# mental wellbeing

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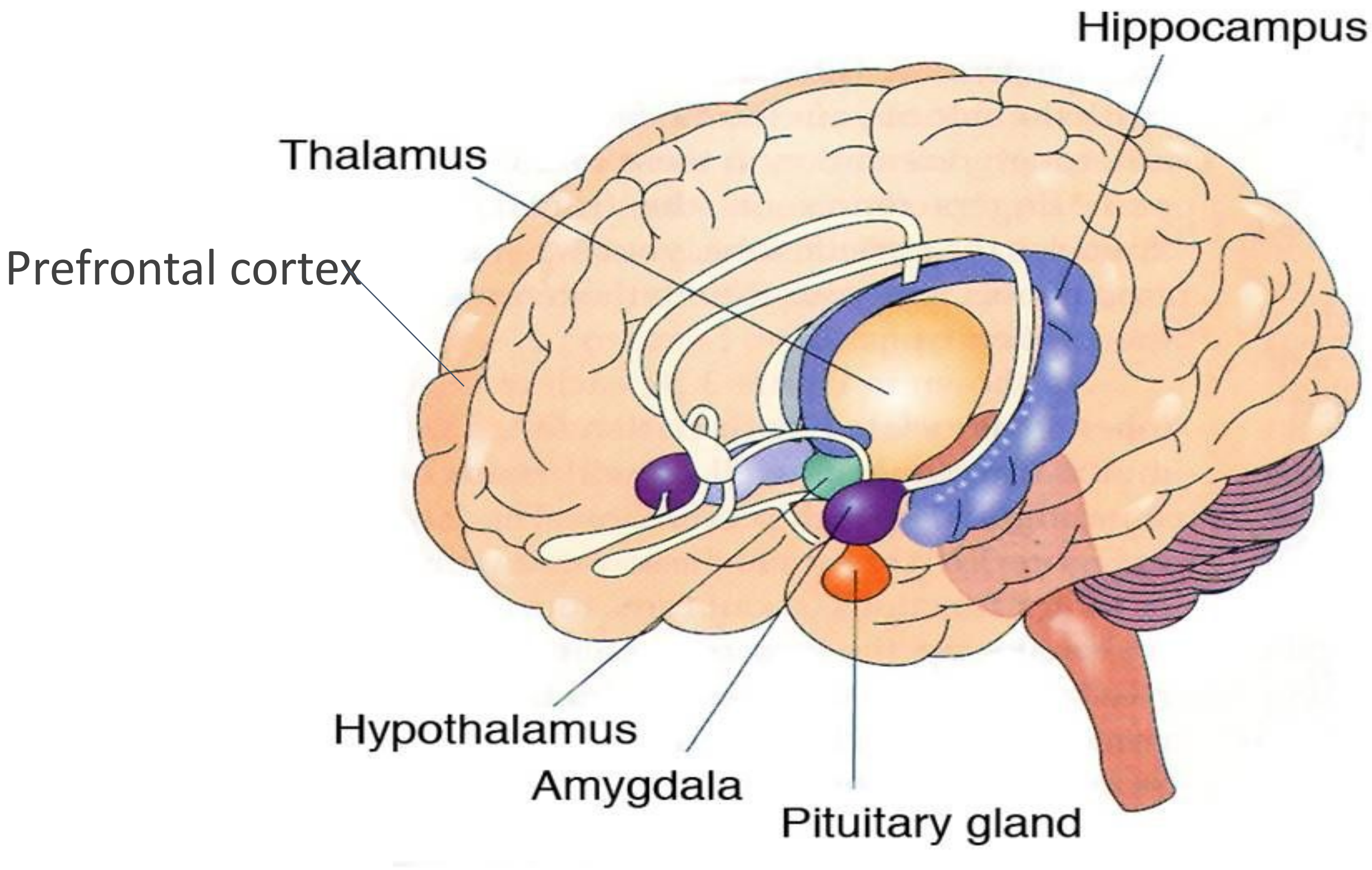
# our brain on stress




amygdala is our internal alert system activates stress response

hypothalamus receives threat signal and activates endocrine system the HPA axis

body flooded with epinephrine and cortisol; cortisol has a positive feedback loop

primed for fight or flight – if we are overwhelmed we freeze

hippocampus and pre-frontal cortex act as a top-down brake

# meditation and mindfulness – improves braking system

increases resilience to stress

helps us stay present and reduces reactivity

improves focus and memory

increases mindfulness

reduces anxiety and worry

facilitates us to be more creative

increases compassion

cultivates observing and curious attitude

# neuroplasticity

### chemistry

reduce epinephrine and cortisol

increase dopamine and serotonin

increase GABA and ACH

### brain structure

hippocampus

pre-frontal cortex

parietaltemporal junction

reduced amygdala

### traits

personality

emotional reactivity

stress resilience

reflexivity

focus

# body scan - experiential

choose if you want to participate, or not

make yourself comfortable

turn-off your camera if you wish

if it feels uncomfortable just stop, and wait until it finishes

if you like it, try Yoga Nidra

# mindfulness


paying attention to the present moment with intention

mindfulness is a form of secular meditation developed by University of Massachusets professor John Kabat-Zinn

mindfulness based stress reduction (MBSR) – recognised as therapy for stress and anxiety

effective in as little as 6 weeks

can be contra-indicative for some mood disorders PTSD/social anxiety

not about shutting-off thoughts but noticing thoughts and cultivating awareness and acceptance

# meditation practices

## diaphragmatic breathing

- sit or lie quietly
- place hands on your abdomen
- deepen your breath but keep it gentle and rythmic
- notice your hand rise with the in breath and lower on the out breath
- Counting the out breath up to 10 can help anchor our attention
- when your mind wanders simply return to the breath in an accepting and compassionate way
- Not about emptying our mind but seeing it

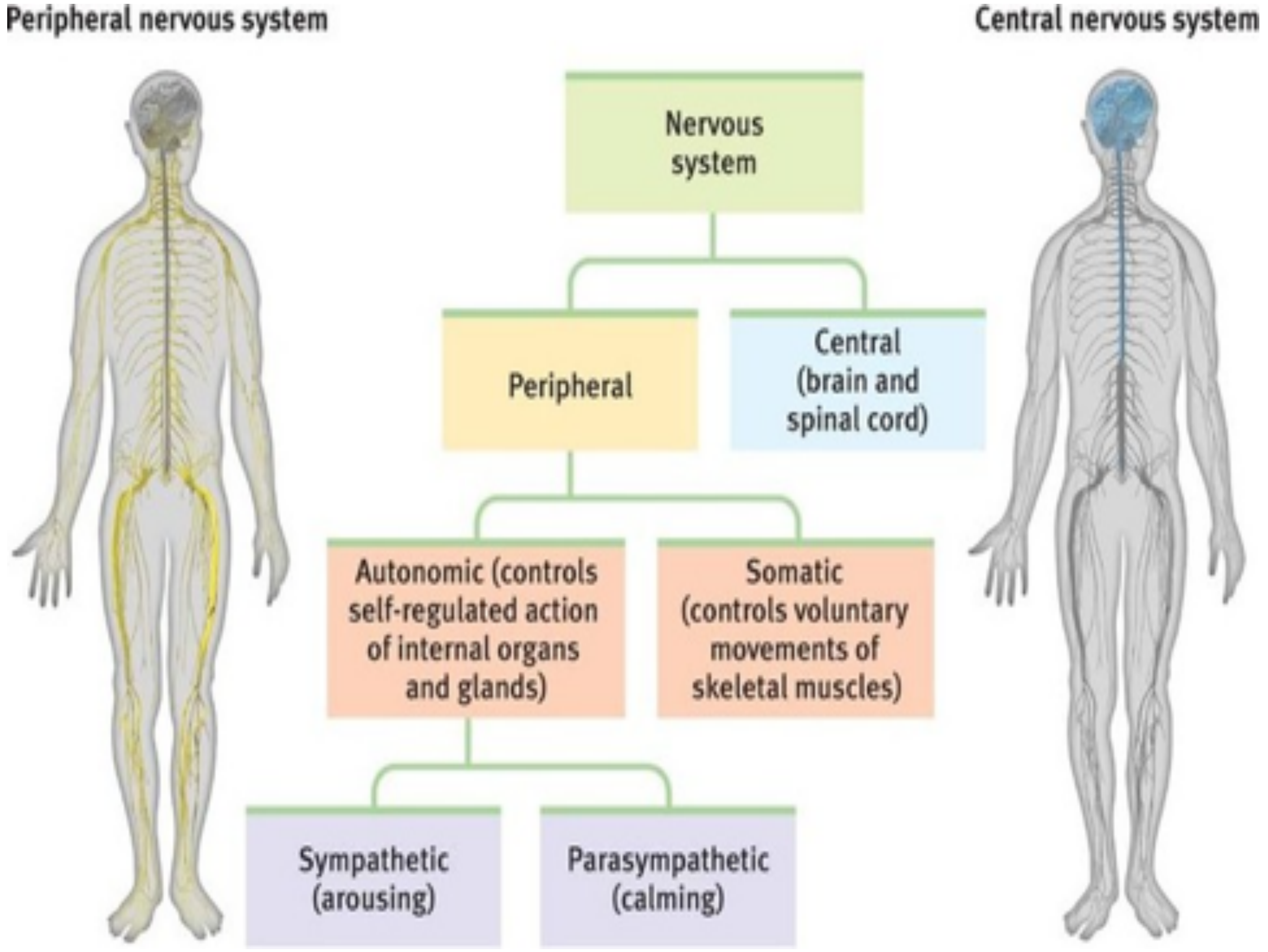
## mantra

- sit or lie quietly
- repeat a word or phrase that you find calming
- can be as simple as “I am here now”
- repeat as often as needed – then stop
- when thoughts come-up repeat the mantra
- foundation of transcendental meditation but doesn’t need to spiritual

## walking meditation

- set the intention to notice internal and external
- soften and widen focus
- walk slowly and try and simply notice your surroundings and internal landscape
- try to bring all your senses; sight, smell; touch; hearing; and tasting
- Noticing a particular colour can anchor us to the practice

# nervous systems - bottom-up braking

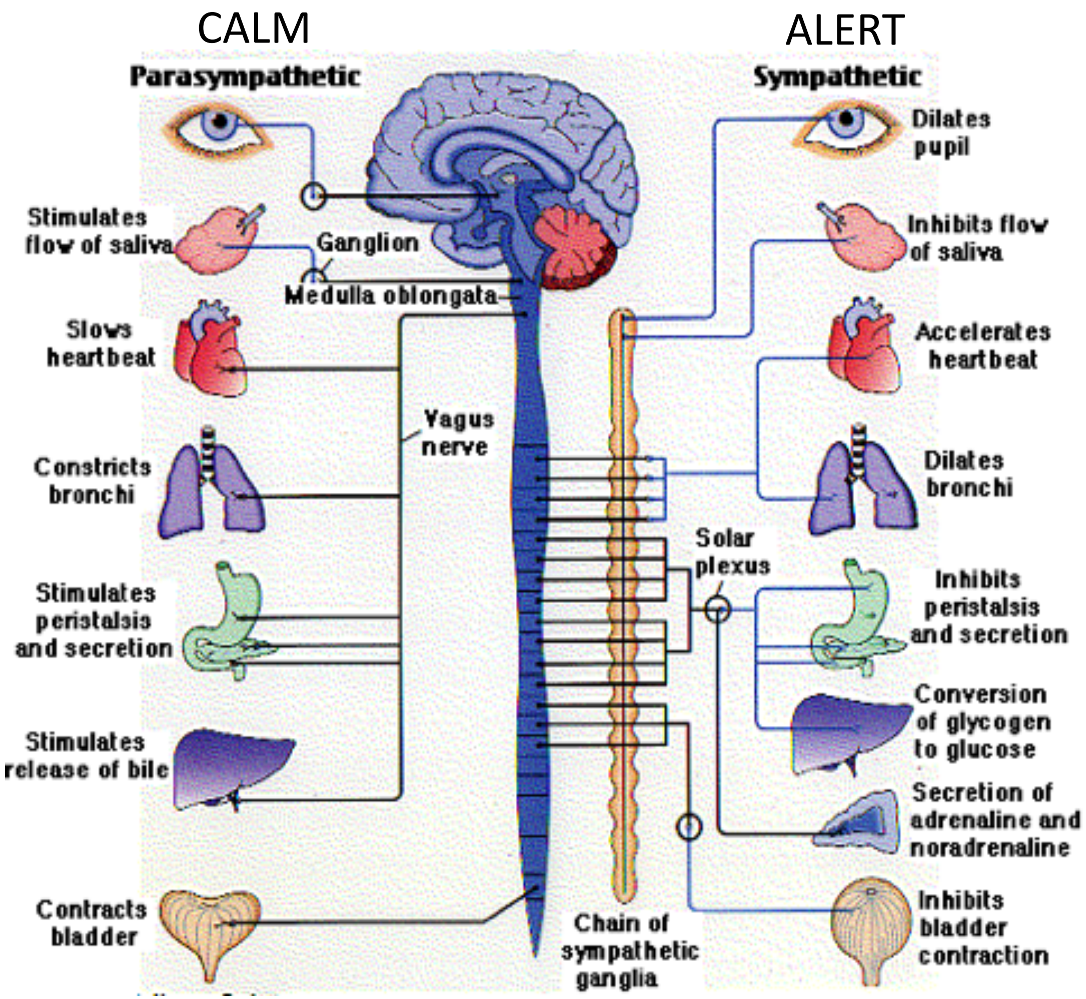



stress and anxiety is mediated between our nervous system, brain and endocrine system

our stress response starts and ends in our autonomic nervous system (ANS) which is responsible for all sub-cortical processes

we can relieve stress through applying our body our bottom-up brake

# welcome to vagus - your vagus nerve




autonomic nervous system controls all sub-cortical functions its largely automatic and involuntary

peripheral nervous system gathers information internally and externally which it relays to the brain

sympathetic ganglion alerts thalamus to threats; vagus nerve calming signals

breathing is both a conscious and subconscious function and can be used to signal safety

currently a lot of interest in the vagus nerve - much of what is on the internet is misguided

# altered states – change your breath; change your state

on an inhale, the diaphragm moves down creating space which allows the heart to expand and reduces blood flow

neurons in the heart signal the reduced blood flow to the brain which reacts by signalling to heart to increase rate

on an exhale the opposite process happens and your heart rate slows down

longer inhales and shorter exhales increase heart rate and alertness which mimics stress

shorter inhales and longer exhales lower heart rate producing a calming effect

we can voluntarily alter our states of alertness and calmness using our breath

# breathing techniques

## polyvagal breathing

- similar to diaphragmatic breathing very calming
- extend the out breath
- breathe in for count of four; breathe out for the count of seven
- variation is to hold for seven then breathe out for count of eight
- Stephen Porges - polyvagal theory

## box breathing

- Breathing technique to be calm and alert
- favoured by navy seals
- basically draw a square with your breath
- breath in for five; retain breath for five; breath out for five; wait for five then repeat
- play around with length of breath but sides should be equal

## shining skull breathing

- sit with straight back
- place right hand below your nose with palm facing down
- breathe in through your nostrils
- breathe out sharply through nostrils  contract abdomen as you exhale as if trying to blow out a candle
- repeat 4 times then breathe normally – do 3 round
- stop if you feel uncomfortable
- avoid if you have blood pressure issues

# a sigh of relief; or a sigh to relieve

physiological sigh quickly reduces your heart rate and stress level – taps into the phrenetic nerve

two short inhales and one longer exhale

stress causes alveoli in our lungs to reducing their surface area and carbon dioxide builds up

inhaling twice reinflates the alveoli so the exhale is more effective at ridding the body of the excess built-up carbon dioxide and calms you down

in about 30 seconds heart rate will start to fall

# Resources

Altered Traits – Daniel Goleman and Richard J Davidson

Befriending Your Nervous System: Looking Through the Lens of Polyvagal Theory – Deb Dana

Breath – James Nestor

https://www.headspace.com

https://hubermanlab.libsyn.com/master-stress-tools-for-managing-stress-anxiety-episode-10

https://www.nhs.uk/.../guides-tools-and-activities/breathing-exercises-for-stress