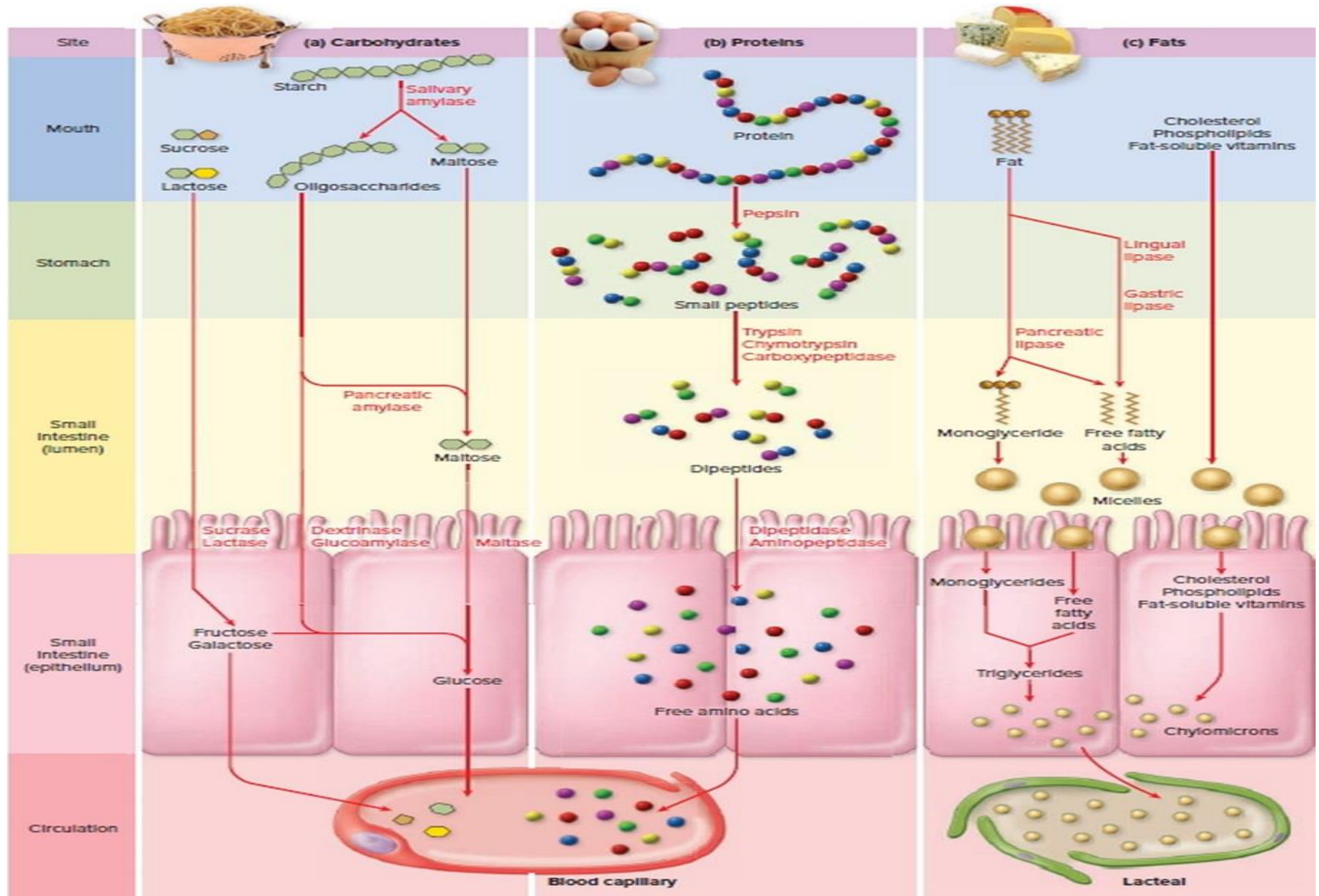


فیزیولوژی پیشرفته، جلسه ششم

نگرشی مقایسه ای بر هضم آنزیمی کربوهیدراتها، پروتئین ها و چربیها

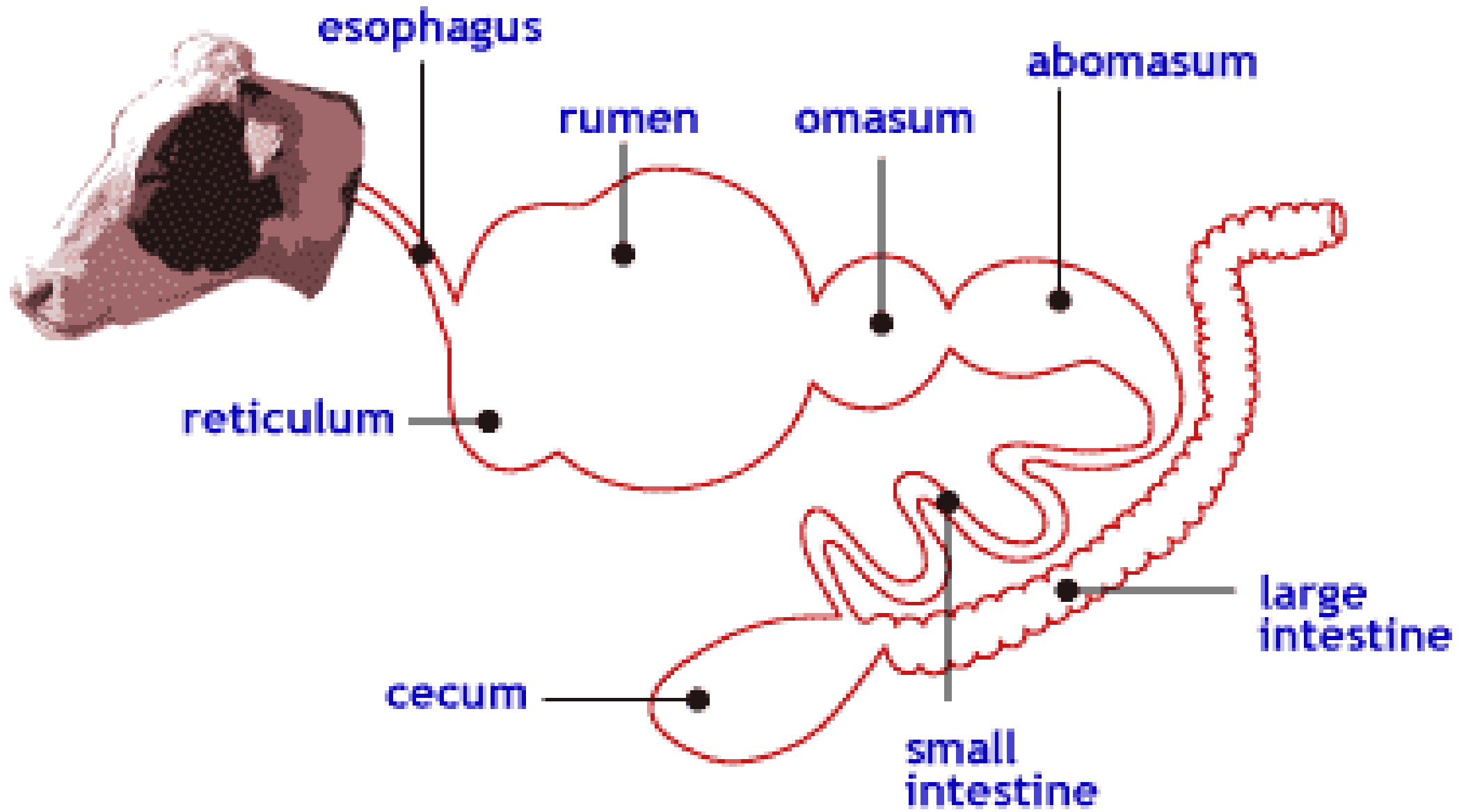


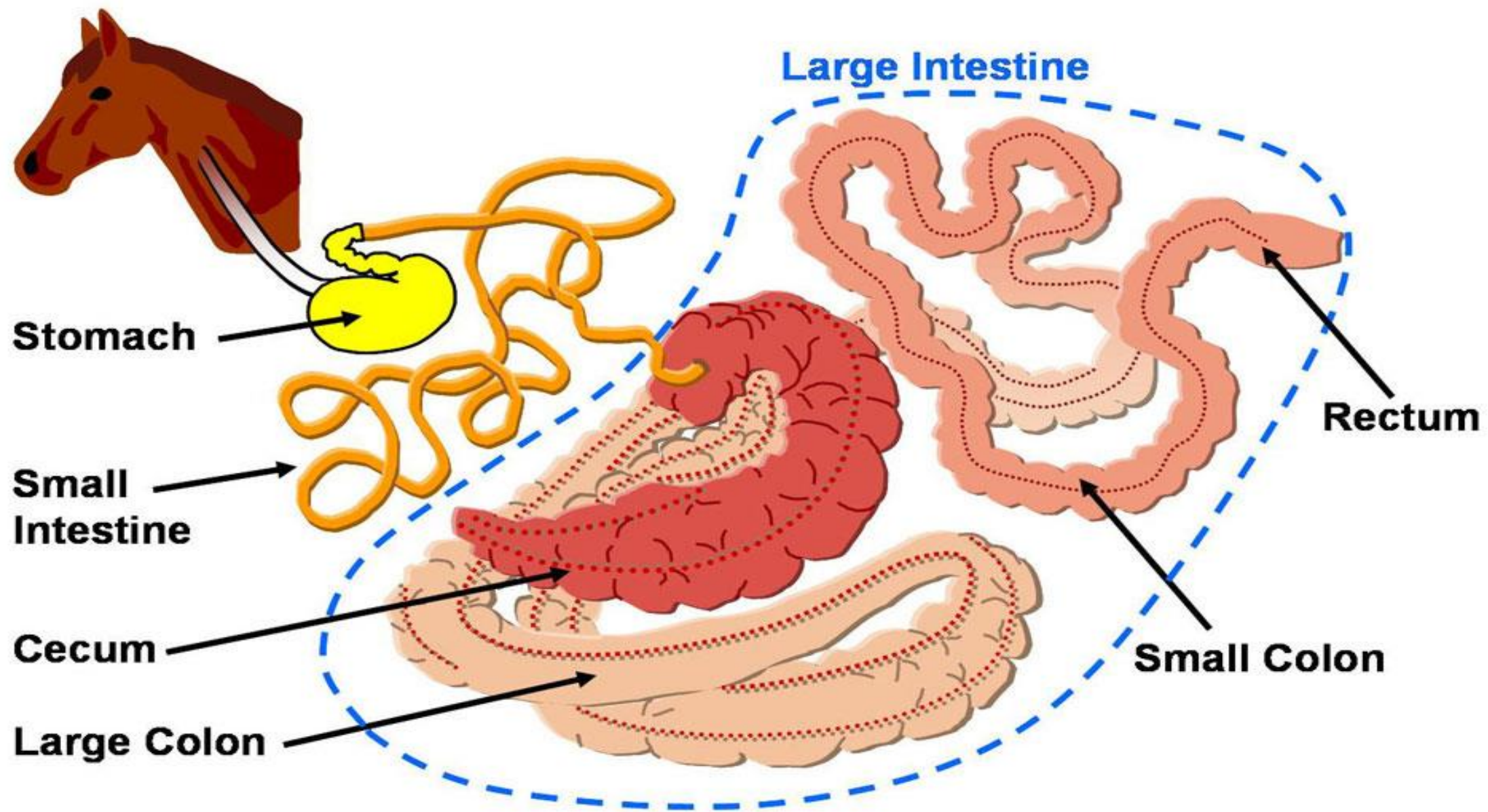
فیزیولوژی پیشرفته، جلسه هفتم

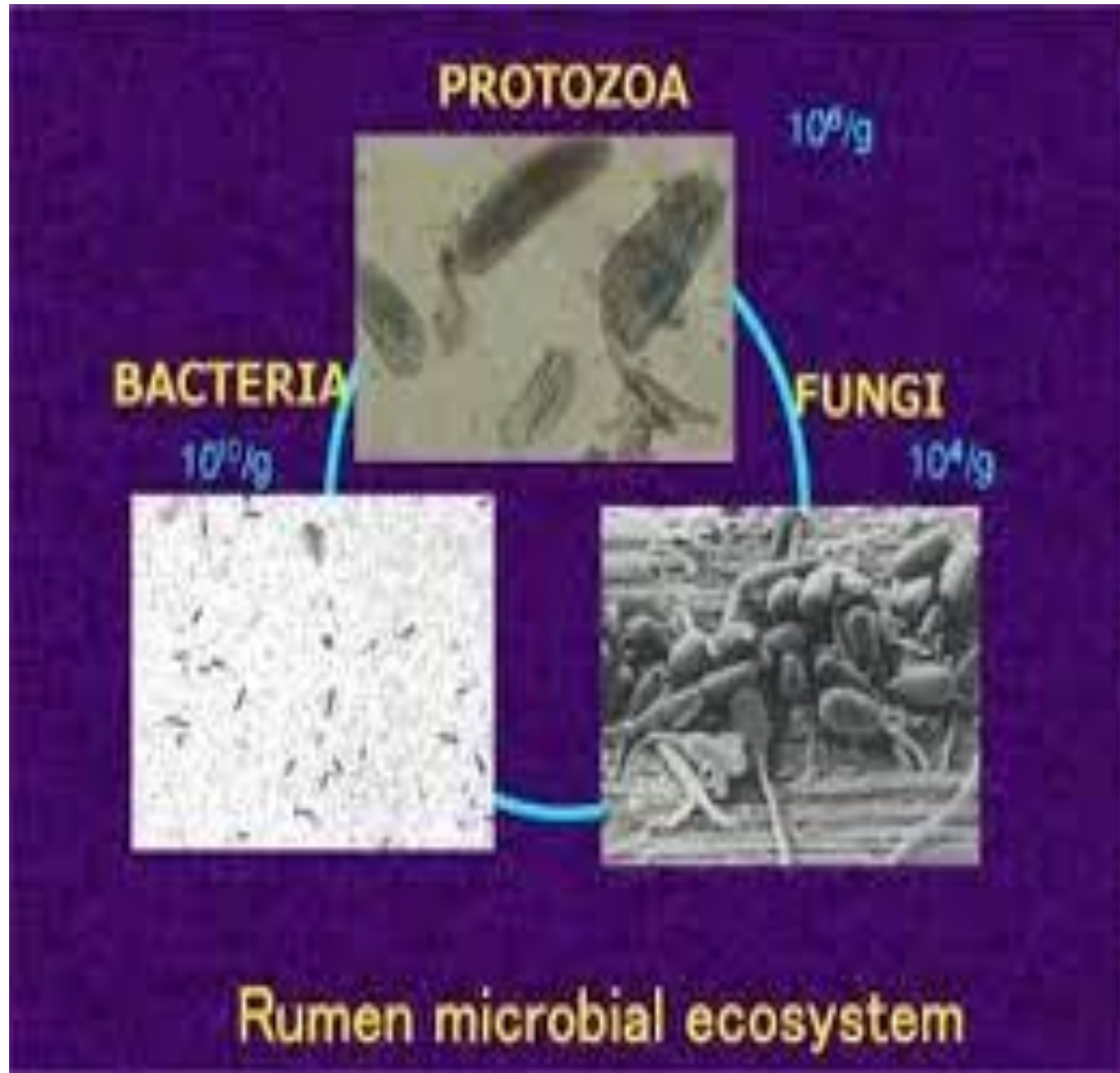
لوله گوارشی در علفخوار نشخوارکننده و غیر نشخوارکننده

تخمیر و هضم میکروارگانیسمی

اهمیت غدد بزاقی در نشخوارکننده و لوزالمعده در علفخوار غیر نشخوارکننده







The rumen microbes

- Bacteria- **gram-positive** and **gram-negative**
 - most numerous group of microbes in the rumen
 - Substrates are fermented to form volatile fatty acids (Acetate, Propionate, Butyrate and others) and CO₂ and CH₄
- Protozoa
 - Generally larger than bacteria but present in small no.
 - Fibre digestion
 - Negatively influence protein utilization – predation and reduce outflow of microbial protein
 - **Ruminants can survive with out protozoa**
- Fungi
 - recently discovered ruminal MOs
 - Degrade the lignin-containing tissues than bacteria

فیزیولوژی پیشرفته، جلسه هشتم

پیش معده نشخوارکنندگان و اعمال حرکتی آن

نشخوار و انقباضات ضد دودی

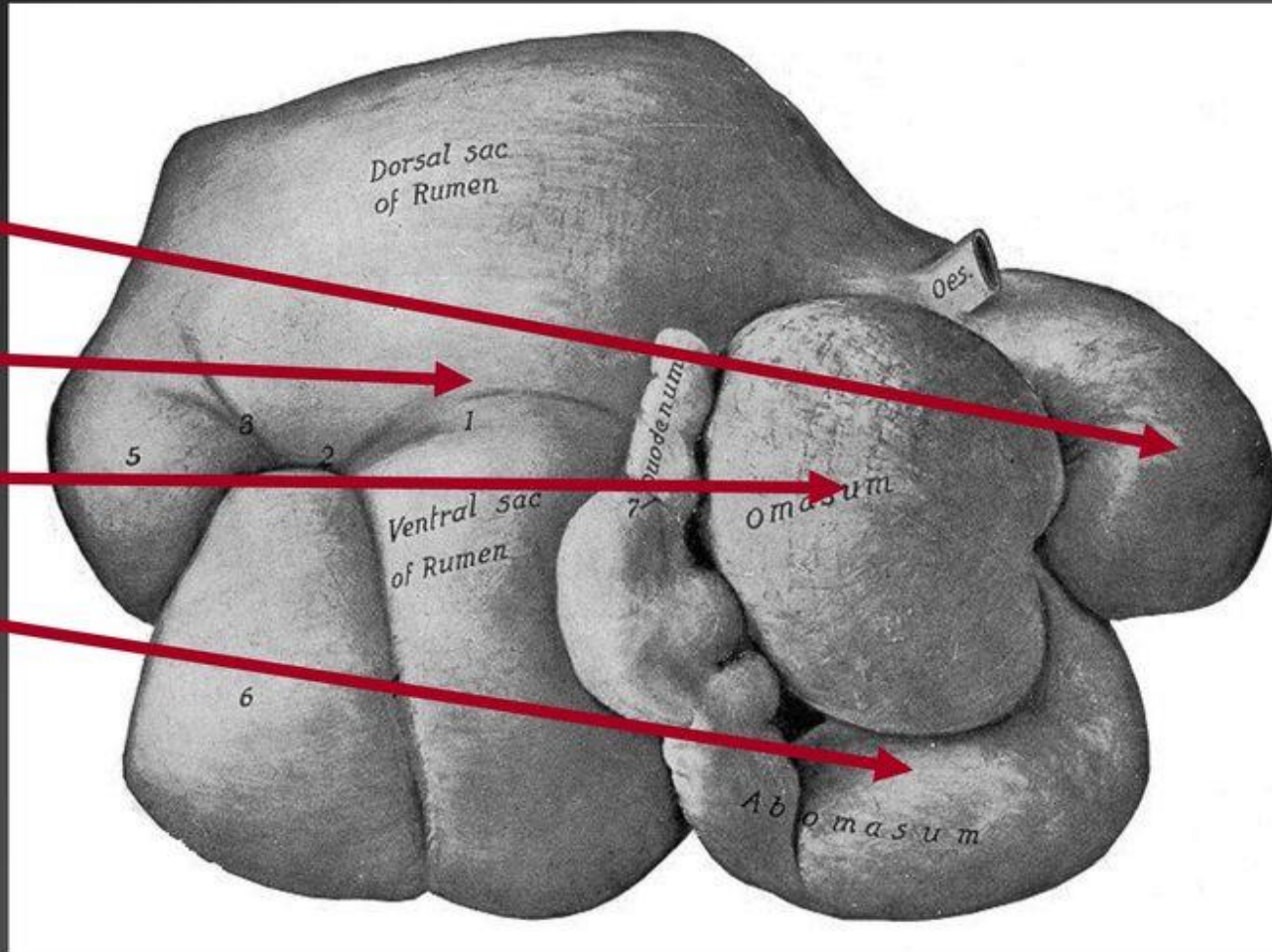
مقایسه شیردان نشخوارکننده با معده جانوران تک معده ای

نشخوار کننده کاذب

Ruminant Stomach

Anatomy:

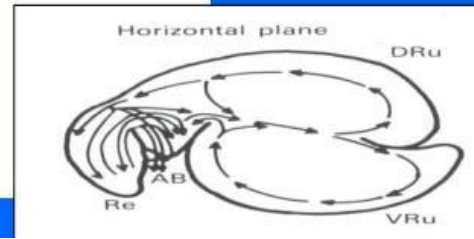
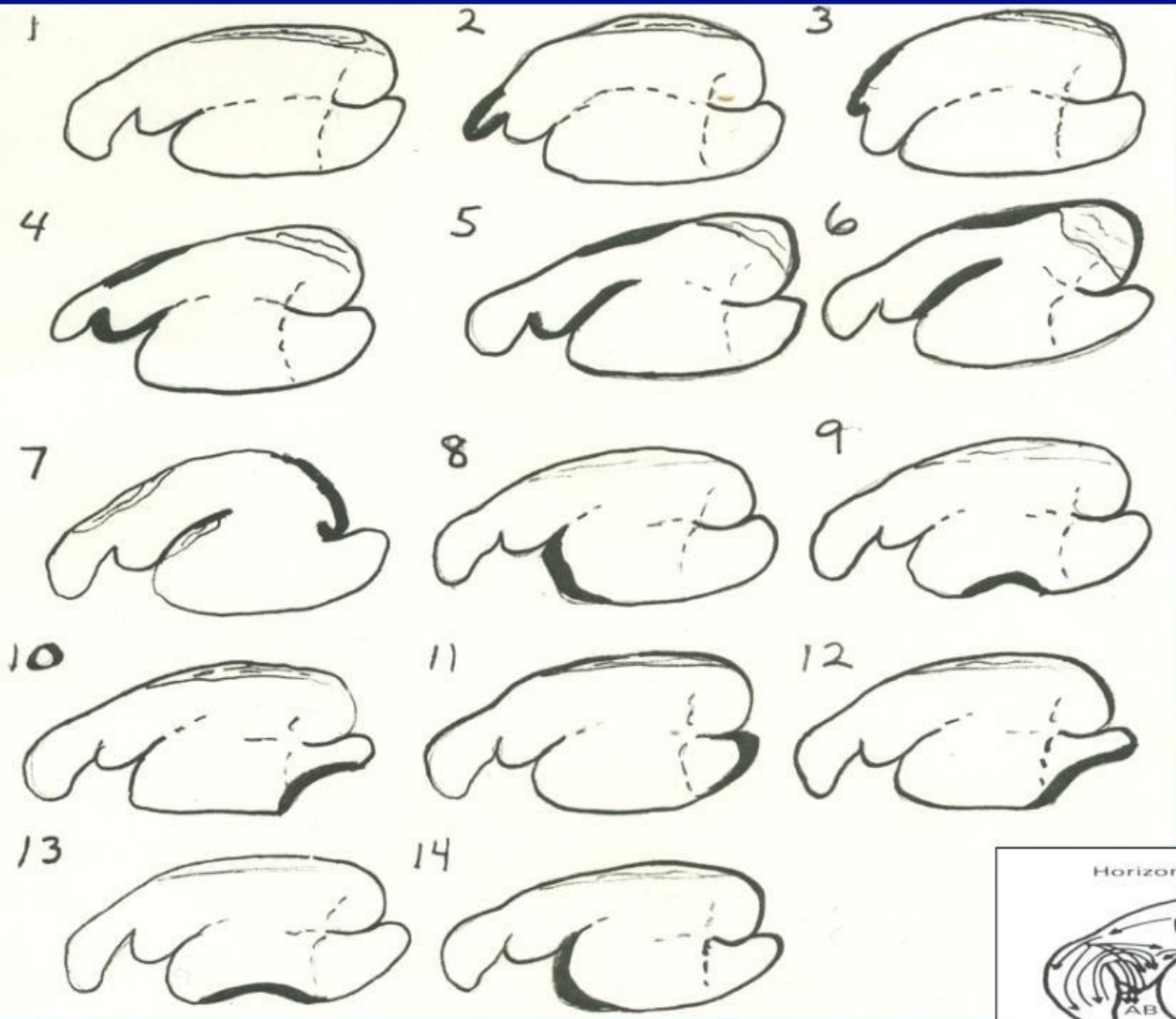
- Reticulum
- Rumen
- Omasum
- Abomasum



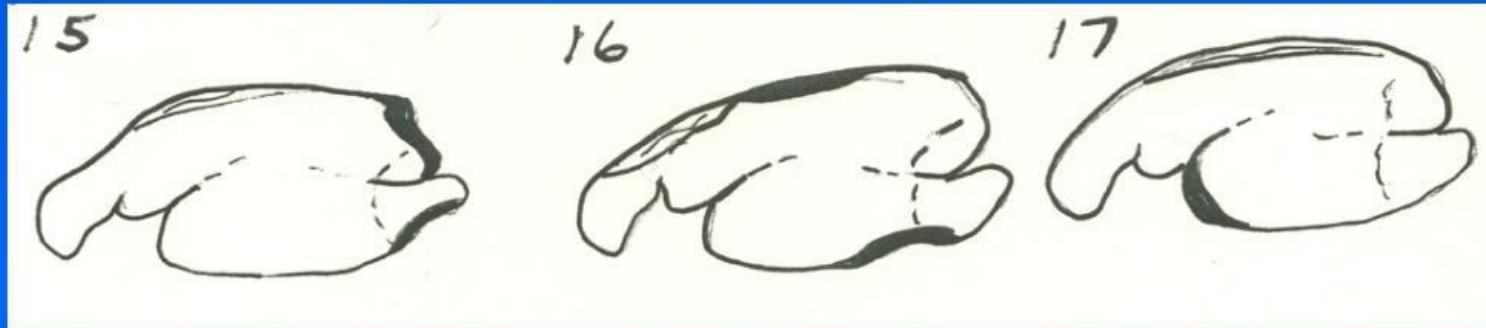
Types of ruminal contractions

- **Primary contraction**
 - Also called A-wave or backward moving
 - Action
 - A biphasic contraction of the reticulum
 - Anterior pillar contracts lifting the anterior sac.
 - Anterior fold rises to form barrier
 - Contraction moves across dorsal sac to dorsal blind sac from contraction of longitudinal pillar and dorsal coronary pillar
 - Dorsal blind sac contracts and dorsal sac relaxes from dorsal coronary pillar
 - Ventral sac contracts along longitudinal pillar
 - Ventral sac relaxed and Ventral blind sac contracts
 - Ventral contraction absent during rumination
 - Functions of the primary contraction
 - Mixing and inoculation of digesta
 - Particle sorting across the reticuloruminal and anterior folds
 - Duration of contraction
 - Fed animal – 30 to 50 seconds
 - Fasted animal – 12 to 18 seconds

The primary contraction of the rumen







- **Secondary contraction**
 - Also called the B-wave or forward-moving contraction
 - Usually occurs after a primary contraction
 - Action
 - Contraction of the ventral blind sac continuing up through the dorsal blind sac using the dorsal coronary pillar
 - Contraction proceeds across dorsal sac forcing gas pocket to the cardiac sphincter
 - Function
 - Eructation
 - Duration
 - 30 seconds

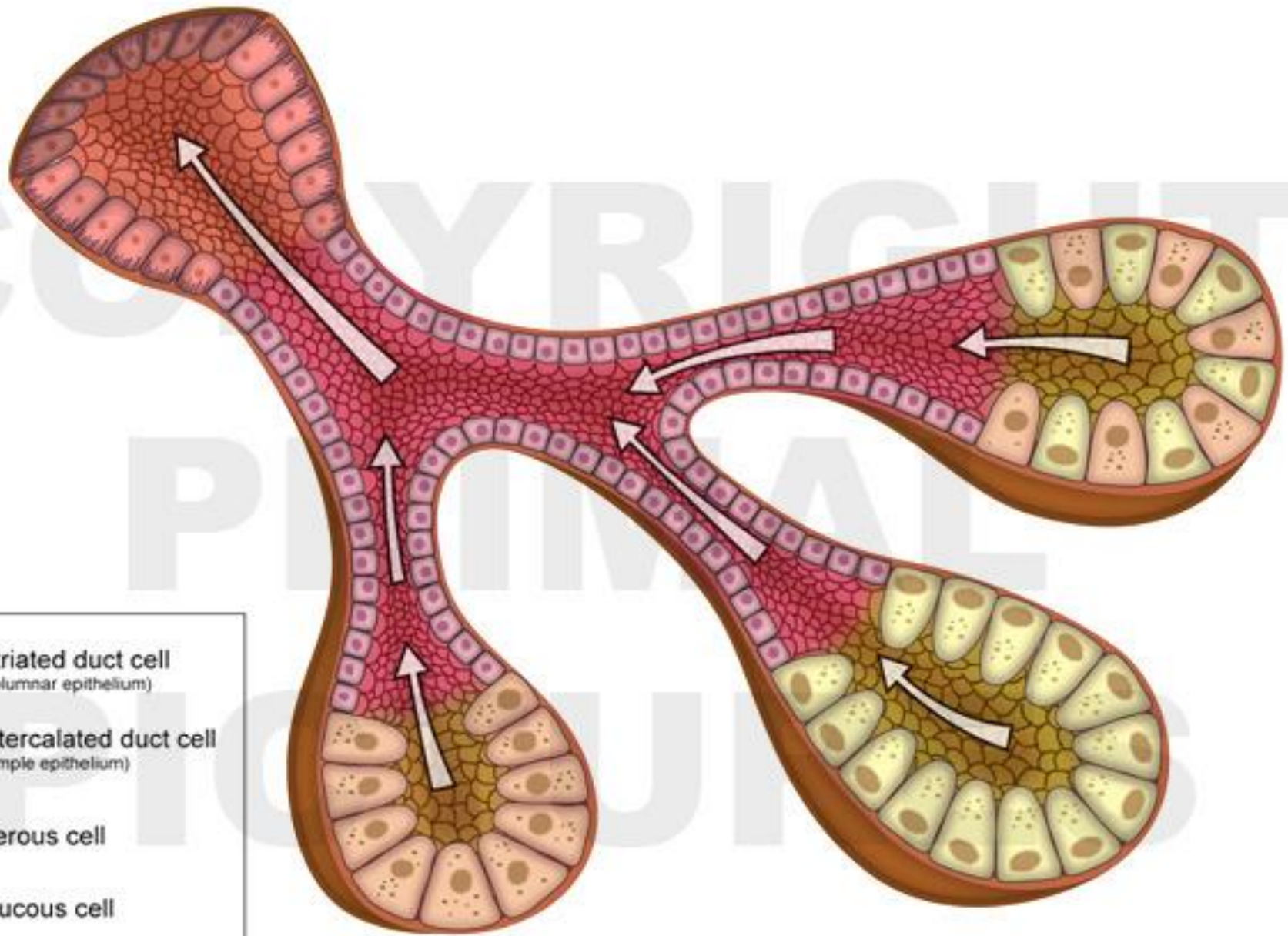


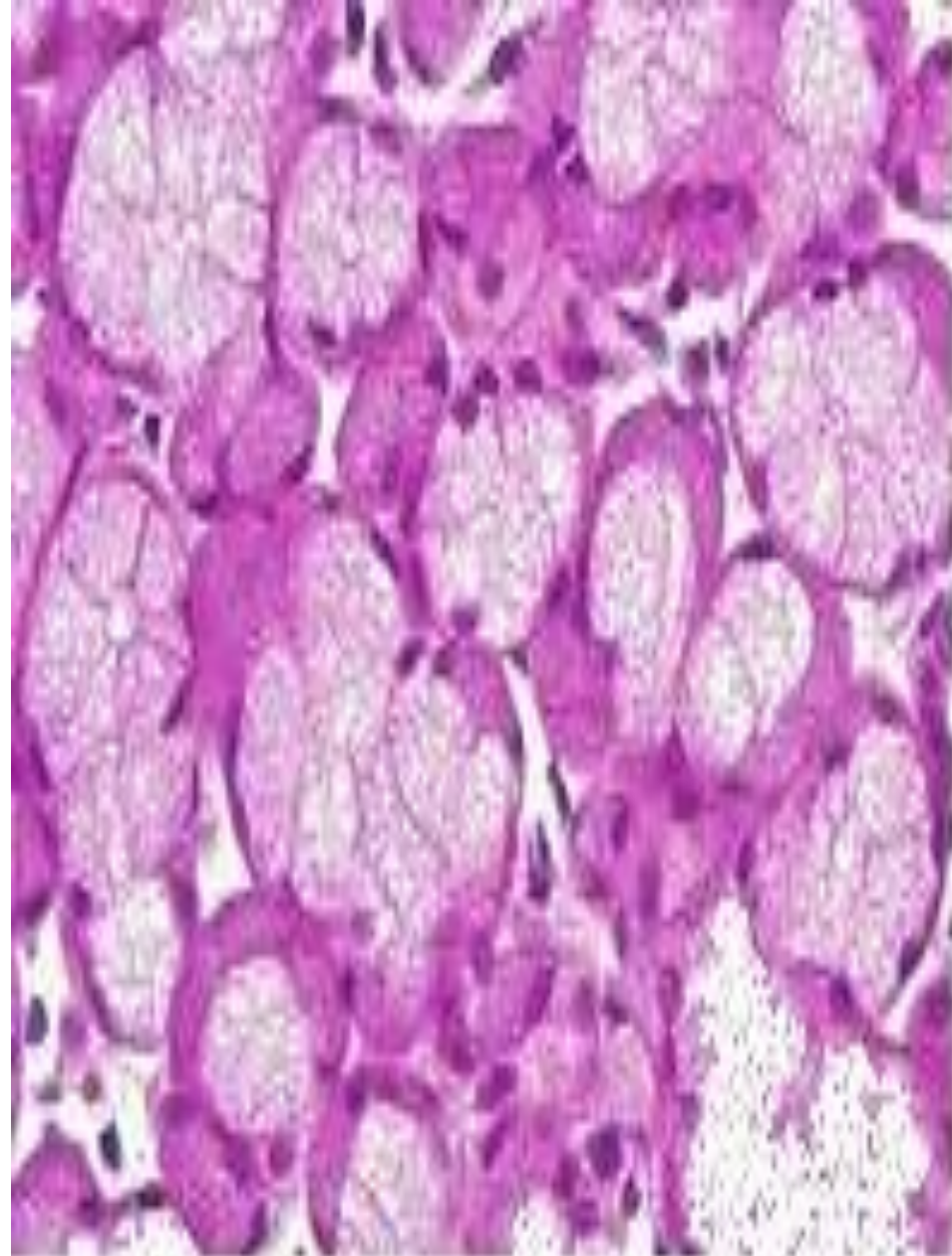
فیزیولوژی پیشرفته، جلسه نهم

فیزیولوژی اندام های ضمیمه گوارشی

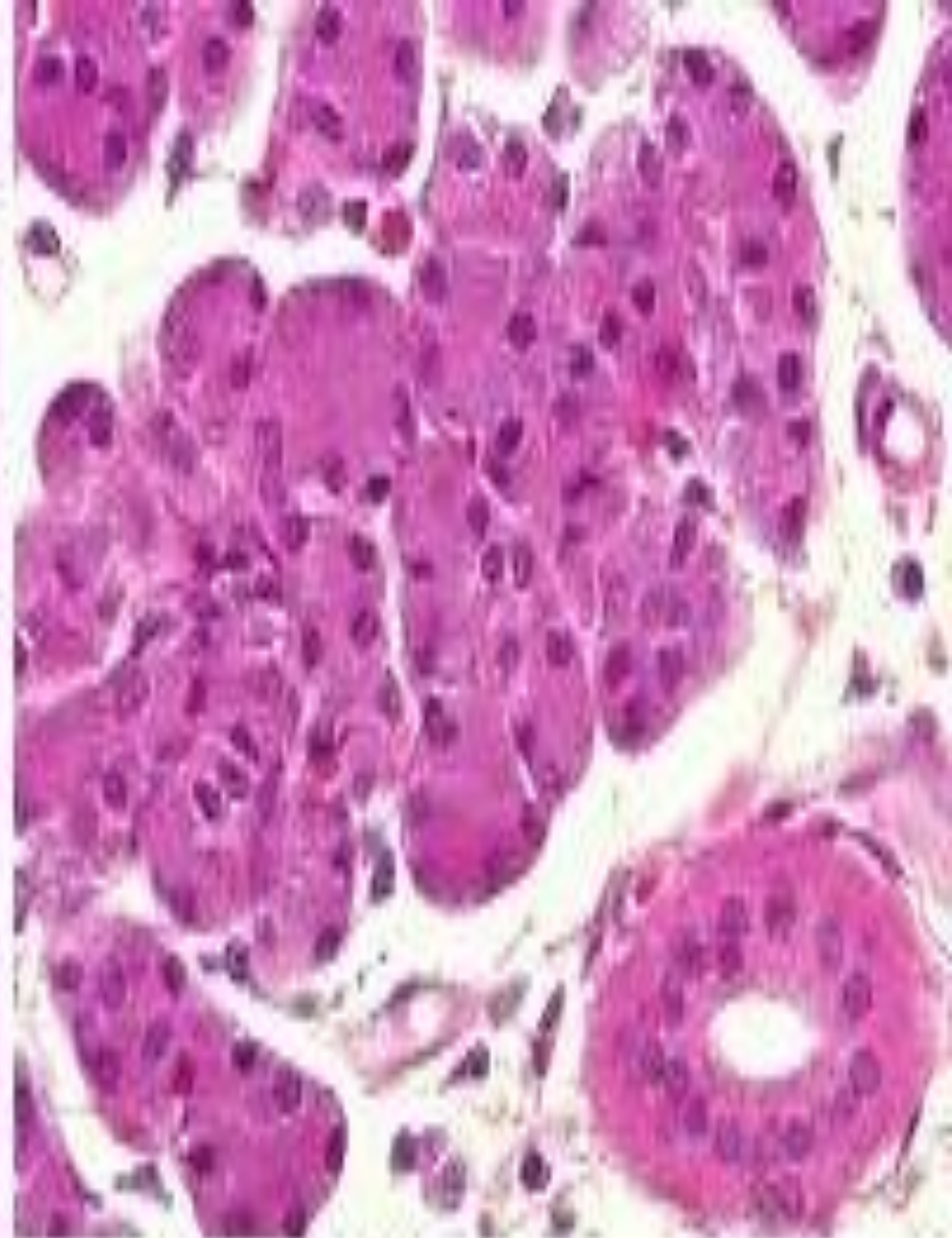
دستگاه گوارش پرندگان

-  **Striated duct cell**
(columnar epithelium)
-  **Intercalated duct cell**
(simple epithelium)
-  **Serous cell**
-  **Mucous cell**



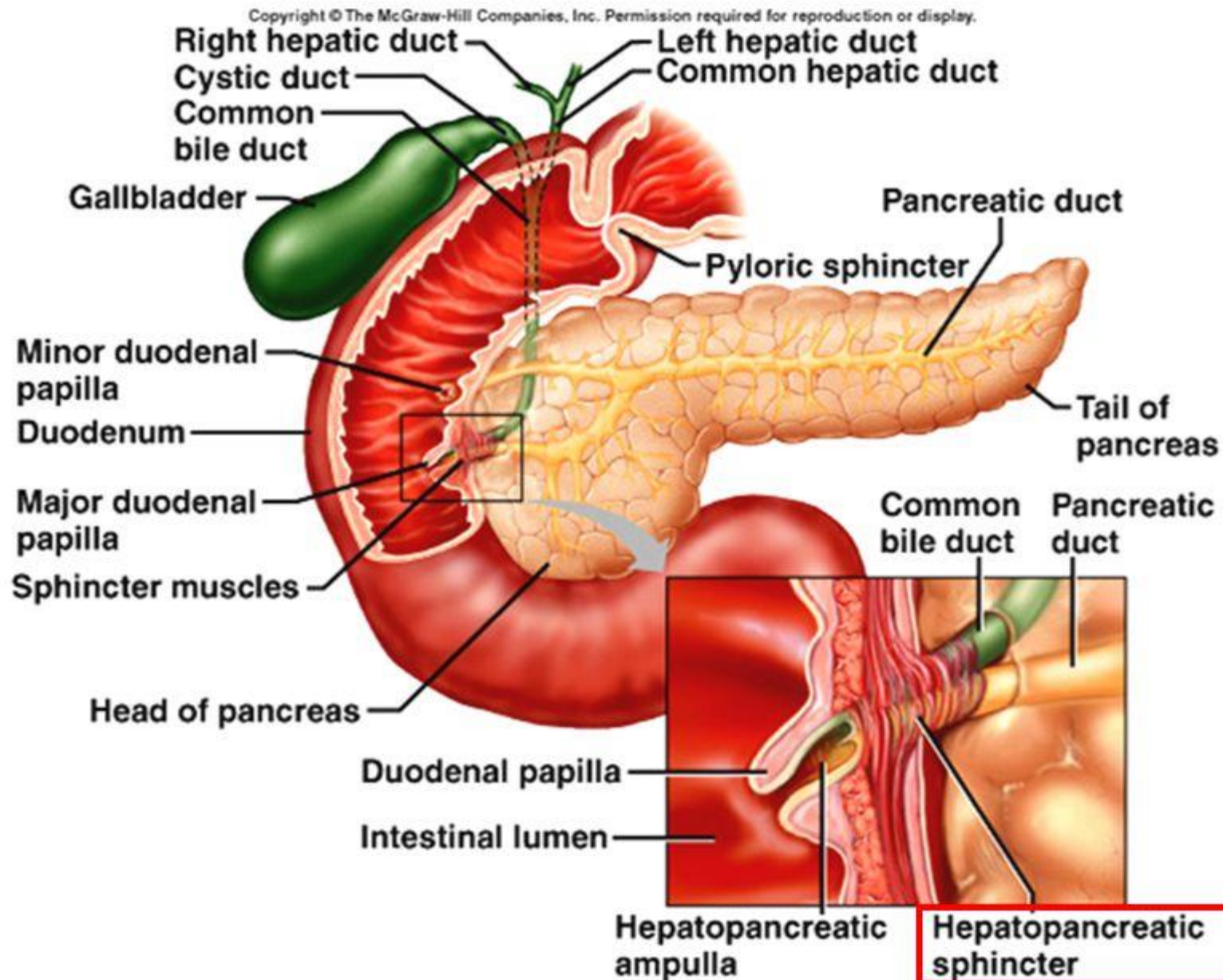


Mandibular gland (mixed)



Parotid gland (serous)

Pancreas

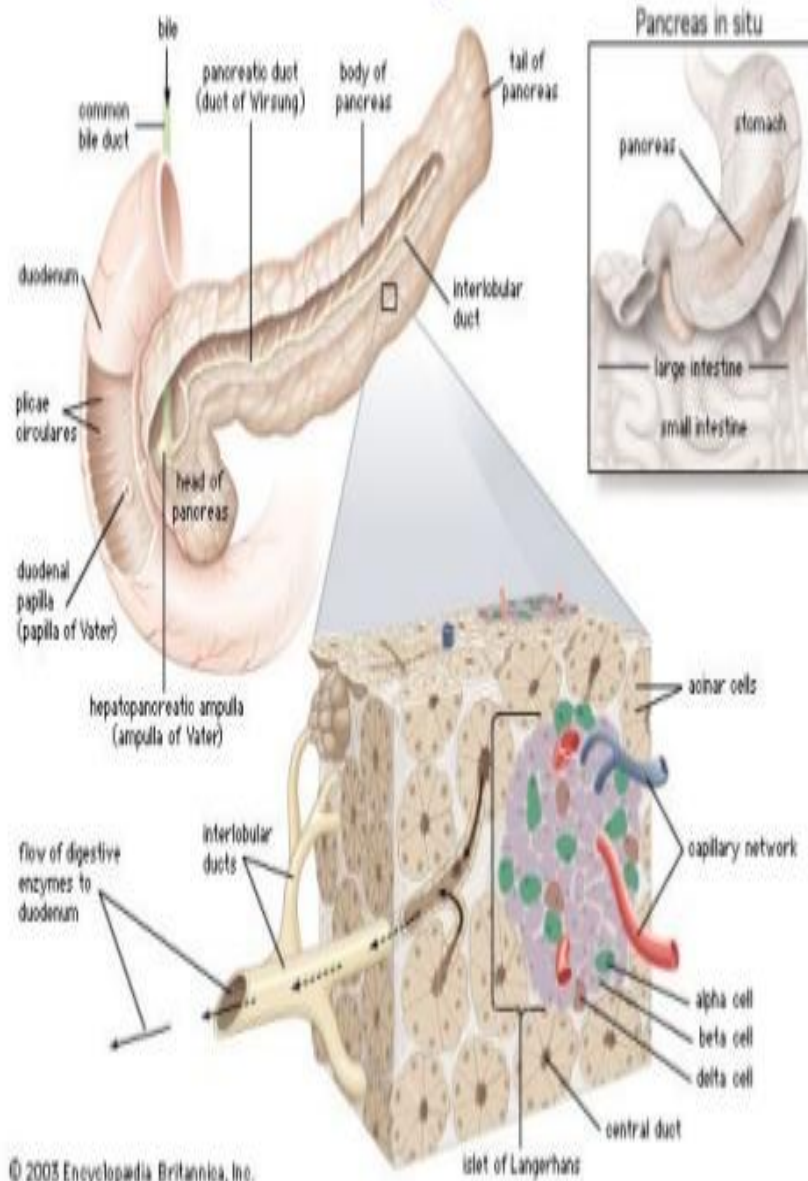
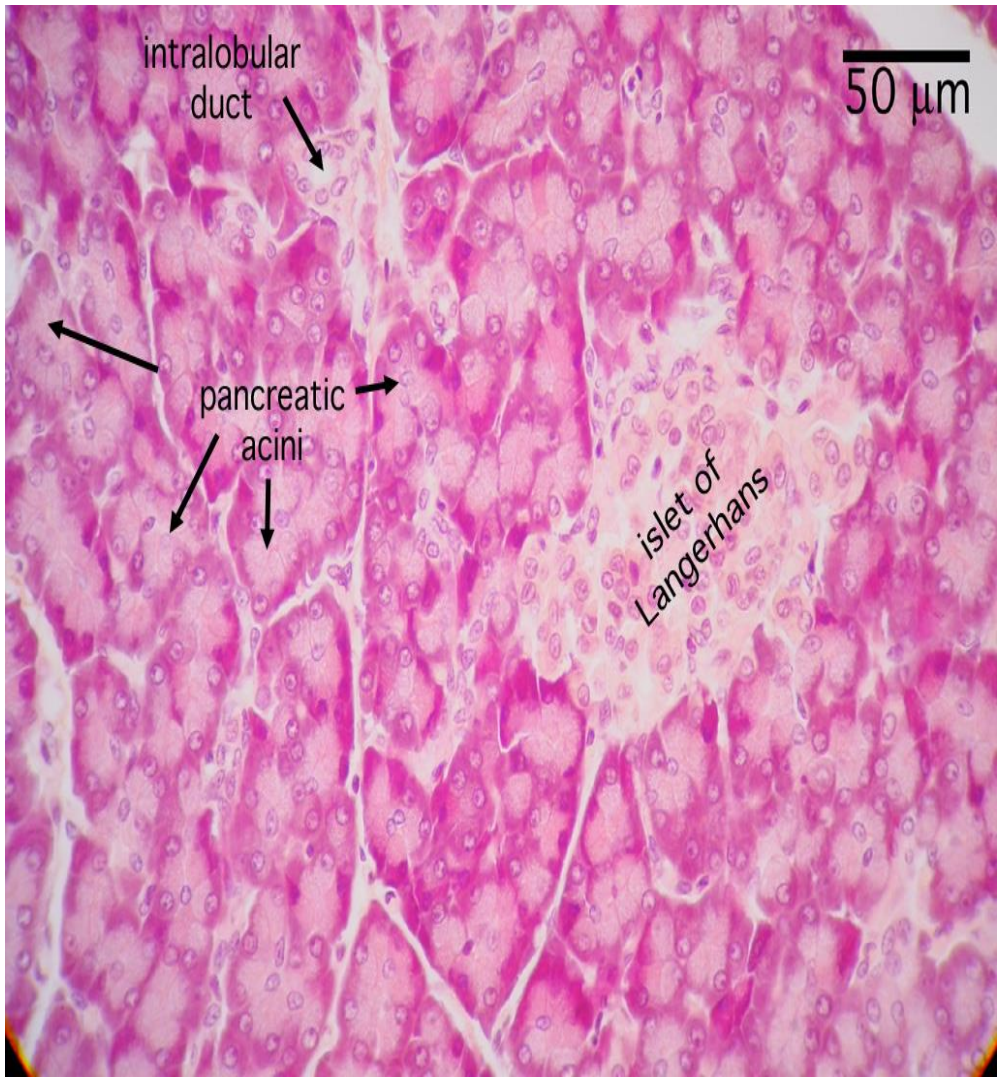


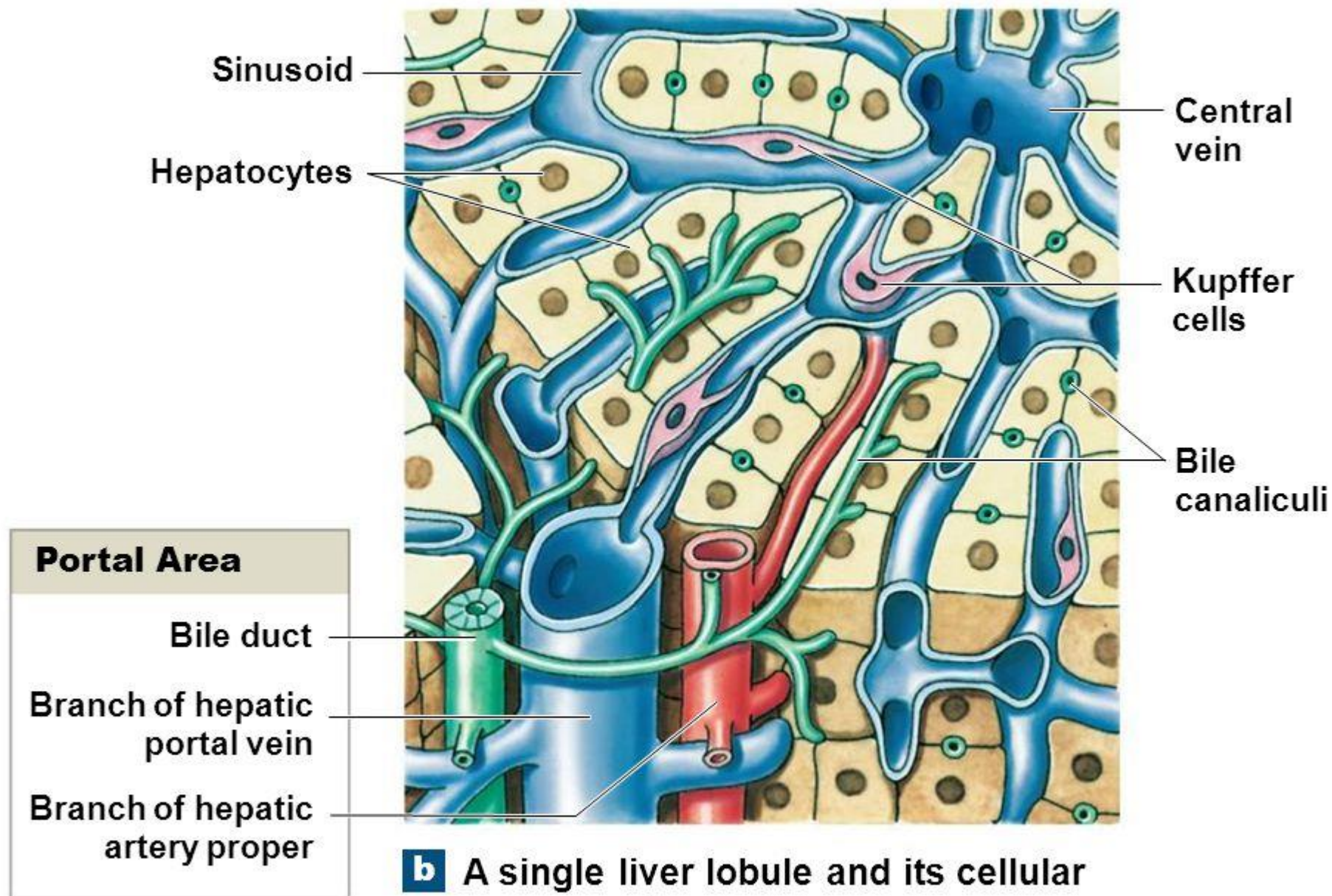
Exocrine
(digestive)
and
endocrine
(metabolic)
functions

Completes
digestion of
proteins that
was started
in the
stomach

Functional Anatomy of Pancreas

-an exocrine and endocrine gland.

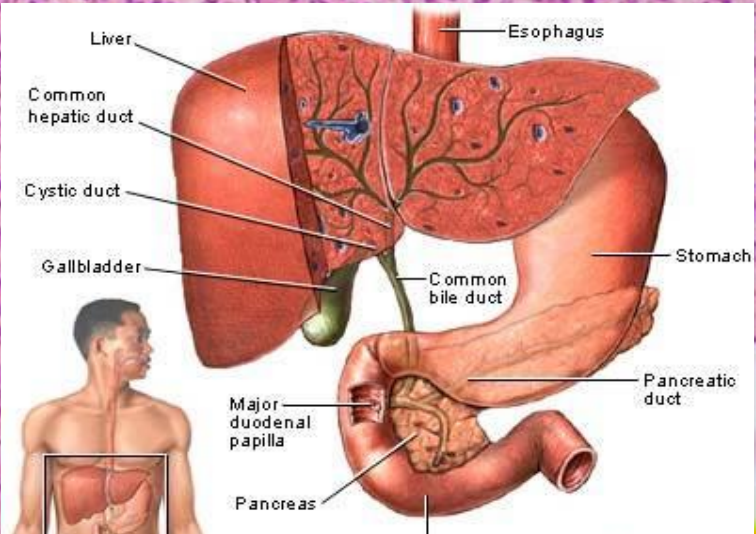


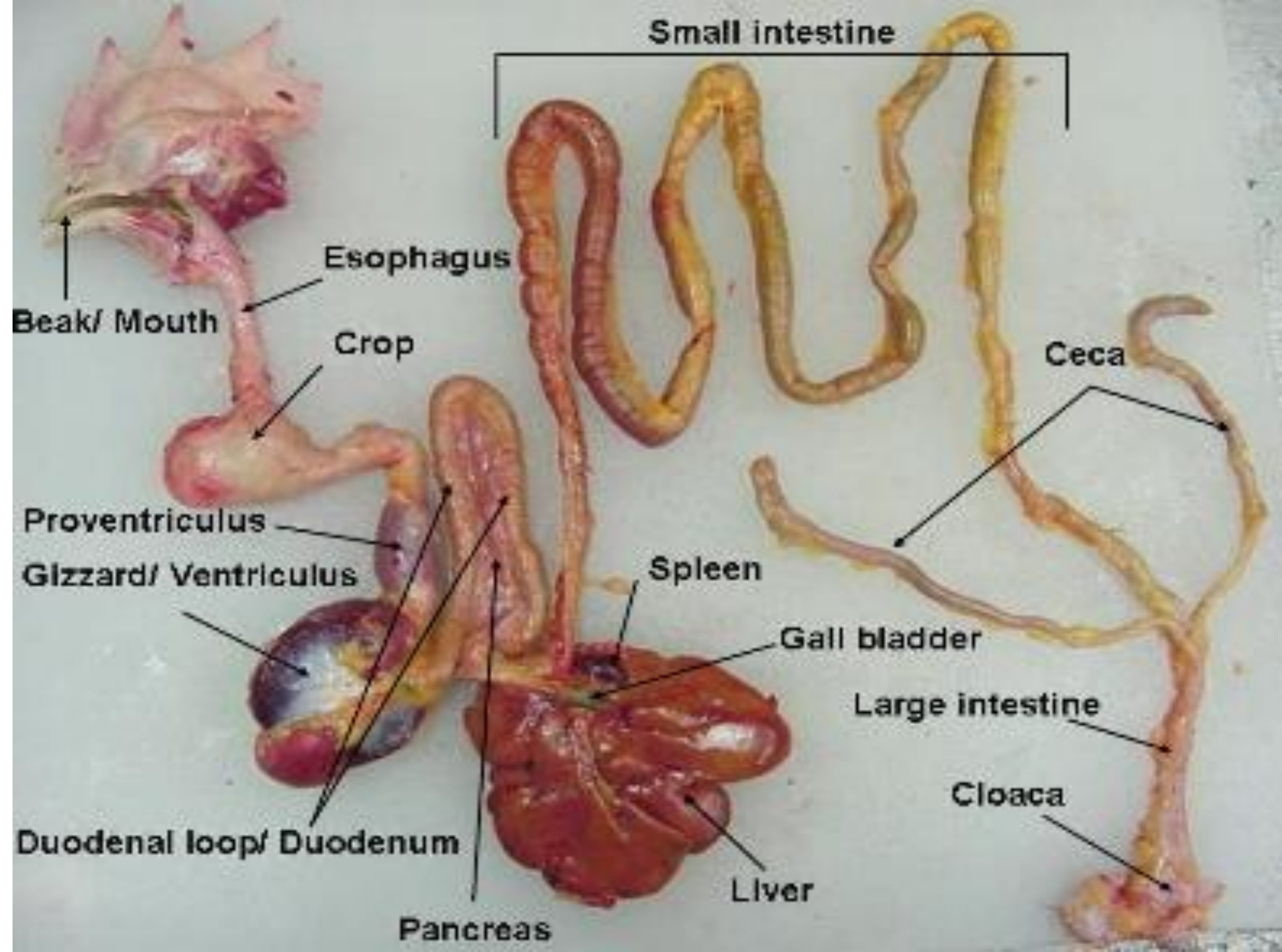


b A single liver lobule and its cellular components

200 μ m

hepatic lobule
portal area
hepatic lobule
hepatic lobule



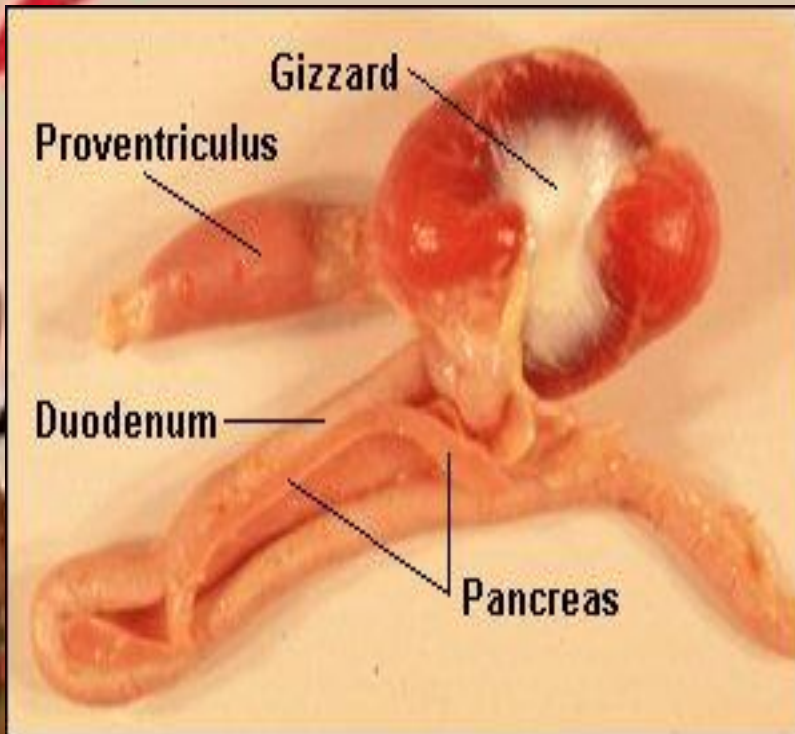


Secreting surface
acids/ enzymes

PROVENTRICULUS
(Stomach)



GIZZARD



Fibrous Muscle



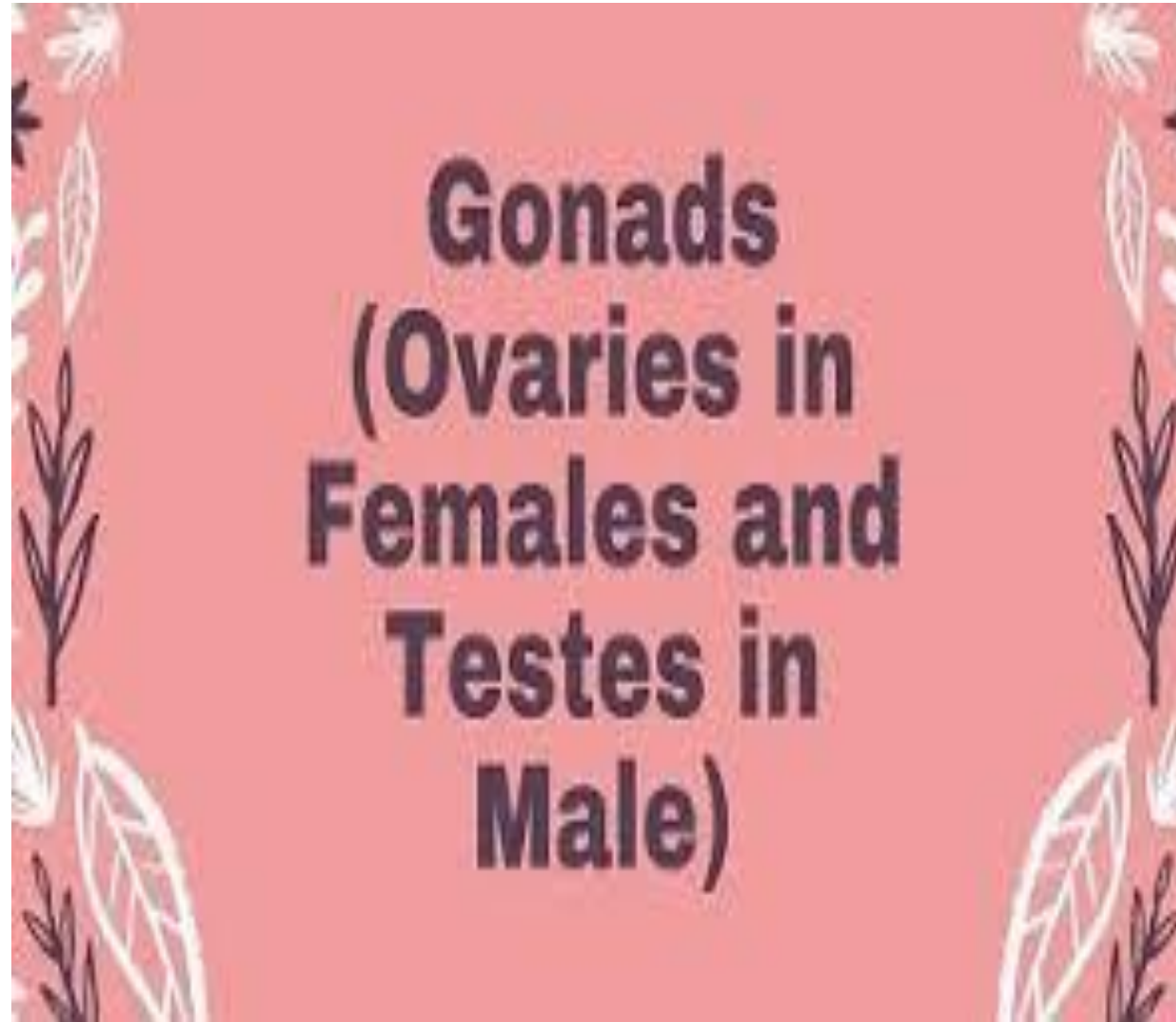
فیزیولوژی پیشرفته، جلسه دهم

نقش های فیزیولوژیکی غدد جنسی

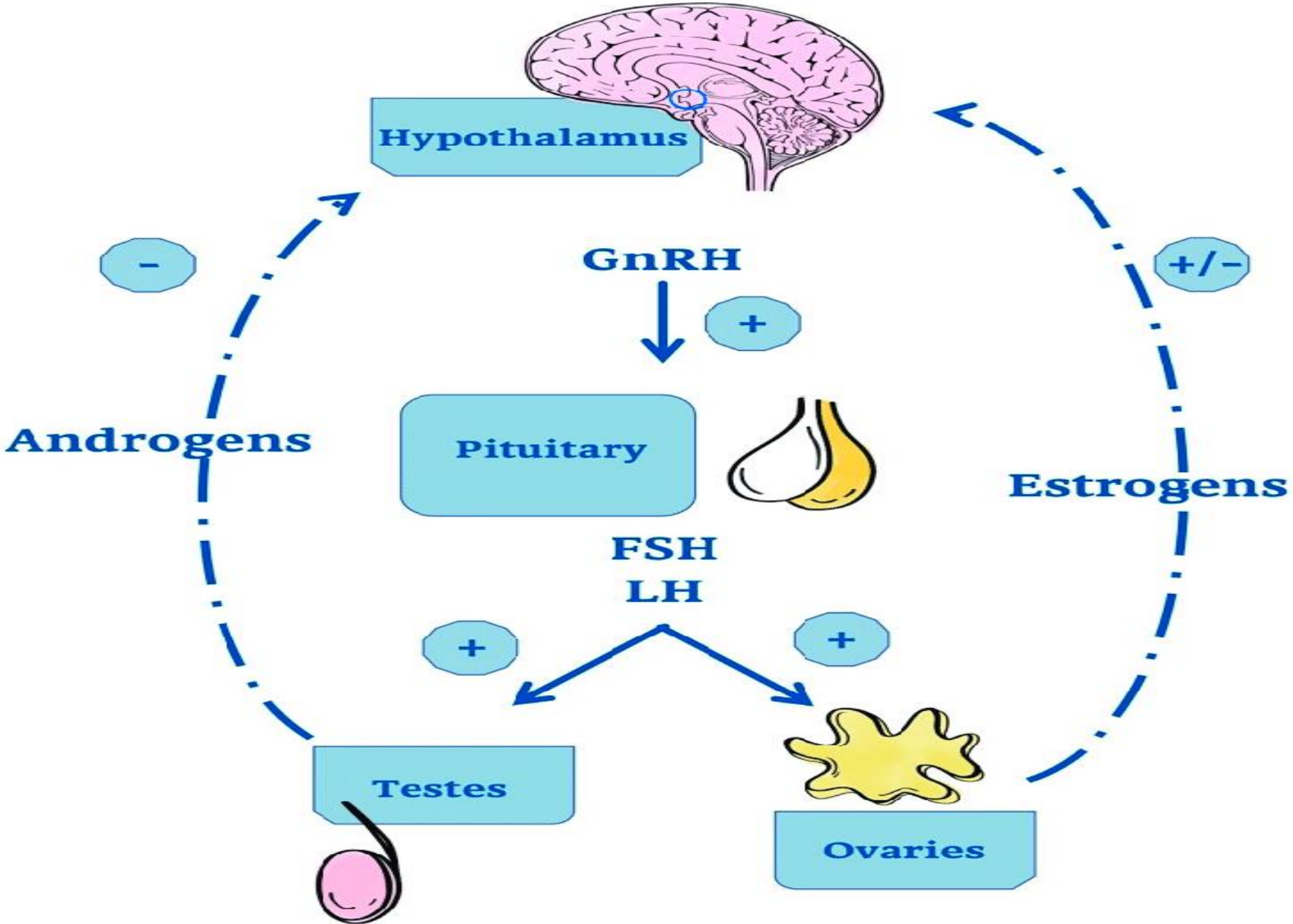
محور هیپوتالاموس- هیپوفیز- غده جنسی

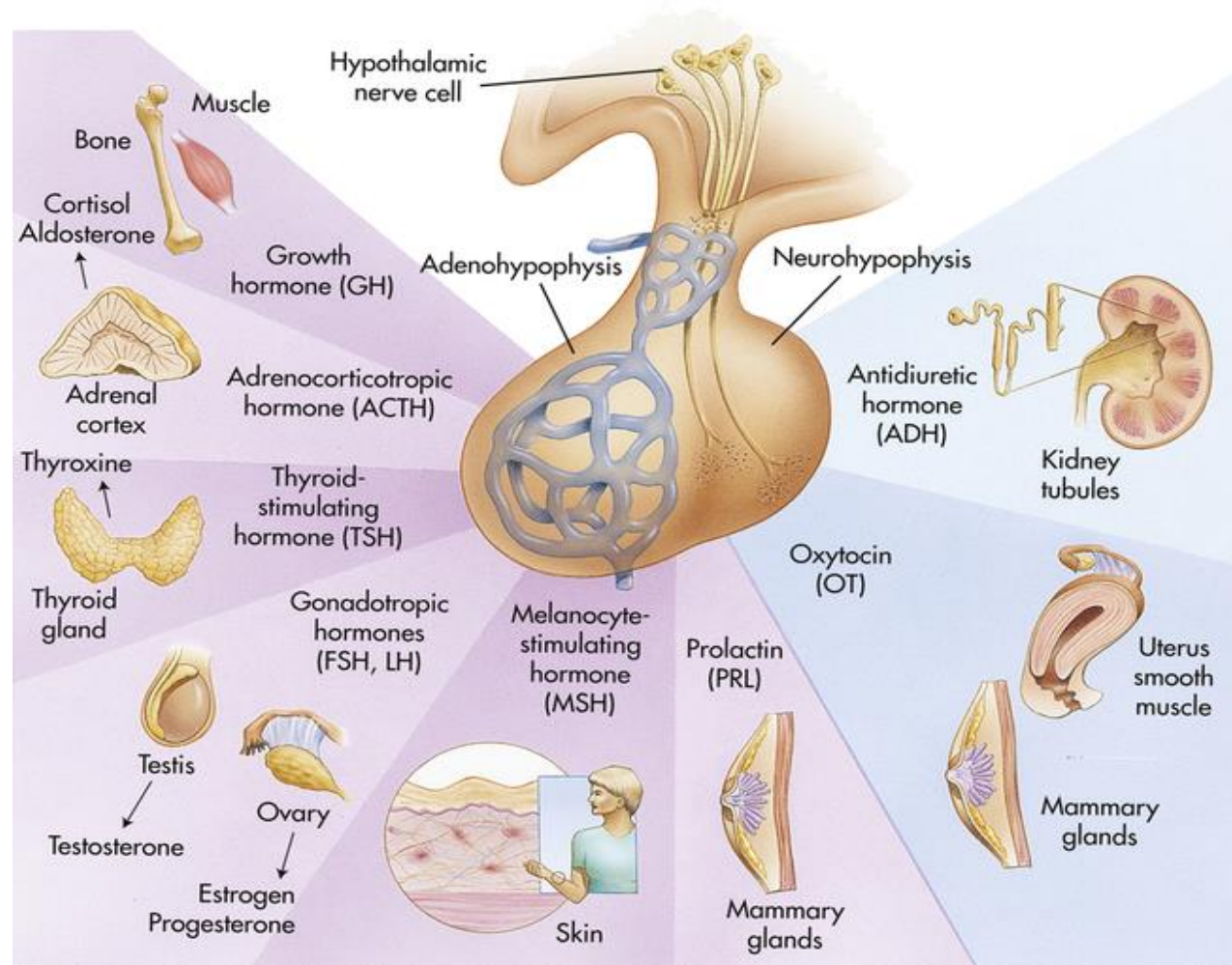
هیپوفیز و گنادوتروپین ها

Functions of:



THE HYPOTHALAMIC-PITUITARY-GONADAL AXIS



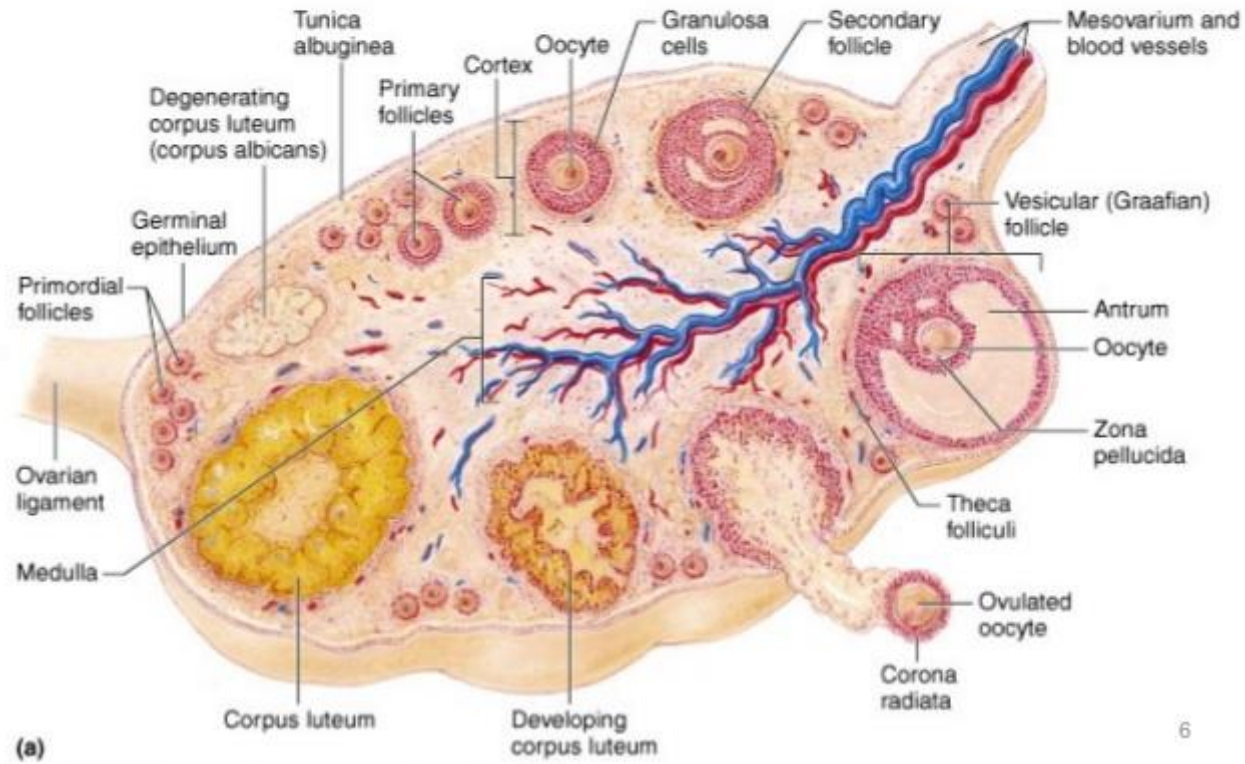


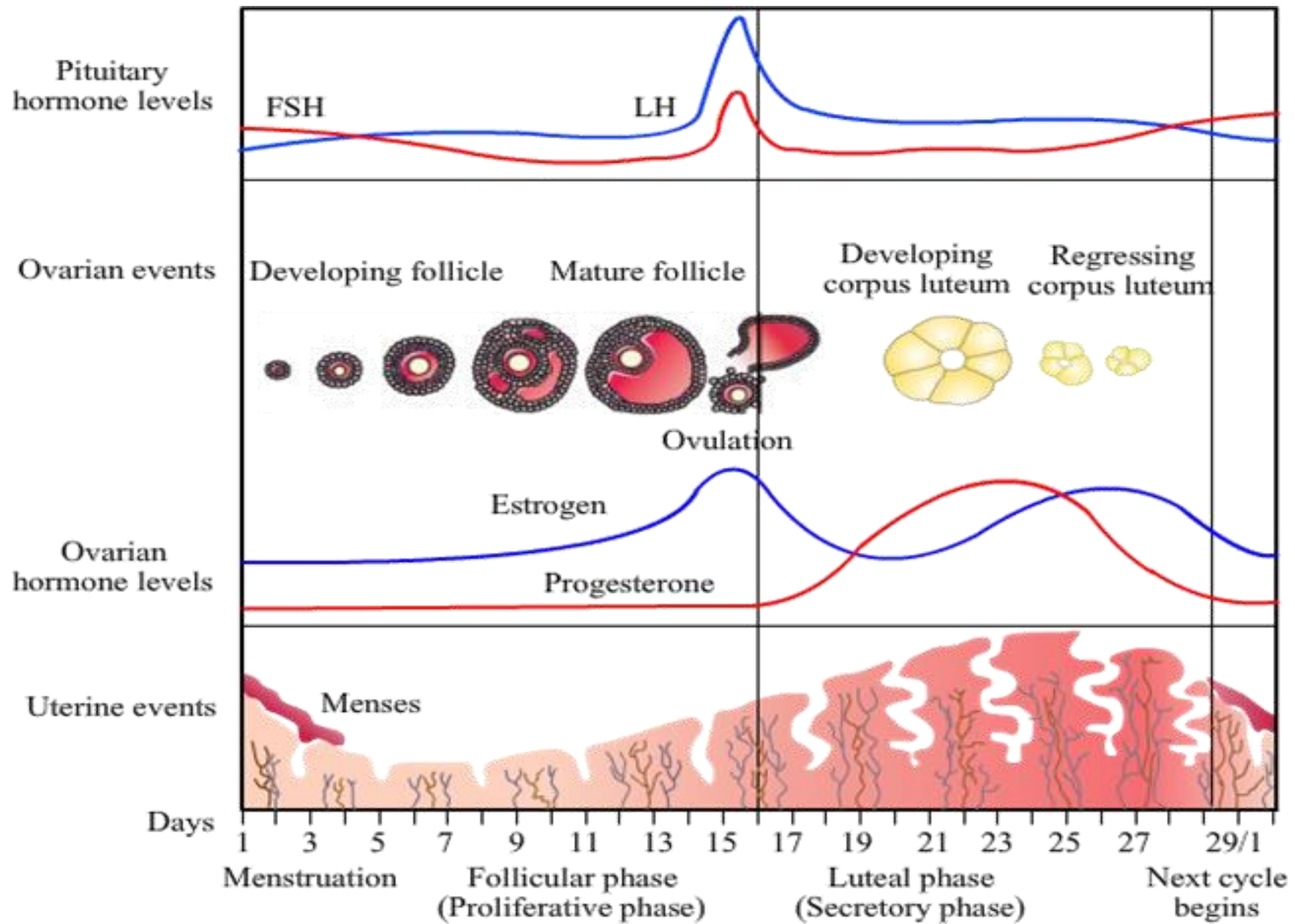
فیزیولوژی پیشرفته، جلسه یازدهم

اثرات اختصاصی، عمومی و رفتاری هورمون های جنسی

ساختمان و دوره های فیزیولوژیکی تخمدان

The ovary





فیزیولوژی پیشرفته، جلسه دوازدهم

چرخه فحلی و مراحل آن

رفتار فحلی، انواع چرخه های فحلی، اهمیت فعل یابی



STAGES OF ESTROUS CYCLE

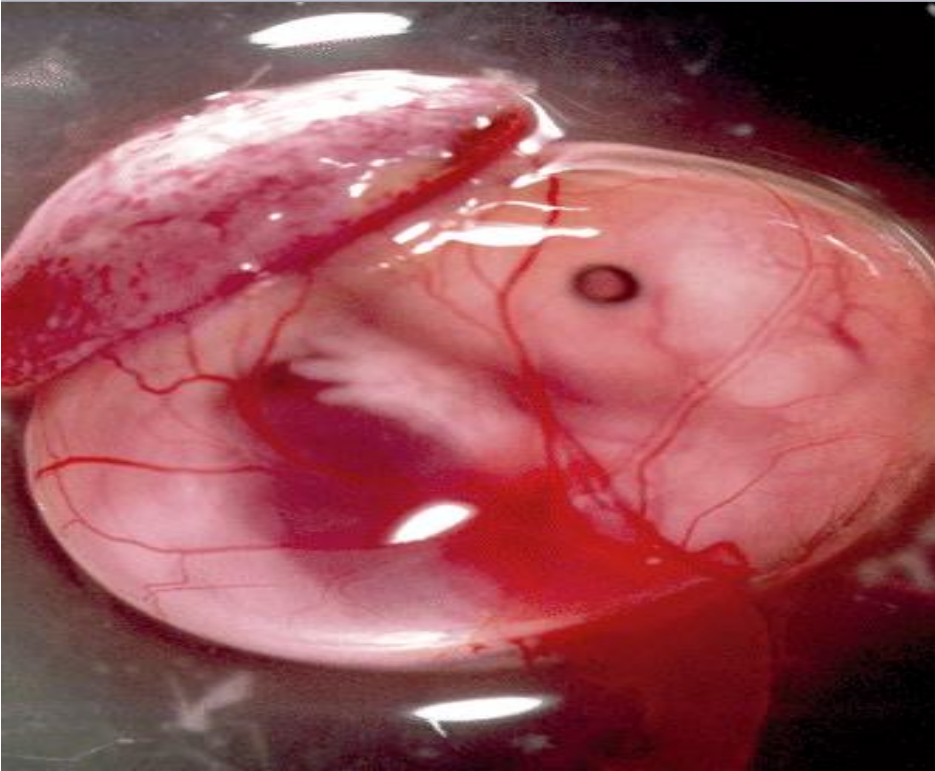
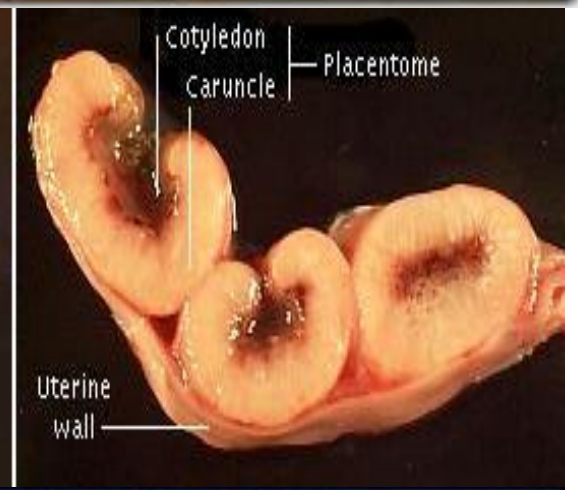
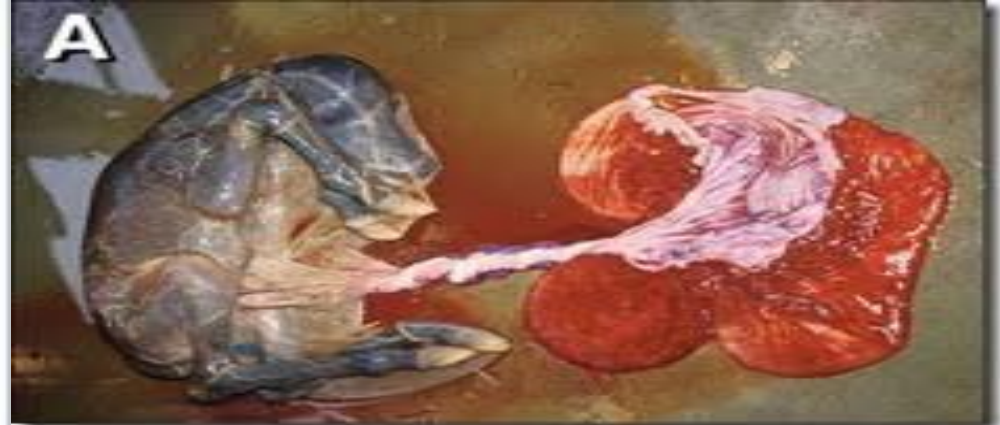
- **Four stages:**
 - **Proestrus**
 - **Estrus**
 - **Metestrus**
 - **Diestrus**
 - **Follicular phase = Proestrus + Estrus**
 - **Luteal phase = Metestrus + Diestrus**

Estrous Cycle Intervals

- Polyestrous: animals that cycle continuously throughout the year if they are not pregnant (cattle and swine)
- Seasonally polyestrous: animals with seasonal variations in estrous cycles (horse, sheep, cat)
- Diestrous: animals with two cycles per year, usually spring and fall (dog)
- Monoestrous: animals with one cycle per year (fox and mink)

فیزیولوژی پیشرفته، جلسه سیزدهم

آبستنی، جفت و نقش های فیزیولوژیکی آن، انواع جفت



Functions of Placenta

Nutritive function:

Glucose, iron, calcium, phosphorus, aminoacids, water, NaCl , vitamins and fatty acids

Excretory Function:

products like urea, uric acid diffuse form foetal to maternal blood

Waste

Immunological function:

foetus is antigenically a foreign body, the placenta protects the embryo and foetus from rejection. The MHC class I and II are not present on the placental trophoblast.

The

Barrier Function:

large molecular weight substances cannot cross the placenta

Though

Respiratory Function:

of oxygen and CO₂ between fetuse and mother. It is facilitated by three factors: HbF, Large quantity of Hb, Double Bohr effect

Exchange

PLACENTAL FUNCTIONS

Endocrine function

Steroid Hormones:

- 1- Estrogens
- 2- Progesterone

Protein hormones:

- 1- Human chorionic gonadotrophin (hCG)
- 2- Human placental lactogen (hPL)
- 3- Human chorionic thyrotrophin (hCT)
- 4- Hypothalamic and pituitary like hormones
- 5- Others: inhibin, relaxin and beta endorphins.

فیزیولوژی پیشرفته، جلسه چهاردهم

نگرشی بر مکانیسم های تنظیمی عصبی و هورمونی

