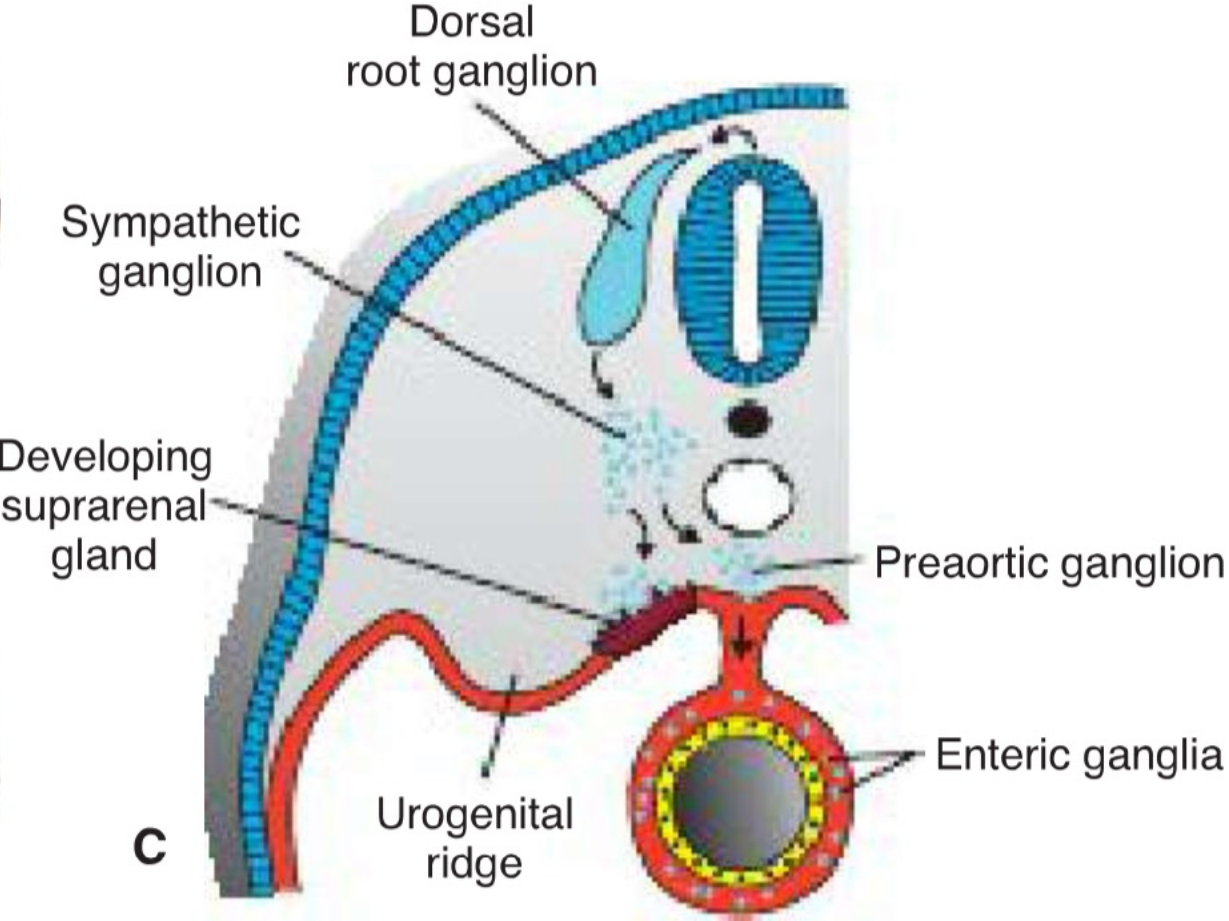
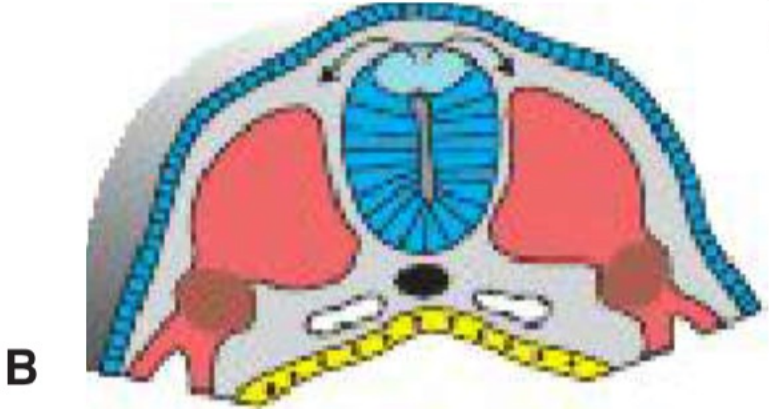
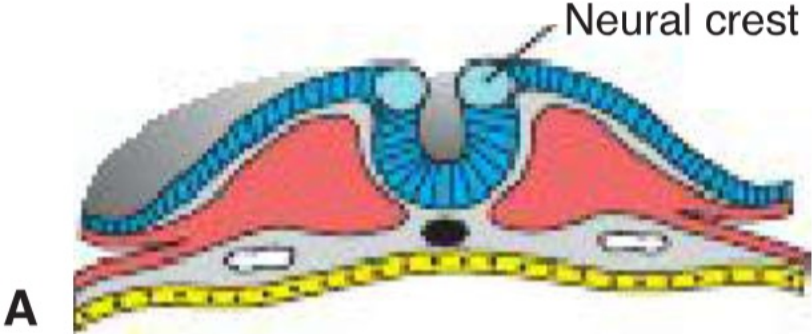


# Development and teratology of the nervous system

Anna Mac Gillavry Danylevska

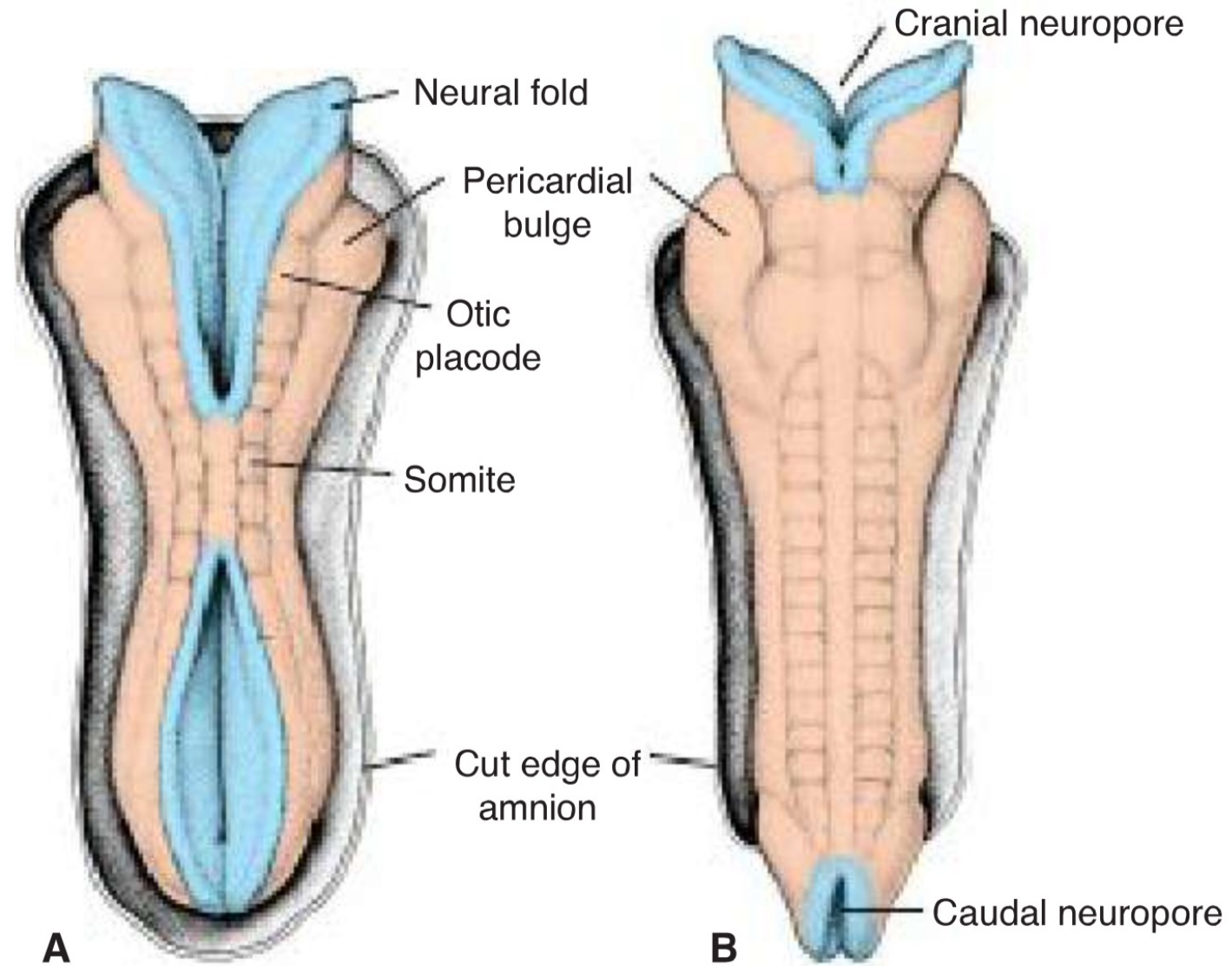
22.5.2023

# Neural tube development

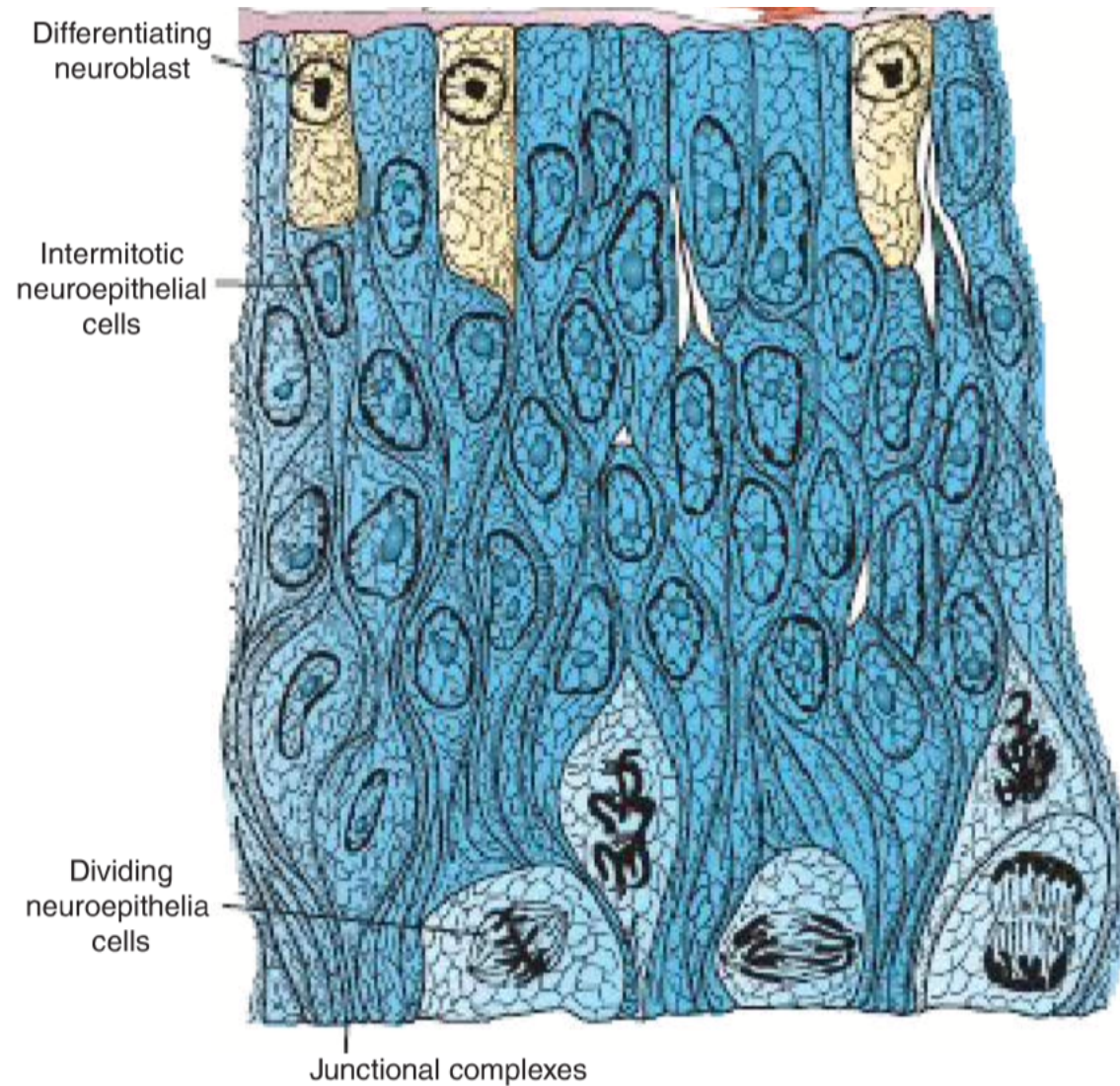


Neural crest

# Neural tube development

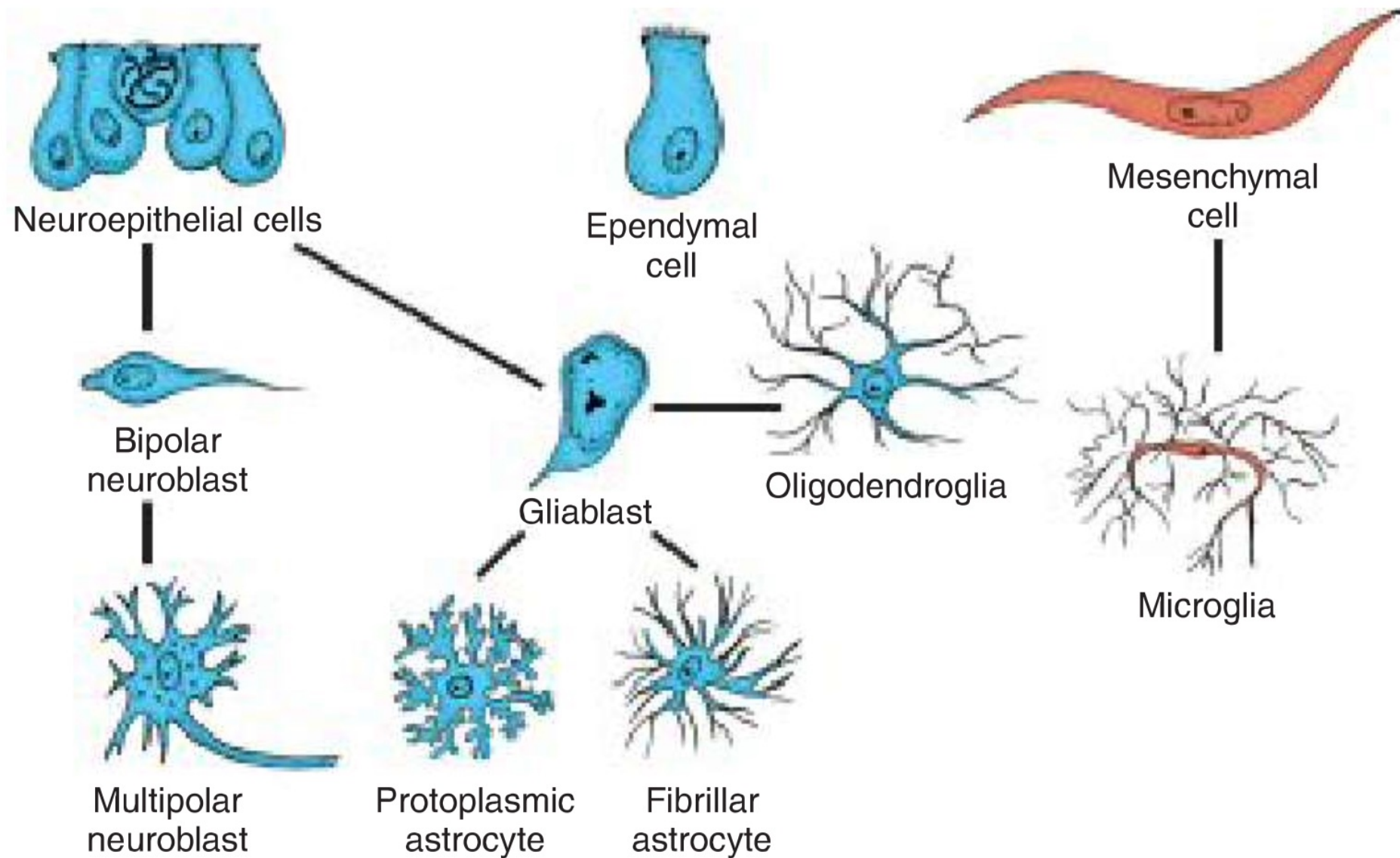


# Histogenesis of the neural tube

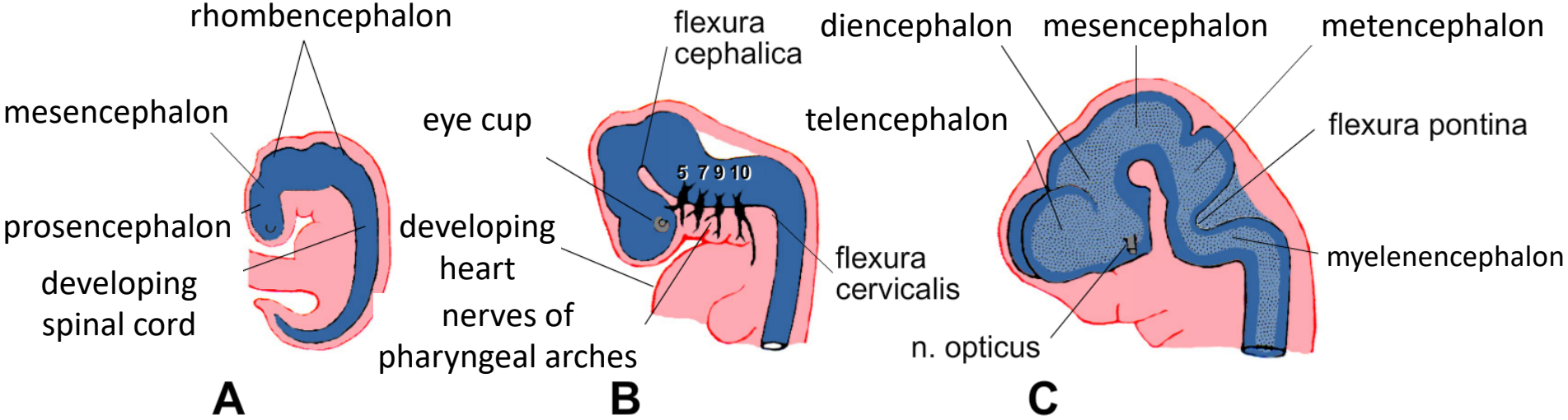




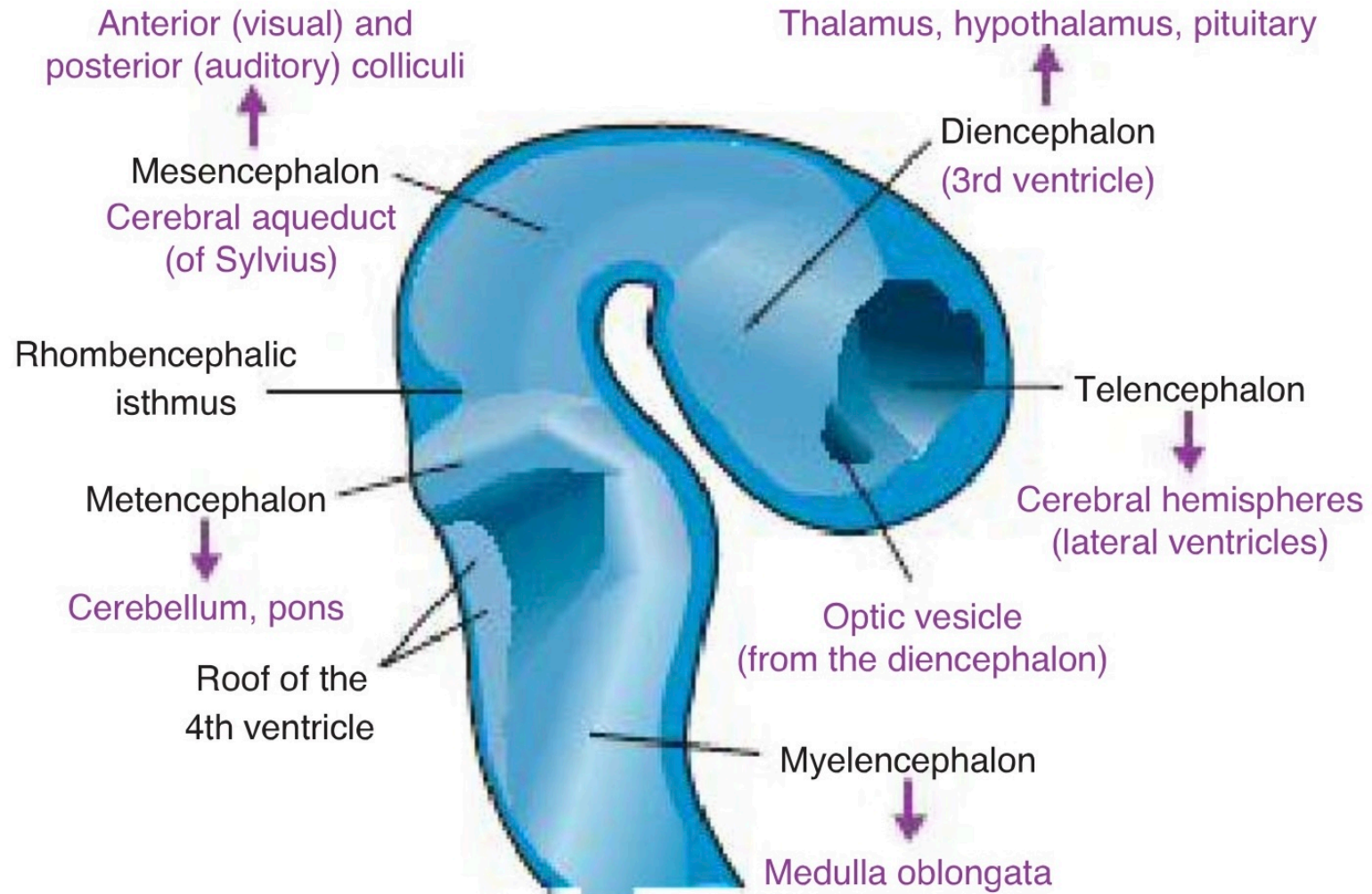
# Histogenesis of the neural tube



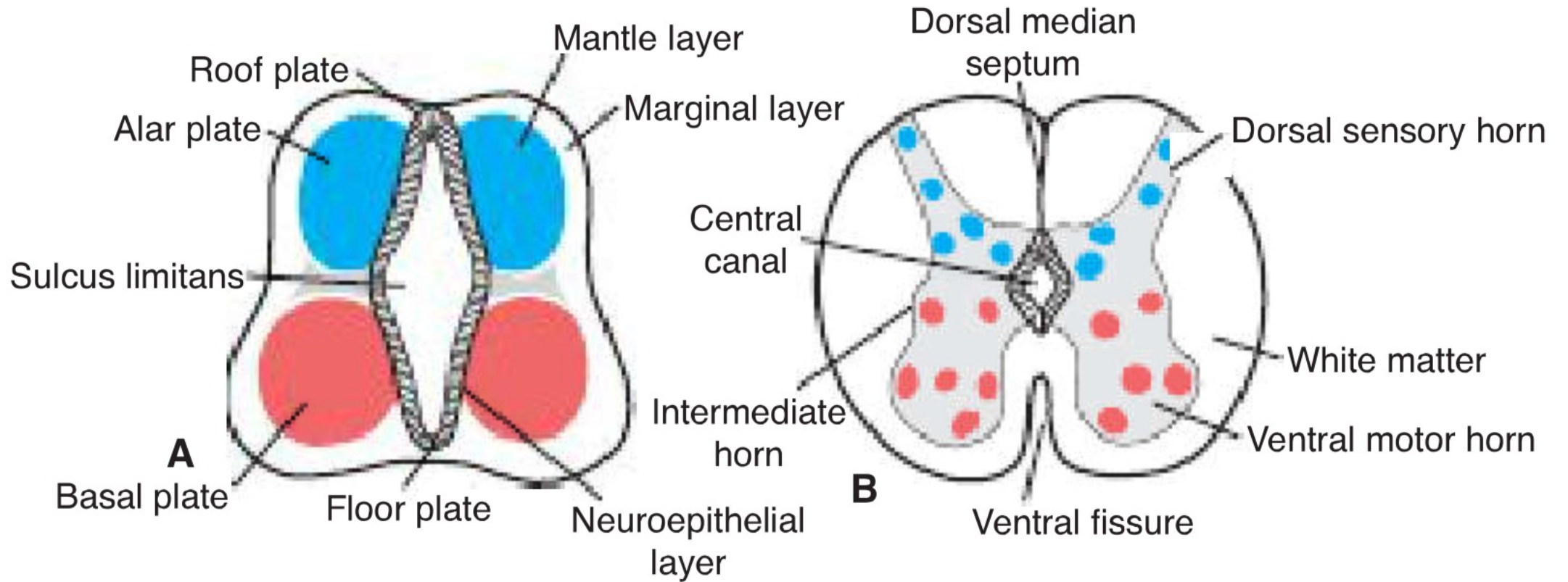
# Development of the brain



# Development of the brain



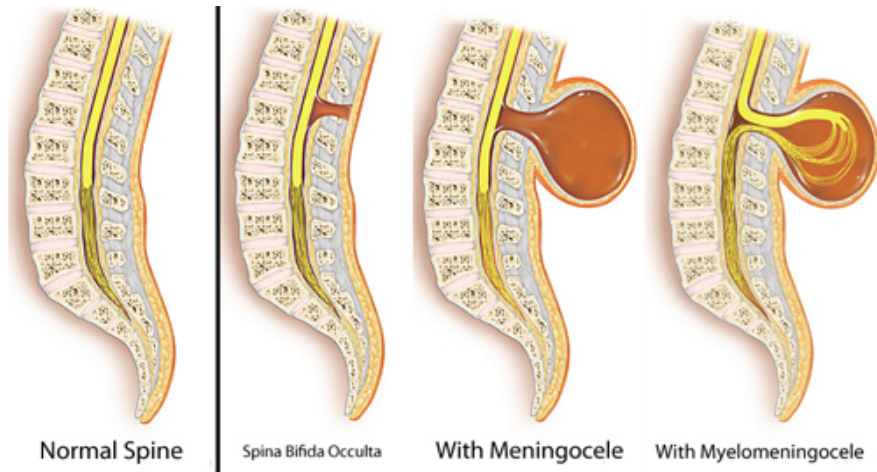
# Development of the spinal cord





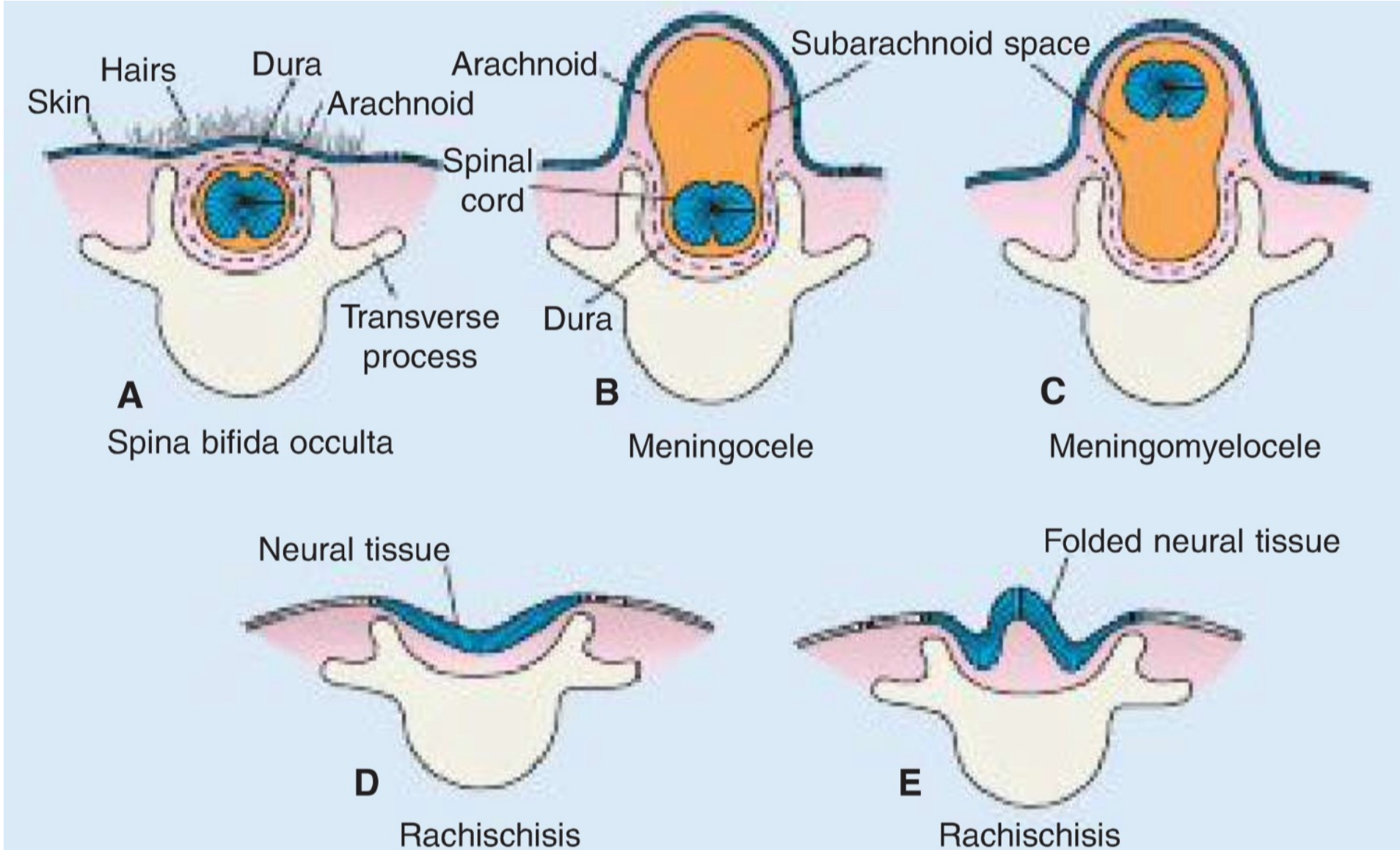
# Neural tube defects (NTDs)

- Spina bifida: spina bifida occulta – defect of vertebral arches covered with skin and usually does not affect the neural tissue – 10 % of population; meningocele; myelomeningocele



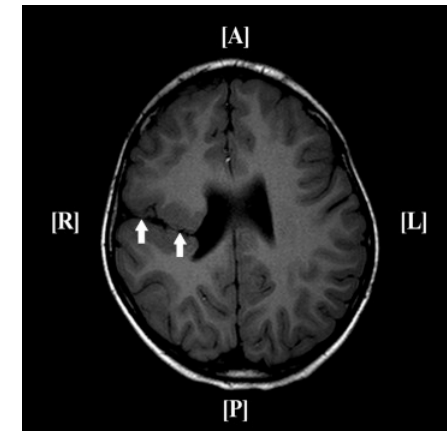
- Rachischisis
- Hydrocephaly due to Arnold-Chiari malformation

# Neural tube defects (NTDs)



# Cranial defects

- Schisencephaly
- Holoprosencephaly (HPE) – 1 in 15000 (1 in 250 early miscarriage)
- Meningocele, meningoencephalocele, meningoencephalocele – 1 in 12000
- Exencephaly: anencephaly (=meroencephaly – 2-4 times more common in female fetuses), craniorachischisis – polyhydramnios
- Hydrocephaly – in most cases due to obstruction of the aqueduct of Sylvius (aqueductal stenosis)
- Microcephaly



**The leading cause of intellectual disability is maternal alcohol abuse!**