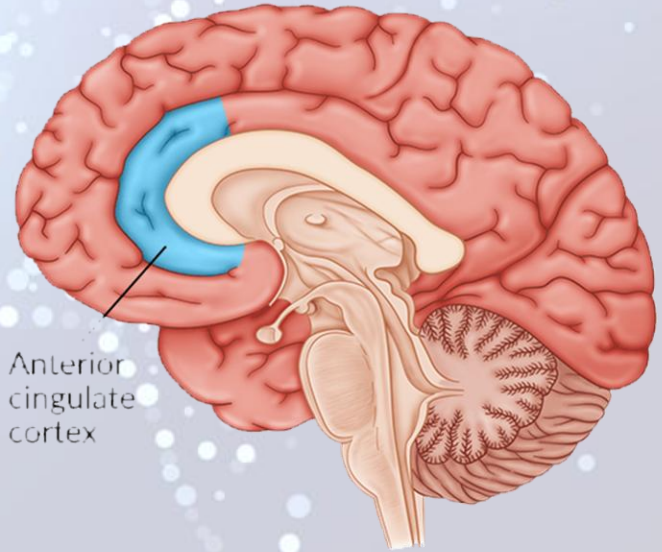


Foto: Mine egne

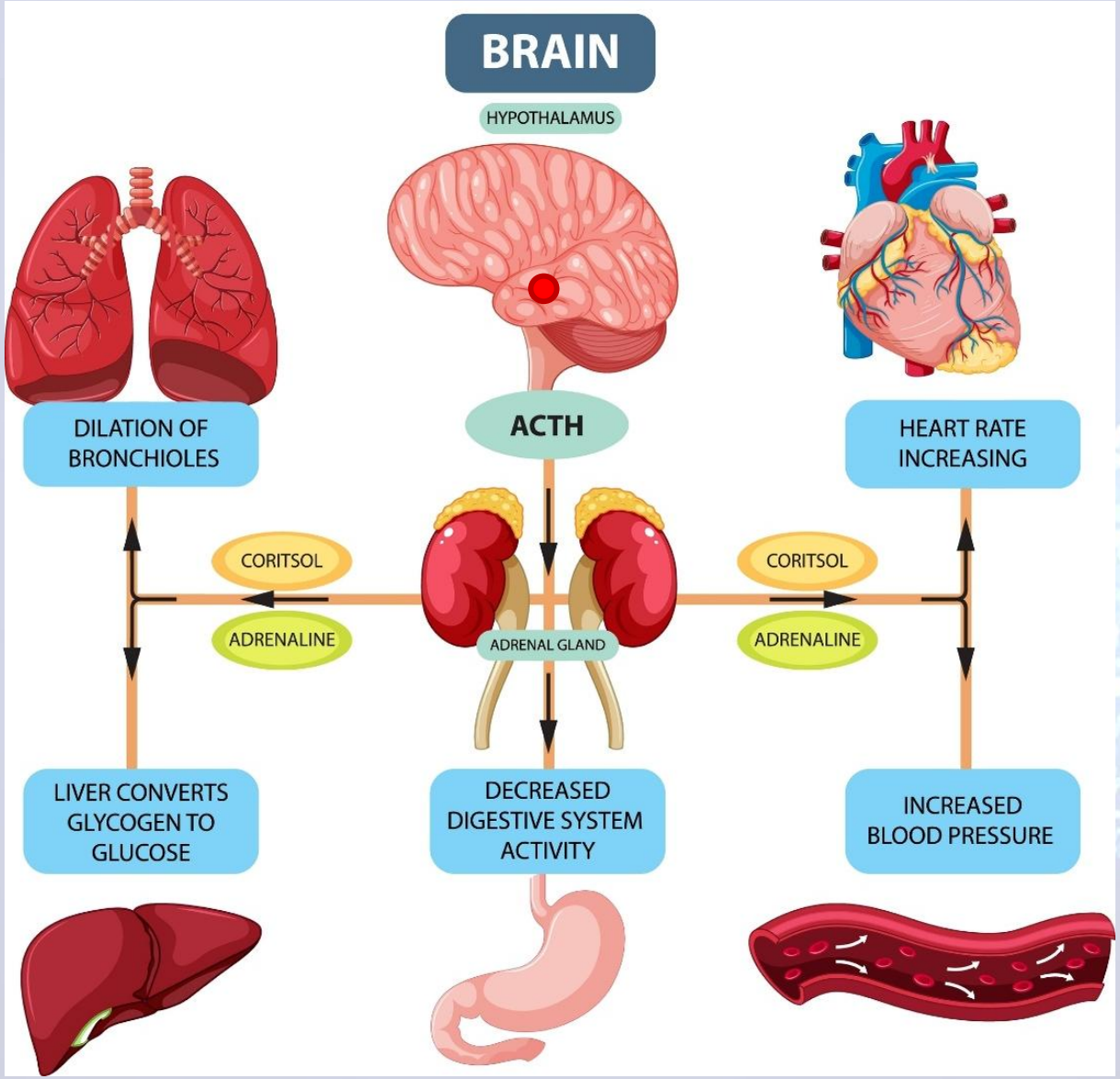
VEKSTMENTALITET







BRA OG DÅRLIG STRESS



Illustrasjon: Shutterstock



Zhao et al. Mental stress-performance model in emotional engineering. I: Emotional Engineering, Vol 6, s 119-139. Springer 2018.

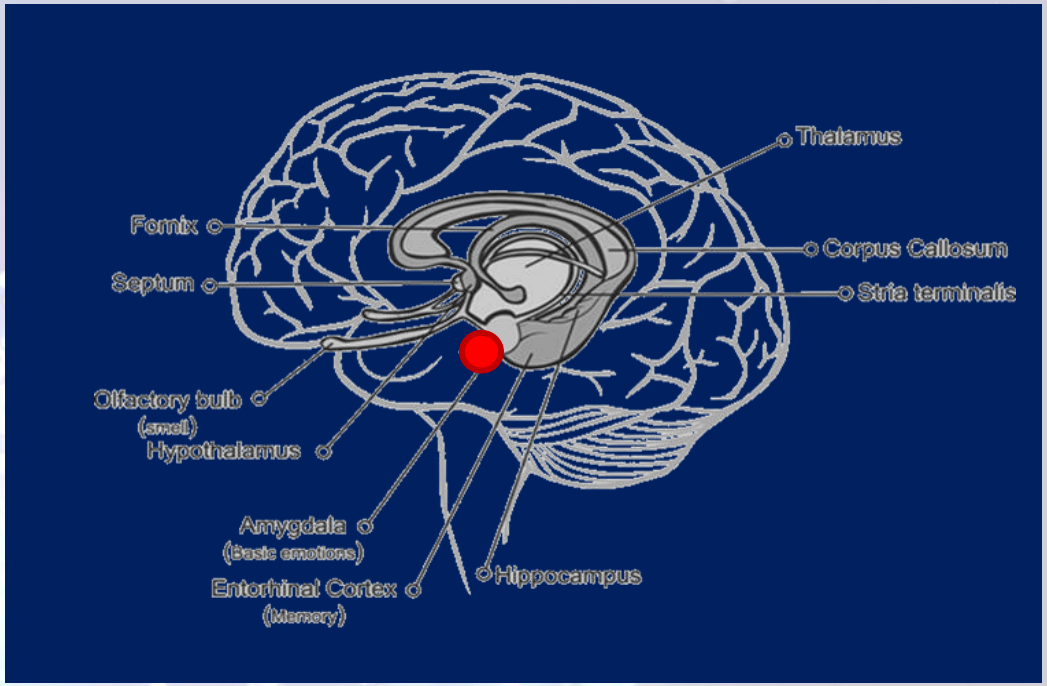
MEDGANG OG MOTGANG



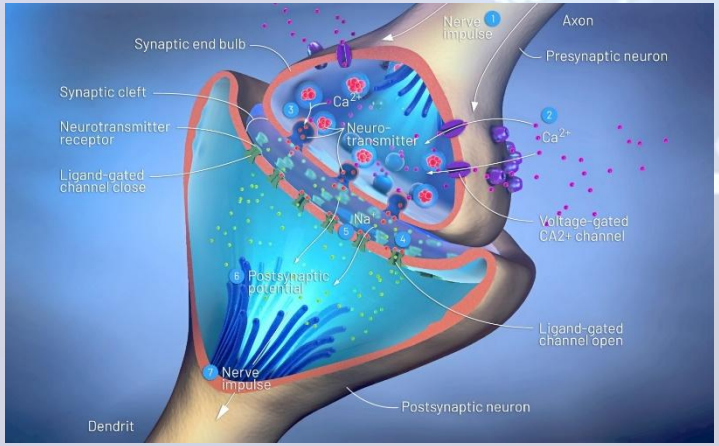
Kristian Gkolomeev (GR). Foto: Jae C. Hong/AP Photo



Foto: Lisa Graham/London Borough of Hounslow Swimming Club



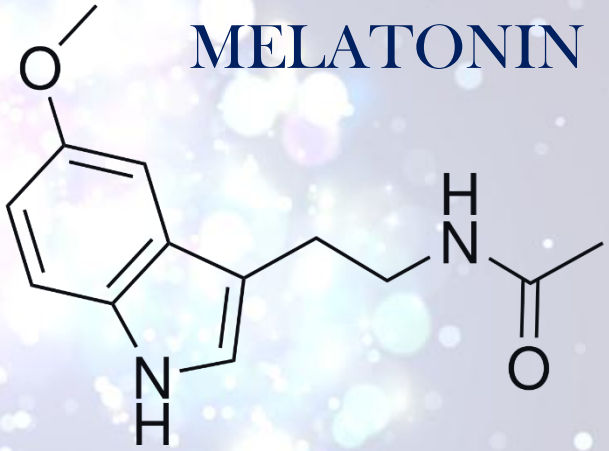


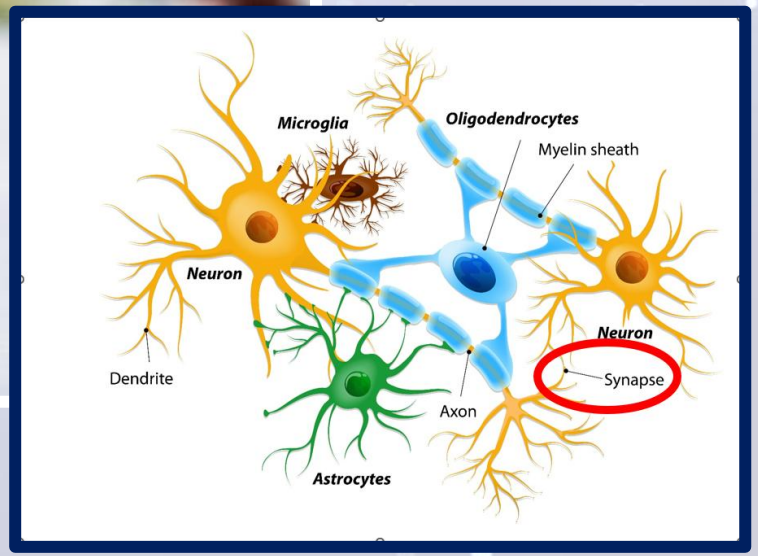


SØVN

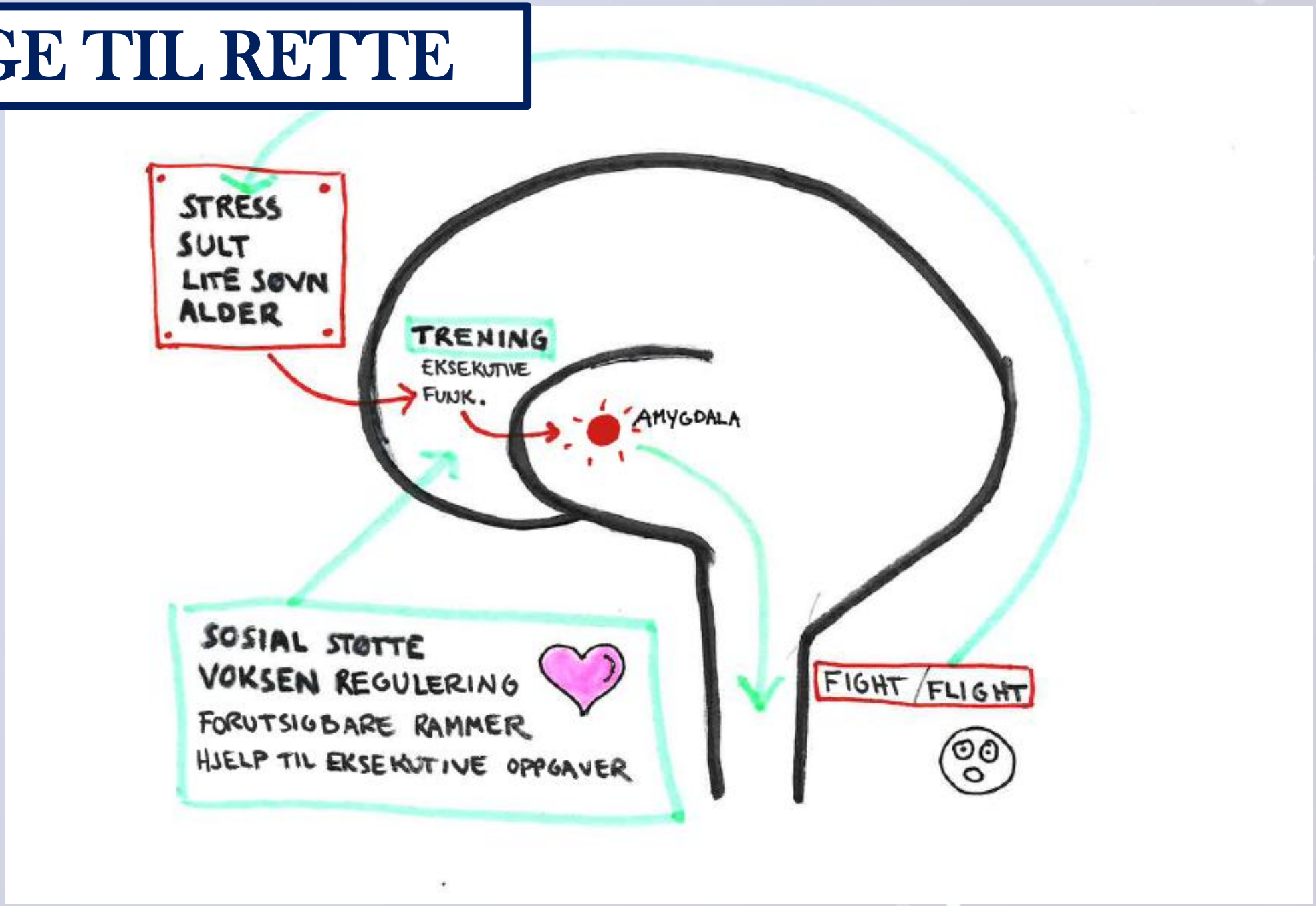


MELATONIN





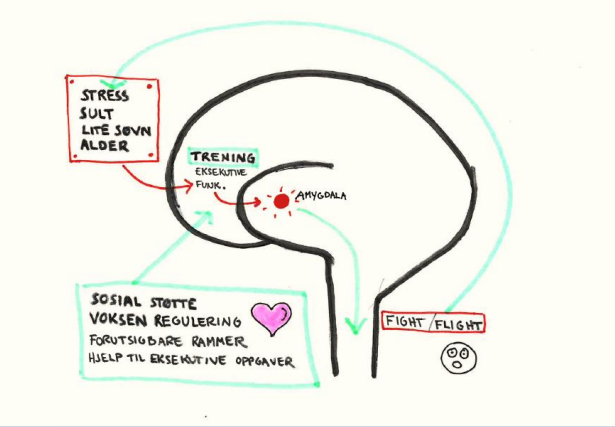
LEGGE TIL RETTE



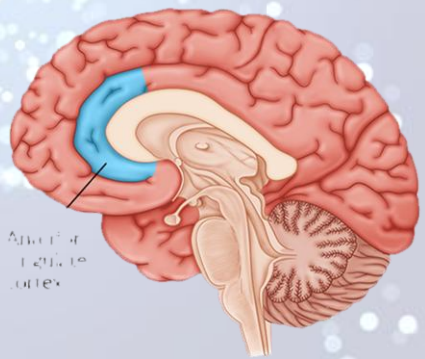
Artwork: Syvertsen MR.

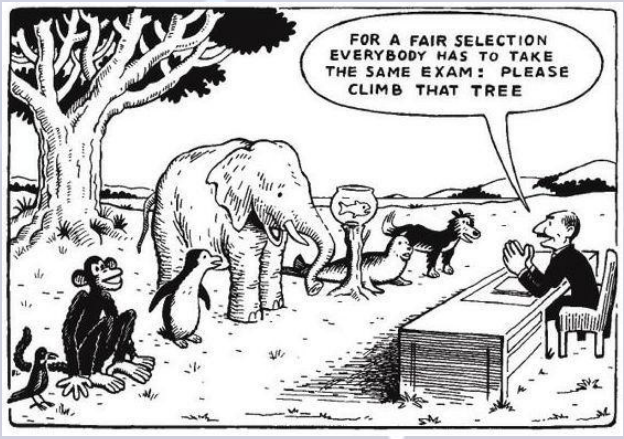
HUSKELISTE

- **Hvem** er denne utøveren?
  - Hva kan jeg forvente? Hvor må jeg inn og støtte?
  - Hva motiverer?
  - Hva stresser?
- Sørg for **tilhørighet** og psykologisk trygghet
- Hjelp til med **gode rutiner**
- Gjør **søvn** til en prioritet

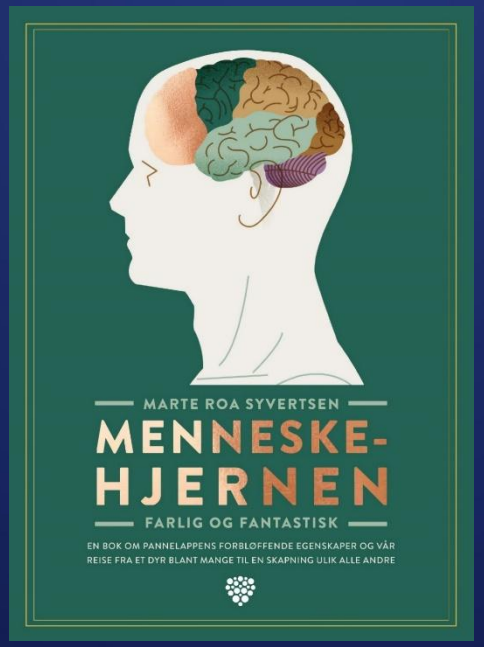






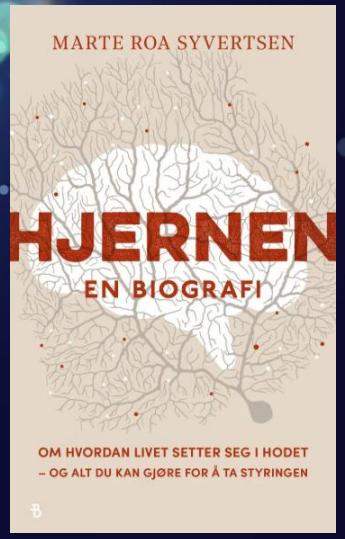


Takk for meg
LES MER









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