

Vznik spermie,
spermatogeneze, spermiogeneze

Jak vzniká spermie ?

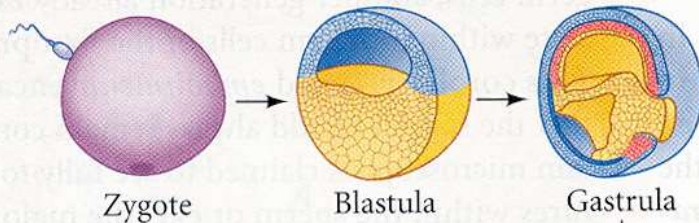
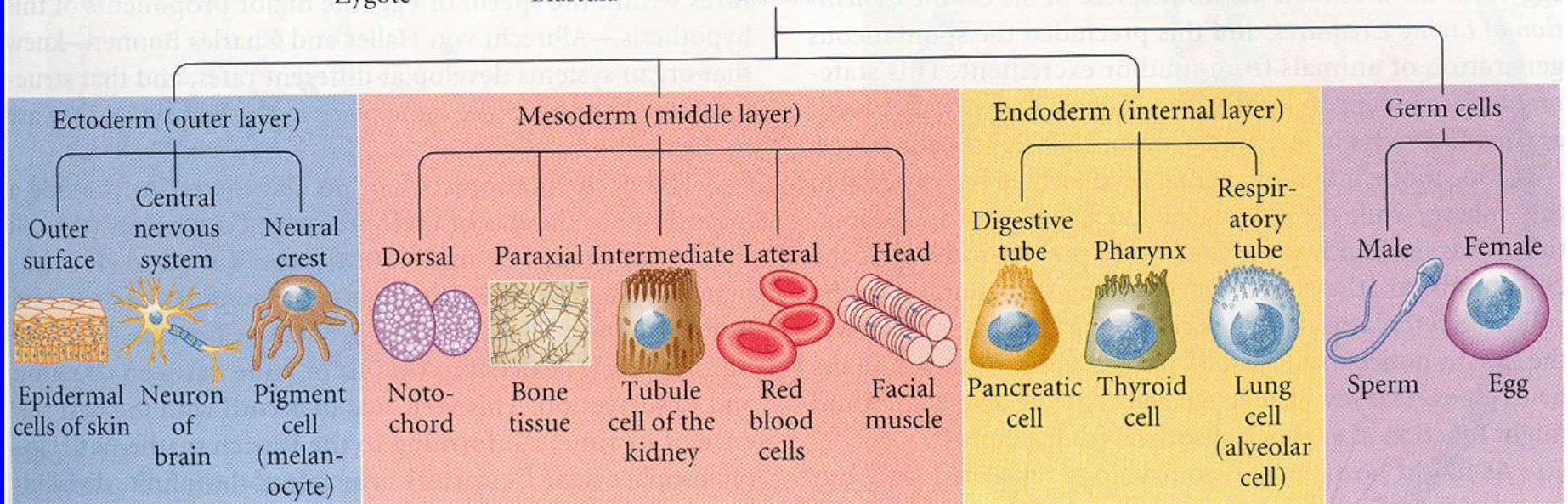


Figure 1.1

Some representative differentiated cell types of the vertebrate body. The progeny of the fertilized egg must diversify into hundreds of cell types. The cell types are organized according to the germ layers from which they arise. The germ cells (precursors of the sperm and egg) are shown as not arising from any of the germ layers.



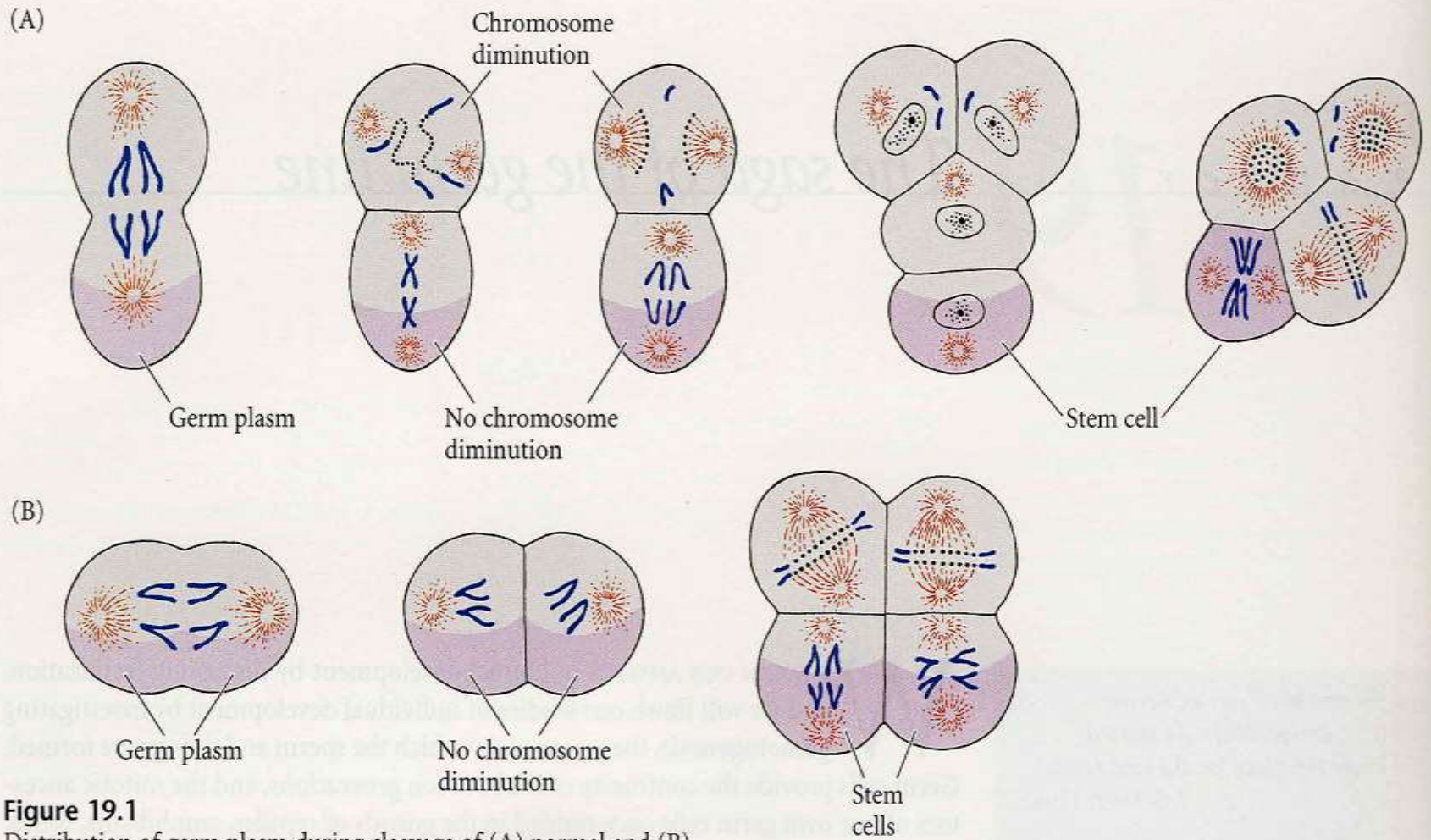
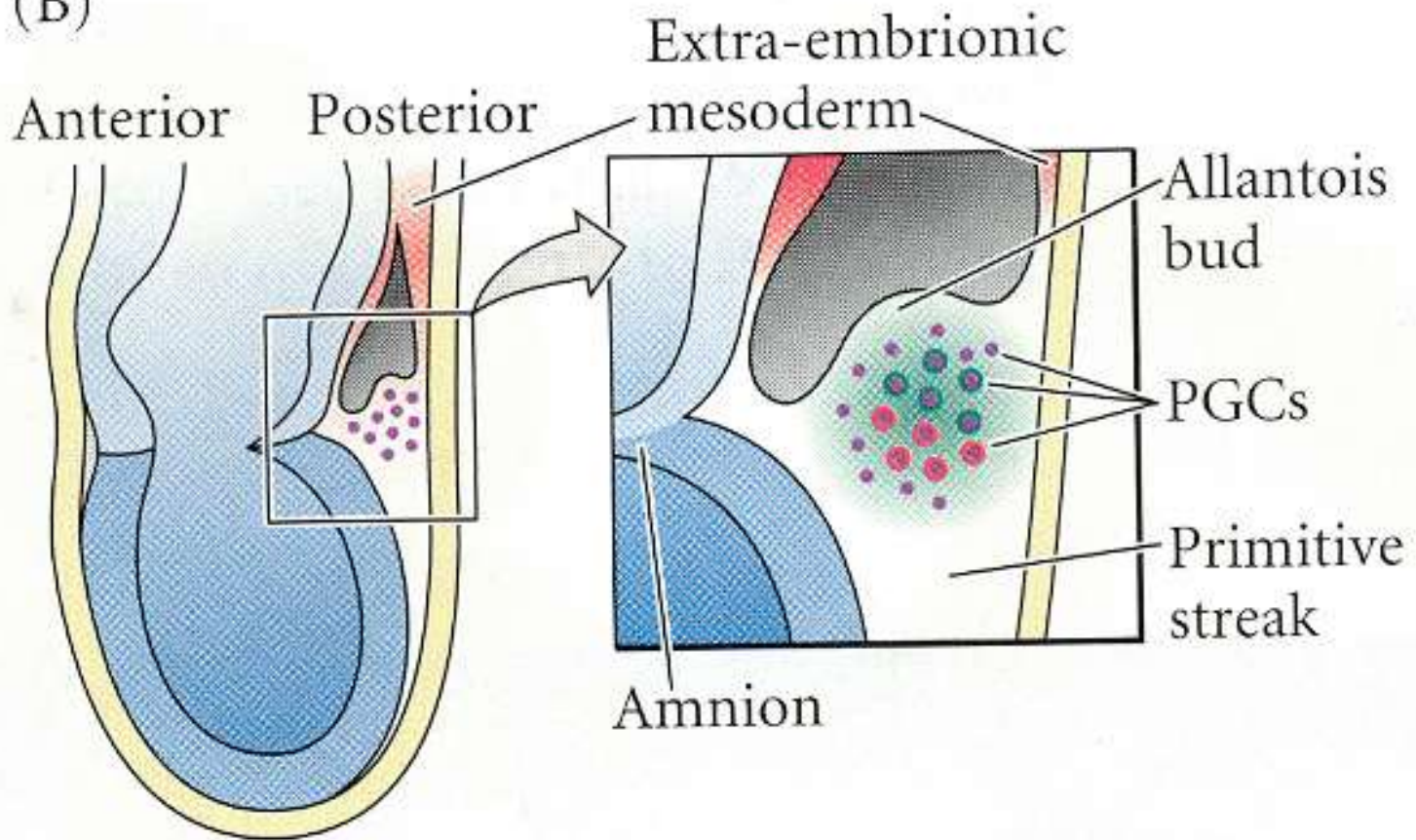


Figure 19.1

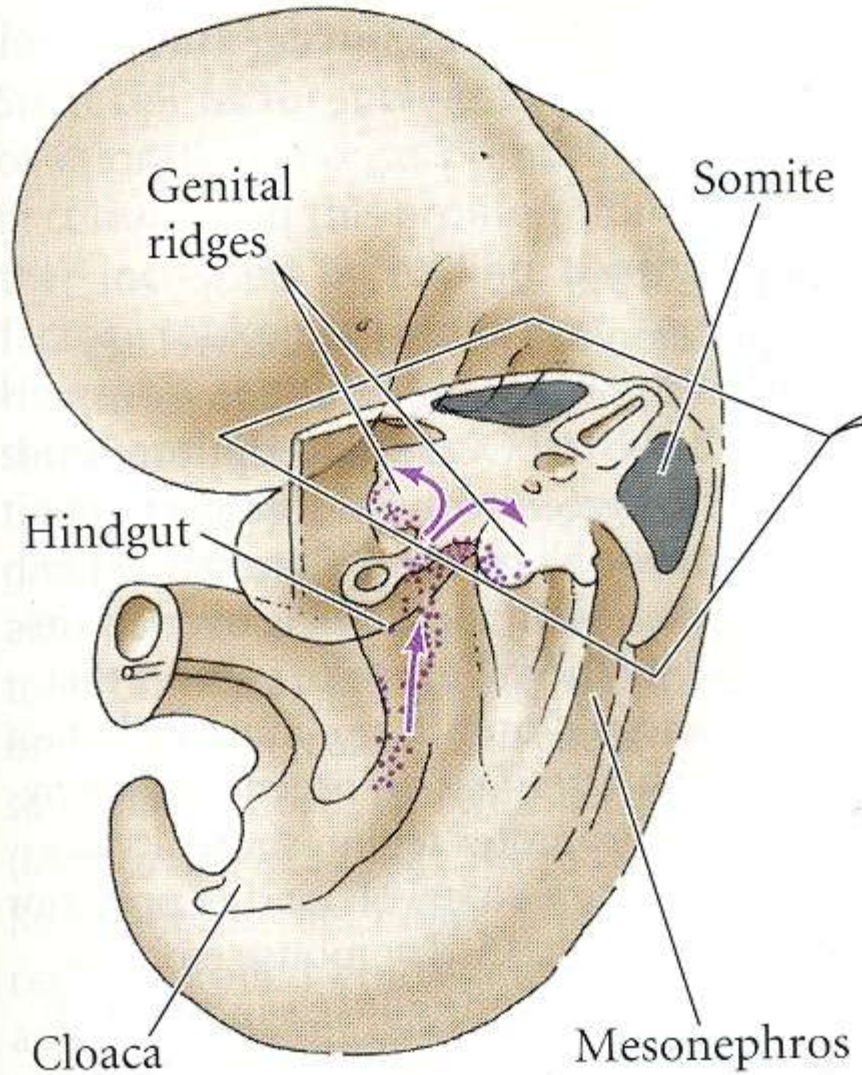
Distribution of germ plasm during cleavage of (A) normal and (B) centrifuged zygotes of *Parascaris*. (A) The germ plasm is normally conserved in the most vegetal blastomere, as shown by the lack of chromosomal diminution in that particular cell. Thus, at the 4-cell stage, the embryo has one stem cell for its gametes. (B) When the

zygote is centrifuged, the germ plasm is located at the animal pole. The zygote splits meridionally while the vegetal cell again divides equatorially. Both vegetally derived cells have normal chromosomes. However, the chromosomes of the more animally located of

(B)



(D) Migration of PGCs into gonad



Genitální lišty

Početnost populace PGC

- Den 7- 10-50 počátek migrace
- Den 11 2,5-5,0 tis. - ukončení migrace a vstup do oblasti pohlavní lišty
- Mitotická aktivita: 16 hodin
- Intenzivní reakce na alkalickou fosfatázu
- Oct4, transkripční faktor

Pokračování mitosy a vznik spermatogonií

- Diferenciace na A-0 rezervní buňky
- A-1-4 obnovitelné kmenové buňky. A-4 buď na A-1 nebo na In spermatogonie a dále na spermatocyty, S-fáze a meiosa
- Definování stadií –gradient bovinního sera a identifikace růstových faktorů (Kit ligant/Kit receptor)-Sertoliho buňky

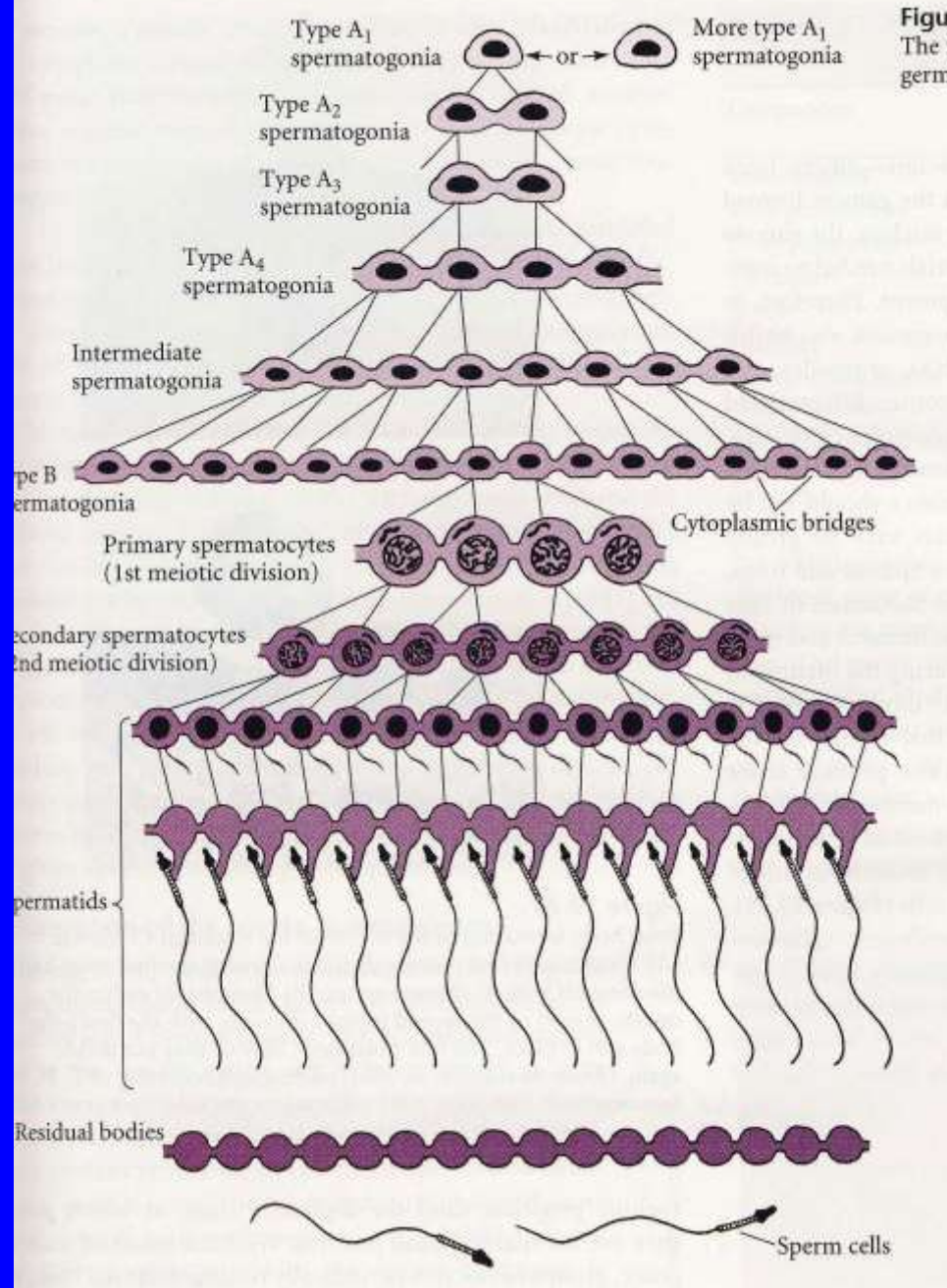
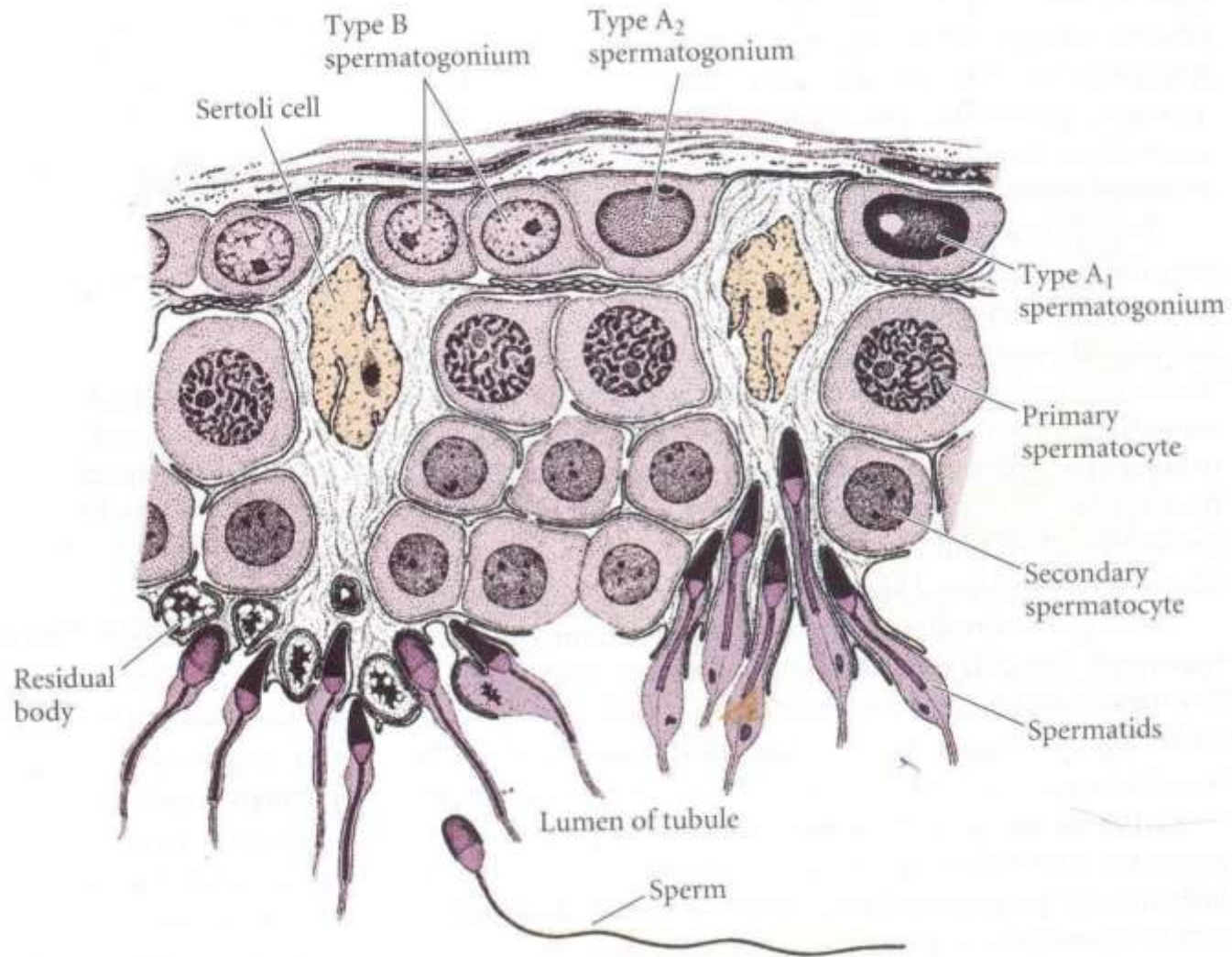


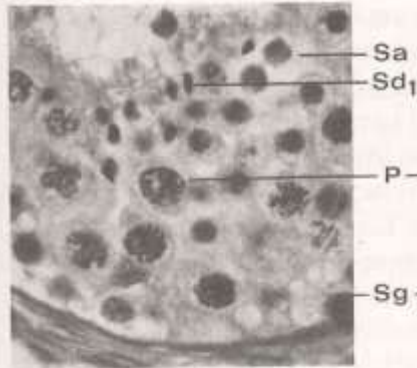
Figure
The f
germ

Tři etapy tvorby spermií

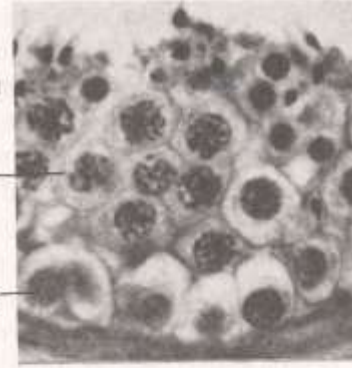
- Transformace kmenových buněk na spermatogonie
- Nástup a ukončení meiosis u spermatocytu
- Přeměna spermatidy na vysoce specialisovanou buňku bez schopnosti dalšího dělení



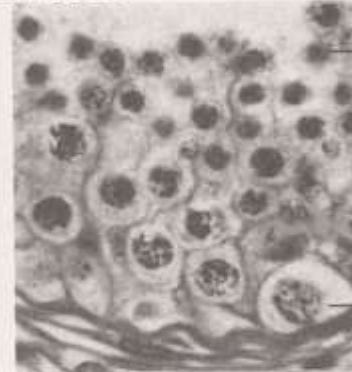
STAGE 1



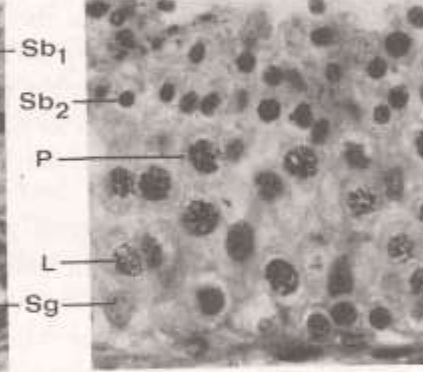
STAGE 2



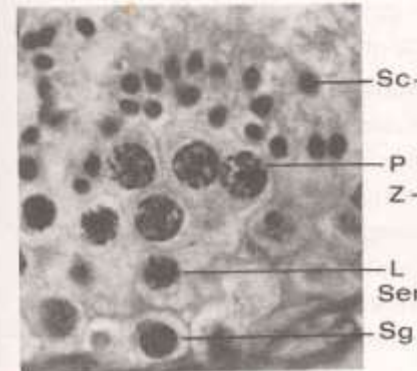
STAGE 3



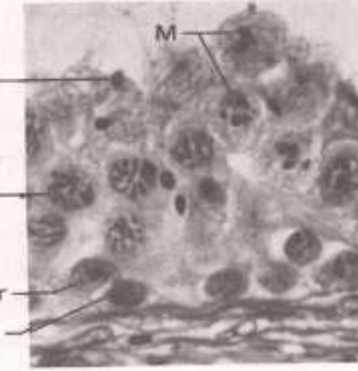
STAGE 4



STAGE 5

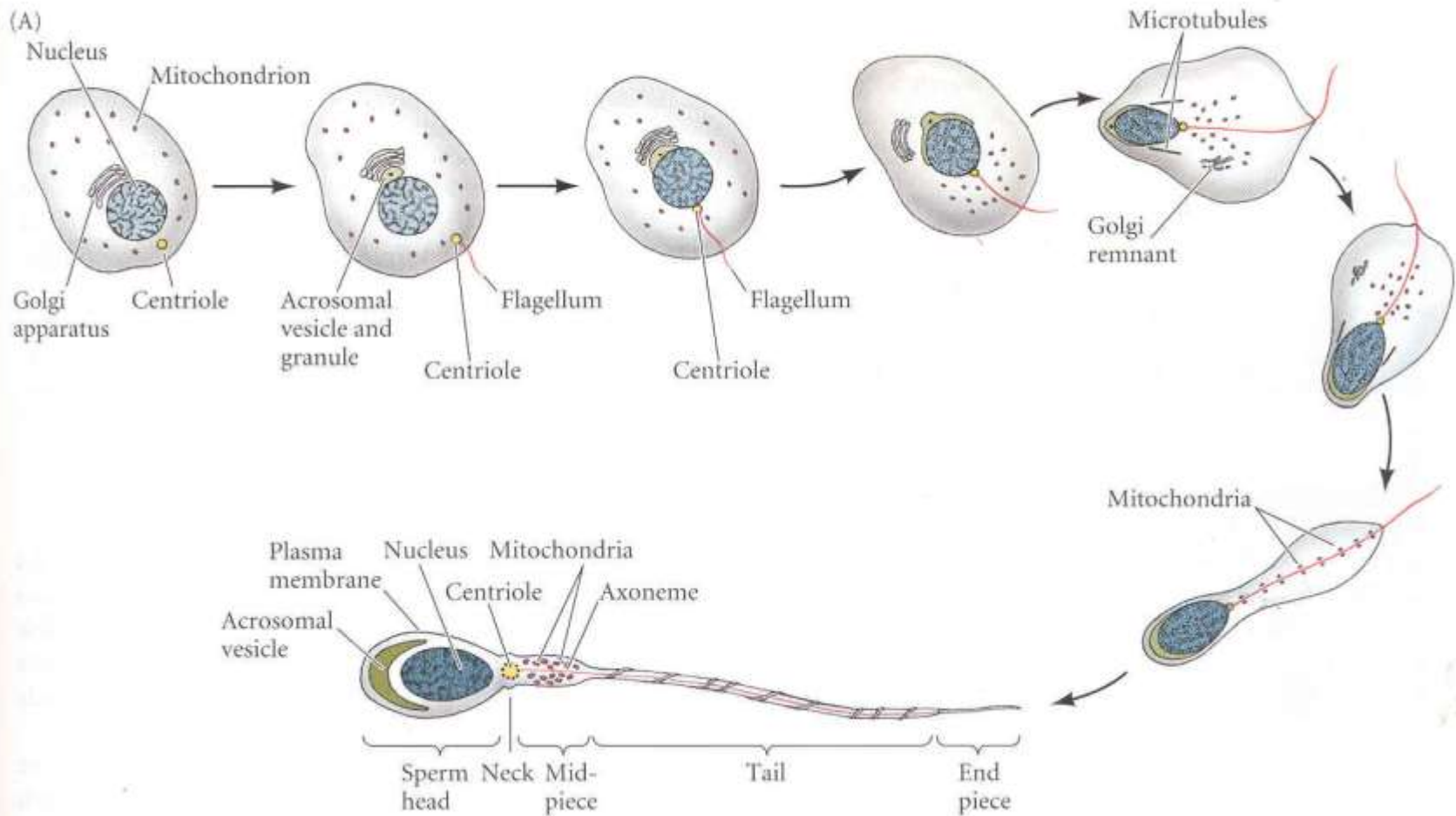


STAGE 6



Spermatida -- Spermie

- Tvorba akrosomu
- Jaderné změny— místo histonů protaminy
- Vývoj bičíku
- Přeskupení buněčných organel
- Změna vztahů mezi spermaidou a Sertoliho buňkou





Human



African green monkey



Russian hamster



Chinchilla



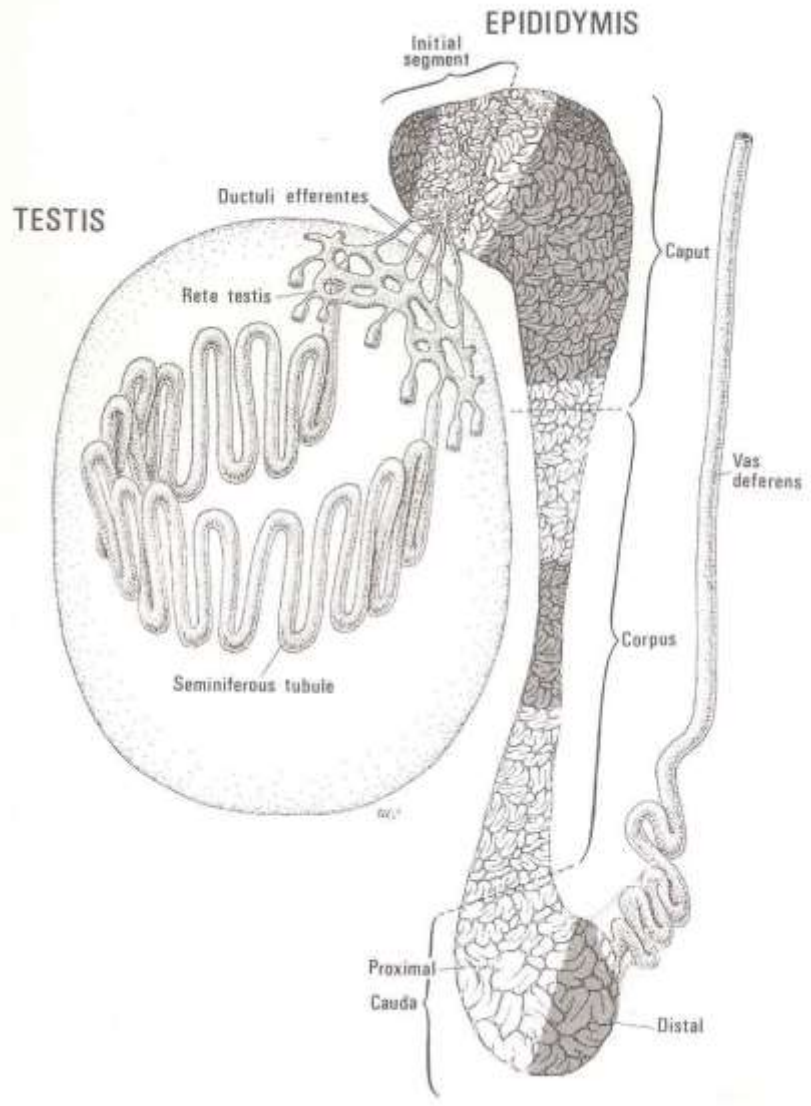
Guinea pig



Ground squirrel

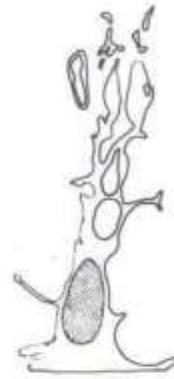
Epididymis

- Caput
- Corpus
- Cauda

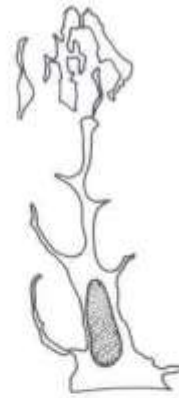




II



VII



VIII



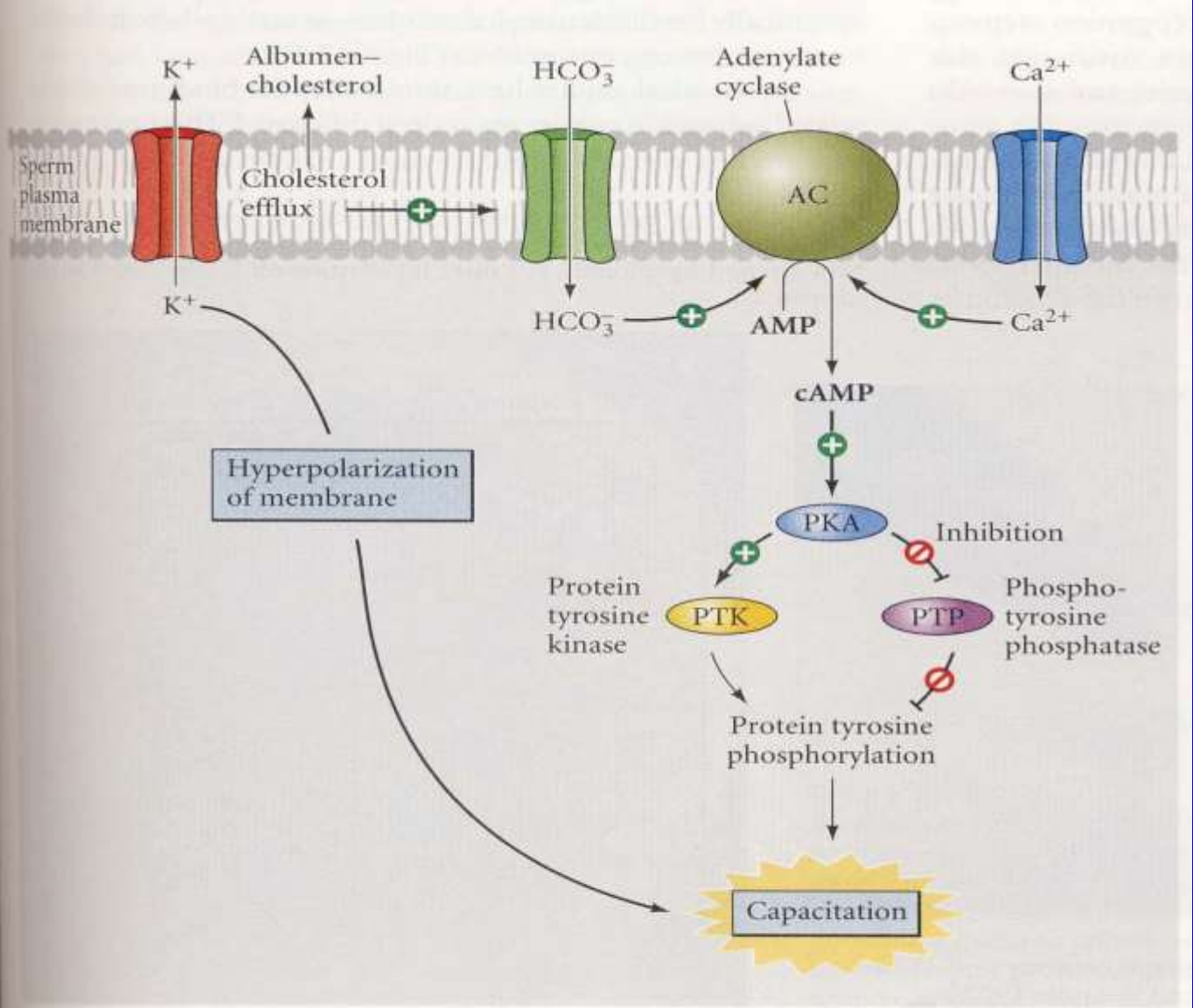
IX



XI



XIV



Odběr ejakulátu

- Umělá vagina - její vlastnosti
 - Manuální odběr

Uchovávání spermii in vitro

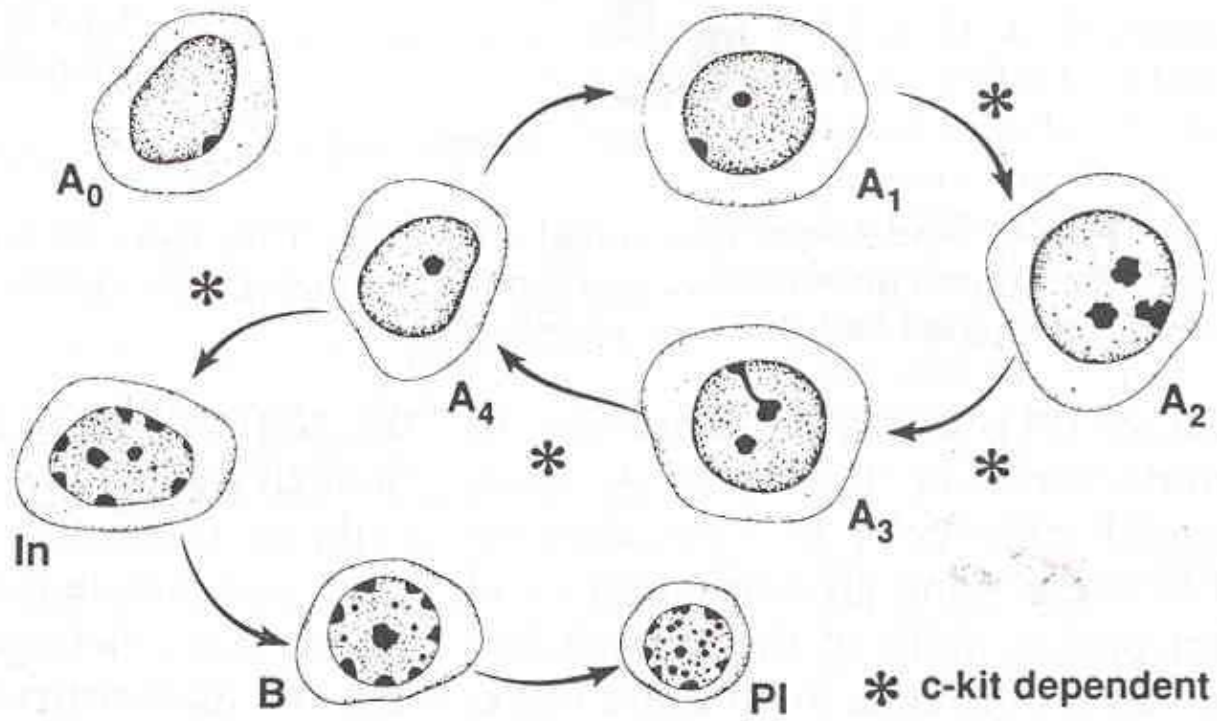
- Teplota nad bodem mrazu
 - V kapalném dusíku

Ztráta oplozovací schopnosti

- Při uchování za pokojové teploty
- Při uchování nad bodem mrazu
- Při uchování v kapalném dusíku

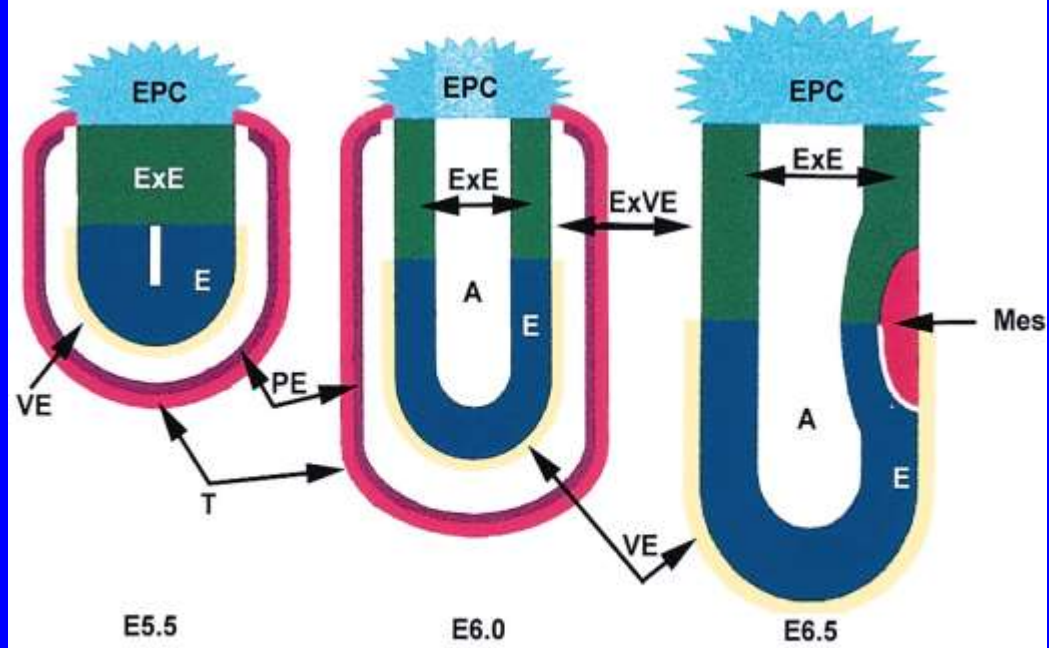
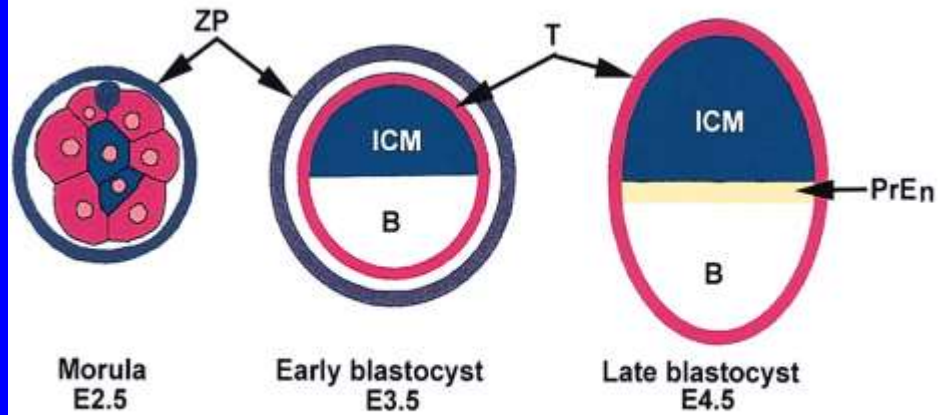
Účast růstových faktorů na vzniku PGC

- Kostní morfogenetický protein BMP 2
- BMP 4
- Fibroblastový růstový faktor b bFGF
- Faktor kmenových buněk



- Ve tvořících kanálcích somatické buňky (Sertoliho?) A jejich enzym Cyp 26b1 degraduje retinovou kyselinu (RA) a tím brání vstup do meiosis.

Preimplantation Stages



Post-implantation Embryos

(A) Migration of PGCs to allantois region

