Extrapyramidal system

- Cortex – Brodman area 6 in F lobe
- Subcortical centres - bazal ganglia
- Afferent and efferent pathways

Functions of EPS

- Neostriatum
  - Protect movements against undesirable afferent impulses to motor system – lesion – hyperkinesis
  - Lesion of nc. ventrooralis talami – decreasing of hyperkinesis
  - Regulation of muscle tone – lesion – hypotonia

Functions of EPS

- Pallidum
  - Influence of neostriatum at motor cortex
  - Increased muscle tone during voluntary and automatical movements
  - Lesion of pallidum and efferent pathways – decreased muscle tone

Functions of EPS

- Lower parts of EPS, mainly substantia nigra
  - Soften (decreased) muscle tone
  - Regulation of automatic movements – gait, mimic, protective movements
  - Lesion – increased muscle tone and affection of automatic movements

Functions of EPS

- Ne. subtalamicus – corpus Luysi
  - Coordinate afferent impulses to movements on the contralateral side of the body
  - Lesion – hyperkinesis on the contralateral side of the body
EP syndromes

- Hypertonic – hypokinetic syndrom
- Hypotonic – hyperkinetic syndrom
- Dystonic syndromes

Hypertonic – hypokinetic syndrom

- Increased muscle tone – rigidity
- Flection position of the body
- Tremor 3-7 Hz, at rest, temporarily suppressed when the limb is voluntarily moved, dissapears during sleep
- Increased ERP

Hypotonic – hyperkinetic syndrom

- Chorea (putamen, nc. caudatus)
- Decreased muscle tone, ERP
- Choreic movements purposive movement following one another in a disorderly fashion
- Athetosis (striatum, pallidum externum)
- Athetoid movements are slower, coarser
Dystonia

- abnormal postural state of one limb, neck or other body segment
- generalised forms involved the trunk
- produced by abnormal cocontraction of agonist and antagonist group of muscles
- forms of dystonia - torsion of the back or neck, neck extension, dystonia of fingers, forceful closure of the eyes

Focal dystonia  Writer’s cramp

Torticollis

Laterocollis  Ventrocollis

Blepharospasm
Generalised dystonia