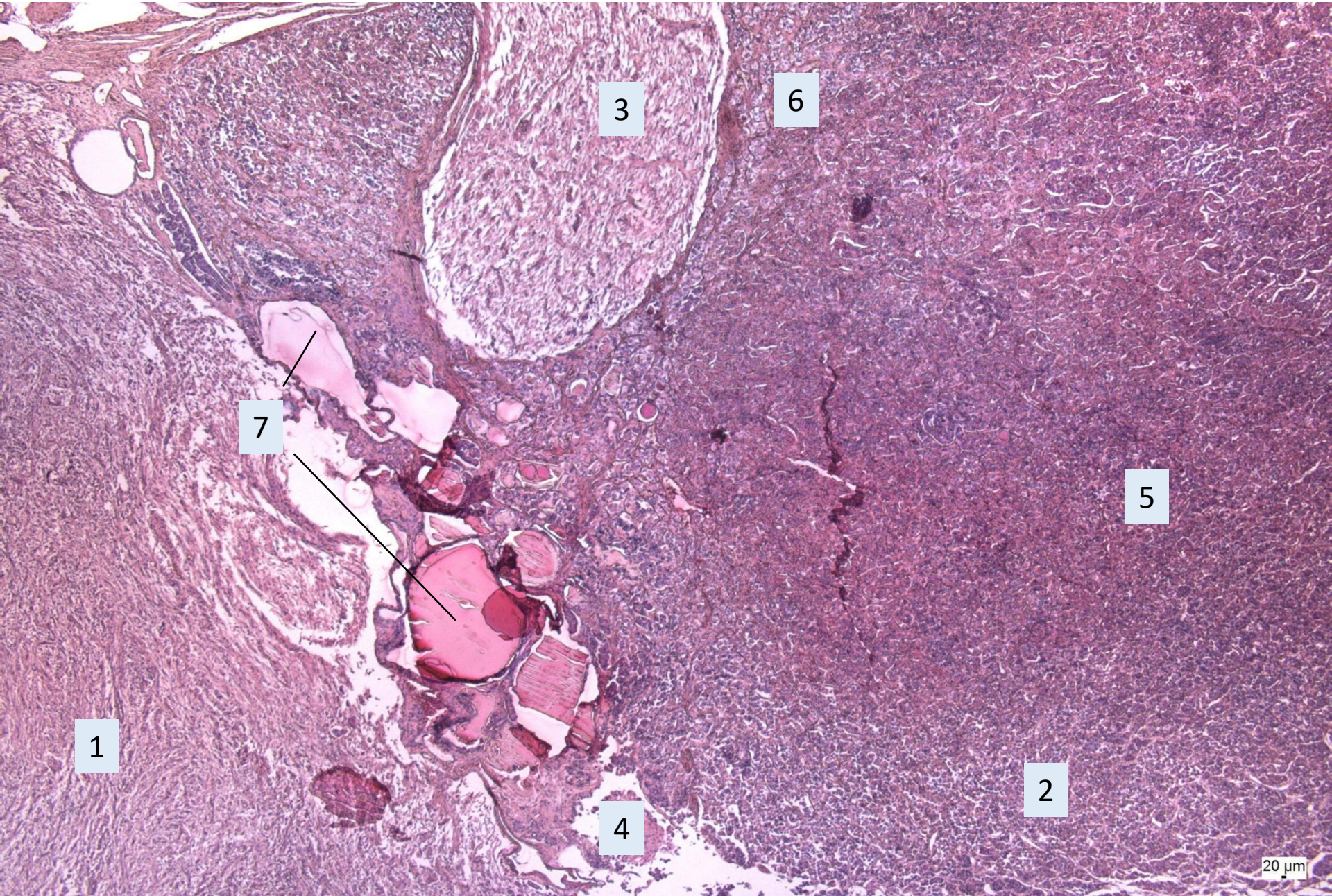


# Endocrine system

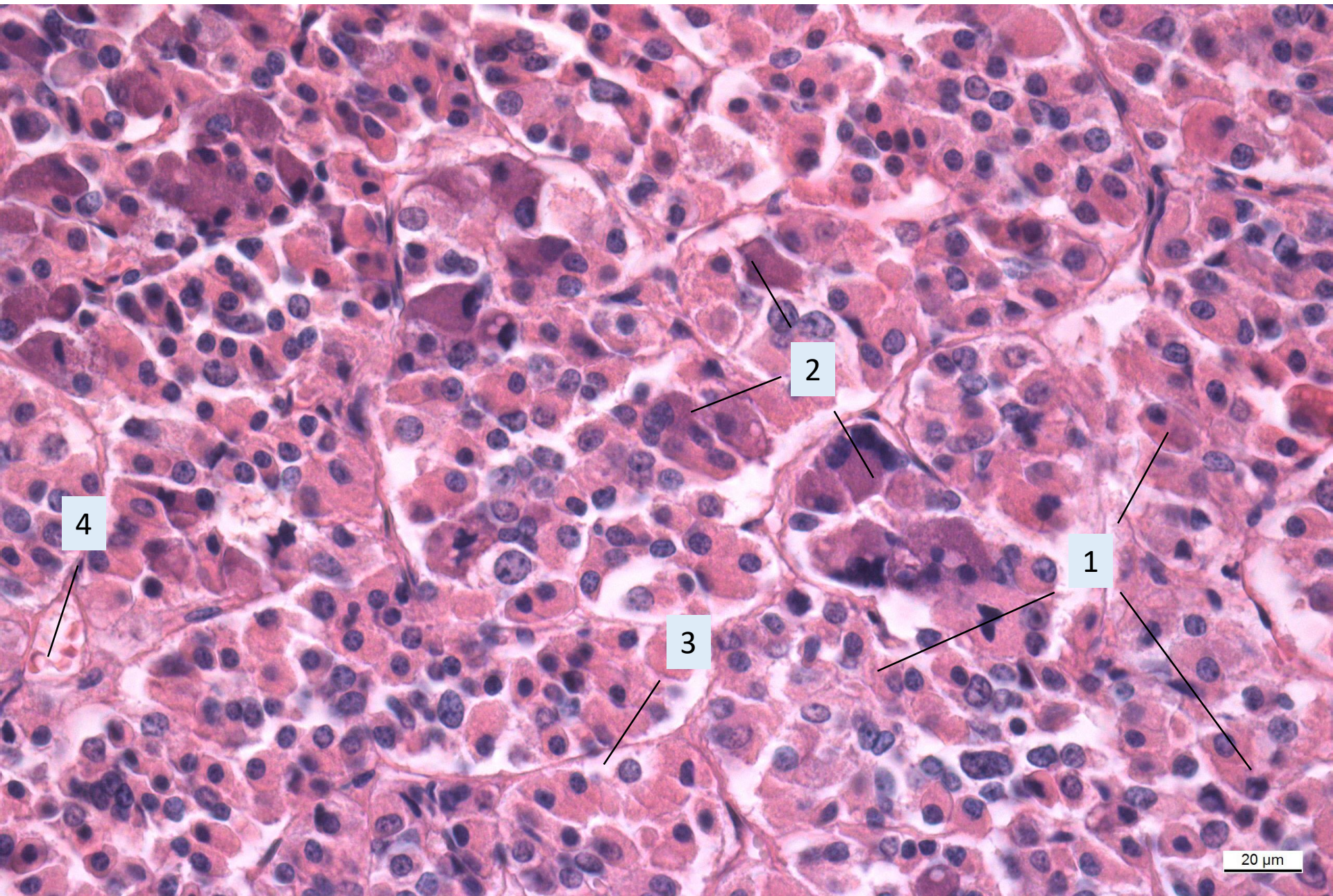


# Hypophysis – pituitary gland



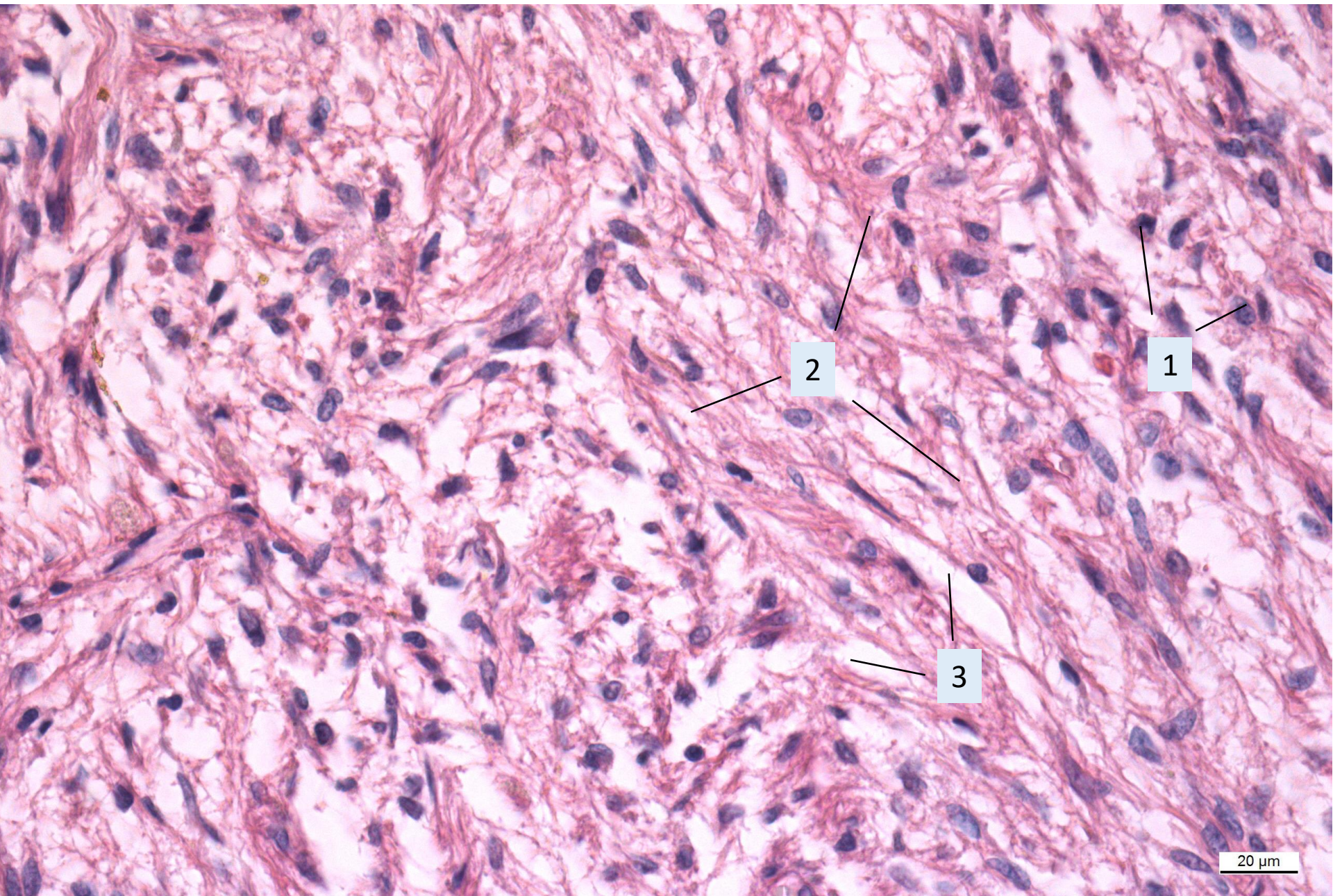


# Anterior hypophysis – adenohypophysis





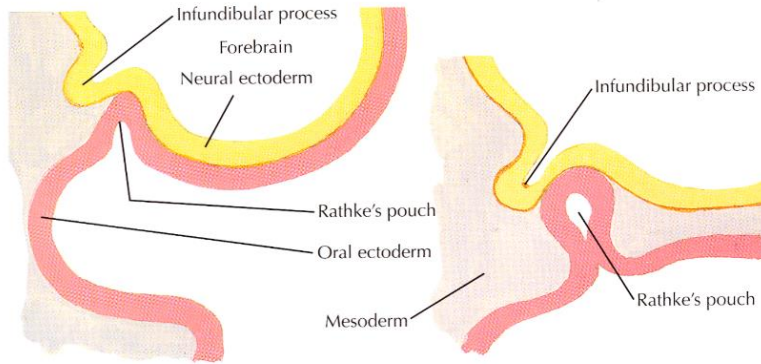
# Posterior hypophysis – neurohypophysis



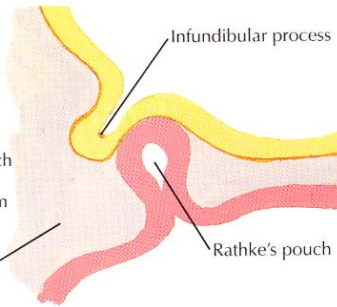


# Embryonic development of pituitary gl.

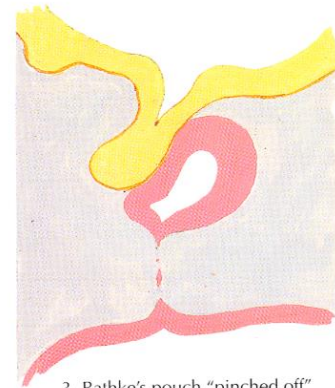
- Ectoderm (Rathke's pouch)
- Neuroectoderm of ventral wall of diencephalon



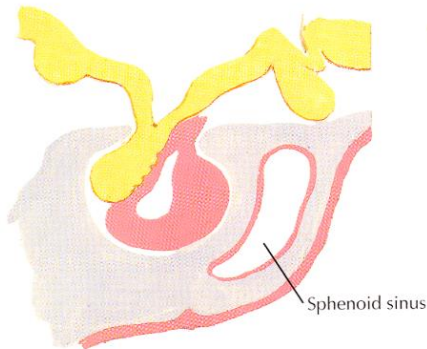
1. Beginning formation of Rathke's pouch and infundibular process



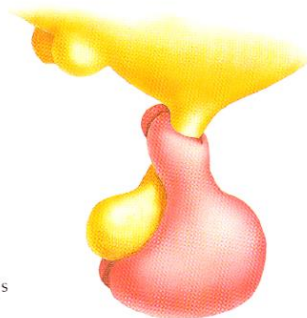
2. Neck of Rathke's pouch constricted by growth of mesoderm



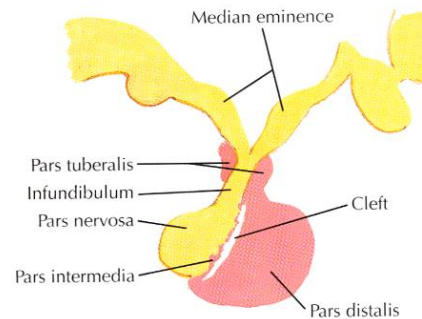
3. Rathke's pouch "pinched off"



4. "Pinched off" segment conforms to neural process, forming pars distalis, pars intermedia and pars tuberalis

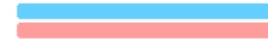


5. Pars tuberalis encircles infundibular stalk (lateral surface view)



6. Mature form

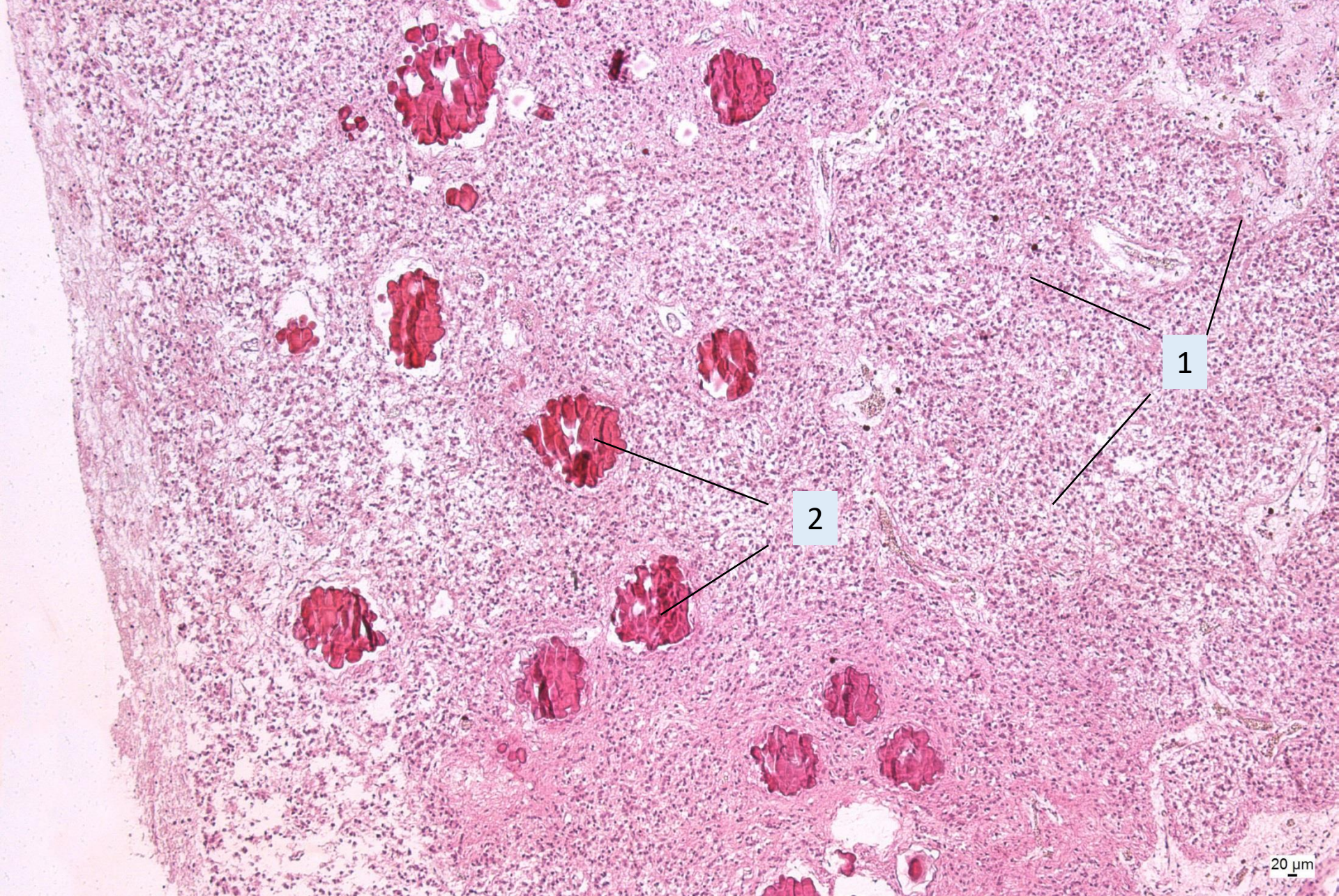
## Development of the Hypophysis



*F. Netter M.D.*



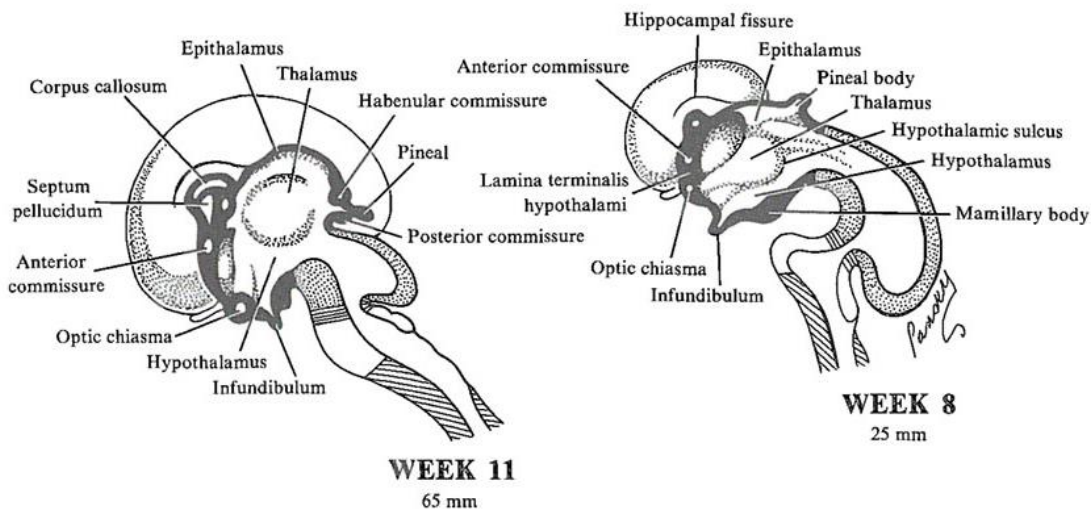
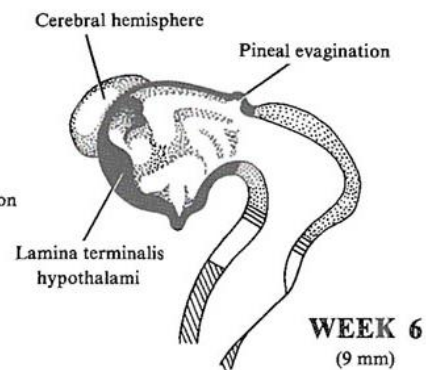
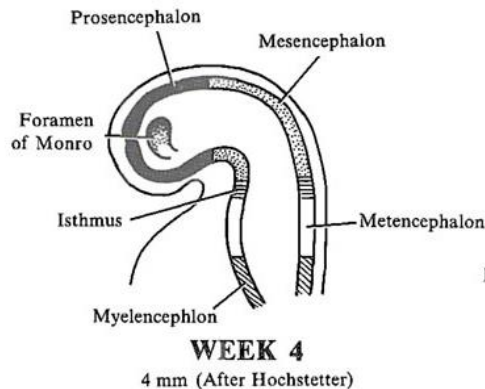
# Pineal body (*epiphysis cerebri*)



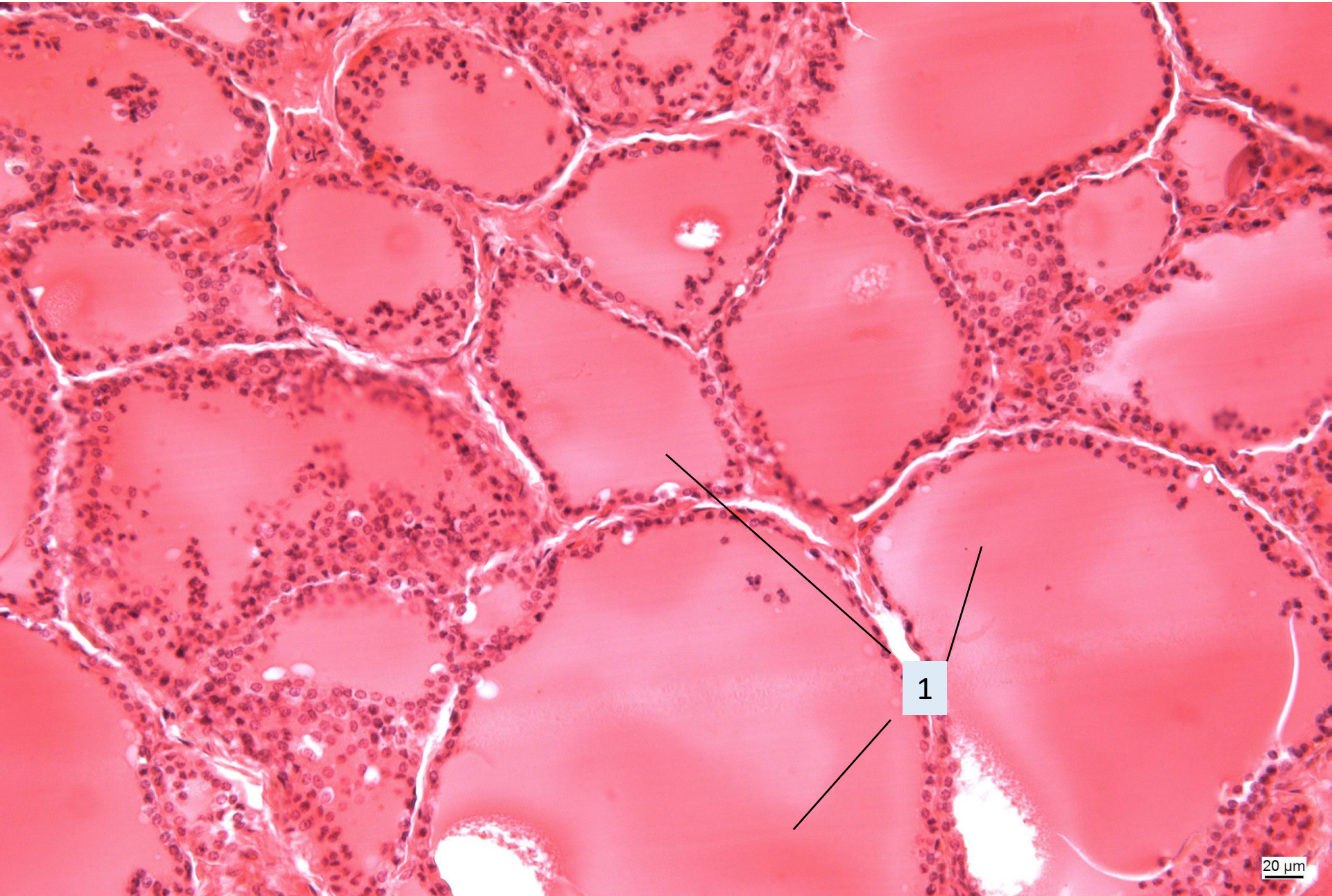


# Embryonic development of epiphysis

- thickening of caudal part of ependyma that does not contribute to development of choroid plexus at the roof of diencephalon
- neuroectoderm

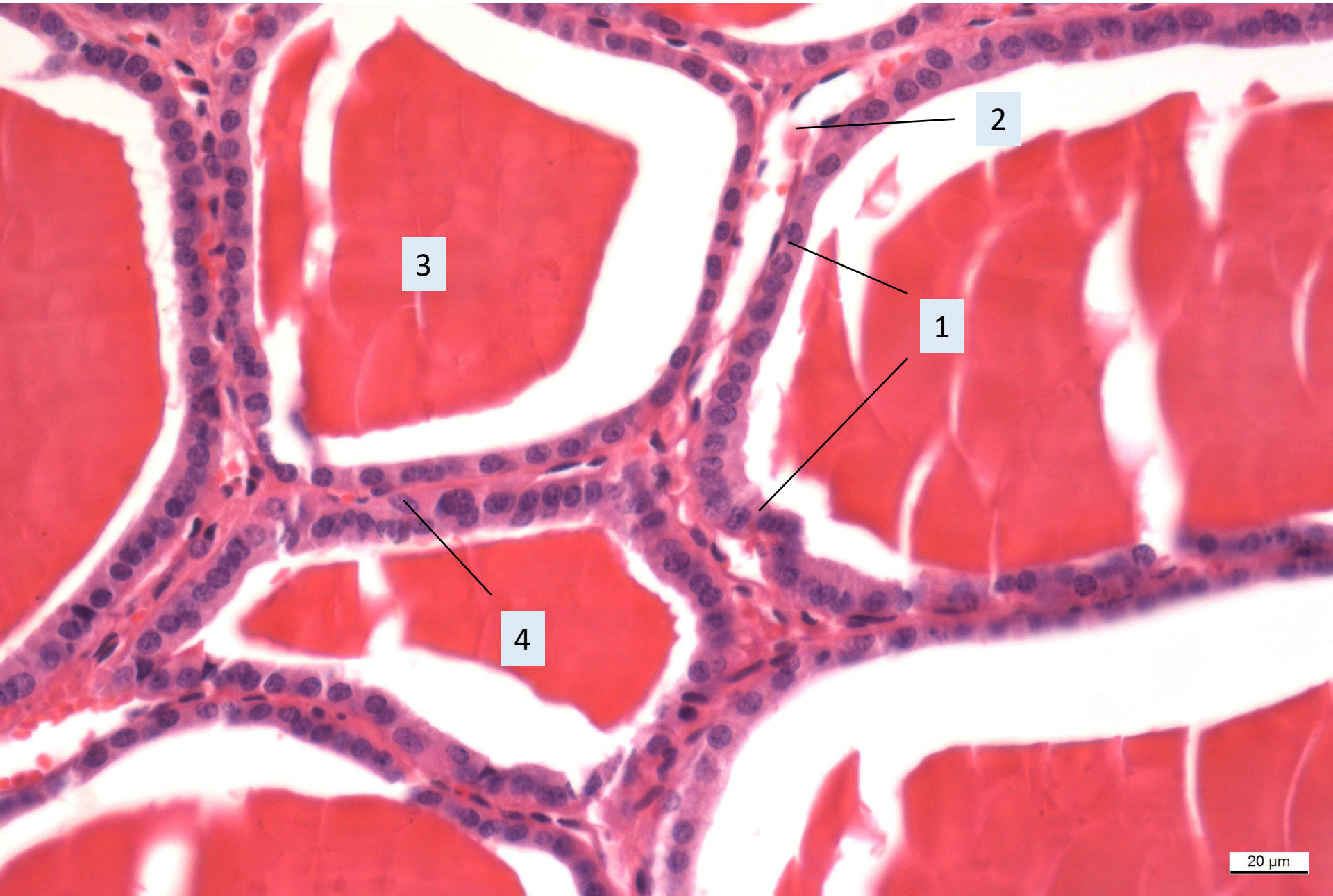


# Thyroid gland (*gl. thyroidea*)





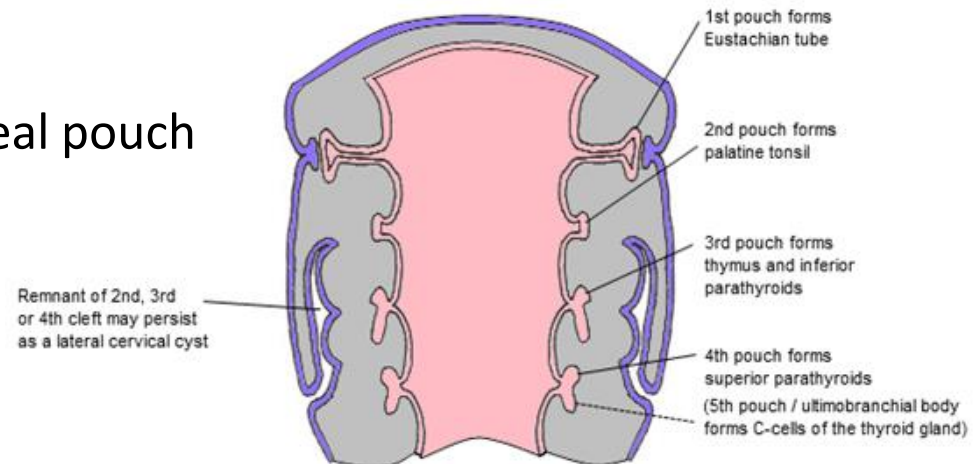
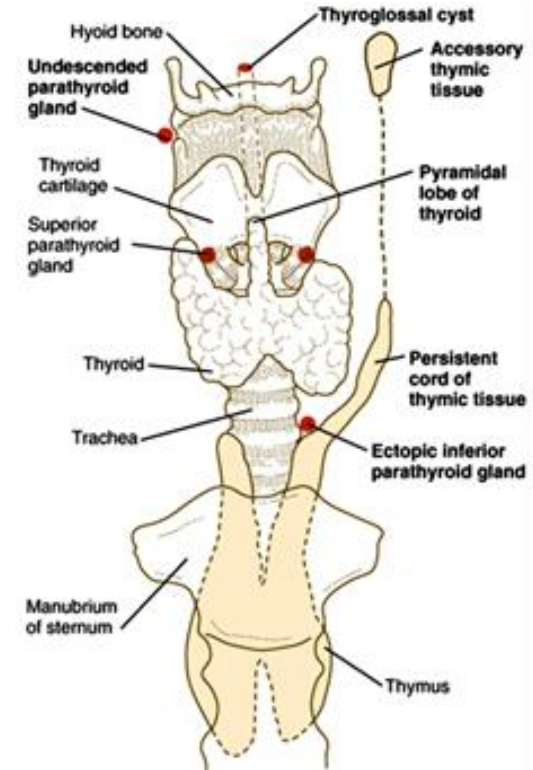
# Thyroid gland (*gl. thyroidea*)





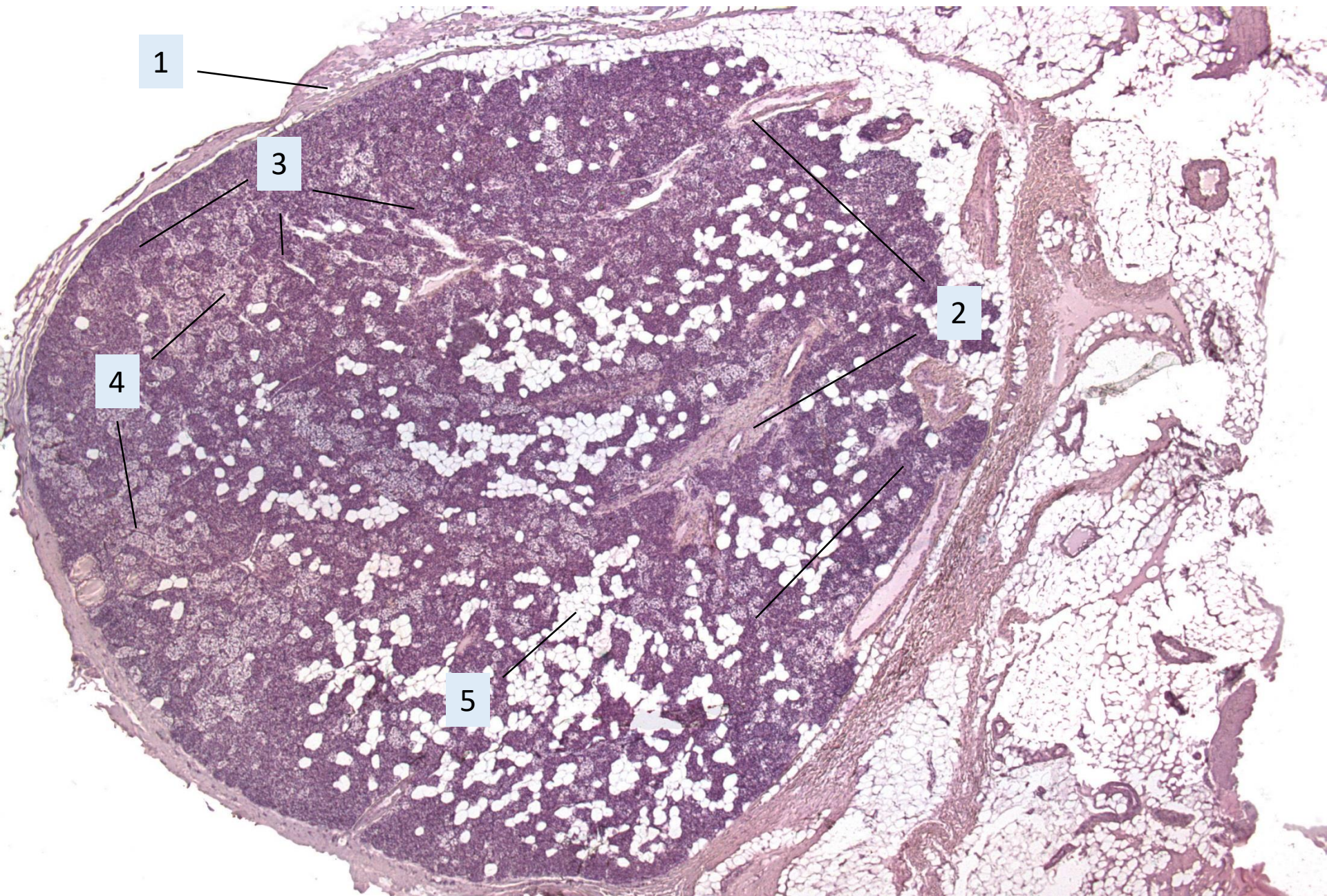
# Thyroid development

- endodermal proliferation of pharyngeal floor between *tuberculum impar* and *copula*
- obliterating *ductus thyreoglossus*
- *foramen caecum*
- bilobed diverticulum
- *lobus pyramidalis*
- C-cells
  - neural crest origin
  - ultimobranchial body of 5th pharyngeal pouch



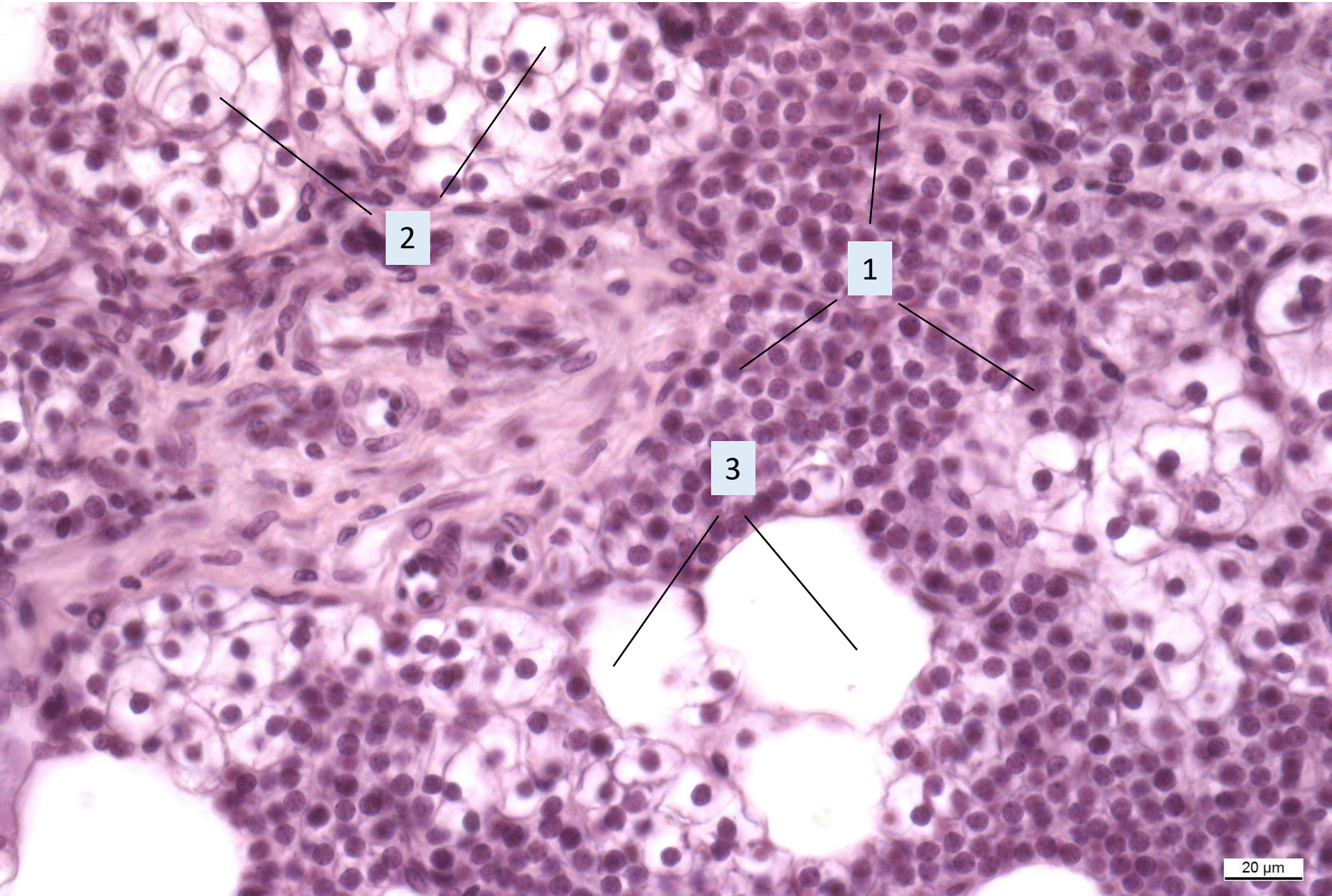


# Parathyroid gland (*gl. parathyreoidea*)





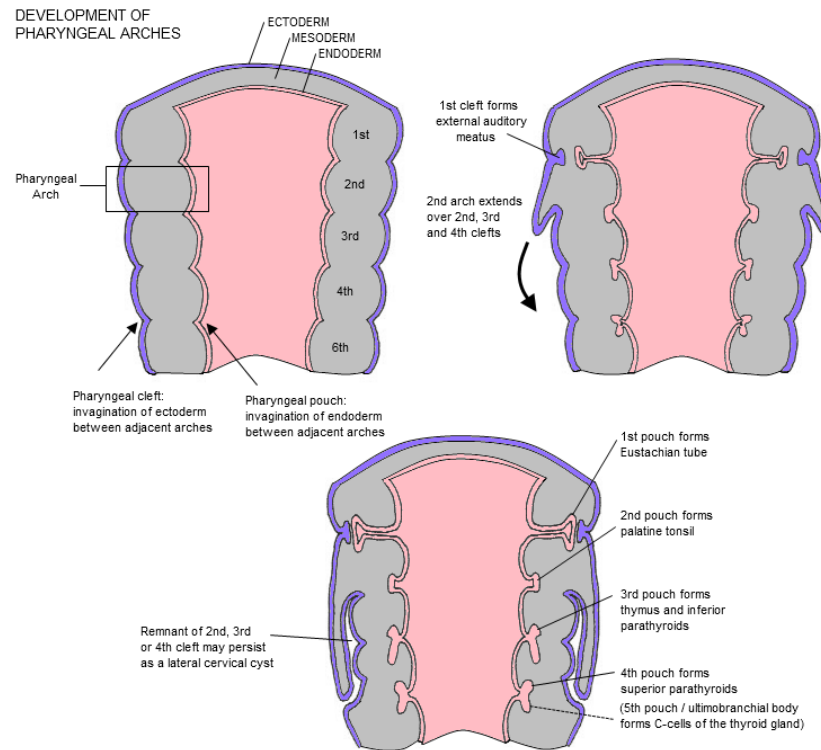
# Parathyroid gland (*gl. parathyreoidea*)





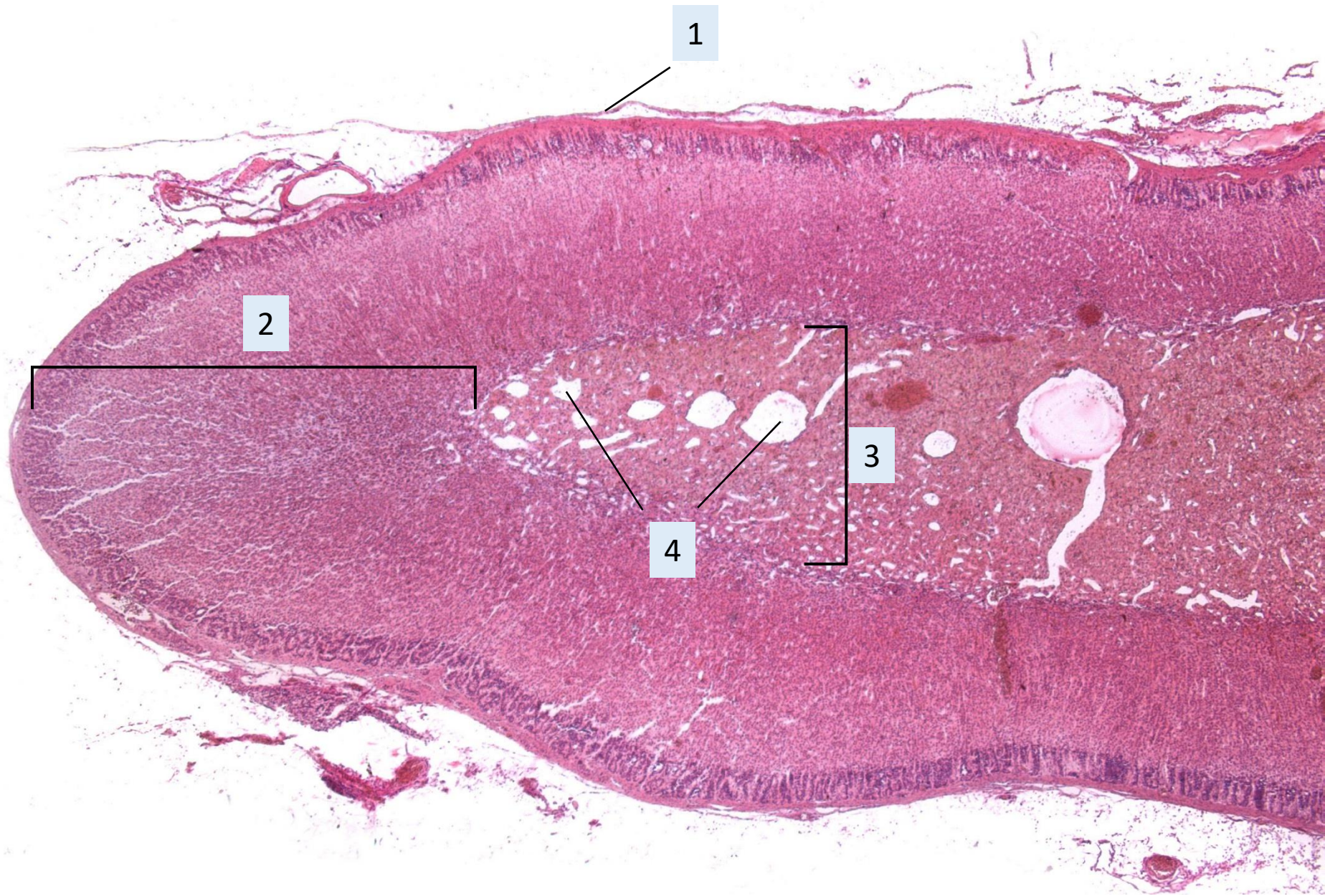
# Embryonic development of parathyroid gland

- *glandulae parathyroideae superiores* from endoderm of 4th pharyngeal pouch
- *glandulae parathyroideae inferiores* from dorsal process of 3rd pharyngeal pouch
- together with thymus descend to lower poles of thyroid



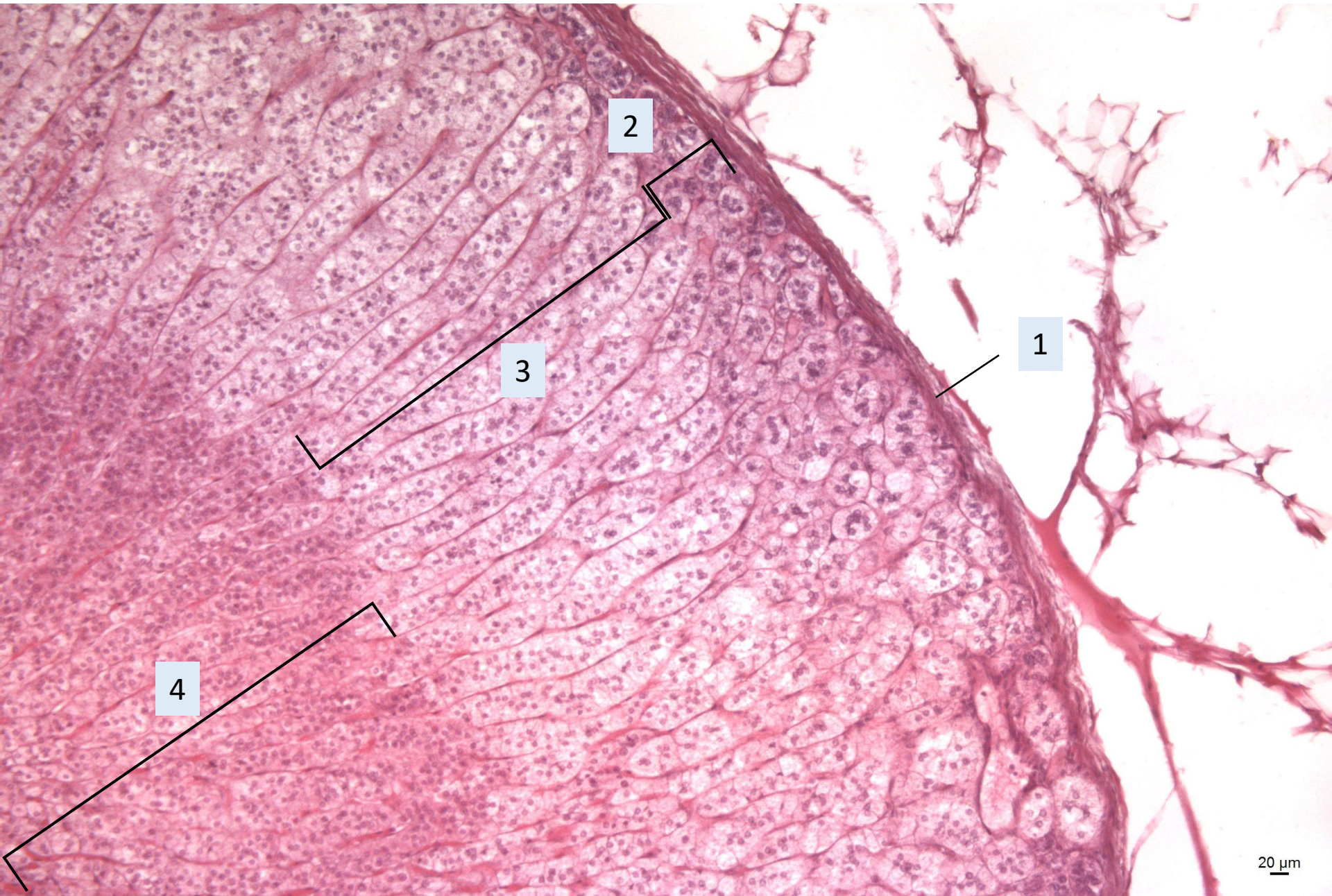


# Suprarenal gland (*gl. suprarenalis*)



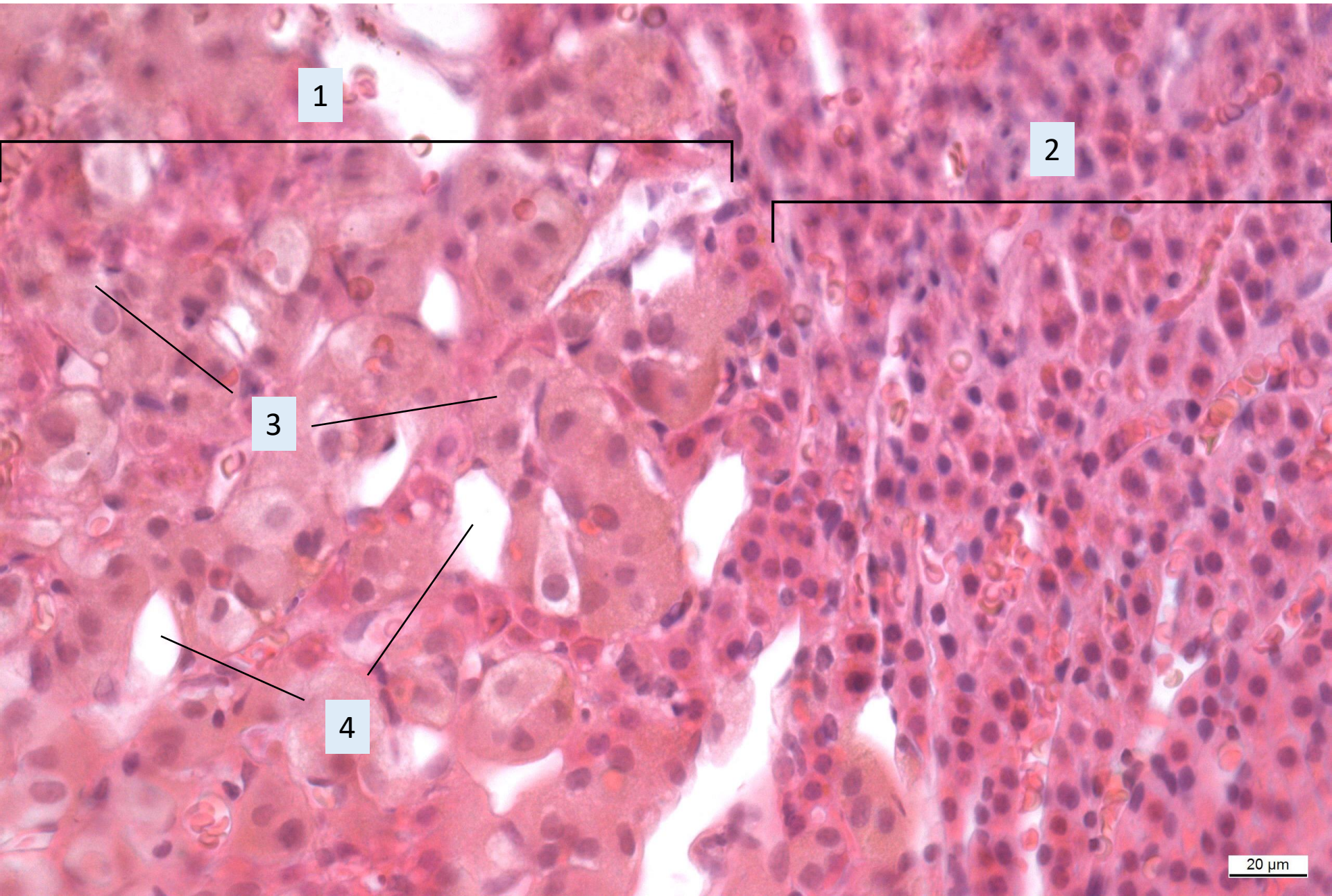


# Suprarenal gland (*gl. suprarenalis*)





# Suprarenal gland (*gl. suprarenalis*)



1

2

3

4

20  $\mu$ m



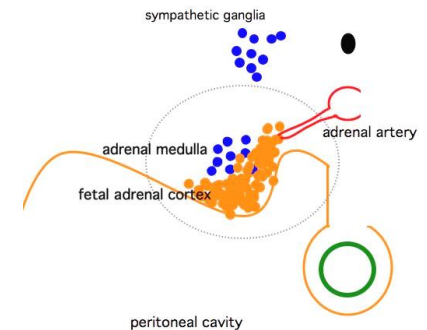
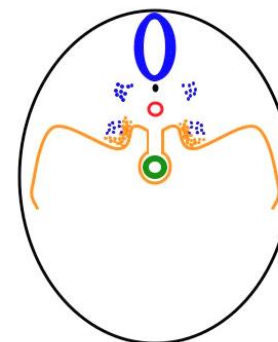
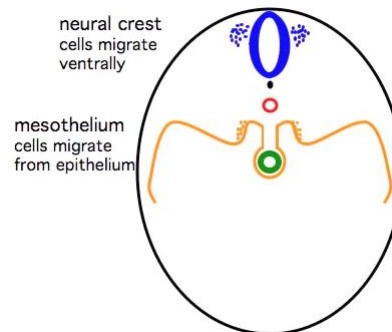
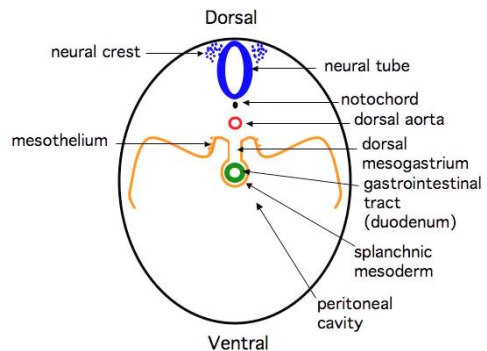
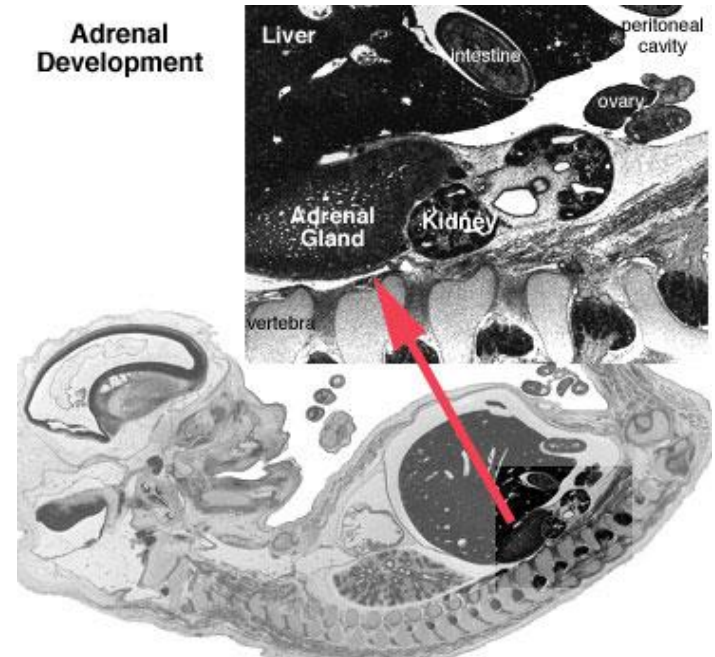
# Embryonic development of suprarenal gland

## Cortex

- mesoderm
- mesothelium, coelomic epithelium
- primitive fetal cortex 5-6<sup>th</sup> week
- fetoplacental unit
- definitive cortex
- *zona reticularis* fully differentiates within 3 years

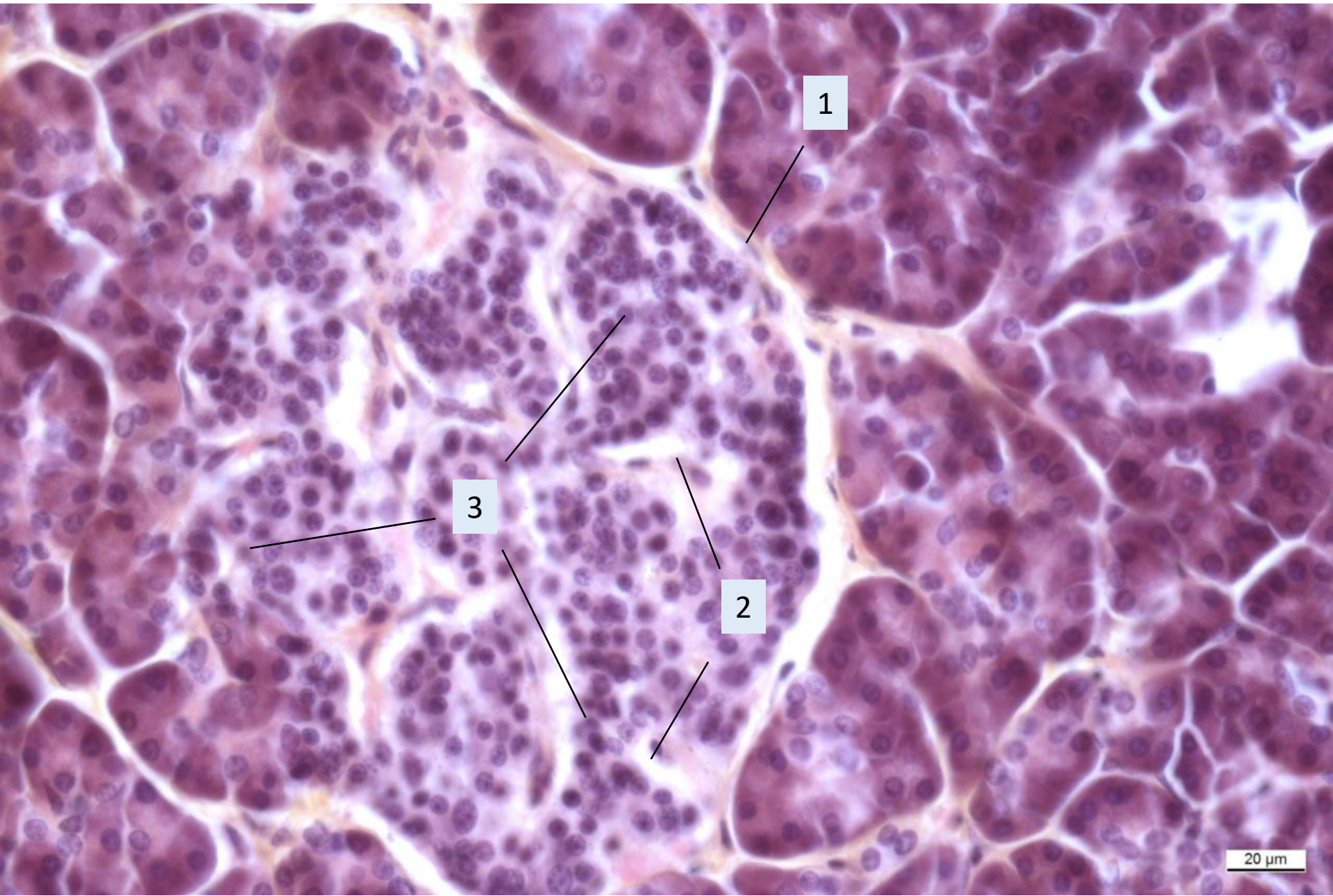
## Medulla

- *neural crest*





# Langerhans islets





# List of slides

52. *Hypophysis cerebri*

53. *Epiphysis*

54. *Glandula thyreoidea*

55. *Glandula parathyroidea*

56. *Corpus suprarenale*

23. *Pancreas* – islets of Langerhans

Atlas EM:

12. Steroidogenic cells (Ovary)

66. *Pancreas* – islets of Langerhans