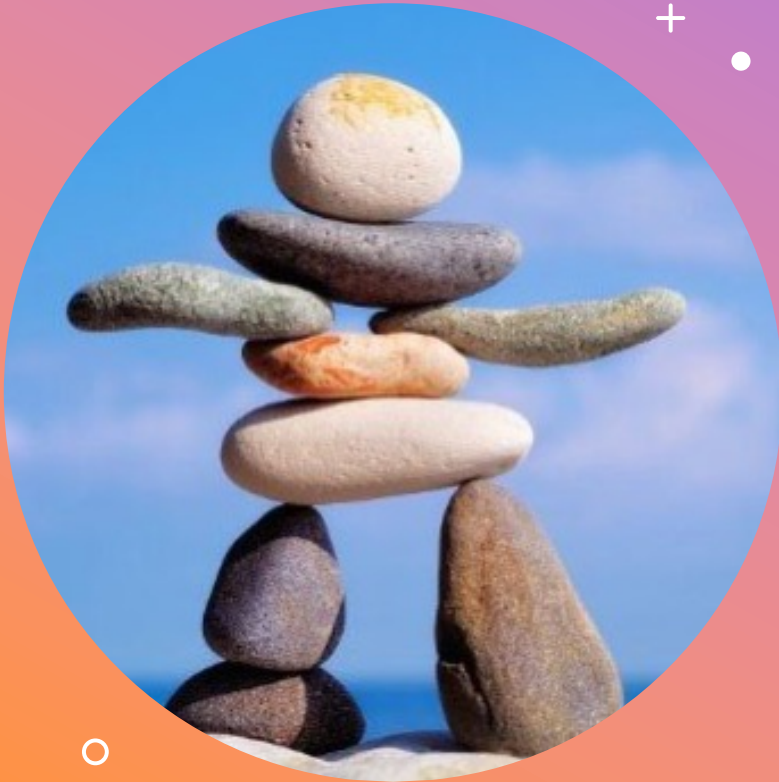


# BALANCE, LONGEVITY & COGNITION



ROBIN NORRIS  
Superior Athletic  
Club



# AGENDA

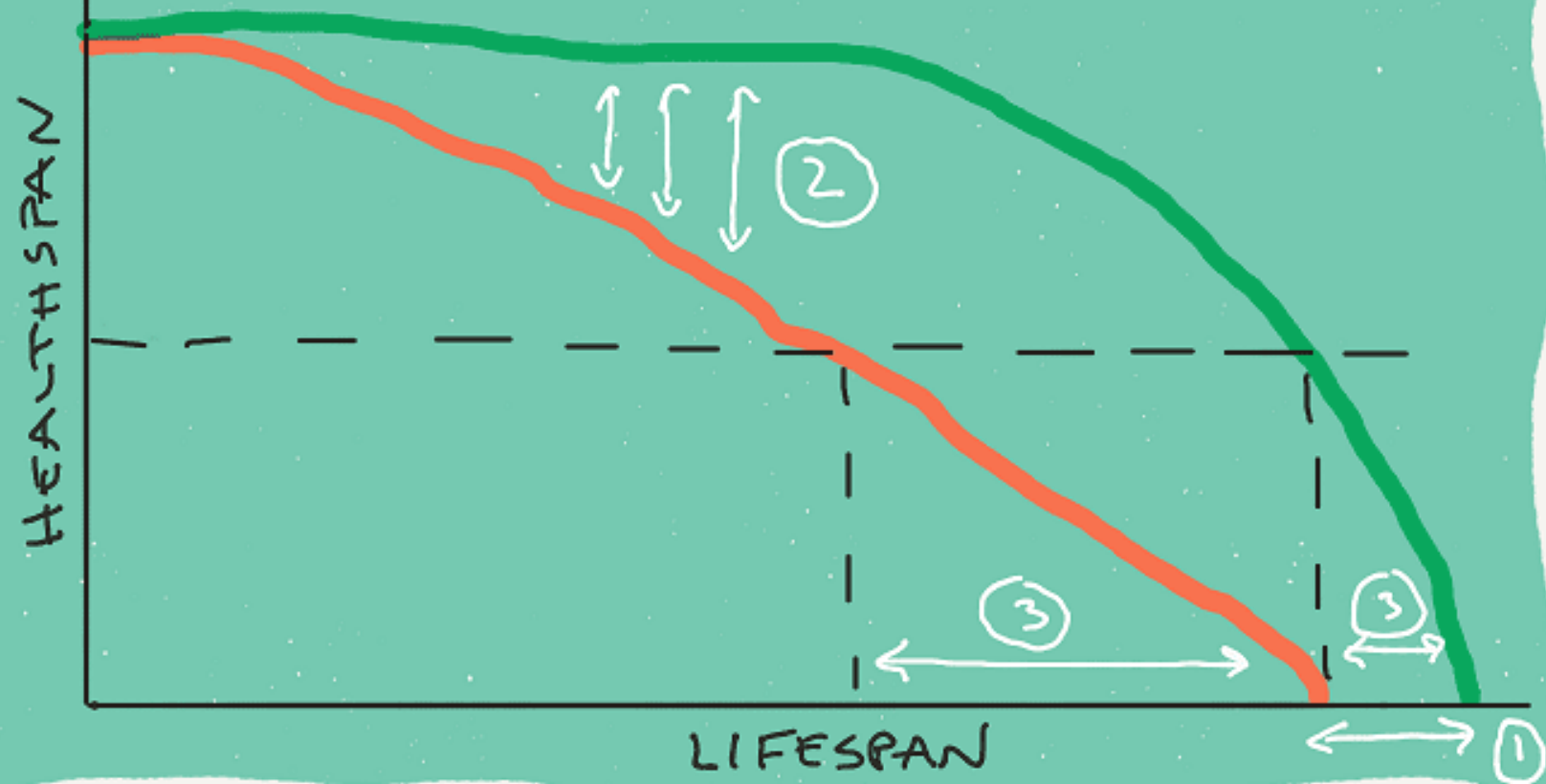
Lifespan vs. Healthspan

Cognitive Decline

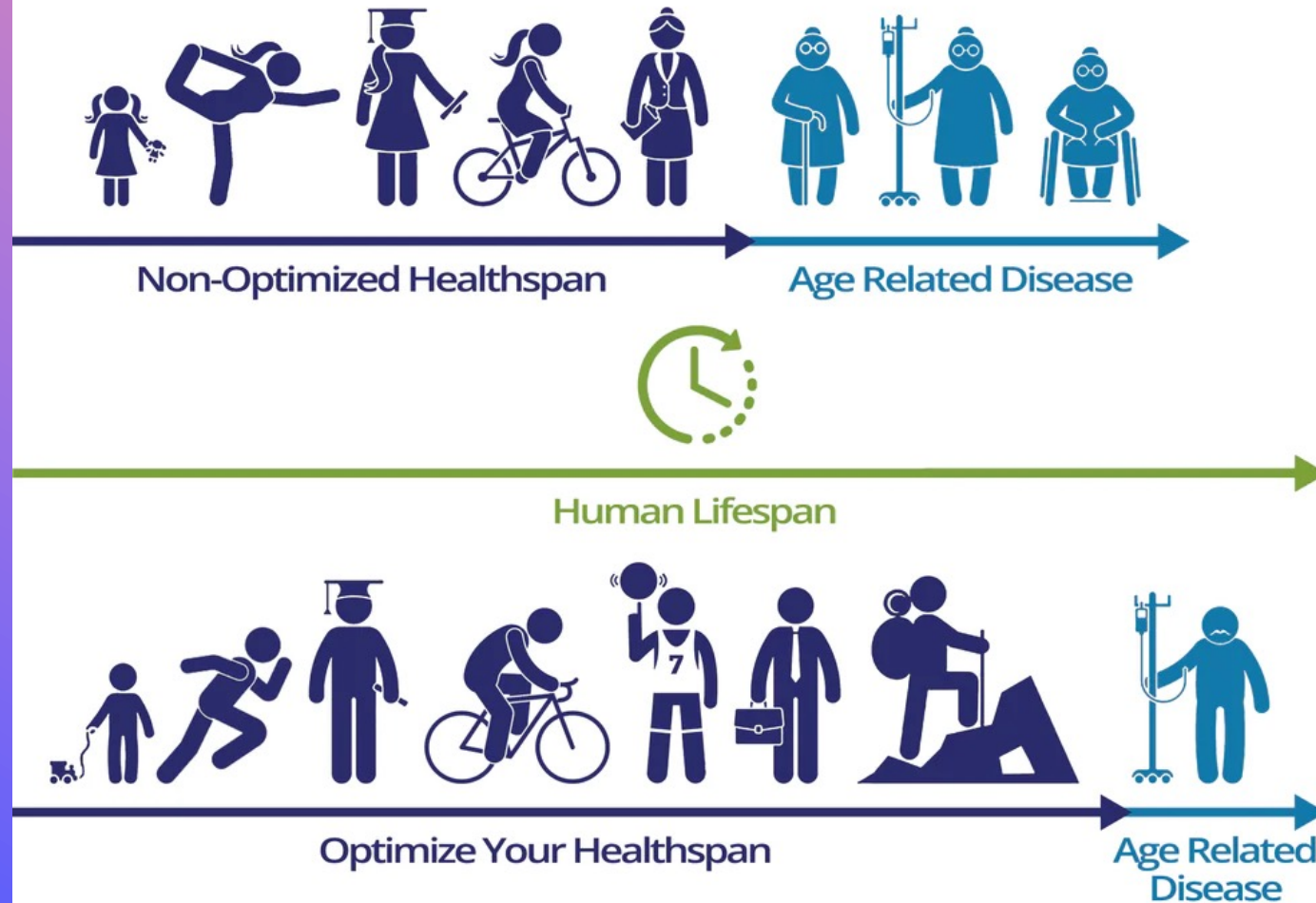
Balance

Optimizing: What to Do

# Healthspan vs. Lifespan



# Lifespan VS Healthspan





A 3D rendering of a human brain, colored in a vibrant red. The brain is positioned centrally, and thick, dark red liquid is dripping from its base, forming several long, viscous strands that fall onto a flat, light blue surface below. The background is a smooth gradient, transitioning from a deep blue on the left to a lighter, yellowish-green on the right. In the upper right corner, there are three small, faint icons: a cross, a solid dot, and an open circle. A thin, vertical light blue line is visible on the far left side of the image.

# COGNITIVE DECLINE

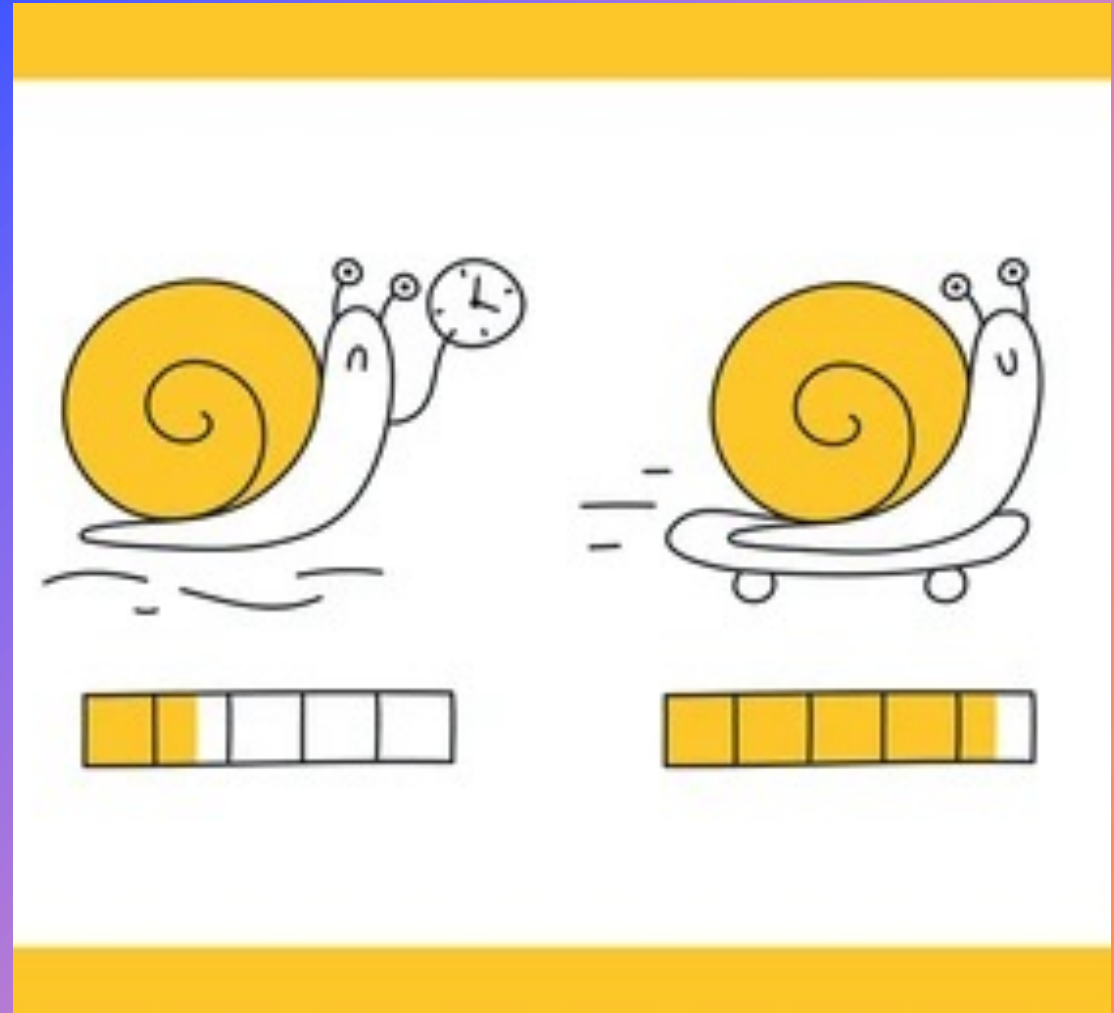


# MEMORY LAPSES

Difficulty remembering recent events or familiar names

# SLOWER PROCESSING SPEED

Taking longer to think through or respond to tasks



# DECREASED ATTENTION AND FOCUS

Trouble maintaining concentration,  
distracted by random thoughts or low  
priority problems





# DIFFICULTY WITH PROBLEM- SOLVING OR DECISION MAKING

Deferring to others in decision making,  
losing steps in complex tasks





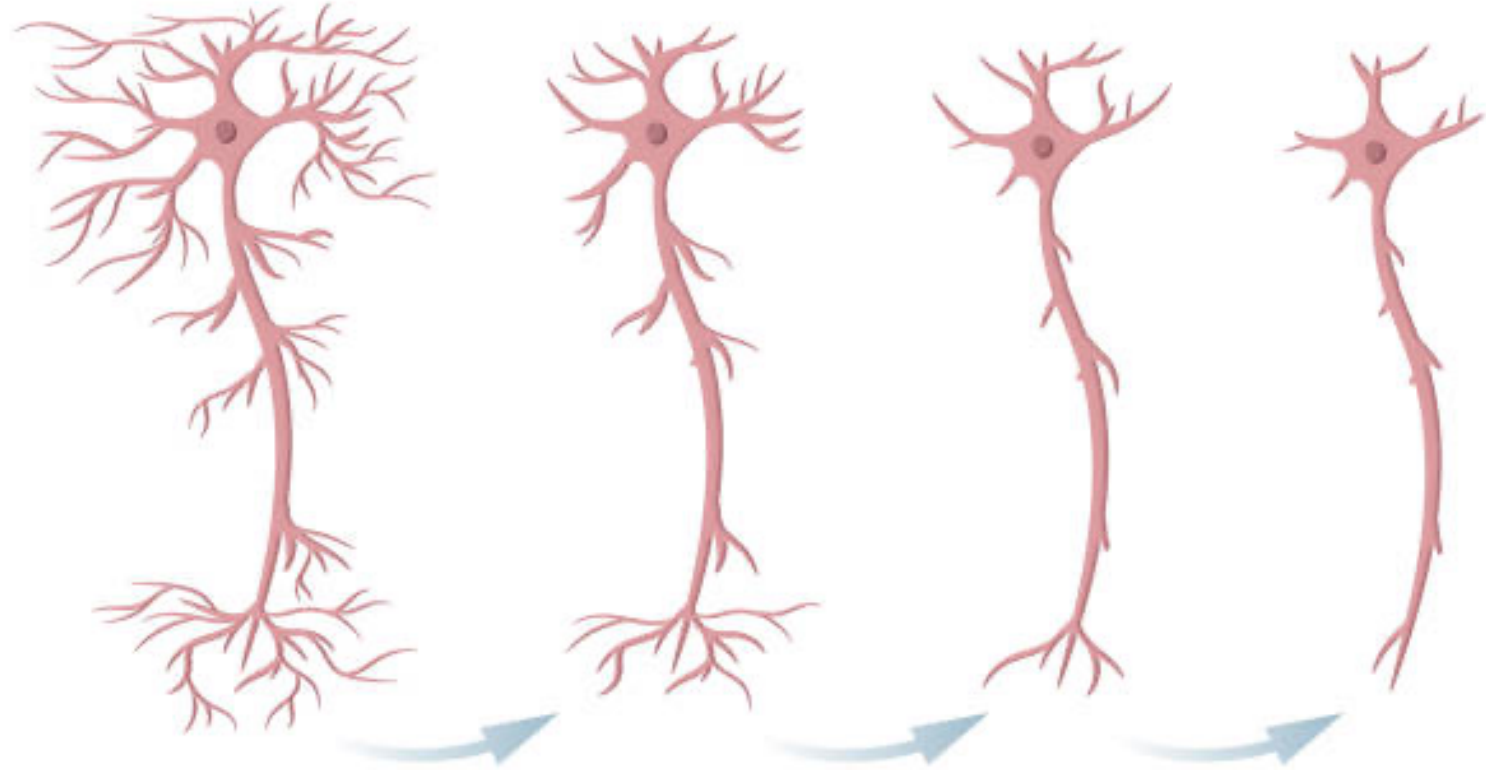
# KEY FACTORS IN COGNITIVE DECLINE

- **Neuronal Loss & Shrinkage**
- **Diminished Neuroplasticity**
- **Reduction in Neurotransmitter Levels**
- **Chronic Inflammation**
- **Vascular Changes & Blood Flow**
- **Sleep Disturbances**
- **Accumulation of Amyloid Plaques**
- **Mitochondrial Dysfunction**
- **Hormonal Changes**
- **Oxidative Stress & Free Radicals**
- **Synaptic Dysfunction**
- **Genetic Factors**

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**Neurodegeneration**



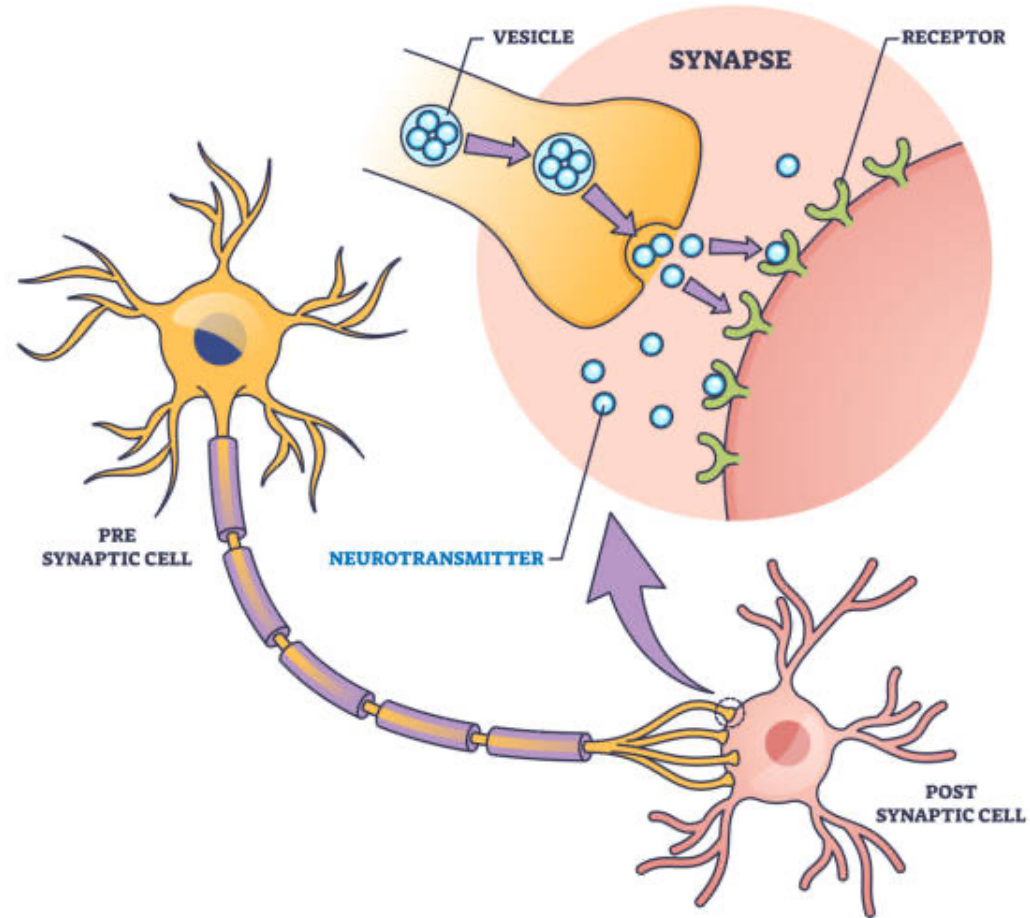
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# NEUROTRANSMITTER



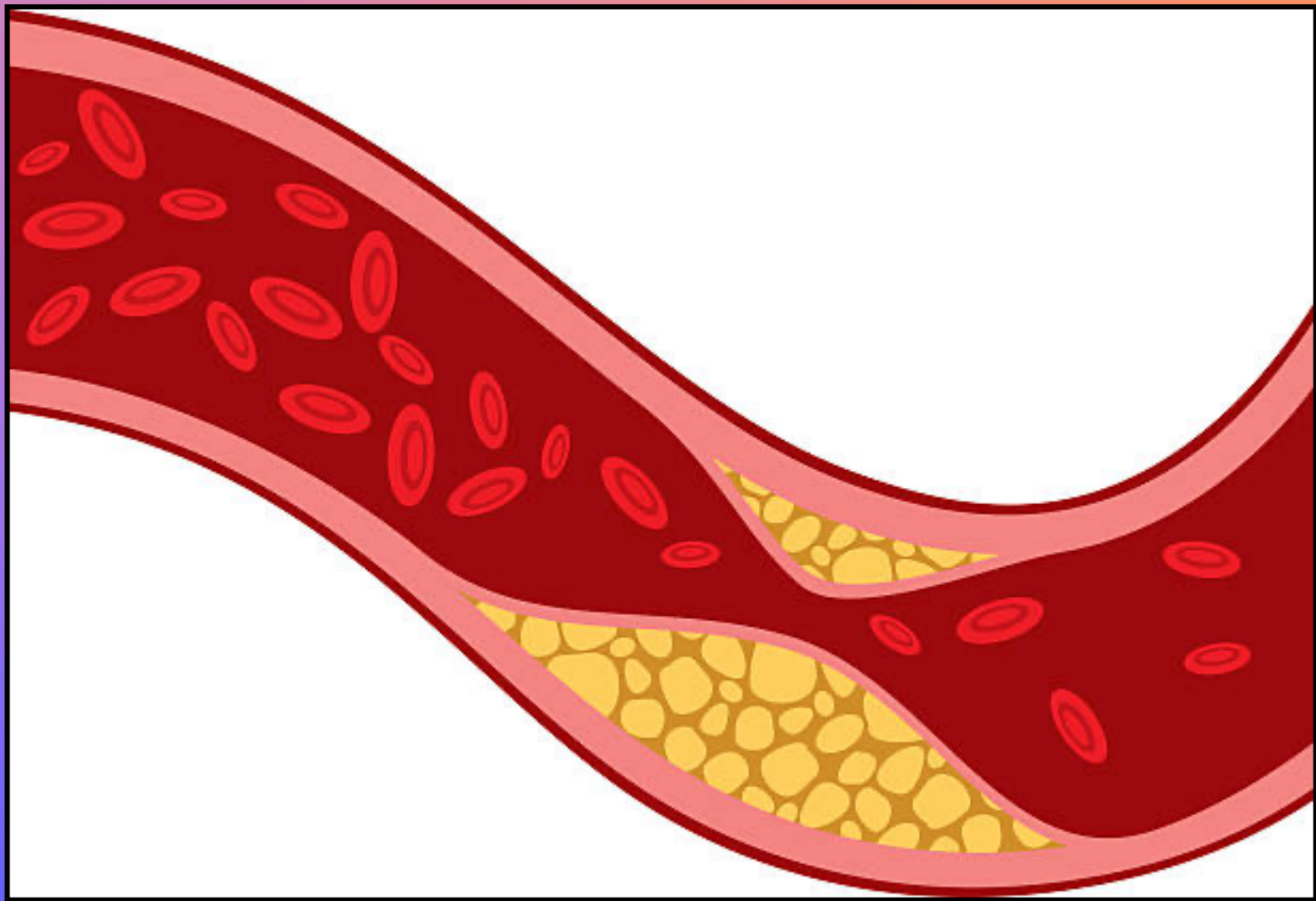
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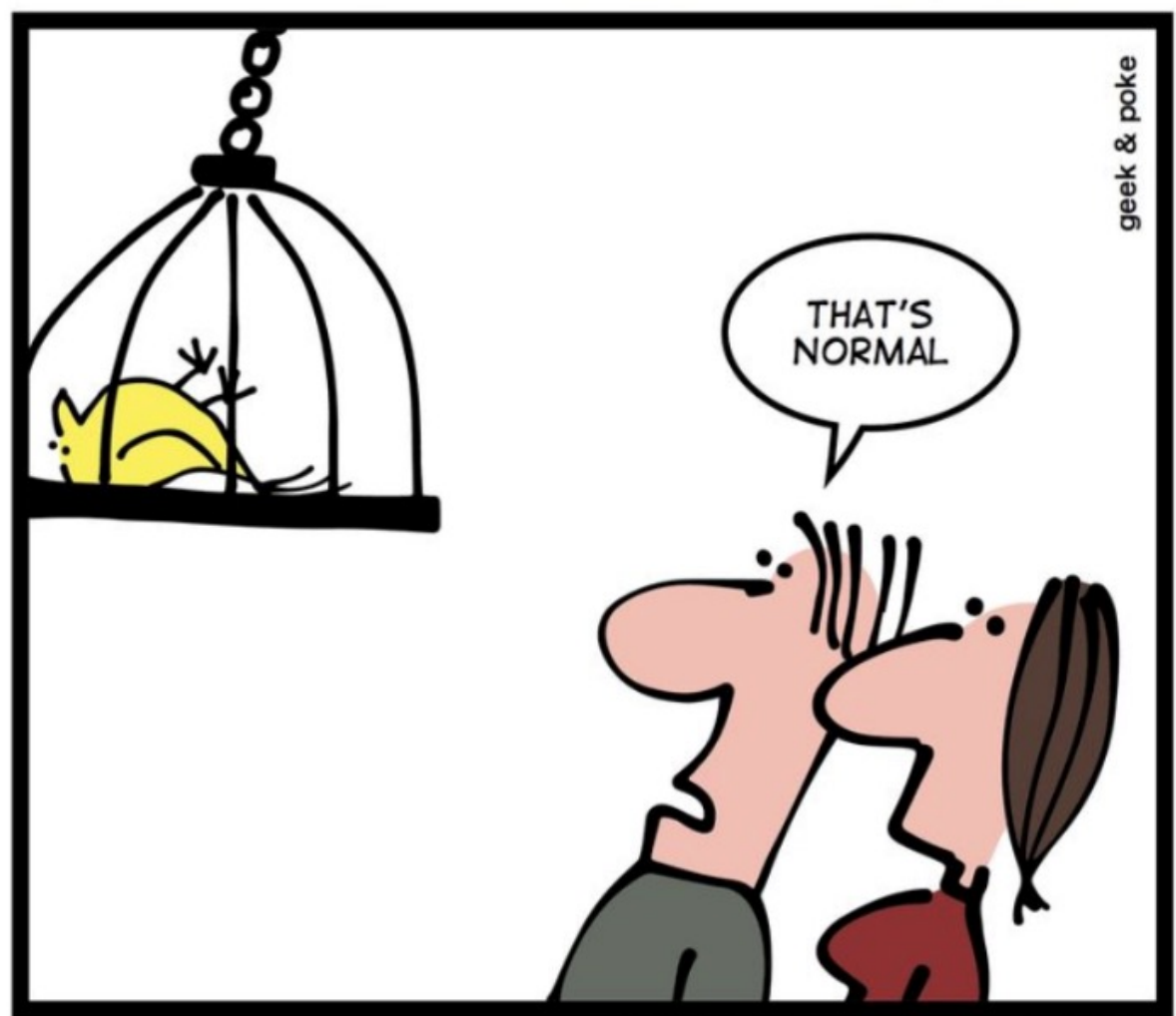
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geek & poke

CANARY IN THE COAL MINE



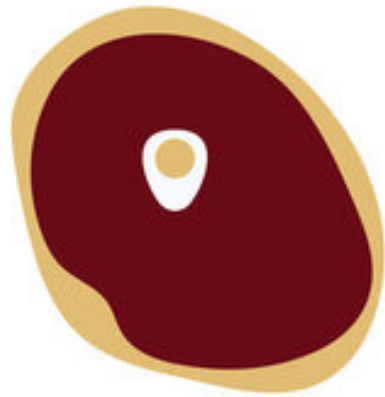


There is a 30-40% mortality rate in those over age 65 after what event?

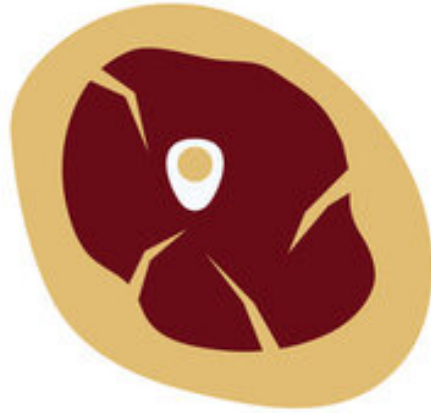




What is the number one risk factor  
for all-cause mortality  
in aging adults?



30 years old



50 years old



80 years old

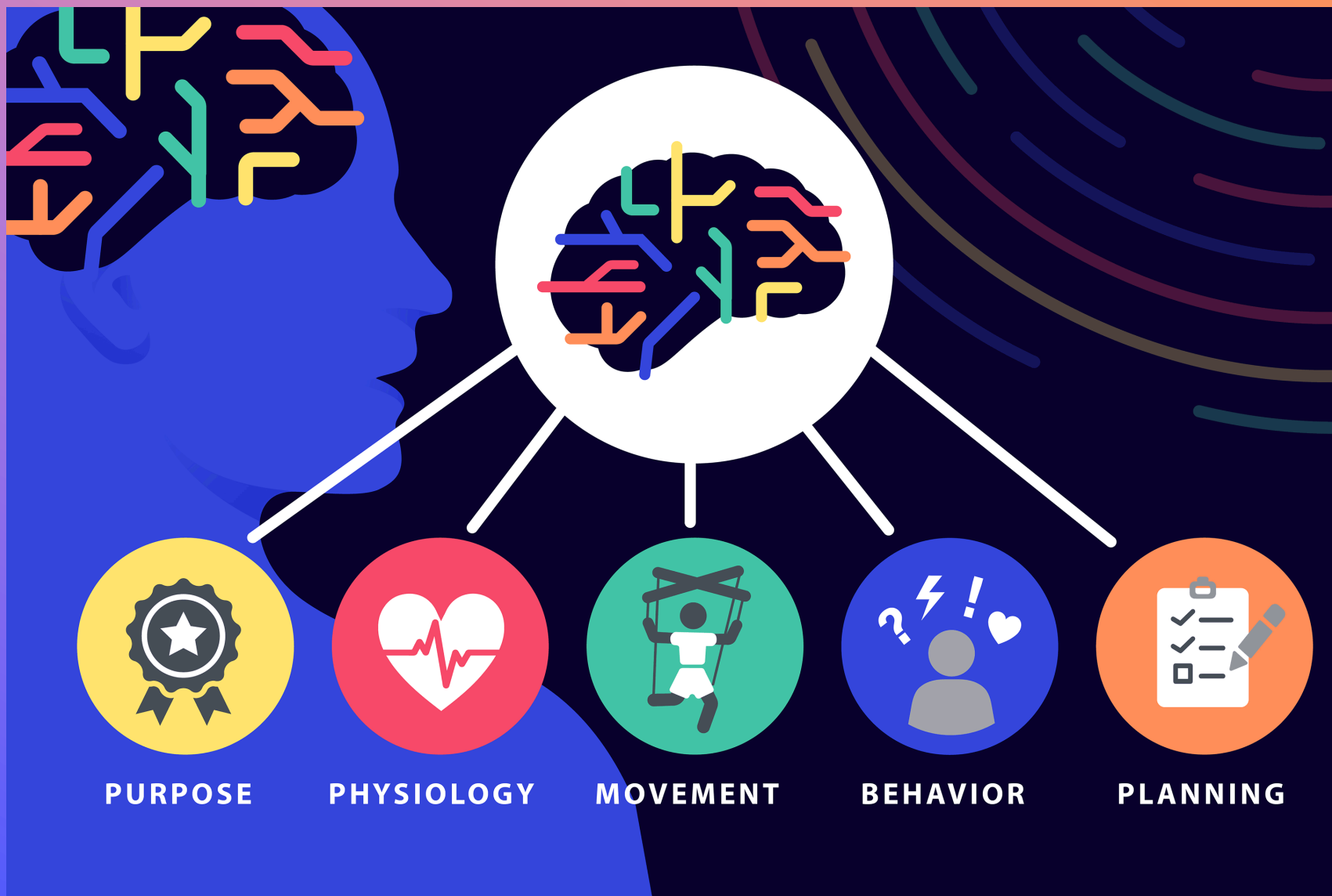
SARCOPENIA



Average muscle loss of 1-2% per  
year  
after age 50

Equates to about 4% loss  
in strength per year





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How does the brain know  
where you are in space?

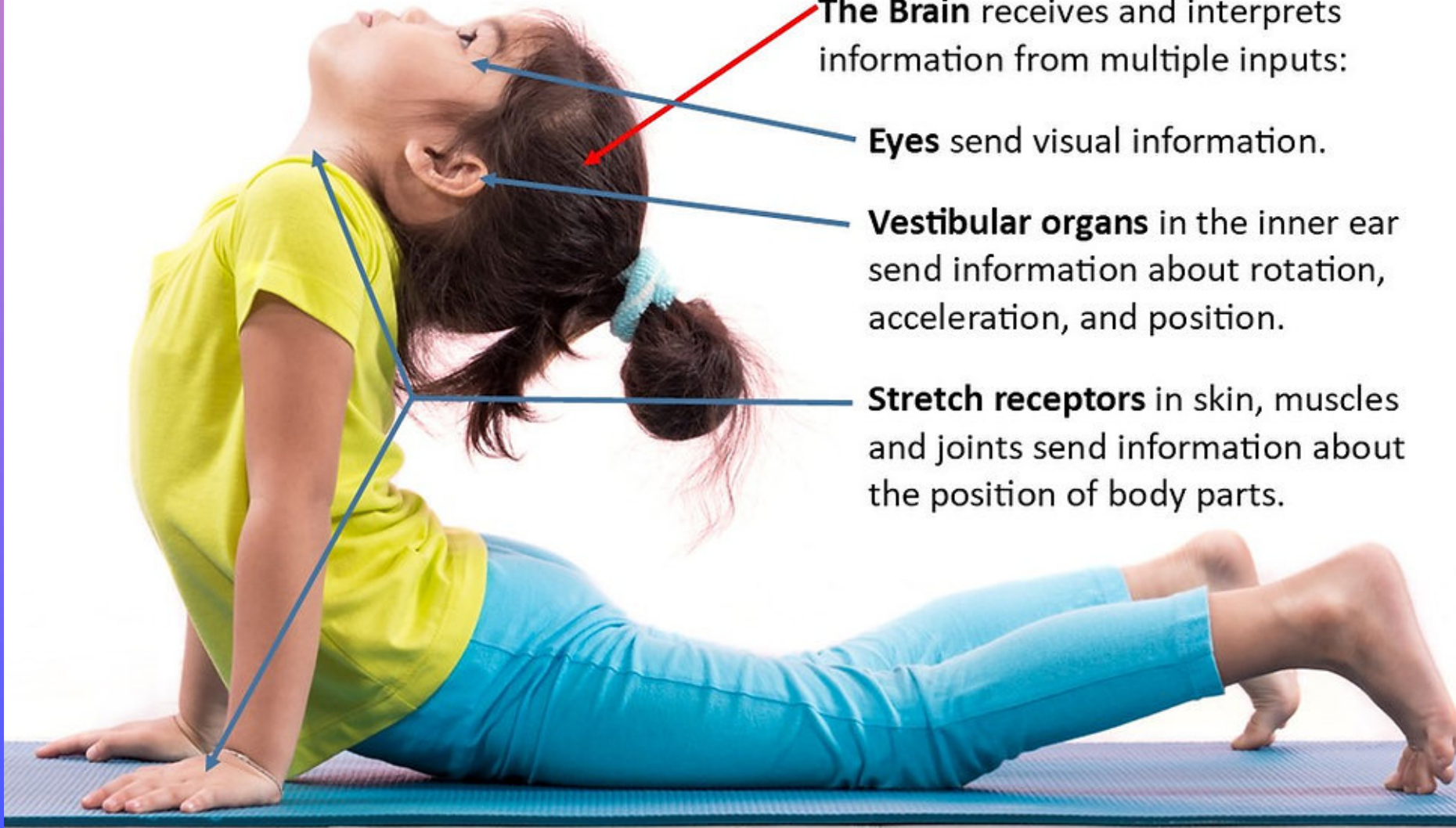
## Proprioception

**The Brain** receives and interprets information from multiple inputs:

**Eyes** send visual information.

**Vestibular organs** in the inner ear send information about rotation, acceleration, and position.

**Stretch receptors** in skin, muscles and joints send information about the position of body parts.



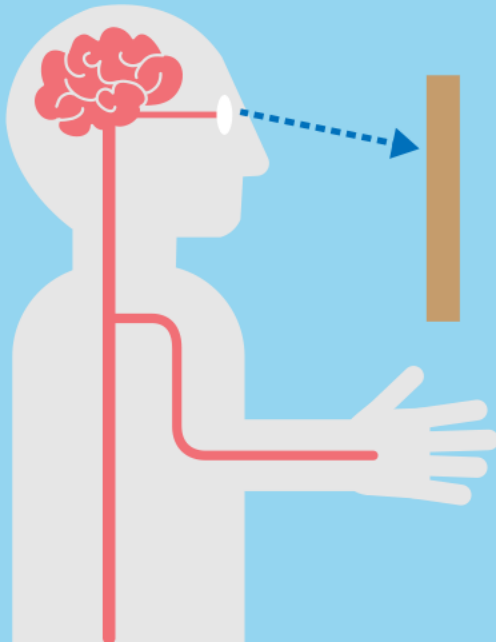
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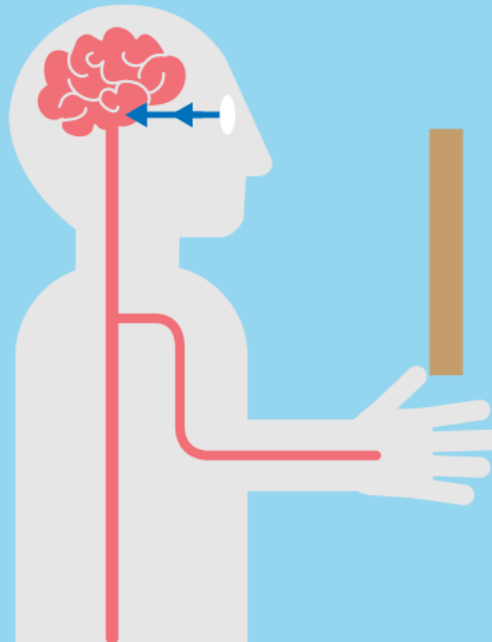
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How does problem-solving affect  
balance?

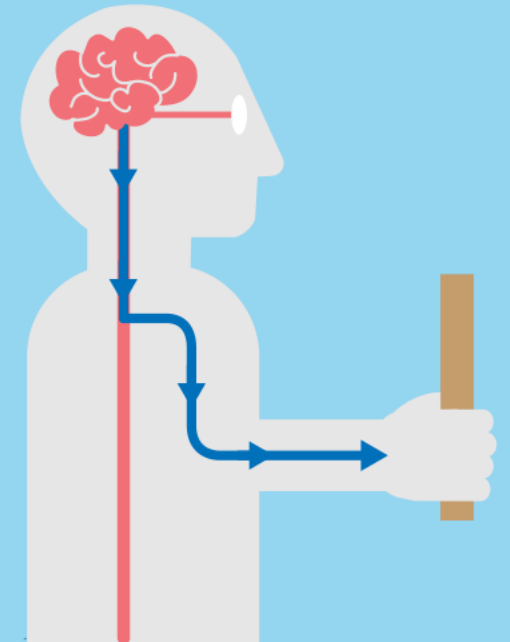
Eyes see the ruler has been dropped.



Sensory neurons send a message from the eyes to the brain.



Brain sends a message down the motor neurons to close the hand.







# IS IT TOO LATE?

Forging new neural pathways





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# THE POWER OF CHOICE



## LANGUAGE IS IMPORTANT

Pretty good for my age...

It's better than...

At least I'm not...

I used to...

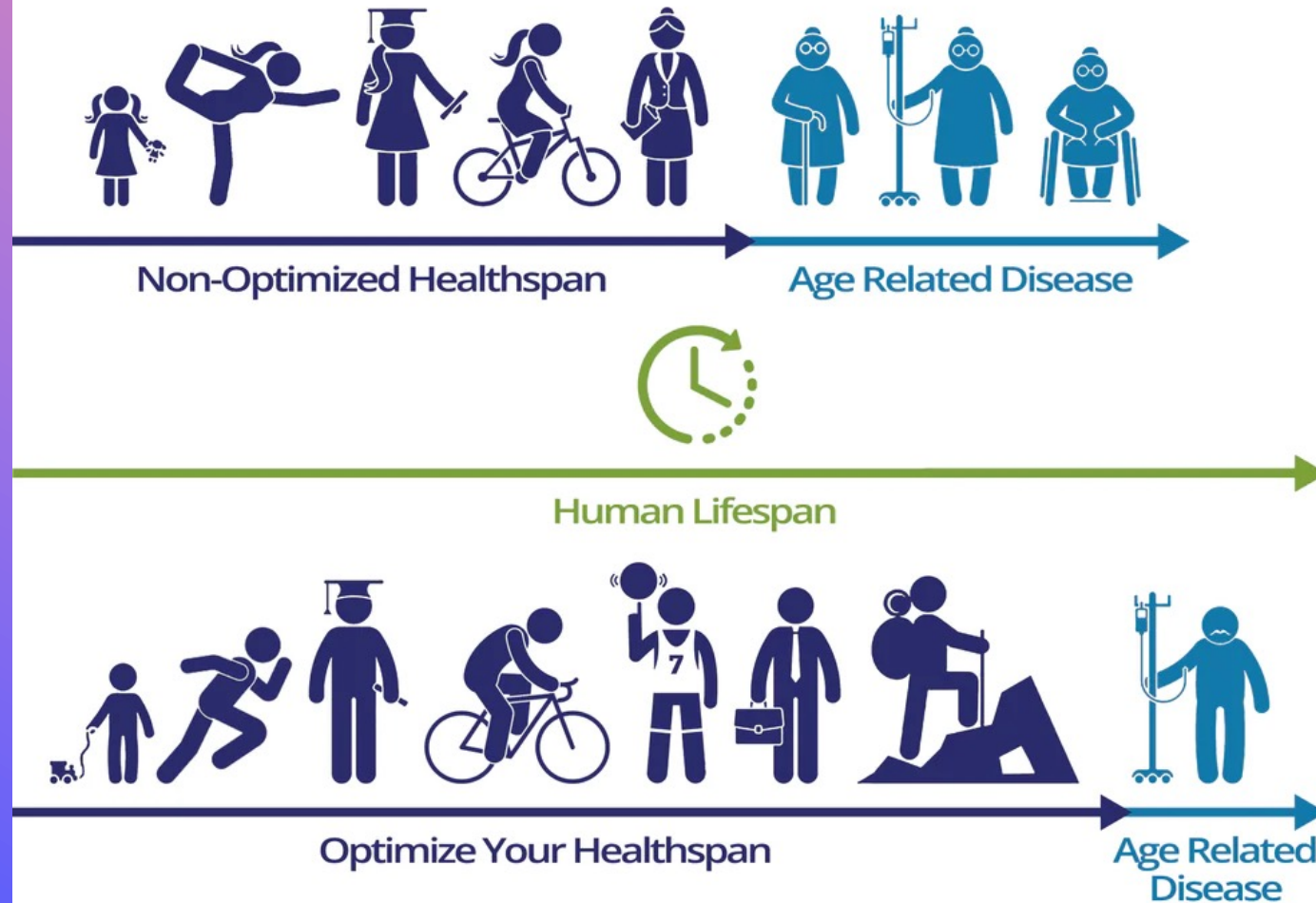
Once I...

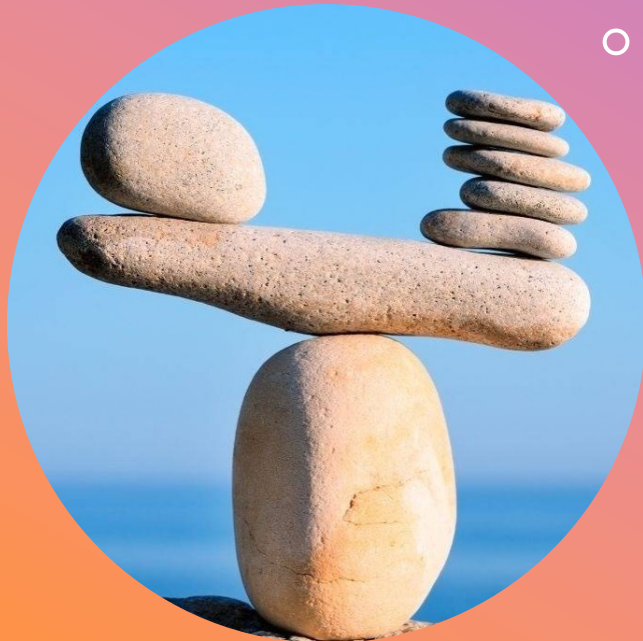


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- **Genetic Factors**

# Lifespan VS Healthspan





# THANK YOU

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