



# Psychology of Mental Health and Well-being

## Work/Study-Life Balance

### Stress Management & Coping

## Lesson 2

Department of Psychology and Psychosomatics  
Faculty of Medicine, Masaryk University

Autumn semester 2020



Pavel Humpolíček, Ph.D.

PhDr. **Pavel Humpolíček**, Ph.D.

**Masaryk University, Faculty of Medicine**  
**Department of Psychology and Psychosomatics**  
Brno, Czech Republic

[upp.med.muni.cz](http://upp.med.muni.cz)

**Private practice** (counselling, therapy, assessment, coaching)

[www.p-s-y-c-h-o-l-o-g.cz](http://www.p-s-y-c-h-o-l-o-g.cz)



# Dealing with Stress

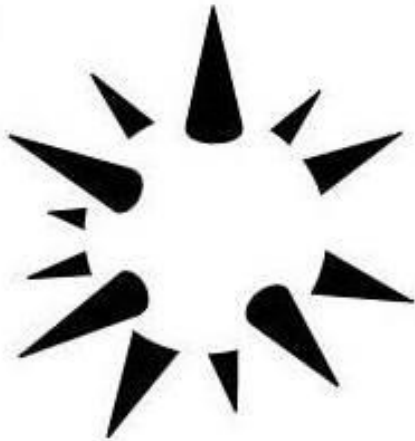
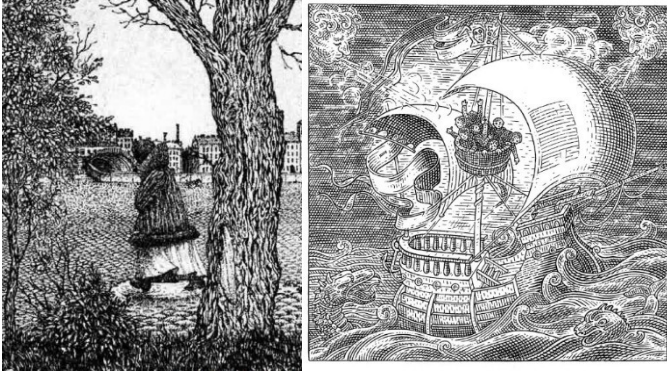
## Coping

### Well-Being

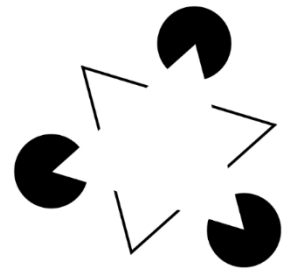
Work-Life Balance  
Study-Life Balance

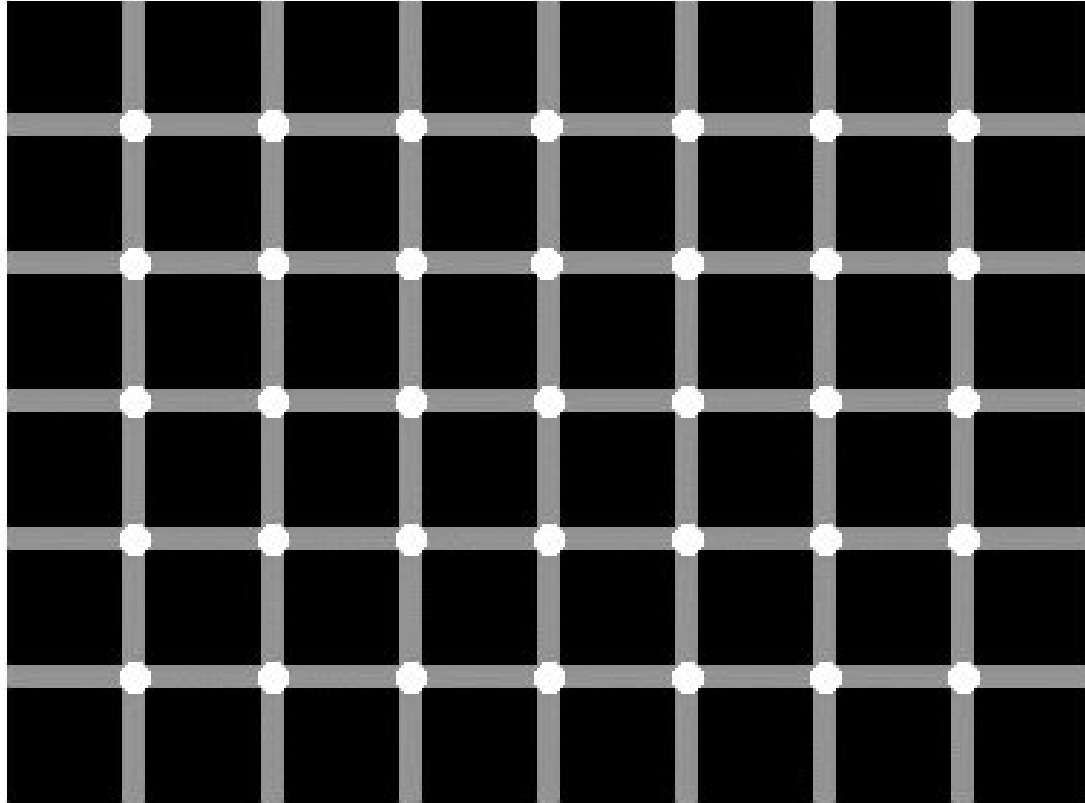
# Self-regulation & Mind control

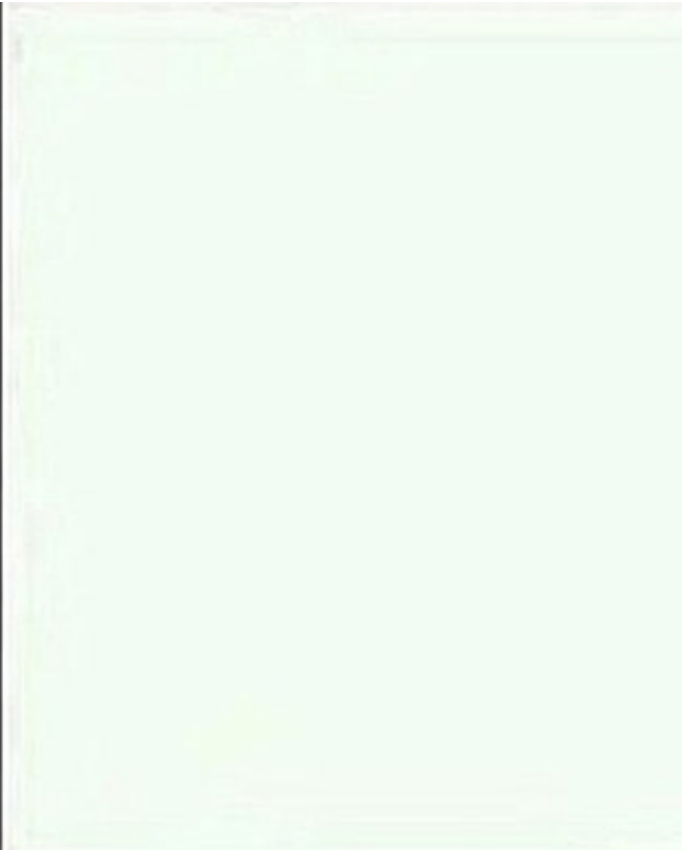
Do you believe (in) your senses?



[www.scientificpsychic.com/graphics/](http://www.scientificpsychic.com/graphics/)








1- Look at the yellow point for 10seconds.

2- Look Here

Then

A photograph of a man's face with a red dot on his nose, next to a solid light blue rectangular area.

# Audio illusions





# The brain is playing a game, let's play together

## Brain Tricking

**Blind spot**

**Through the palm**

**Hand – Leg / Eye-Tongue**

Left-Right, Up-Down

**Subtraction on One Leg** (deduct 7 from 1000)



# More of Energy?

**Just EFFECTIVITY!**



# Fight or Flight

In the 1915, **Walter Cannon** recognized that the autonomic nervous system is activated in response to stress and suggested that stress mobilizes the body's responses in readiness for either attacking (**fight**) or flying (**flight**) an enemy or threatening situation.

Although such responses may have promoted survival when they evolved in human history, they are not productive given the longer periods of stress exposure common in modern life. Such enterprises as keeping a job, going to school, and playing on the soccer team require more complex responses.

# Fight or Flight

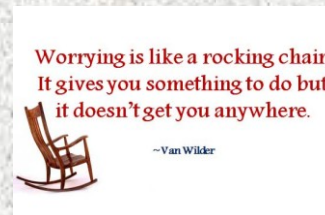
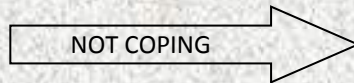
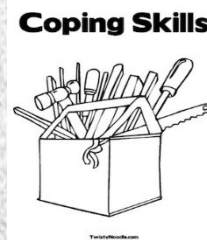
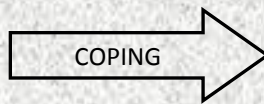
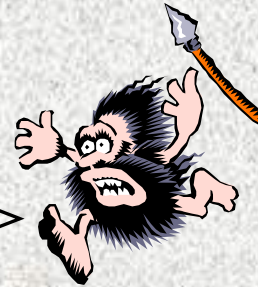
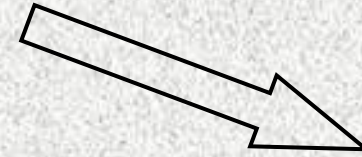
- Walter B. Cannon (1915)
- Four stages:
  - Stage one: Stimulus
  - Stage two: Threat determination
  - Stage three: Arousal
  - Stage four: Return to homeostasis

# Effects of stress

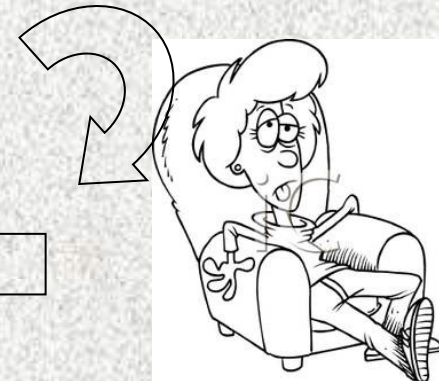
## STRESSORS



**POOR DIET**  
**NO EXERCISE**  
**NEGATIVE THOUGHTS**  
 ...

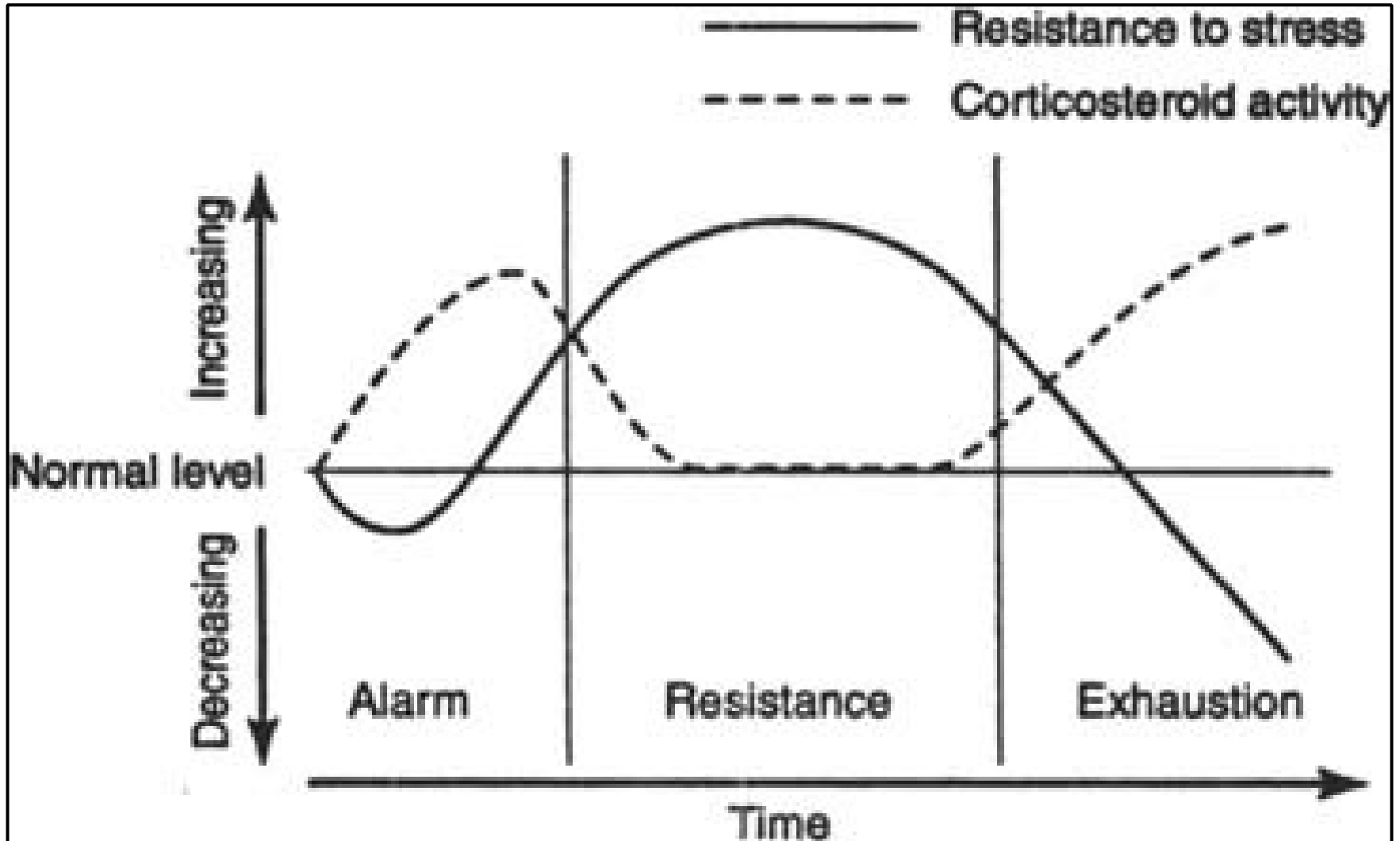


**RELAXATION**  
 Active / Passive



# GAS

The general adaptation syndrome. Hans Selye

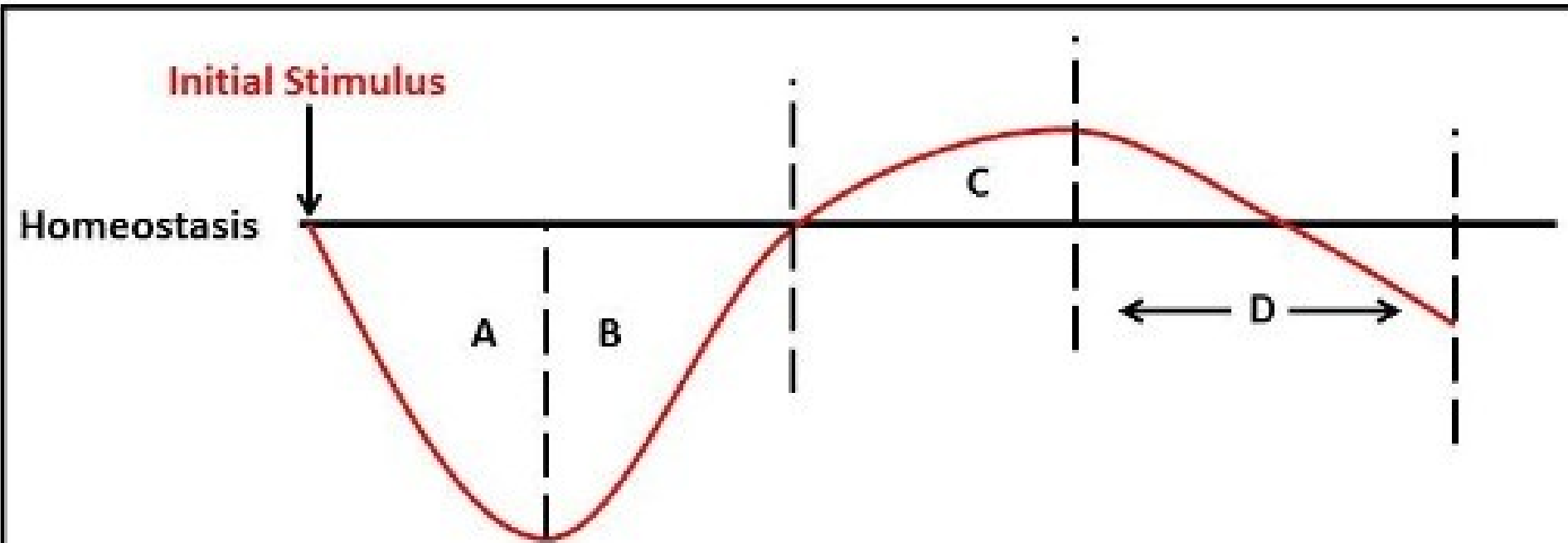


# GAS

**Alarm:** The body first organizes physiological responses (similar to fight/flight resp.) to threat.

**Resistance:** Stress-activated responses continue, stabilizing the body's adaptations to stress.

**Exhaustion:** The body has depleted its reserves and can no longer maintain responses to the stressors.



## Legend:

A = Alarm Phase

B = Resistance Phase

C = Supercompensation Phase

D = Exhaustion or Detraining Phase

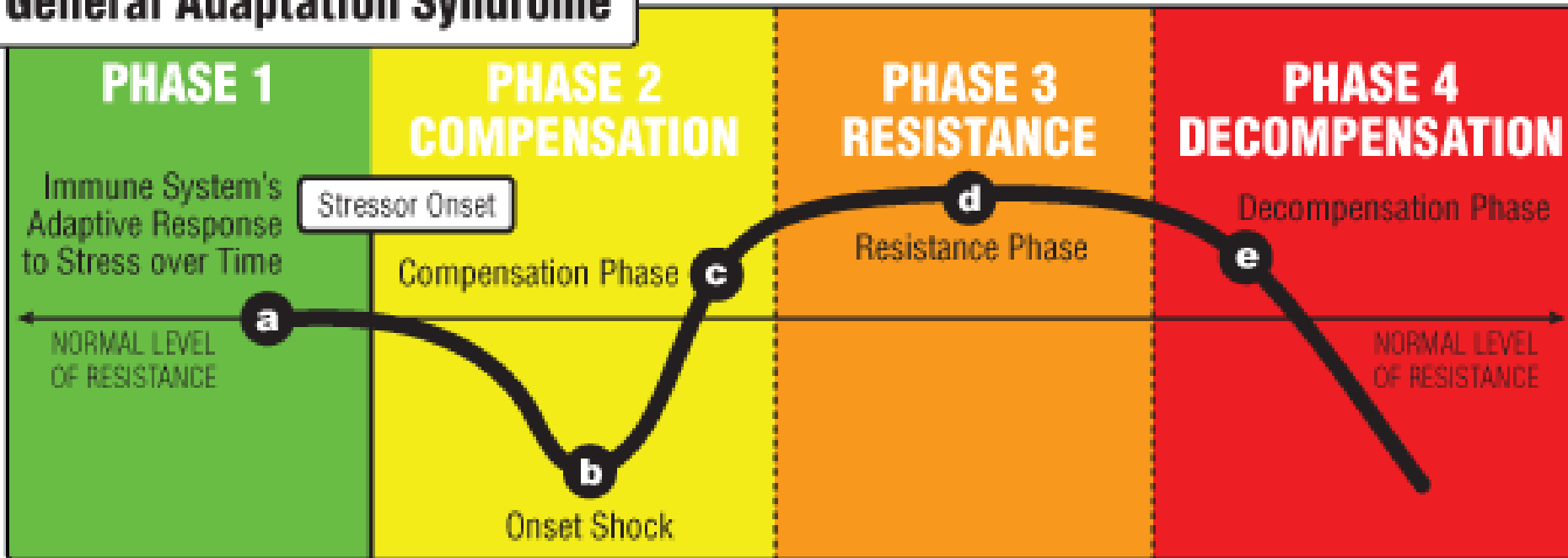
# GAS

**Alarm:** The body first organizes physiological responses (similar to fight/flight resp.) to threat.

**Resistance:** Stress-activated responses continue, stabilizing the body's adaptations to stress.

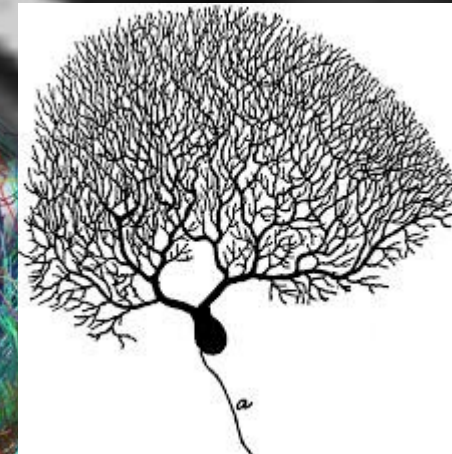
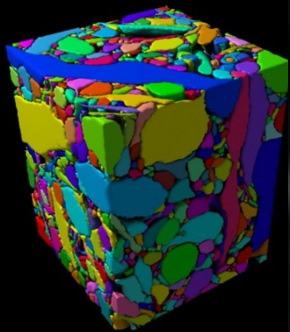
**Exhaustion:** The body has depleted its reserves and can no longer maintain responses to the stressors.

## General Adaptation Syndrome



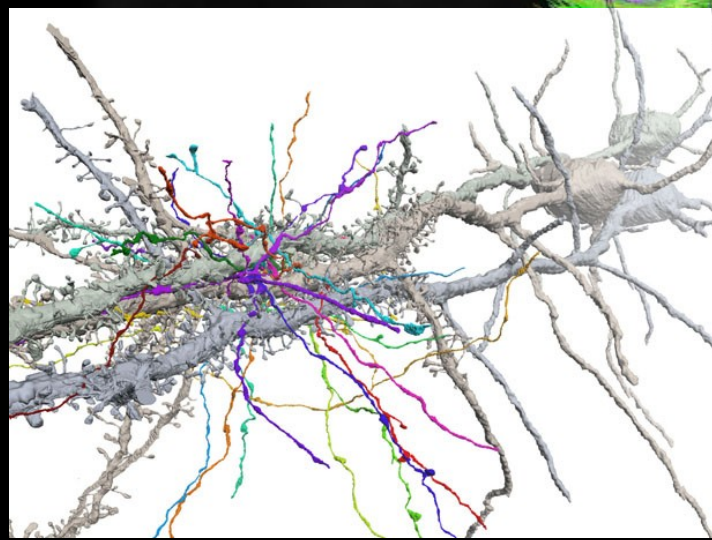
and other opiate drugs used in the modulation of pain.



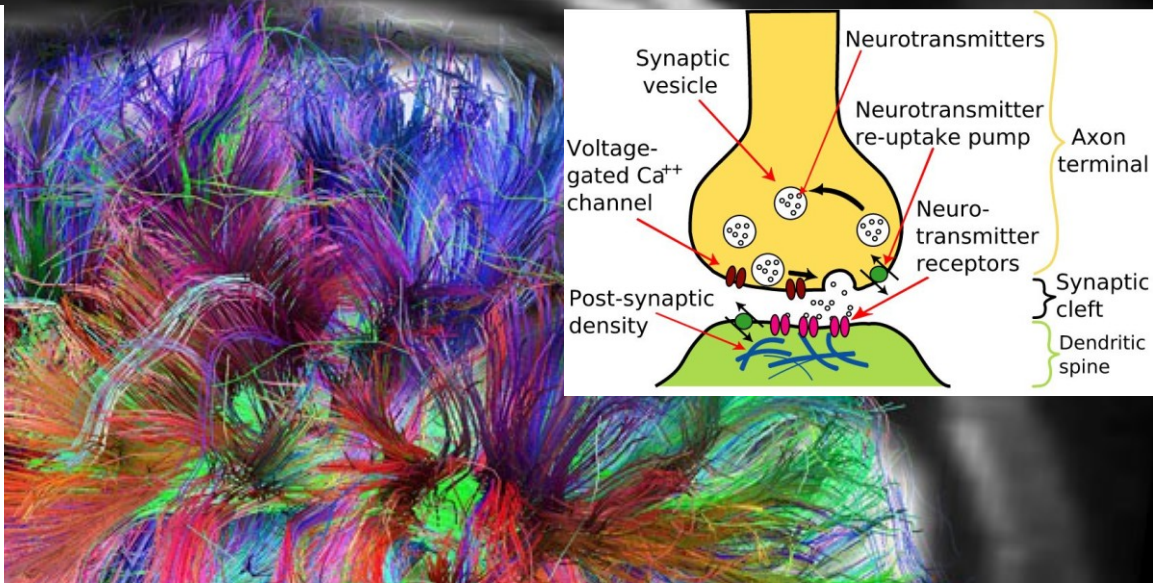
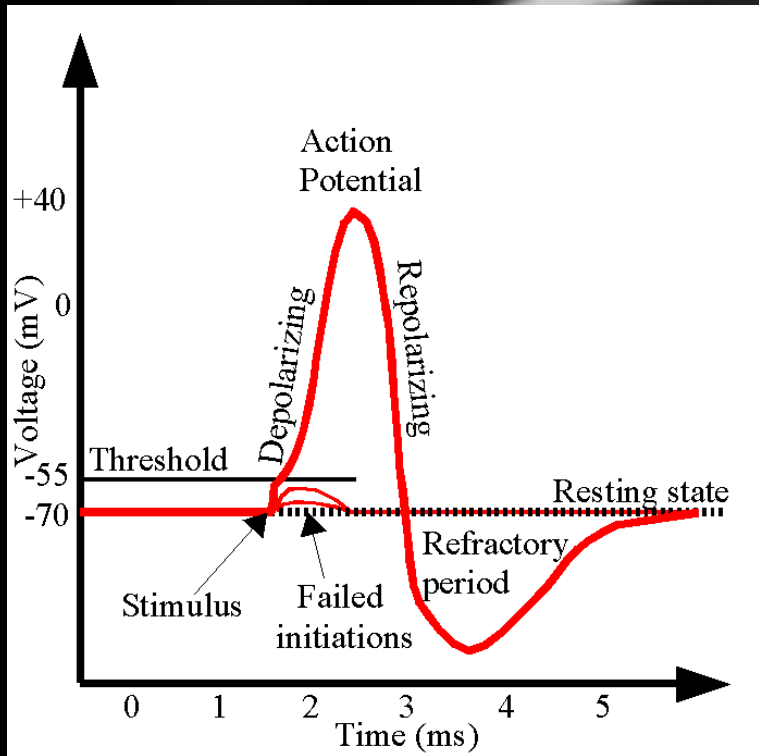


COMPLEX & COMPLICATED

CONNECTOME



P©H



**COMPLEX & „SPEEDY“**

**CONNECTOME**



**2 meters**

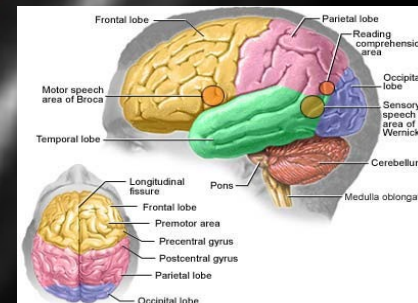
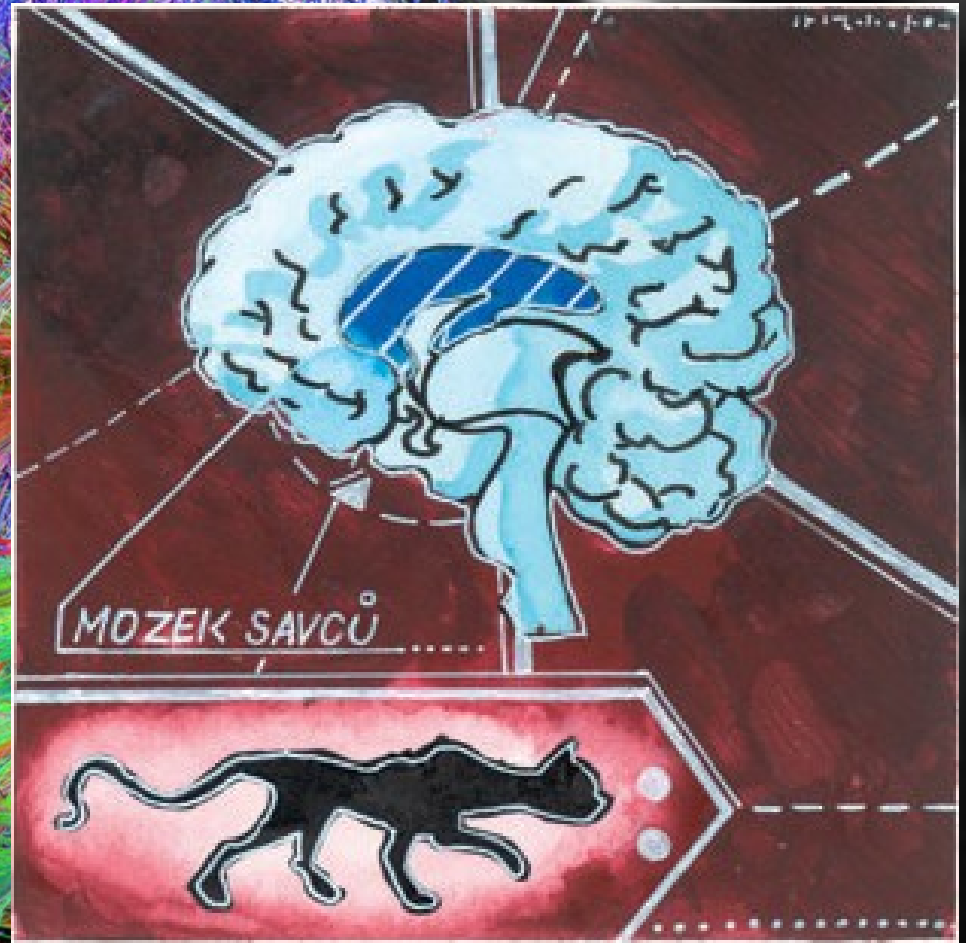
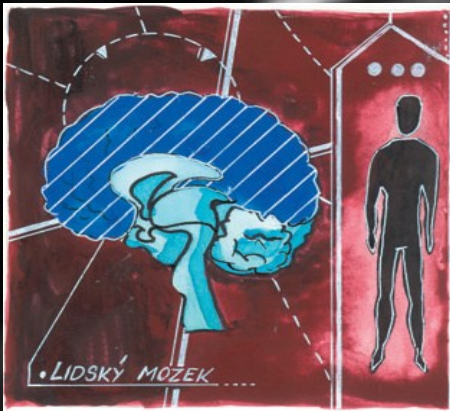
**myelinated axon  
speed up to 120 m/s**

432 kph



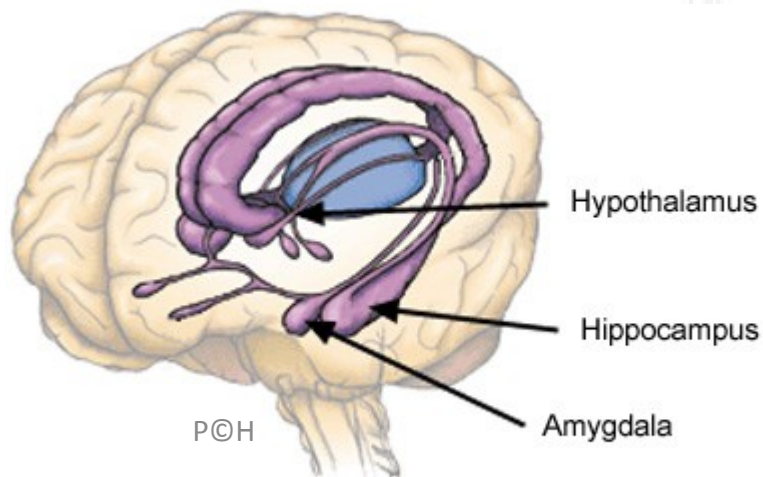
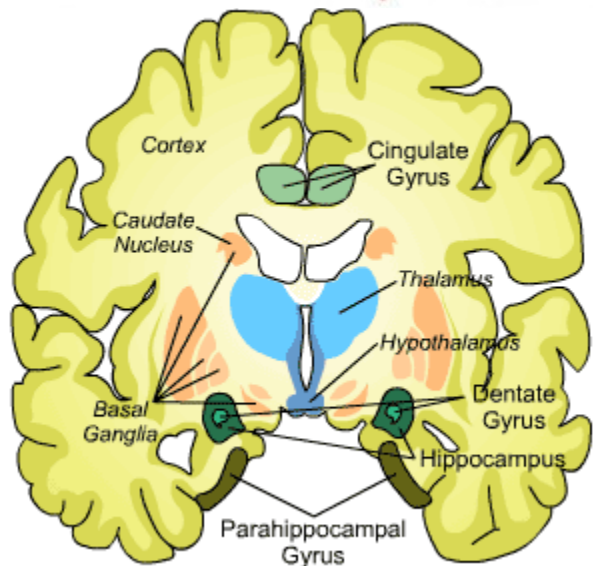
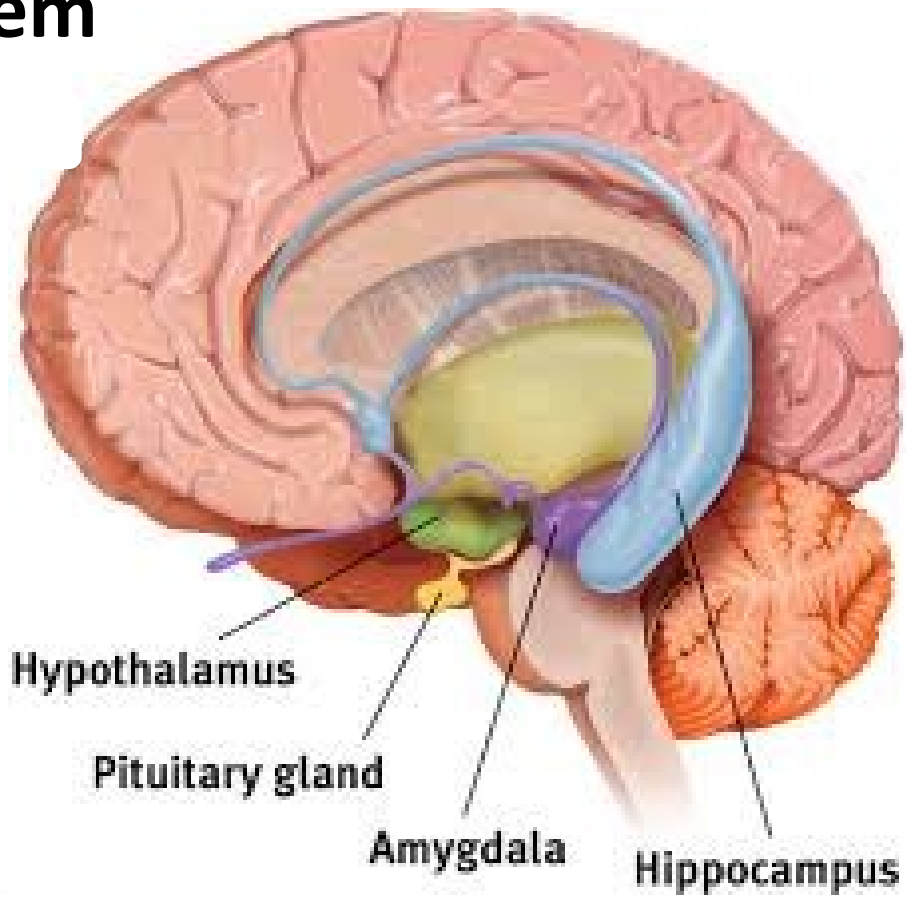
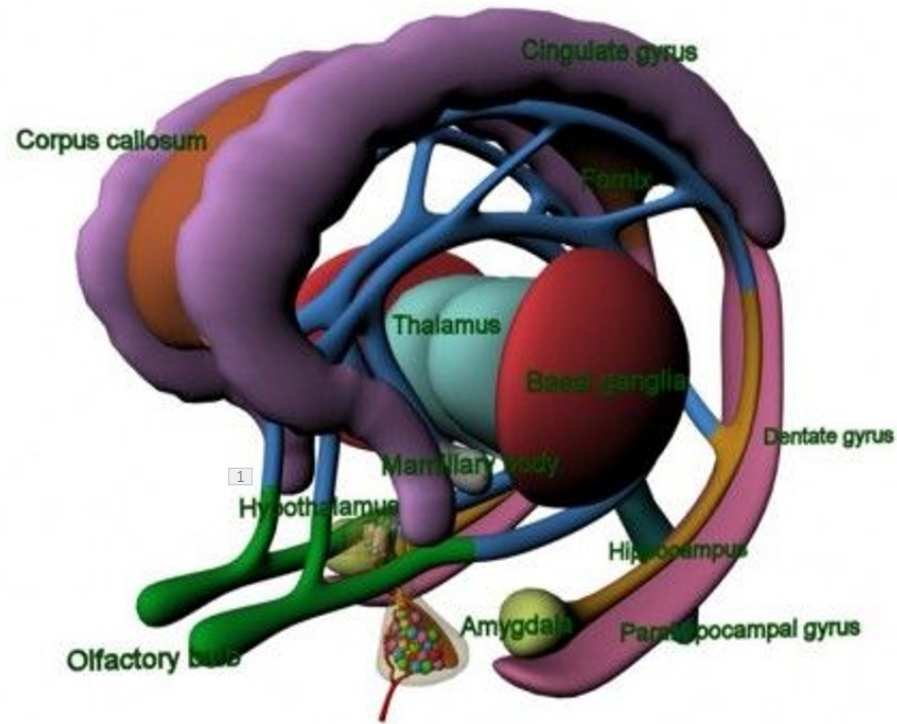
**non-myelinated axon  
speed up to 2 m/s**

7,2 kph



# Triune theory - Paul McLean

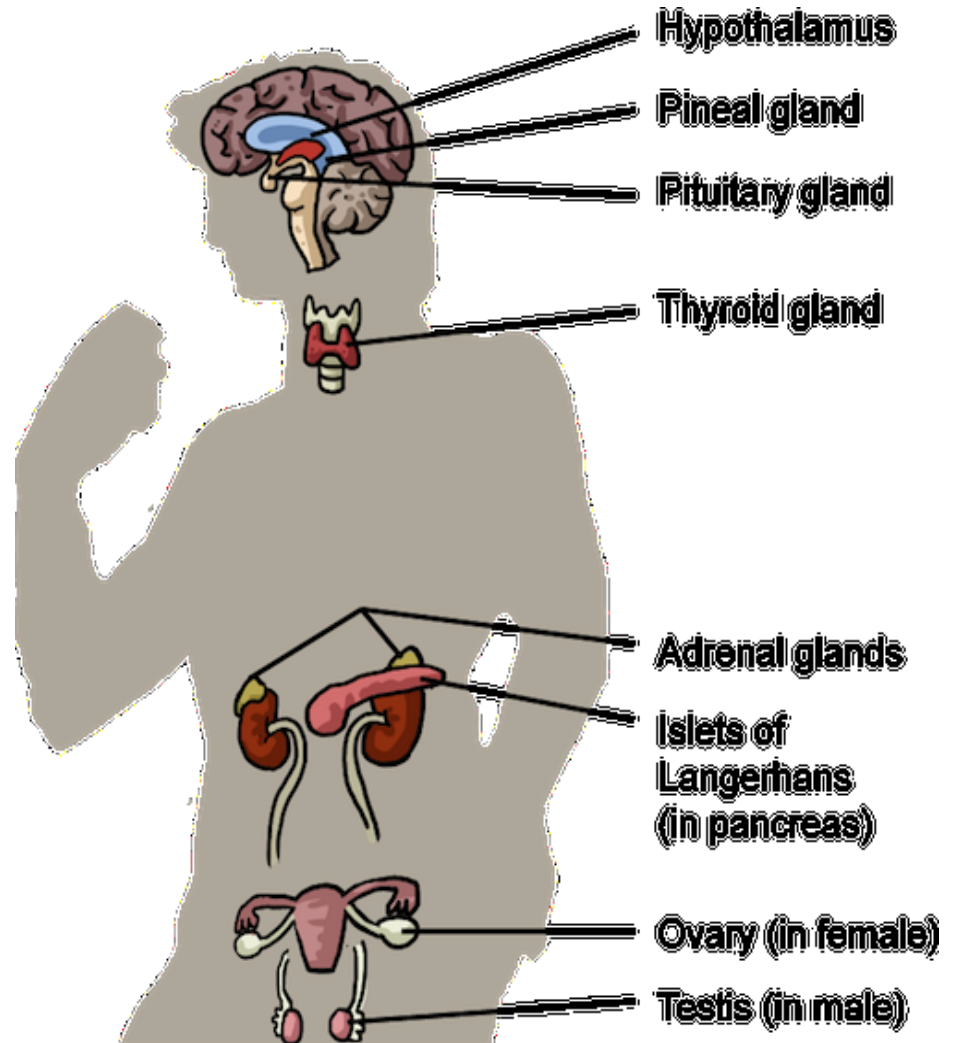
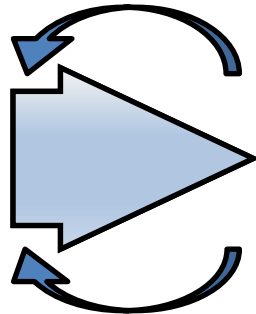
# Limbic system



# Autonomic Nervous System & Endocrine System

Two systems working together during immediate stress:

- Sympathetic
  - (responsible for expending energy)
- Parasympathetic
  - (responsible for conserving energy)





**Don't worry about stress ...**

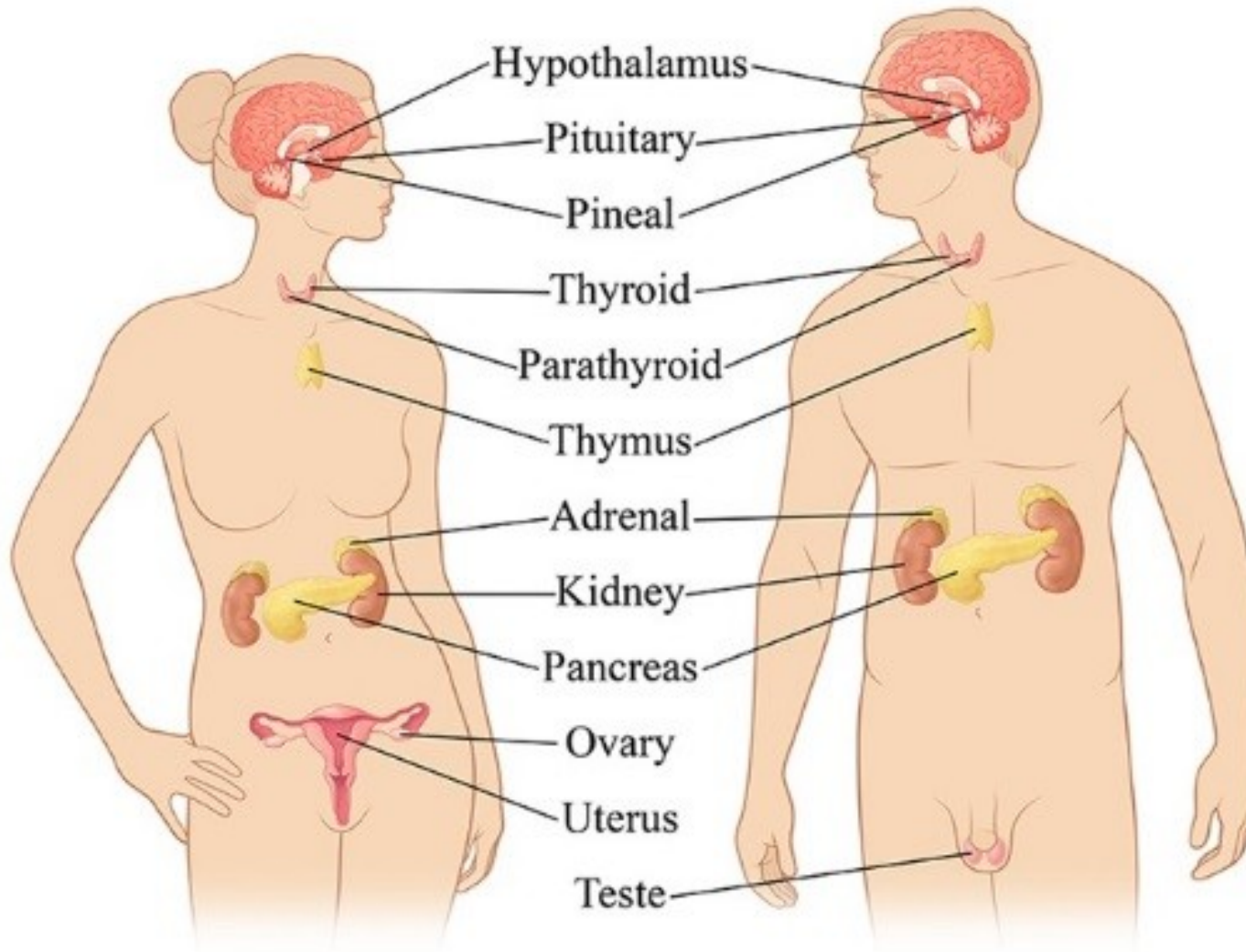
**... we're able to influence  
the duration & intensity!**

**... we're able to deal with it ...**

**... it would help us!**

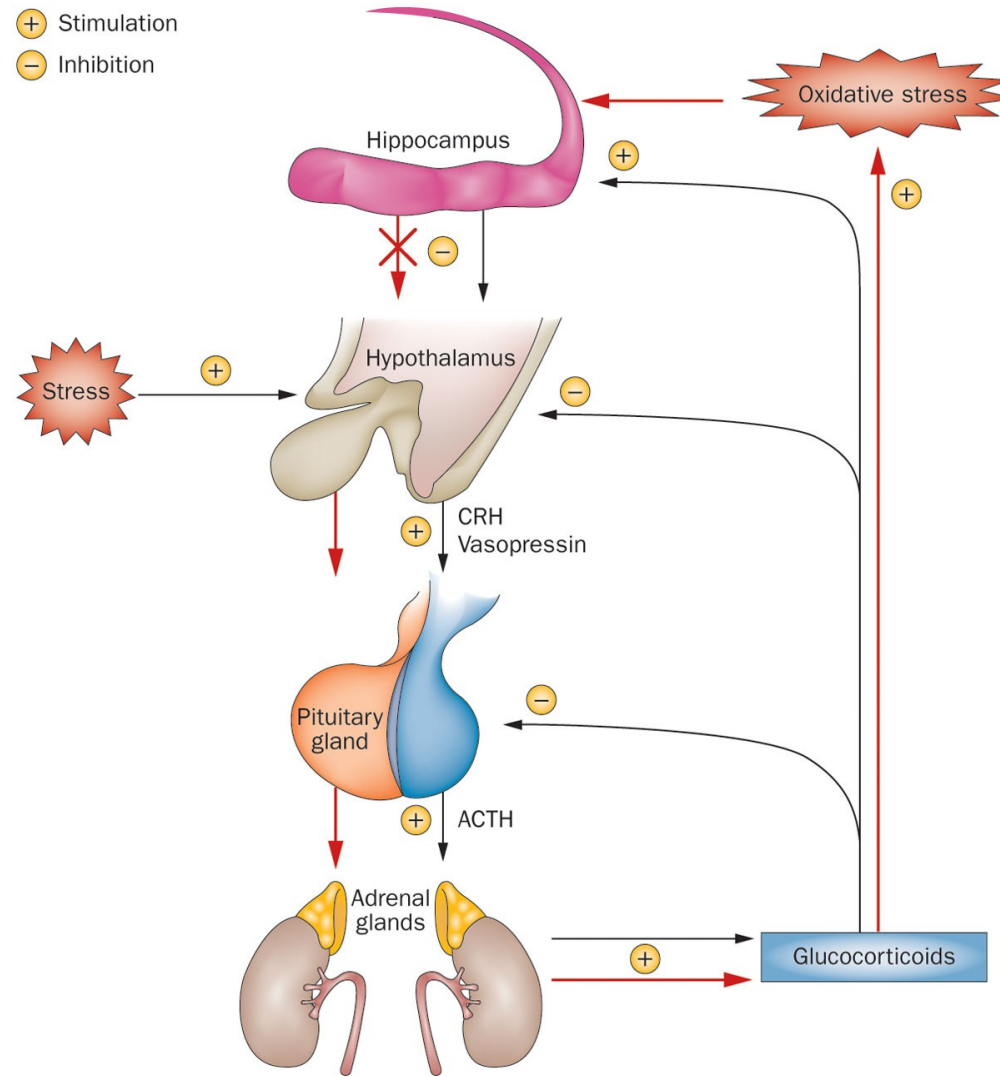


# Endocrine System



<http://www.hormone.org/hormones-and-health/the-endocrine-system>

# Schematic diagram showing the potential role of oxidative stress in the progressive dysfunction of the hypothalamic–pituitary–adrenal (HPA) axis observed with ageing





# Autonomic Nervous System

- Stressor → Adrenal glands secrete adrenaline
- Sympathetic vs. Parasympathetic
- Sympathetic Physiological response
  - Heart rate increases; Muscles tense; Blood pressure rises; Pupils dilate; Breathing increases; Perspiration ...

## Endocrine System

Stressor → Hypothalamus → CRF released → Pituitary gland → ACTH → Bloodstream → Adrenal glands → Produce adrenaline and glucocorticoids → Physiological response

# The “Response” Flow Chart

- Life
- A Perceived threat
- Hippocampus (Alarm)
  - Alarm, you will have an emotion
- Limbic System (Seat of Emotions)
  - Emotional response will lead to a physical one
- Reticular Activating System
  - Connection between mind/body
- Hypothalamus (Supervisor)
  - Turns on Endocrine and Autonomic systems

# The “Response” Flow Chart (cont.)

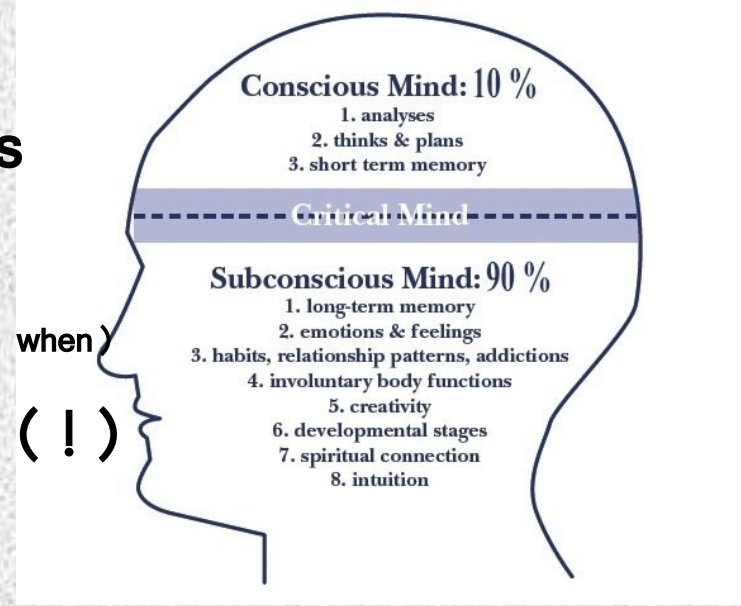
- Endocrine System (Hormones)
  - Vasopressin-helps move blood through by increasing water in the blood
  - Cortisol-increases blood glucose for battle. Also suppressed T-Cells, more likely to become ill.
- Autonomic Nervous System
  - Sympathetic System- “ON” switch, increases energy level
  - Parasympathetic System- “OFF” switch, decreases energy level

# Endocrine System

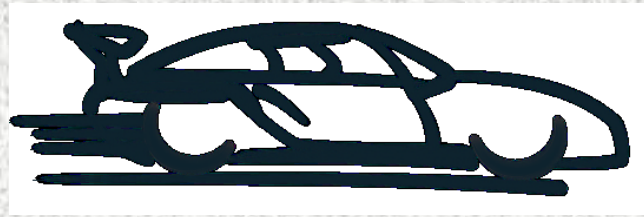
- **Vasopressin** (pituitary gland)
  - Increases blood permeability to water
  - Increases blood volume
  - Increases blood pressure
- **Cortisol**- primary glucocorticoid (adrenal gland)
  - Increases blood sugar/ gluconeogenesis (mobilizes free fatty acids)
  - Decreases T-lymphocyte production
- **Thyroxin**(hypothalamus)
  - Accelerates heart rate
  - Increases gastrointestinal motility
  - Increases anxiety
  - Increases blood pressure

**STRESS** is healthy or dangerous ...

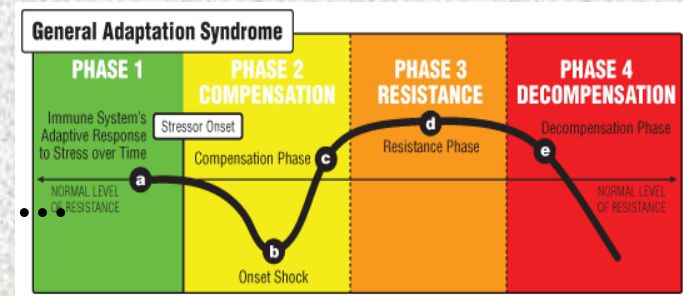
... out of control (not only when)  
it's unconscious (!)



is fast ...



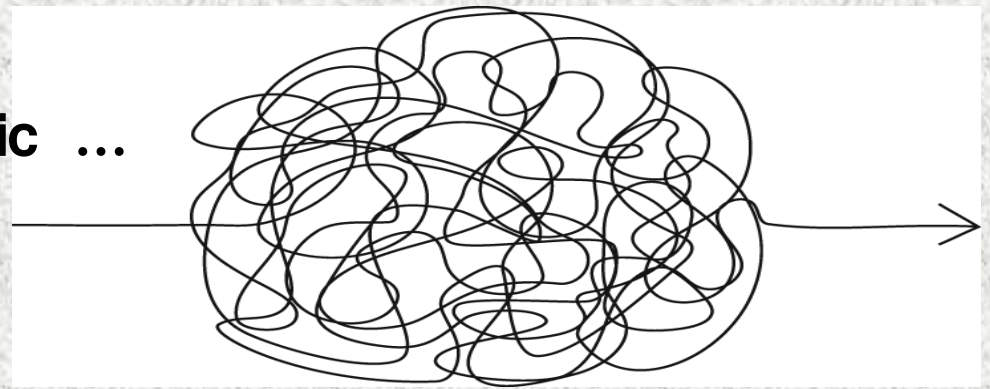
but sometimes has a long stamina



is wasteful ...



& chaotic ...





# Focus on Principles

If you do something,

**FOCUS**  
**&**  
**DO IT FOR 100%!**





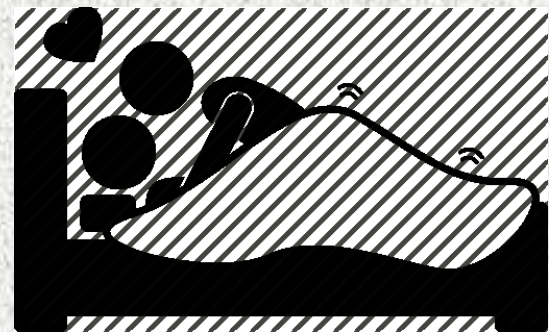
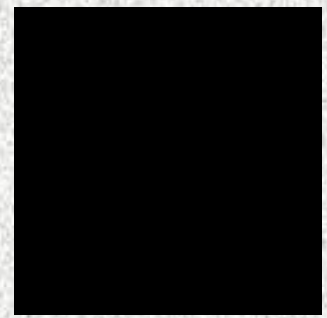
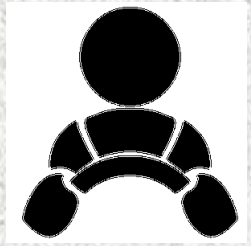
FOCUS & DO IT FOR 100%!

# FOCUS vs. DISTRACTORS





# FOCUS & DO IT FOR 100%!











# Dealing with stress

basic information, sources, links

short version



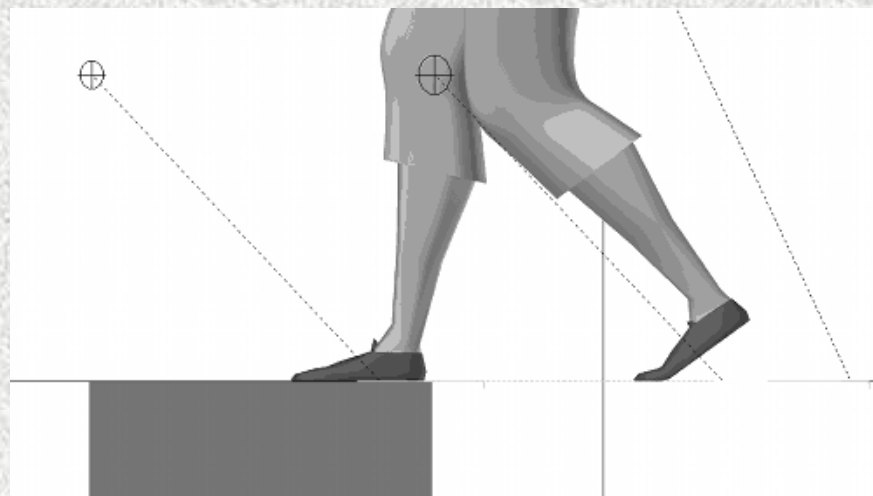
What kinds of everyday activities  
are the most important **to feel fine**  
and stay **healthy**?

What kinds of everyday activities  
are **necessary to stay alive**?



Just a few „things“

in good order, regularity, regime







HOMEOSTASIS  
&  
PREVENTION



individual daily need  
best is water  
(non carbonated, non sparkling)  
mostly between  
2 & 3,5 liters per a day

Verification:

pure/clear/transparent **colour of urine**  
**in the afternoon (2-5 p.m.)**



# The eatwell plate

Use the eatwell plate to help you get the balance right. It shows how much of what you eat should come from each food group.



Department of Health in association with the Welsh Assembly Government, the Scottish Government and the Food Standards Agency in Northern Ireland

# HOMEOSTASIS & PREVENTION

## The eatwell plate

Use the eatwell plate to help you get the balance right. It shows how much of what you eat should come from each food group.



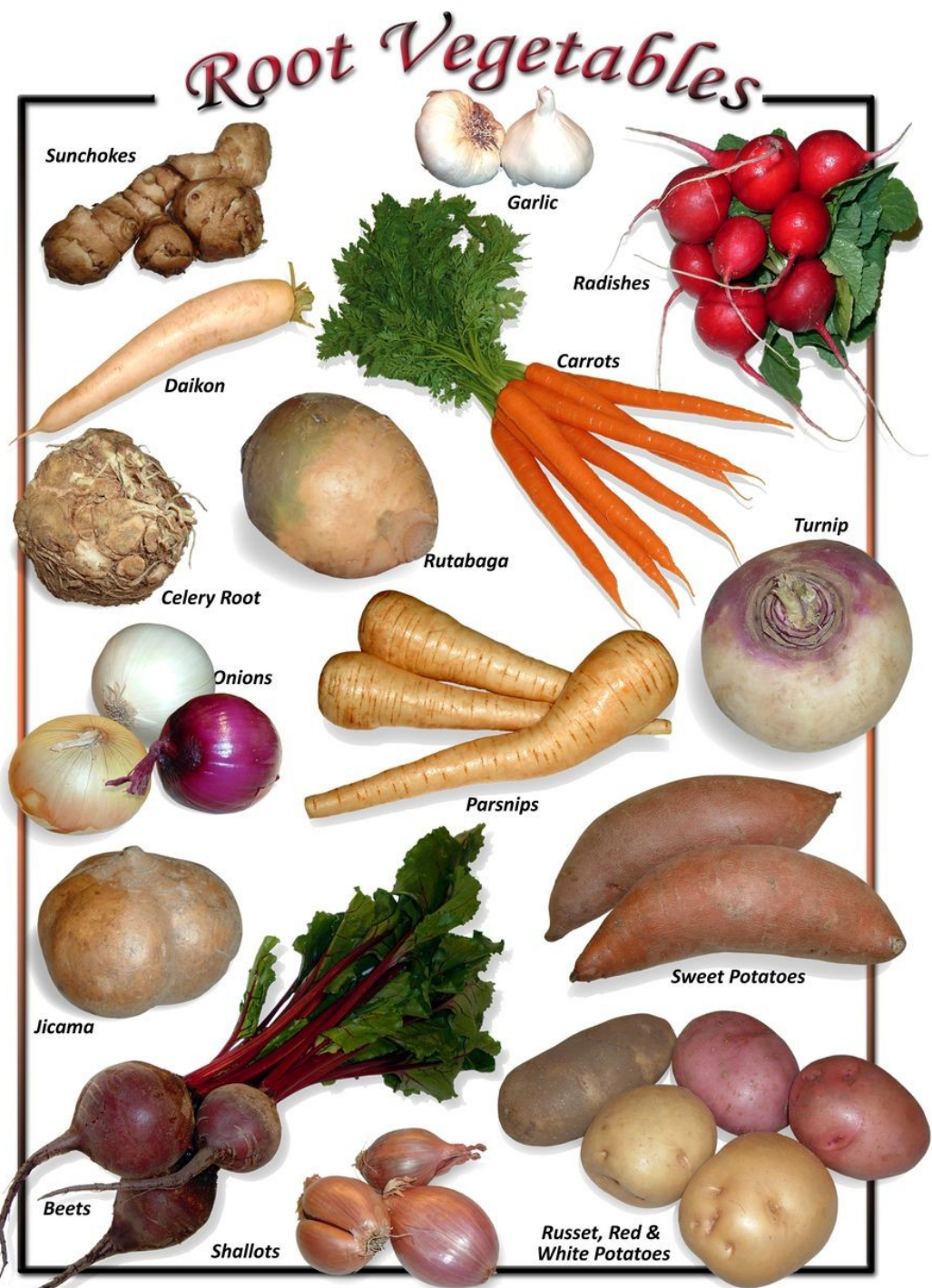
**A varied diet with plenty of nutrients:**  
carbohydrates, proteins, fats;  
**vitamins, minerals and enzymes;**  
roughage/fiber

# ČERSTVÉ POTRAVINY FRESH FOOD

bílý jogurt / greek style natural yoghurt,



naklíčené potraviny / sprout seeds, grains





# MICROBIOME

Rob Knight:

**How our microbes make us who we are**

[www.ted.com/talks/rob\\_knight\\_how\\_our\\_microbes\\_make\\_us\\_who\\_we\\_are](http://www.ted.com/talks/rob_knight_how_our_microbes_make_us_who_we_are)

**TED** Ideas worth spreading







[amandapair.com](http://amandapair.com)

individual daily need

mostly **7,5 +/- 1,5** hours per a day

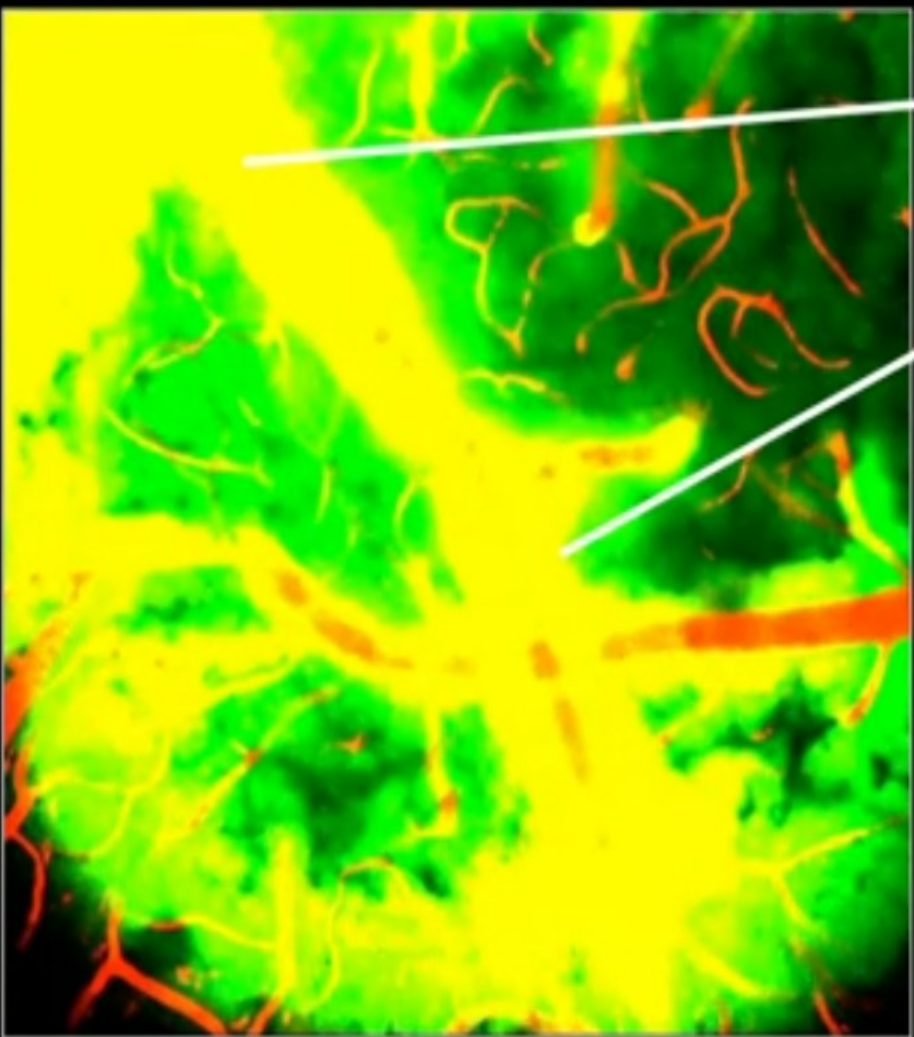


Verification:

**re/fresh/ed feeling  
soon after awakening**  
(best more than 3-5 hours)







Blood Vessels

Cerebrospinal Fluid (CSF)

... and inside the brain



Imaging at the brain surface

<http://psychologon.cz/component/content/article/20-psychologon-recherche/425-jeff-iliff-o-duvod-vic-proc-se-dobre-vyspat>

[http://www.ted.com/talks/jeff\\_iliff\\_one\\_more\\_reason\\_to\\_get\\_a\\_good\\_night\\_s\\_sleep](http://www.ted.com/talks/jeff_iliff_one_more_reason_to_get_a_good_night_s_sleep)

Sidelights:

# Circadian rhythm

- Circadian rhythms are **physical, mental and behavioral changes that follow a roughly 24-hour cycle**, responding primarily to light and darkness in an organism's environment. They are found in most living things, including animals, plants and many tiny microbes. The study of circadian rhythms is called chronobiology.



The classic phase **markers** for measuring the timing of a mammal's circadian rhythm are:

- melatonin secretion by the pineal gland
- core body temperature minimum, and
- plasma level of cortisol



WIKIPEDIA  
The Free Encyclopedia

# Circadian rhythm - Morning-Evening Types

Morningness and Eveningness („lark“ and „owl“) describe a person's individual circadian profile.

- Morning people usually prefer to rise between 5 a.m. and 7 a.m., and retire between 9 p.m. and 11 p.m.
- Evening people tend to prefer both a later wake up (9 a.m. to 11 a.m.) and a later bed time (11 p.m. to 3 a.m.).
- Morning people also tend to be more rigid in their circadian rhythms.
- Evening people find adjustment to new schedules somewhat easier.
- Most people fall somewhere between these two types.



# Circadian rhythm vs. Technology

## Set your display for night time in Windows 10

Your display emits blue light—the kind of light you see during the day—which can keep you up at night. To help you get to sleep, turn on the night light and your display will show warmer colors at night that are easier on your eyes. The night light isn't available if your device uses certain drivers (DisplayLink or Basic Display), or if it uses HDR. To schedule night light so it turns on automatically:

1. Select **Start** > **Settings** > **System** > **Display** > **Night light settings**. If your night light toggle above the link is grayed out, you may need to update your display driver. See [Update drivers in Windows 10](#).
2. Under **Schedule**, toggle **Schedule night light** to **On**. Then, either select **Sunset to sunrise**, or select **Set hours** and enter custom times for the night light to turn on and off.

### Night light settings

Screens emit blue light, which can keep you up at night. Night light displays warmer colors to help you sleep.

Off until sunset (5:55 PM)

Turn on now

Color temperature at night



### Schedule

Schedule night light

On

Sunset to sunrise (5:55 PM — 6:47 AM)

Set hours

### Night light settings

Screens emit blue light, which can keep you up at night. Night light displays warmer colors to help you sleep.

On until sunrise (6:47 AM)

Turn off now

Color temperature at night



### Schedule

Schedule night light

On

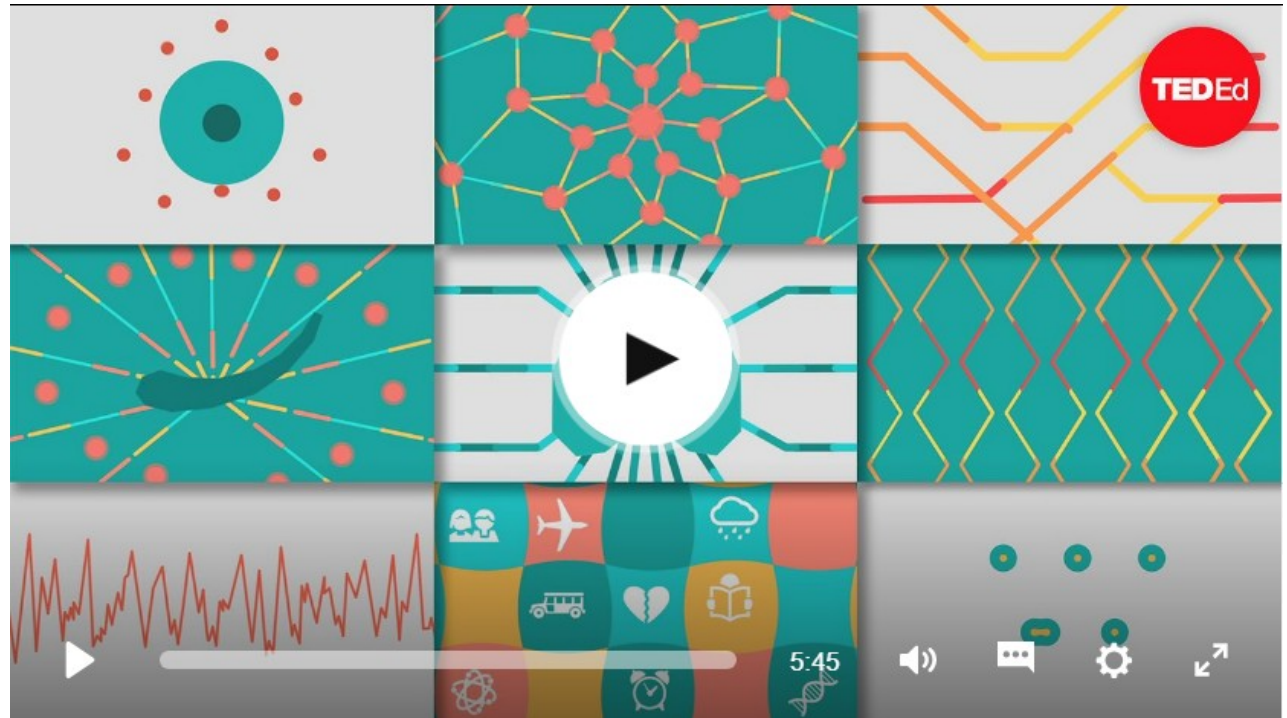
Sunset to sunrise (5:55 PM — 6:47 AM)

Set hours

Open Night light settings

Shai Marcu

TED-Ed: The benefits of a good night's sleep



**TED** Ideas worth spreading

[https://www.ted.com/talks/shai\\_marcu\\_the\\_benefits\\_of\\_a\\_good\\_night\\_s\\_sleep](https://www.ted.com/talks/shai_marcu_the_benefits_of_a_good_night_s_sleep)

# Video inspiration



**Mathias Basner**

**Why noise is bad for your health — and what you can do about it**

[https://www.ted.com/talks/mathias\\_basner\\_why\\_noise\\_is\\_bad\\_for\\_your\\_health\\_and\\_what\\_you\\_can\\_do\\_about\\_it](https://www.ted.com/talks/mathias_basner_why_noise_is_bad_for_your_health_and_what_you_can_do_about_it)

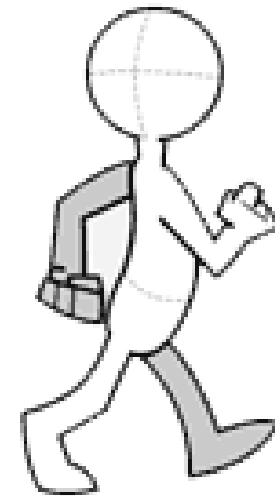




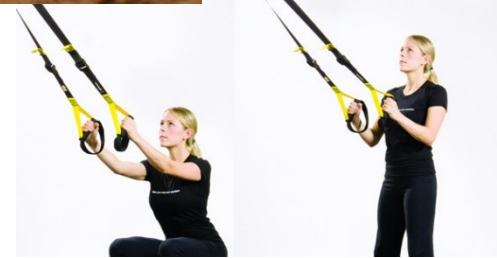
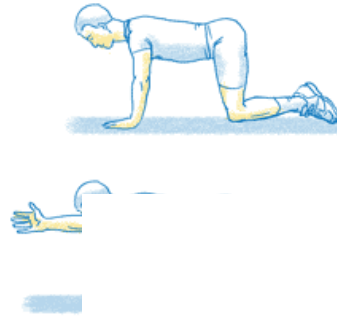
to „move“, exercise, walk  
at least twice per a week (between 25 & 45 minutes)  
in „stayer“ way (long durance in low intensity)

Verification, body reaction:  
(best more than 25 minutes)

**miled sweating**  
**increased heart rate**  
**inability to speak fluently**



**HOMEOSTASIS  
&  
PREVENTION**



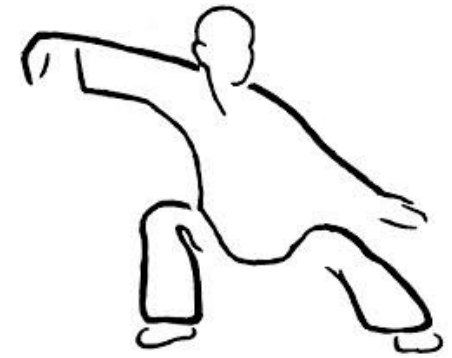
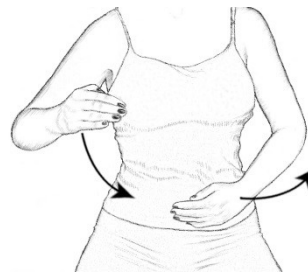
**BALANCE  
&  
ISOMETRIC EXERCISE**

# Relaxation/Concentration/Movements

## 5 Tibetians



## Yoga / Cchi-kung / Tai-chi



# Video inspiration



**Wendy Suzuki**

## **The brain-changing benefits of exercise**

[https://www.ted.com/talks/wendy\\_suzuki\\_the\\_brain\\_changing\\_benefits\\_of\\_exercise](https://www.ted.com/talks/wendy_suzuki_the_brain_changing_benefits_of_exercise)





Have you ever heard about  
**HOMEOSTASIS?**

And what about  
**ALLOSTASIS?**

# Chronic Stress Response

