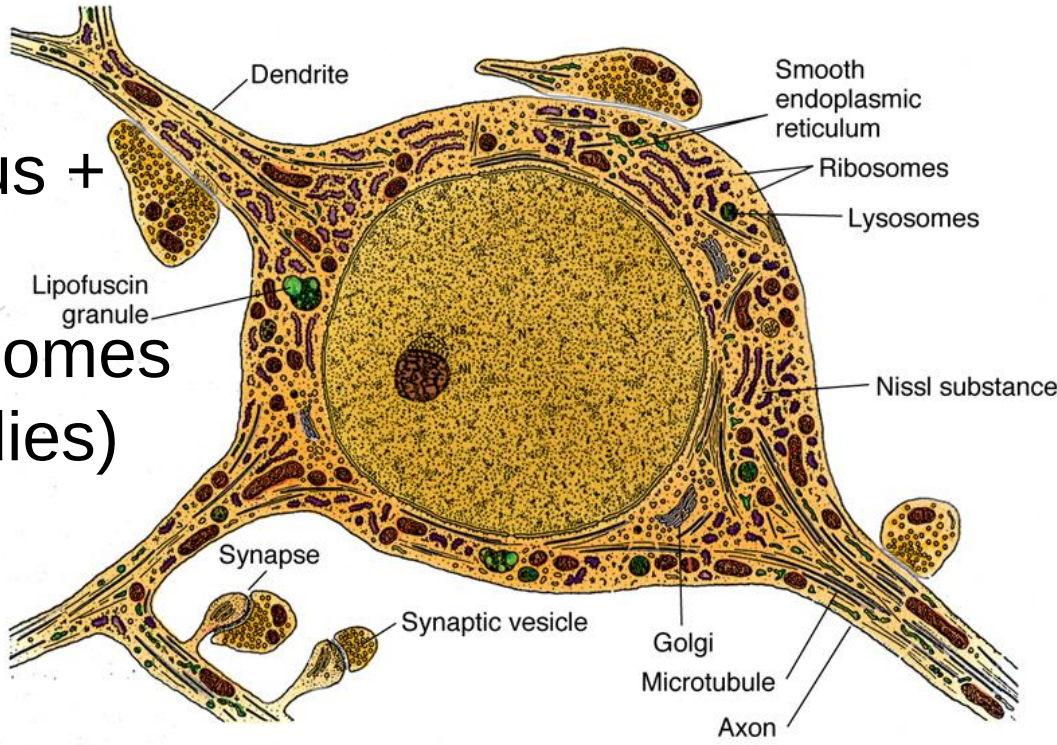
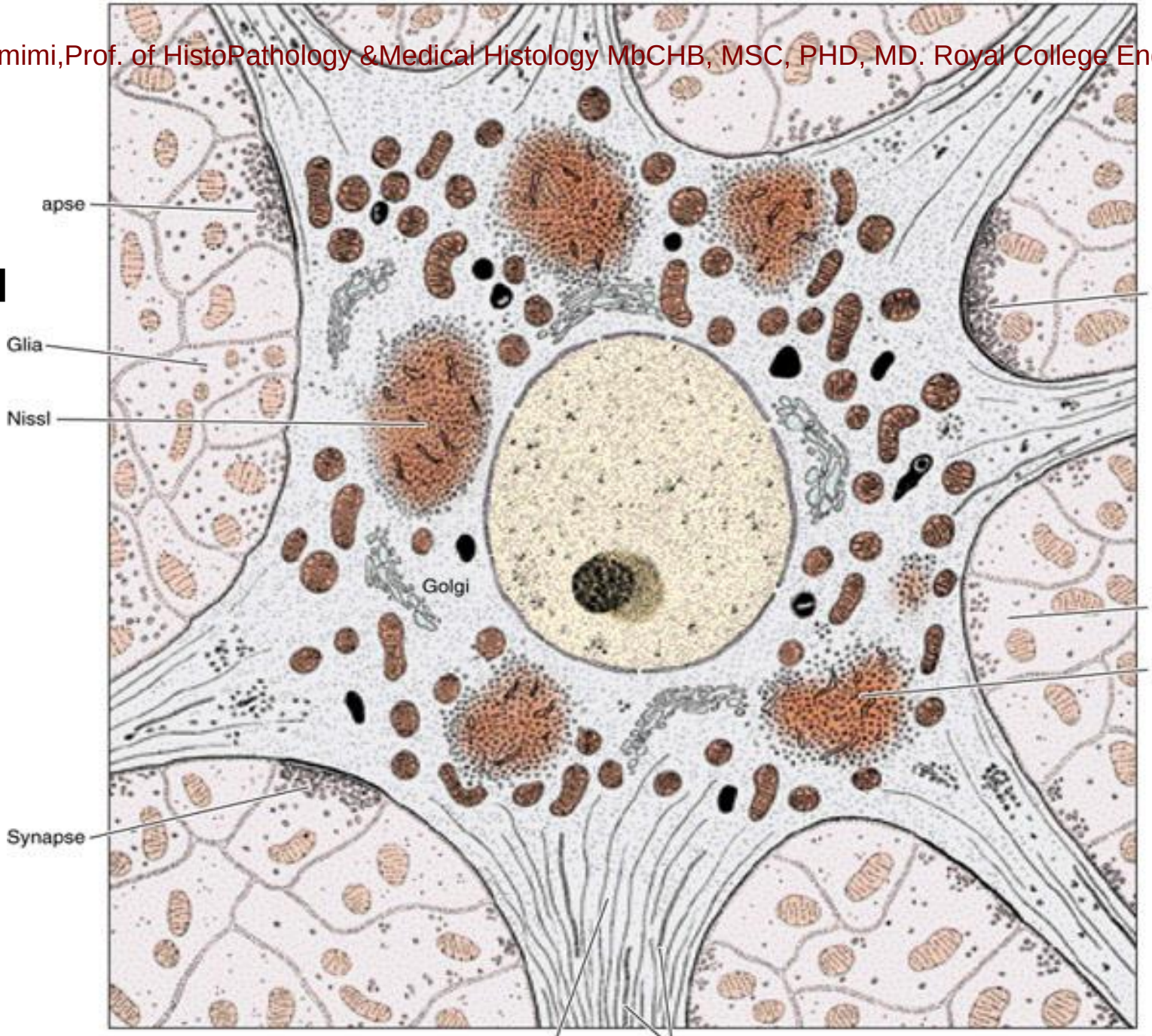
nerve cells perikaryon

The cell body (perikaryon)

- Size from 5 to 150 micrometers
- Large and pale nucleus + prominent nucleolus
- Rough ER + polyribosomes (Nissl substance / bodies)
- Mitochondria
- Golgi, lysosomes
- Pigments

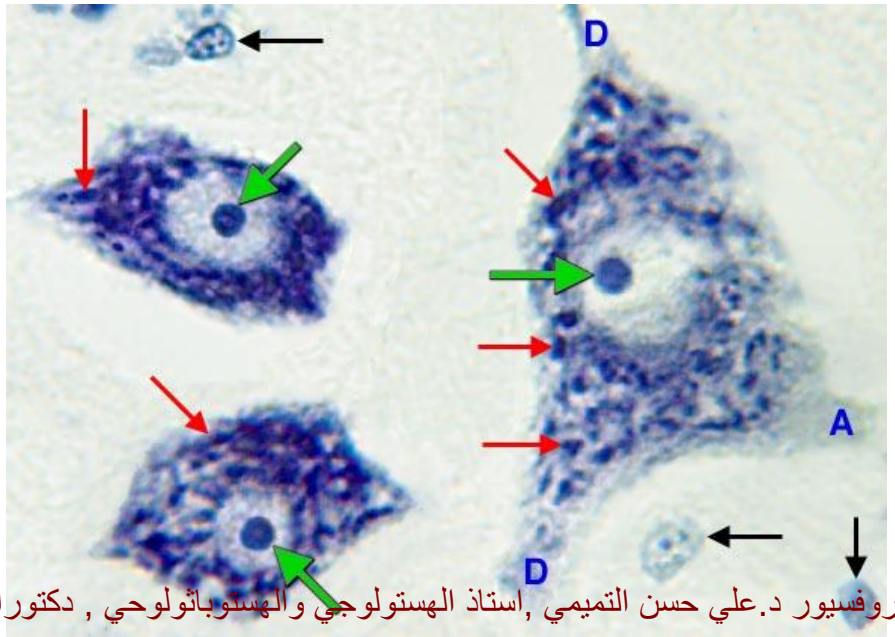


CELL BODY of NEURON



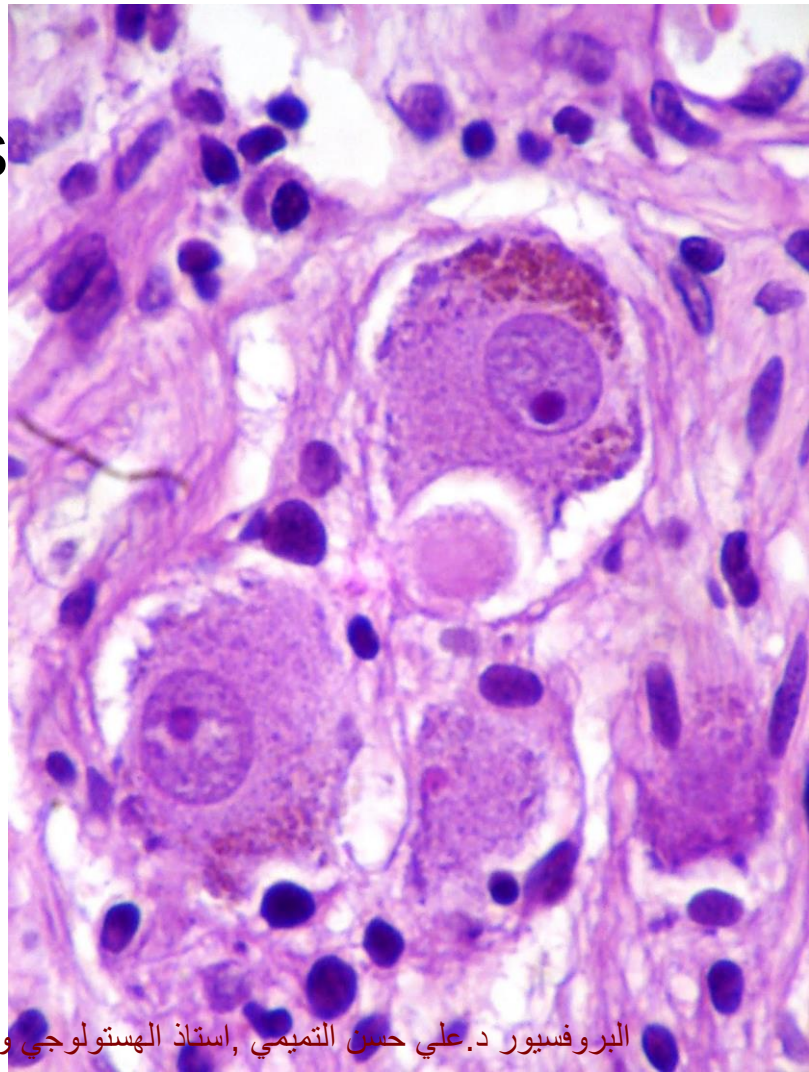
Nissl substance (bodies)

- Responsible for synthesizing proteins
- Composed of rough endoplasmic reticulum
- Is basopphilic, can be well demonstrated by staining with basic dyes (as toluidine blue or hematoxylin)



Pigments in nerve cells

- **Lipofuscin granules** – pigmented residual bodies deribed from lysosomal degradation that accumulate with age
- **Melanin** – black cytoplasmic pigment found in the substantia nigra (in midbrain)



Cytoskeleton - neurofibrils

- Bundles of intermediate filaments („neurofilaments“) and microtubules („neurotubules“)
- After staining with silver are visible with light microscope and are called neurofibrils
- Run through the cell body to processes, they are responsible for cell transport (thanks to molecular motors – dynein and kinesin)

Neurofibrils after impregnation with silver salts (e.g., Holmes´ method)

