

METABOLIC DISORDERS and detoxification

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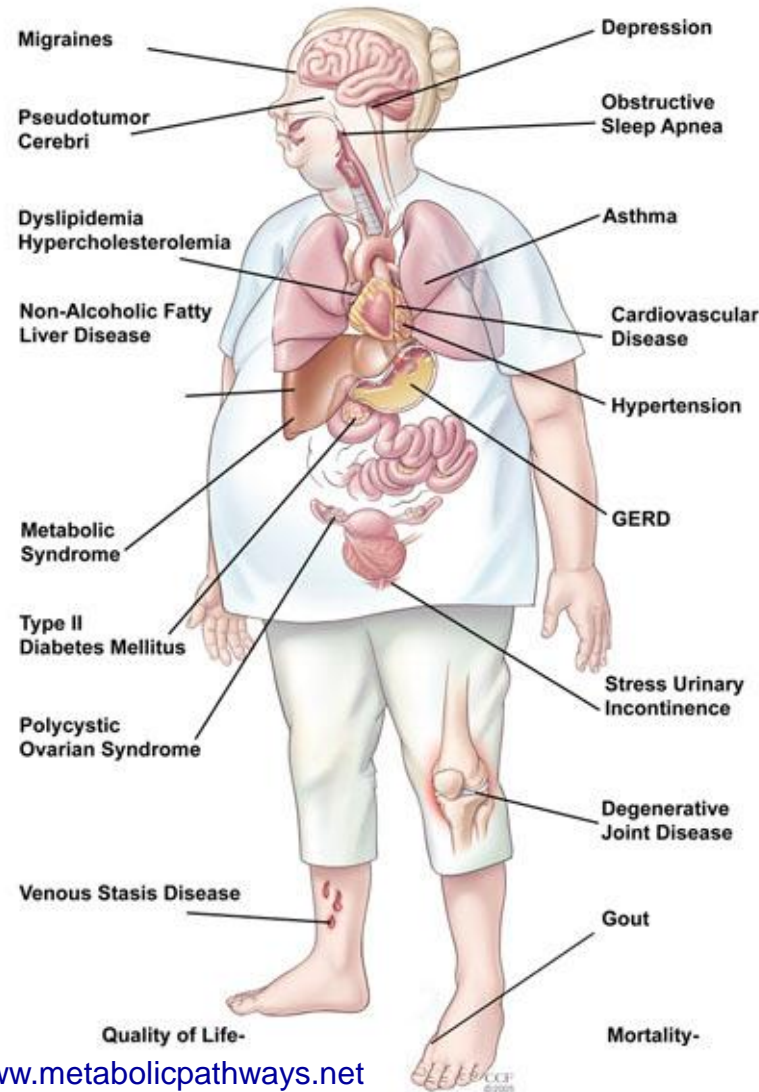


METABOLIC DISORDERS

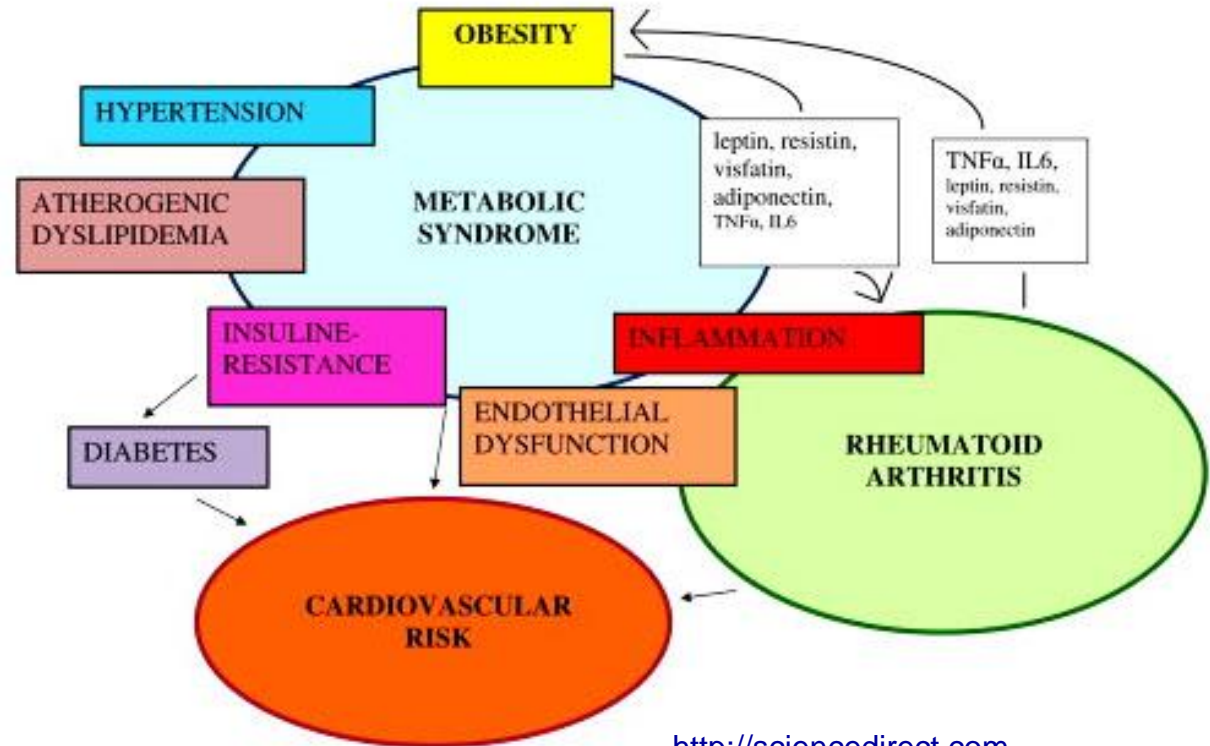
A THREAT FOR THIS CIVILISATION



Health disorders caused by accumulated **metabolites** which act like **toxins** in the human body:

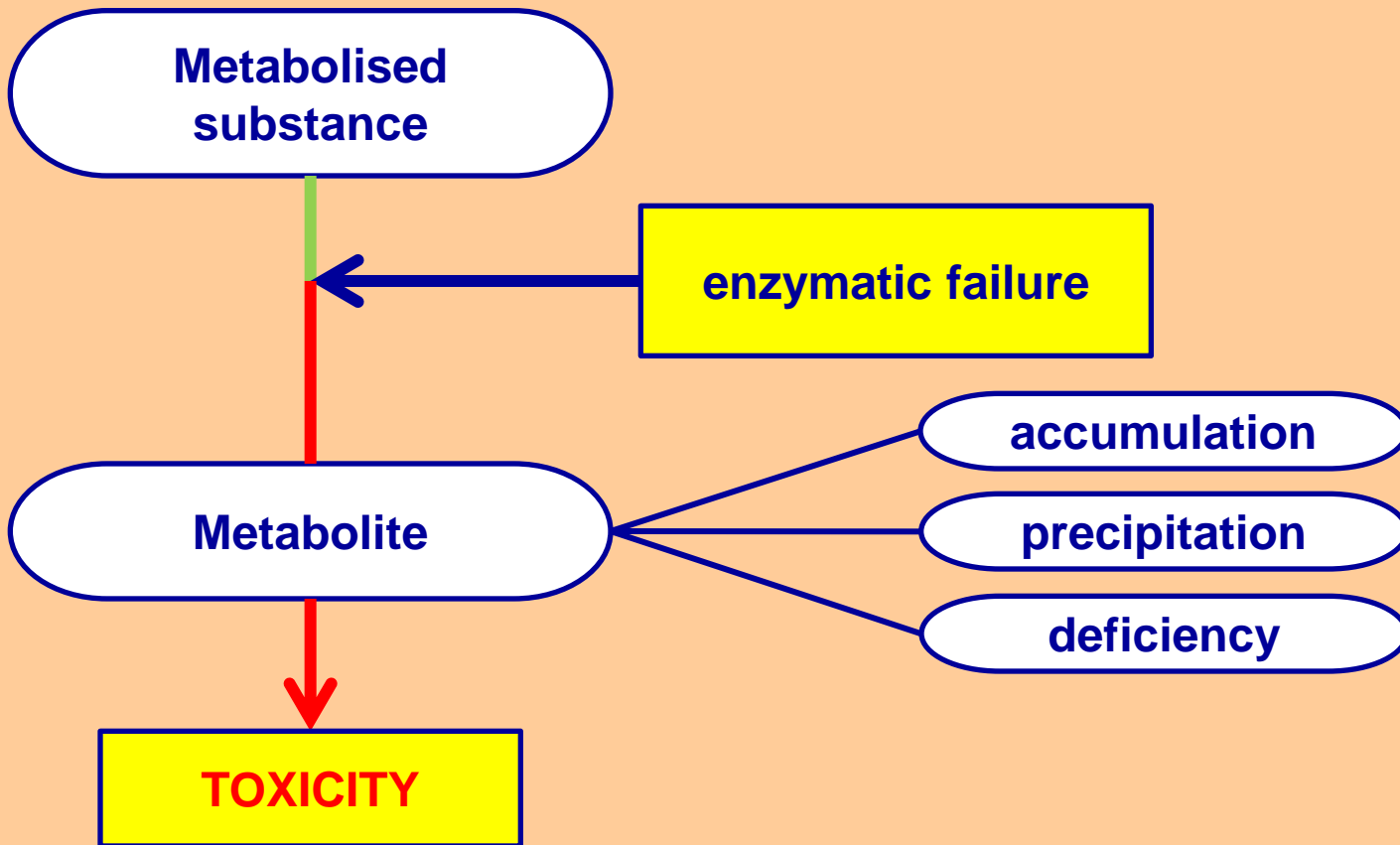


- A part of metabolites accumulate in the human body and affect some of the body systems.

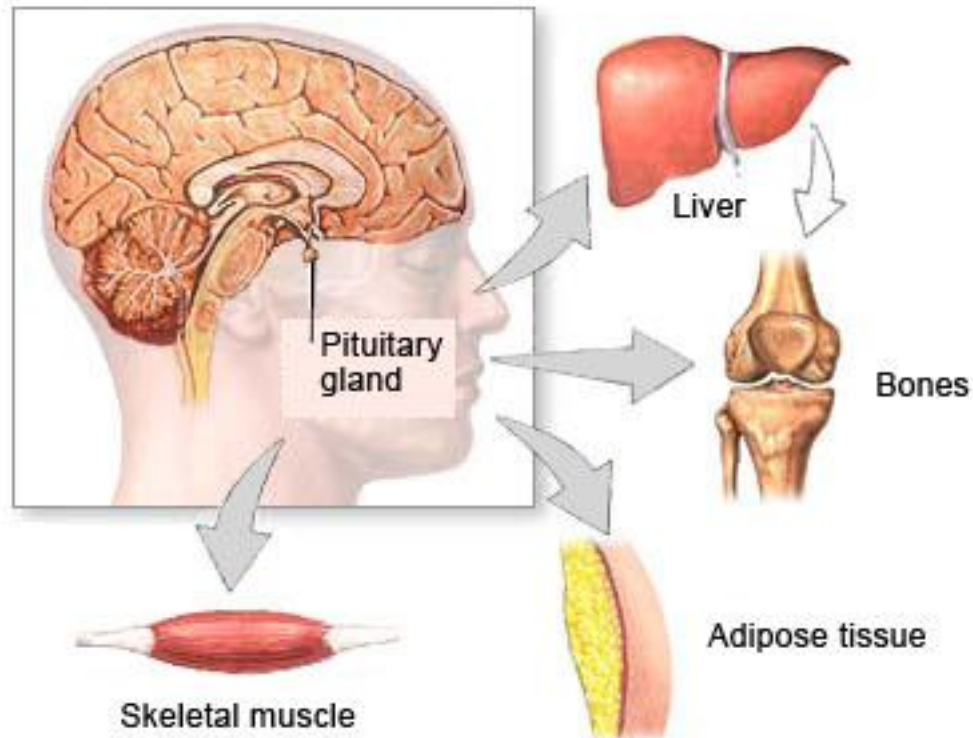


A close relation and complicated interactions between a metabolic dysfunction, inflammation and cardiovascular risk

- Metabolism can be affected by an enzymatic failure:



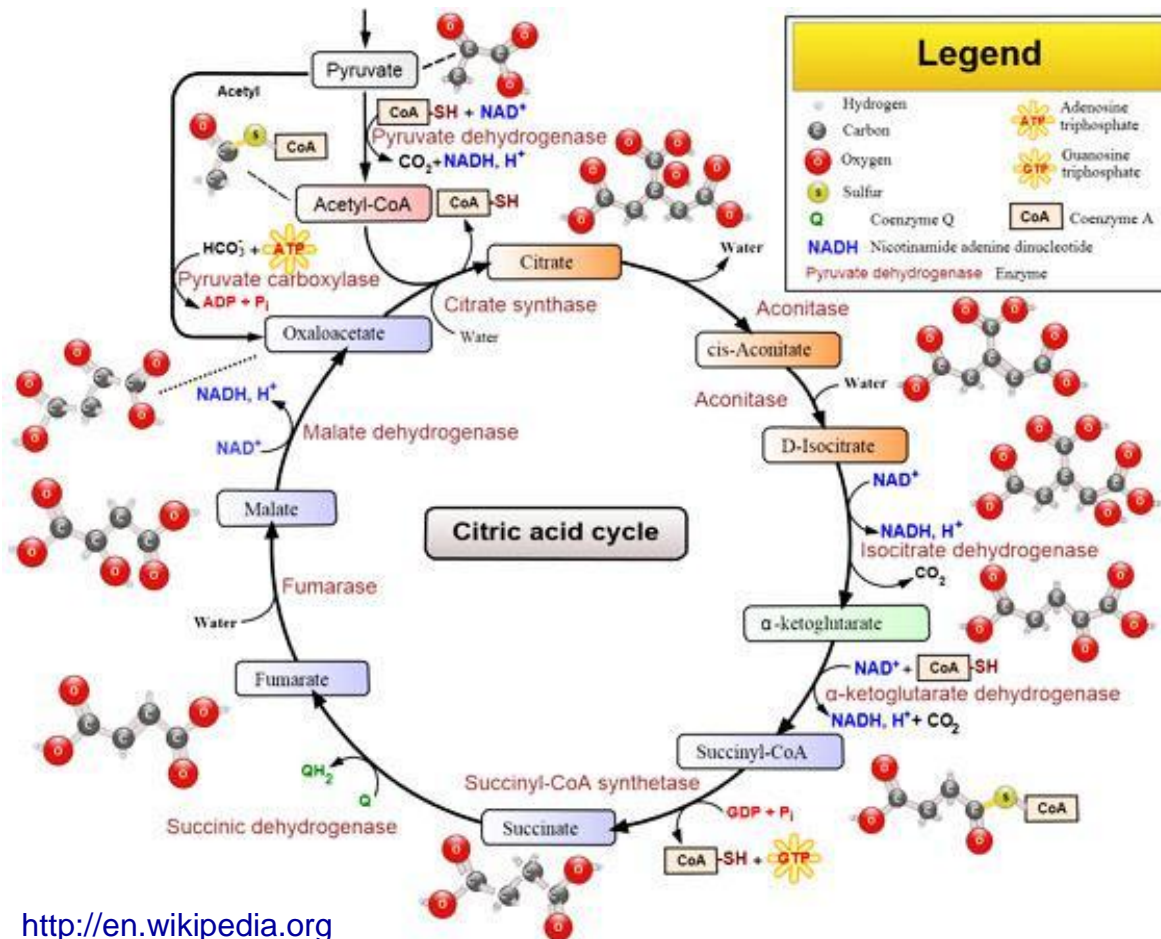
- A faulty endocrine regulation and an afflicted hormonal production (eg. diabetes mellitus) can be another cause of a metabolic disorder.



- Genetic predisposition – another cause of metabolic failures (eg. phenylketonuria).



- The term „metabolism“ means „a change“, or „an interchange“. It refers to all chemical reactions and energy interchanges in the human organism.



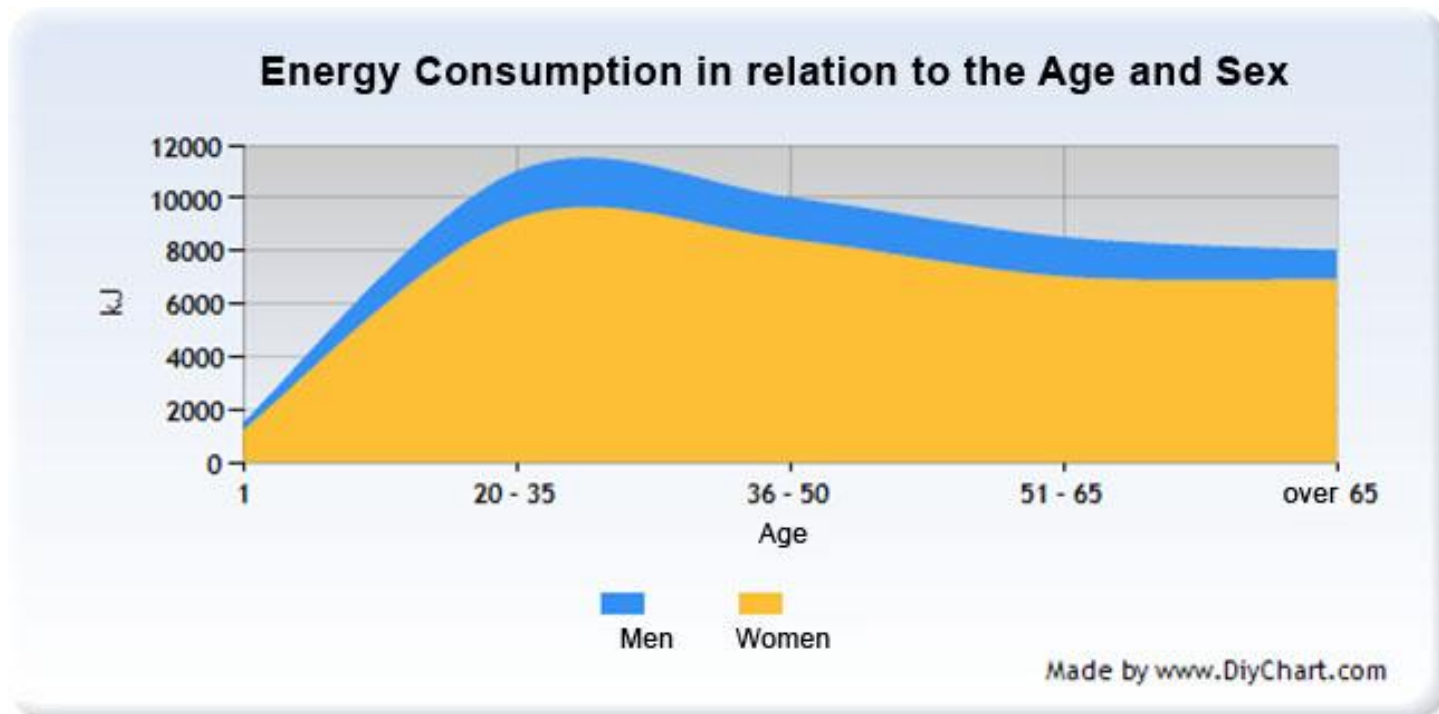
<http://en.wikipedia.org>

- **Carbohydrates, proteins and fats are broken down or synthesized in metabolic processes.**
- Carbon dioxide (CO₂), water (H₂O) and **energy** result from these changes.
- Energy is laid down either in phosphate compounds (ATP) or in store proteins, fats and carbohydrates.
- **Anabolism**: using energy for synthesis of these complex compounds.
- **Catabolism**: obtaining energy by means of breaking down large molecules.

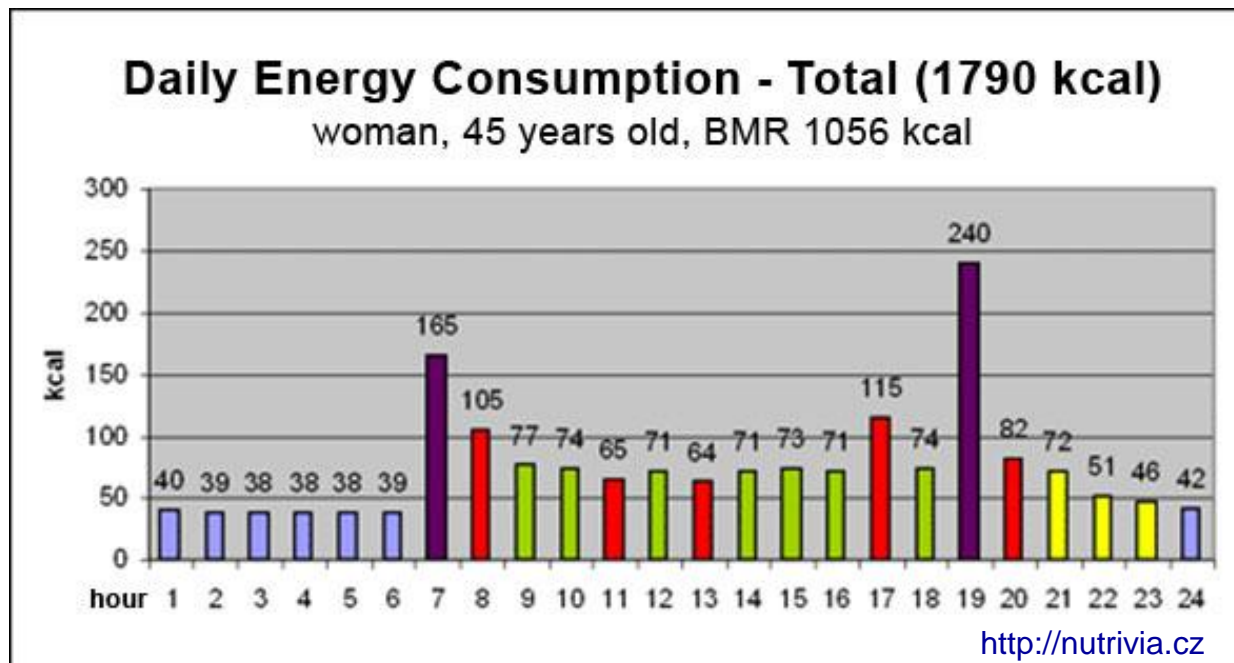
The metabolic rate is influenced by several factors:

- Ambient temperature
- Physical activity
- Type of food (proteins speed up metabolism for 30 %, fats for only 4 %, carbohydrates for 6 %)
- Emotions
- Thyroxin level
- Sex
- Epinephrin (adrenalin) and norepinephrin (noradrenalin) levels

- An average human body's consumption of energy is 2000 kcal/day.
- 1 kcal (kilogram calorie) = 1000 cal (gram calories).
- Children have a very high energy consumption; it gradually decreases with a growing age.



- Anxieties and stress increase metabolic rate, depressions decreases it.
- Starving slows down the metabolic rate as well.
- After food intake, the sympathetic system becomes more active and the metabolic rate increases.



- Manual labour requires a higher food supply (for 3000-4000 kcal/day); sedentary work for only 500 kcal/day.

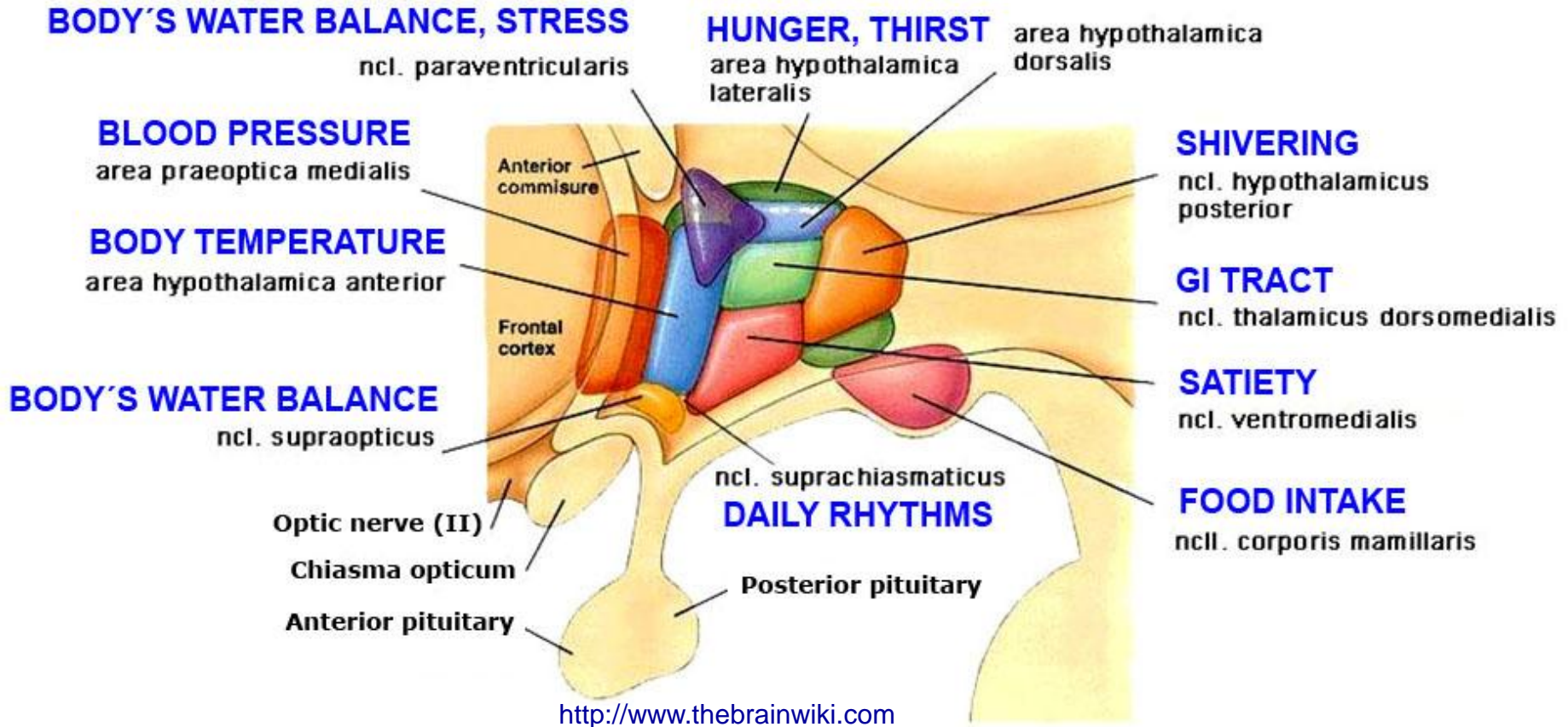


Important hints for keeping an optimal body weight:

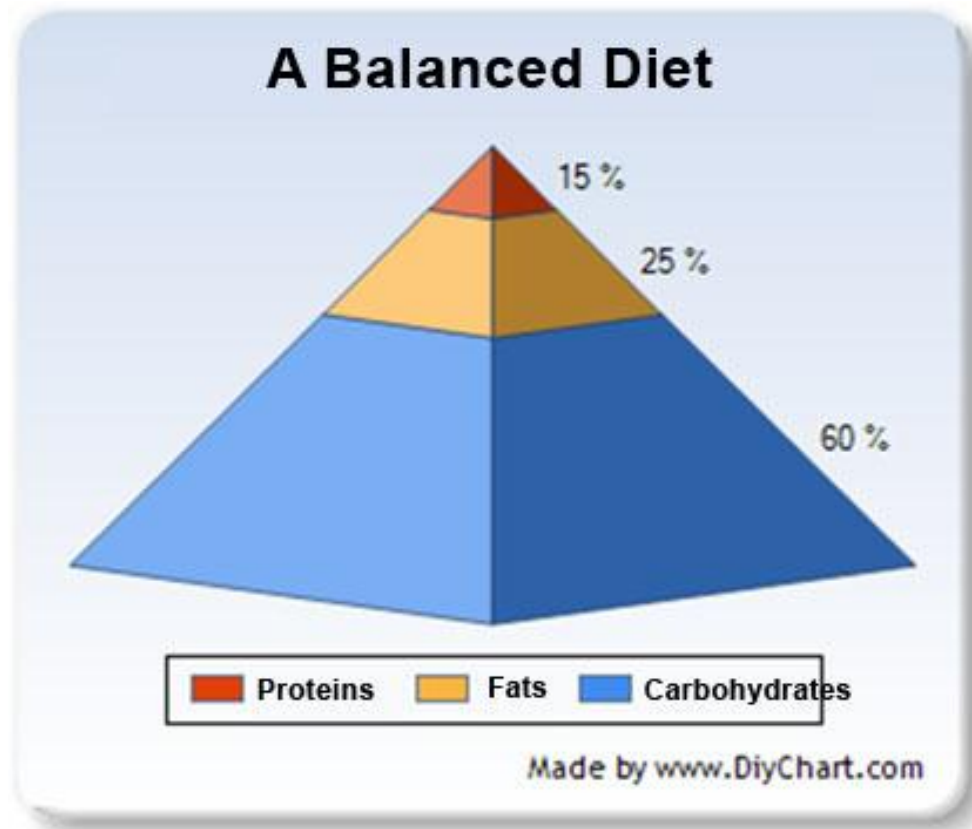
- regular food intake
- increased energy output
- proper nutrition (proteins)
- mental activities and emotional balance
- respecting the age and sex

- Appetite is regulated by two nuclei of the hypothalamus:
 - **ventromedial nucleus: satiety**
 - **lateral nucleus: hunger and thirst**
- Appetite is also regulated by the hormones of the medulla oblongata (serotonin, catecholamines) and by hormones of the GI tract (eg. cholecystokinin, calcitonin, etc.)
- Many mechanisms remain still unclear.

Hypothalamus nuclei



- A woman who puts on weight 11 kg between 25-65 years of age eats up only for 350 mg food a day more than she needs.



Metabolic disorders detoxification

- **Cortex**
- **Metabex**
- **Mebol**



- **LiDren**
- **VelienDren**
- **EviDren**
- **PEESDren**
- **MiDren**