

# Prefrontal syndrome

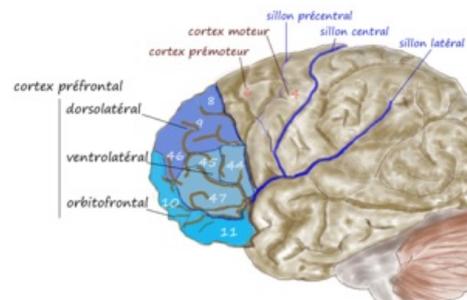
Denotes involvement of the front precentral gyrus, it was previously referred to as an organic psychosyndrome.

## Prefrontal system

The prefrontal system is one of the largest cortical regions of the brain. It forms (together with the central region) one of the two parts of the frontal lobe.

### Function

- integration of information from different sources, planning, decision-making, new ideas (see below)
- **integration of sensory perceptions** (connection with the visual, auditory, olfactory, etc. cortex)
- **integration of learning and memory** (connecting with the limbic system)
- leading role on **the regulation of the limbic system** (projection to the hypothalamus).
- various **specifically human functions**: abstract thinking, creativity, social relations, responsibility, etc.
- attention, perception, movement, temporal integration, emotions



### Connections

- connections from the whole brain, mainly with the rostral thalamus (mediodorsal nucleus of the thalamus)
- connections with mediodorsal nucleus of the thalamus:
  - **large cell part**: to the orbital and medial parts of the prefrontal cortex
    - lesions: euphoria, hyperkinesia, inappropriate social behavior.
  - **small cell part**: to the dorsolateral parts of the prefrontal cortex
    - lesions; apathetic-ablous syndrome, hypokinesia, congenitive disorders

## Clinical signs

Clinical symptoms of prefrontal syndrome include:

- the so-called apathetic-abulous syndrome: (sometimes also referred to as amotivational syndrome),
  - **apathy** (numbness, surrender),
  - **abulia** (loss of will to do any activity).
- significant deterioration of memory in the implantable component,
- **bradypsychism**,
- the patient has no insight into his illness (**anosognosia**),
- undue euporia,
- **moria** (indecent jokes and vulgarisms),
- **gatism** (does not observe cleanlines, gives the impression of approval),
- **ganserism** (he tals about himself in the third person),
- gives approximate answers,
- **puerilism** (childish behaviour),
- **amotional lability** - apathy alternates wit bouts of rage.

The most serious manifestation of frontal lobe involvement is a **comatose state**.

## Examination

During the examination, we objectify a number of reflexes reflecting prefrontal deliberation. Positivity of axial phenomena appears (nasolabial, mentolabial and sucking reflexes). A bilateral lesion of the prefrontal area leads to disorder of standing and walking, the so-called frontal gait <sup>[1]</sup> **Henner's crescendo retropulse** - when the center of gravity is shifted backwards, the patient backs up with accelerating steps until he falls (impairment of the fronto-ponto-cerebellar pathway). When the frontal base is affected, **hyposmia** or anosmia from the olfactory pathway.

## Links

### related article

- Rolandic syndrome

- Frontal lobe syndrome
- Organic psychosyndrome

## Reference

1. AMBLER, Zdeněk. *Základy neurologie*. 6. edition. Prague : Galen, 2006. 0 pp. ISBN 80-7262-433-4.

## Literature

- SEIDL, Zdeněk – OBENBERGER, Jiří. *Neurologie pro studium i praxi*. 2. edition. Praha : Grada Publishing, 2004. ISBN 80-247-0623-7.
- BENEŠ, Jiří. *Studijní materiály* [online]. [cit. 2010-04-24]. <<http://jirben.wz.cz>>.