HUMAN SYSTEMS

25 & 26 APRIL 2026

NIGEL HOWARD

Illinois Deaf and Hard of Hearing Commission

IDHHC

WE ACKNOWLEDGE THE **LAND** OF THE COAST SALISH PEOPLES

–

Sḵwx̱wú7mesh (Squamish), Stó:lō and Səl̓ílwətaʔ/Selilwitulh (Tsleil-Waututh) and xwməθkwəy̓əm (Musqueam)

11 ORGAN SYSTEMS

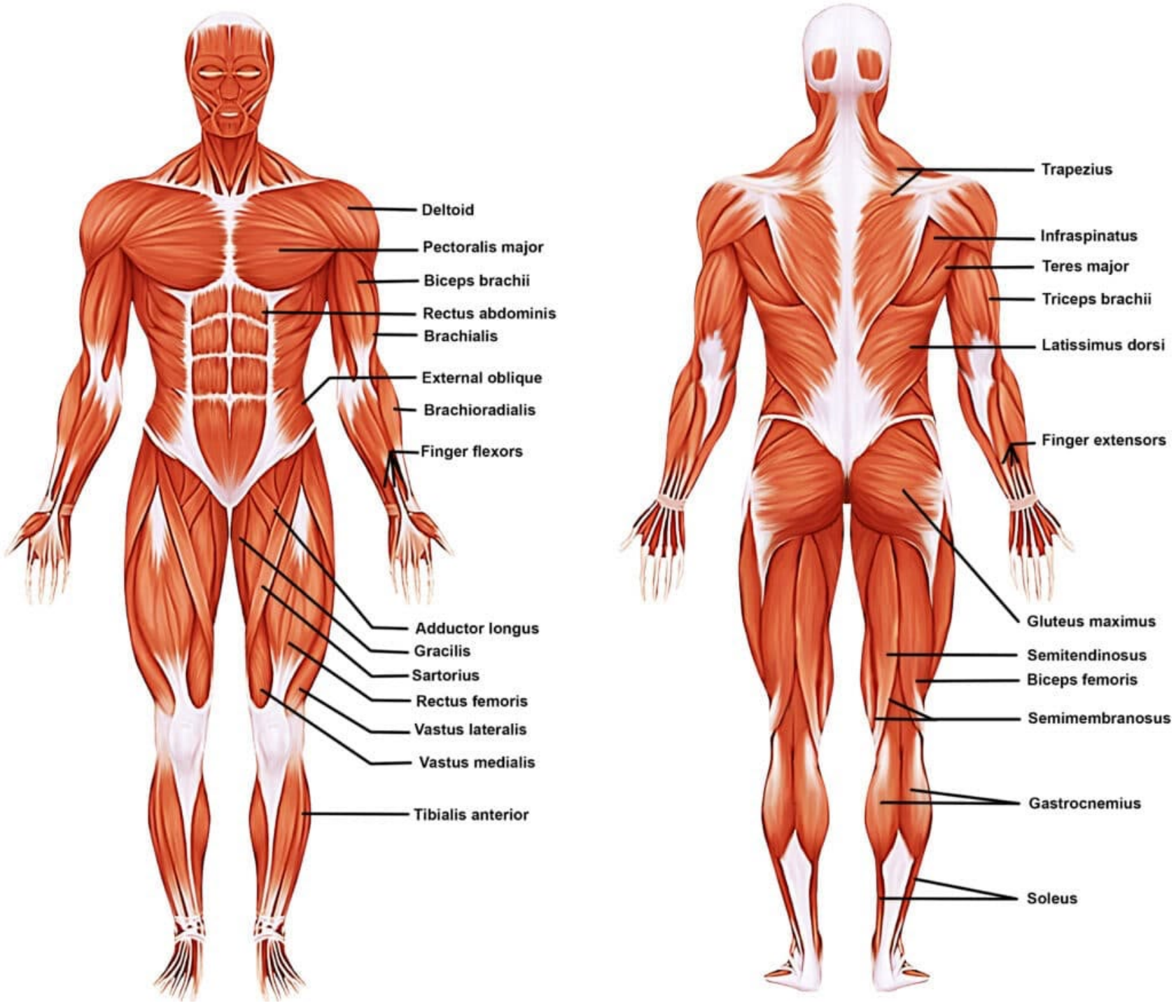
- IMMUNE/LYMPHATIC - Defends the body against infection and maintains fluid balance.
- CARDIOVASCULAR - Pumps blood via the heart to transport oxygen, nutrients, and waste throughout the body.
- MUSCULAR & SKELETAL - Provide structure, support, protection, and enable movement.
- NERVOUS - Coordinates activities, processes information, and controls body responses using the brain, spinal cord, and nerves.

- RESPIRATORY - Facilitates gas exchange, specifically bringing in oxygen and releasing carbon dioxide.
- DIGESTIVE - Breaks down food into nutrients for absorption and eliminates solid waste.
- URINARY - Filters blood to eliminate waste products and regulates fluid balance.
- REPRODUCTIVE - Produces offspring and sex hormones

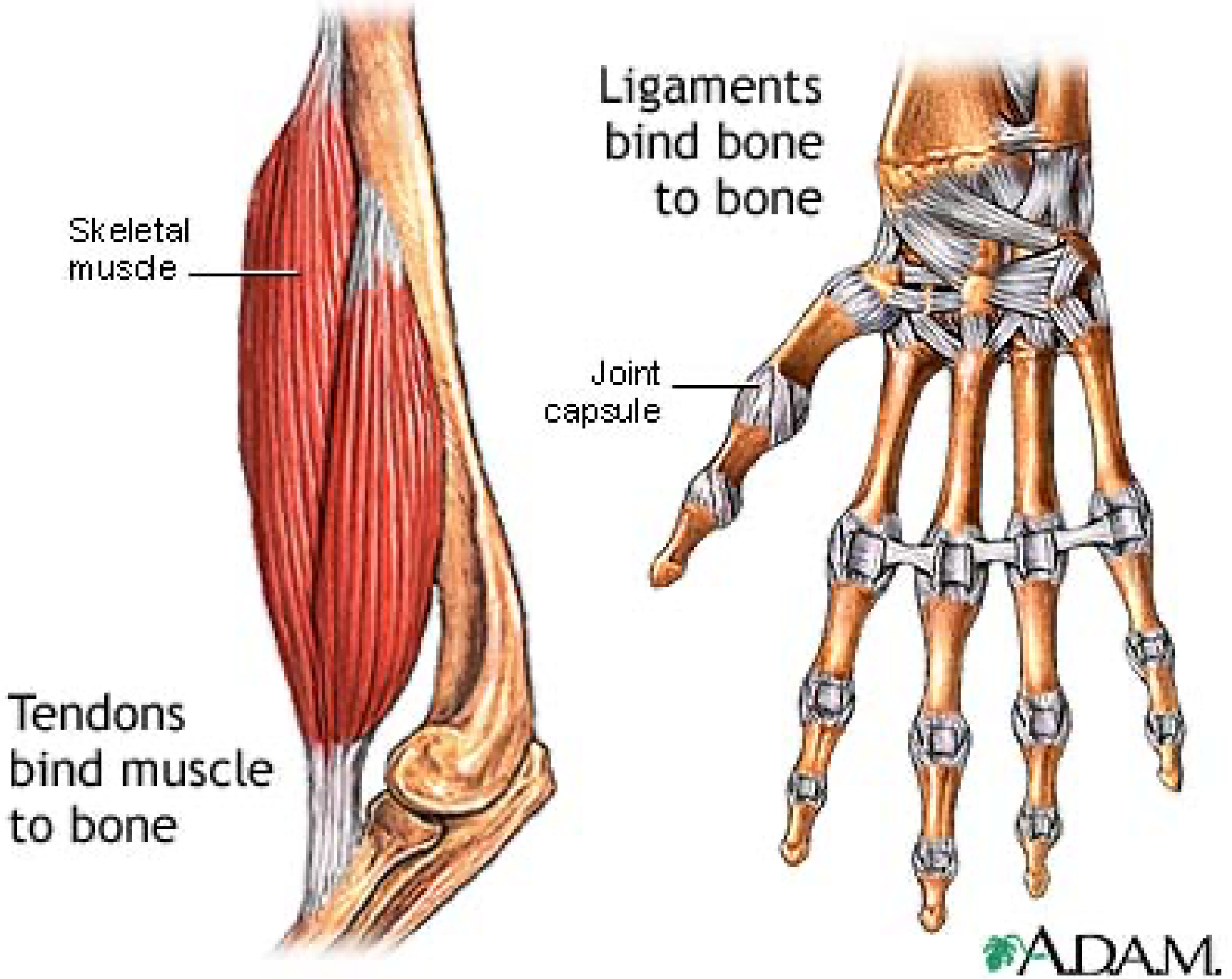
- INTEGUMENTARY – protects the body, regulates temperature, and detects sensations via skin, hair, and nails.

- ENDOCRINE - Regulates bodily processes like growth and metabolism through hormone secretion.

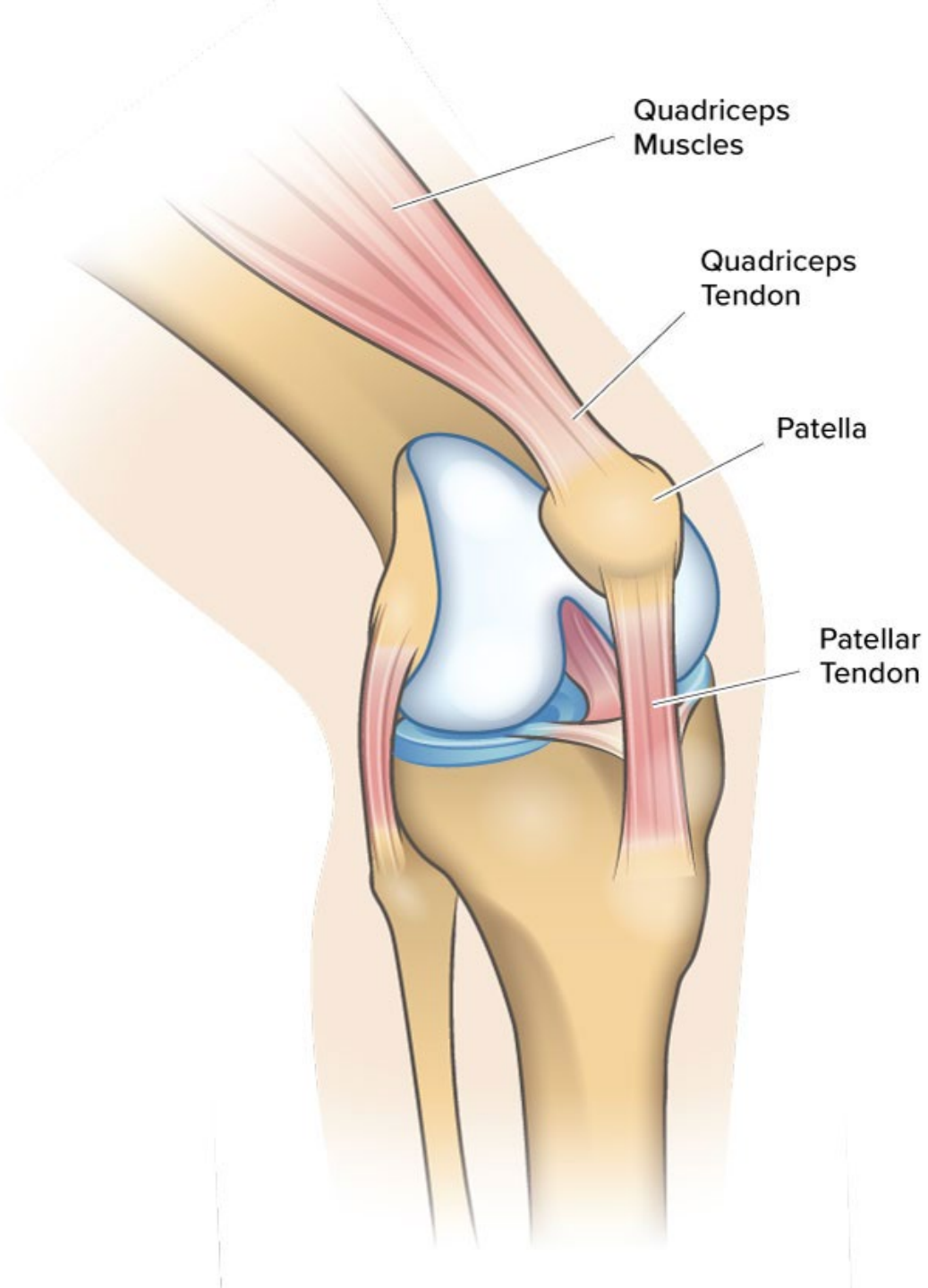
MUSCULAR SYSTEM



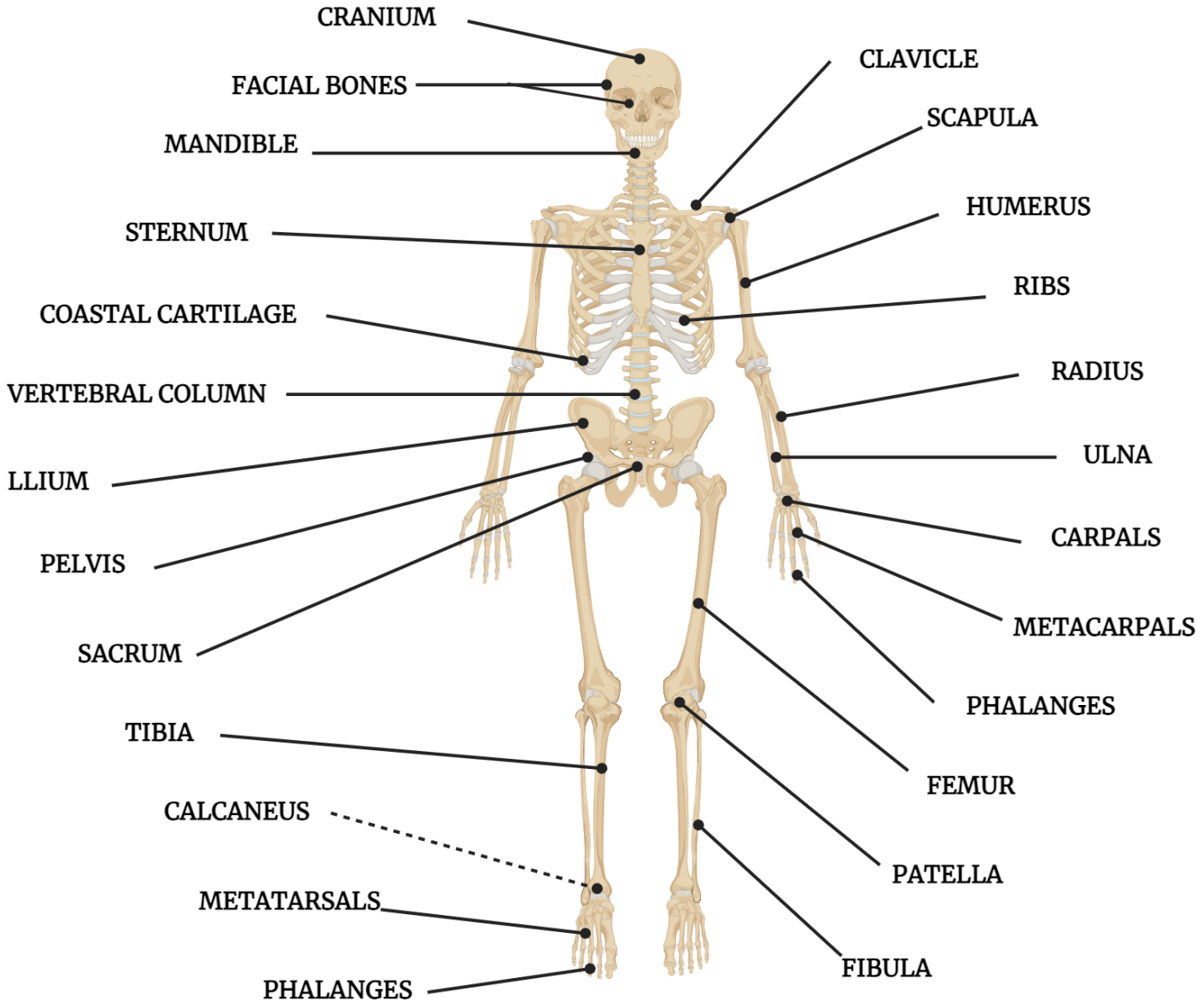
TENDONS & LIGAMENTS



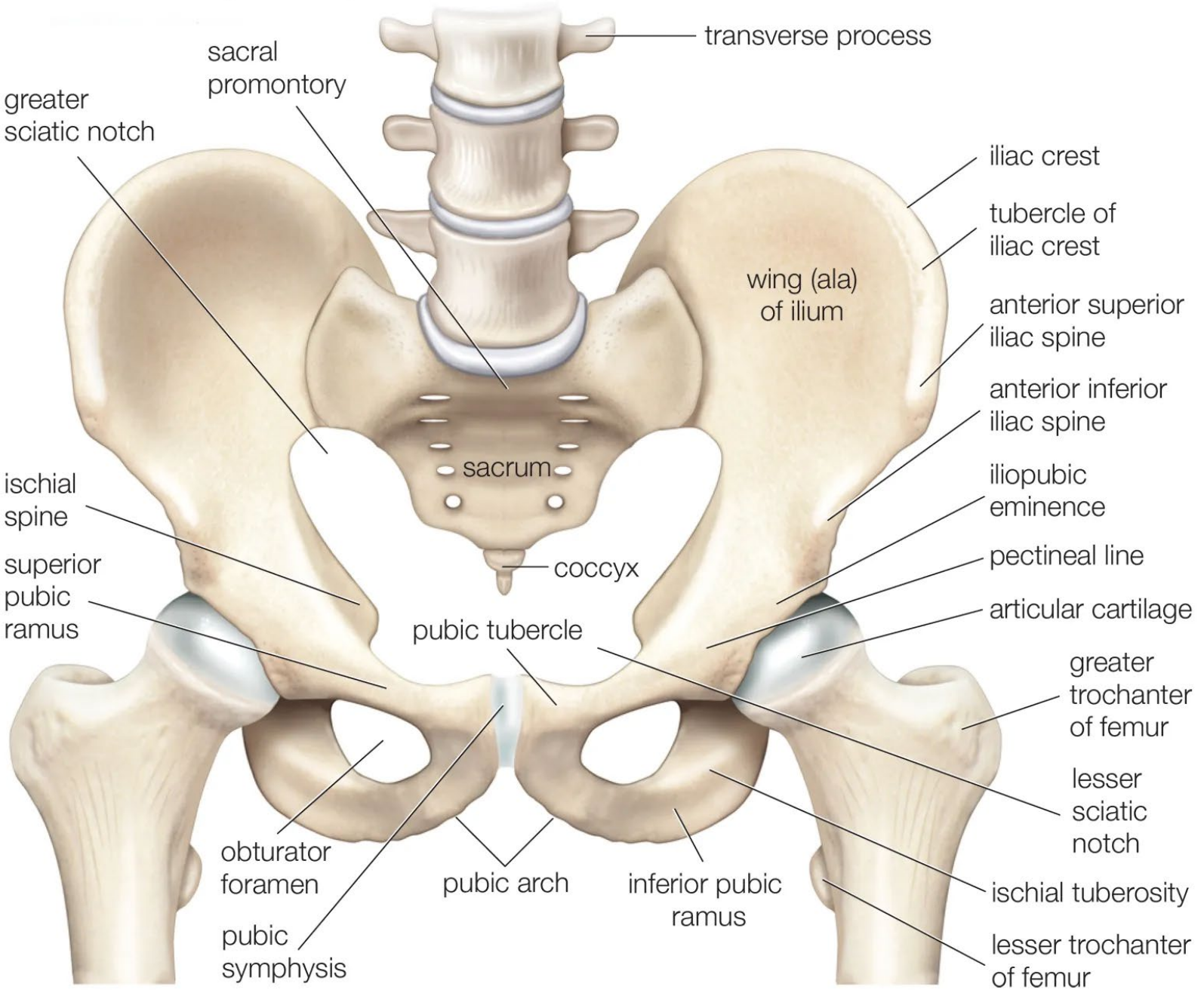
KNEE


Quadriceps
Muscles
Quadriceps
Tendon
Patella
Patellar
Tendon

SKELETAL SYSTEM



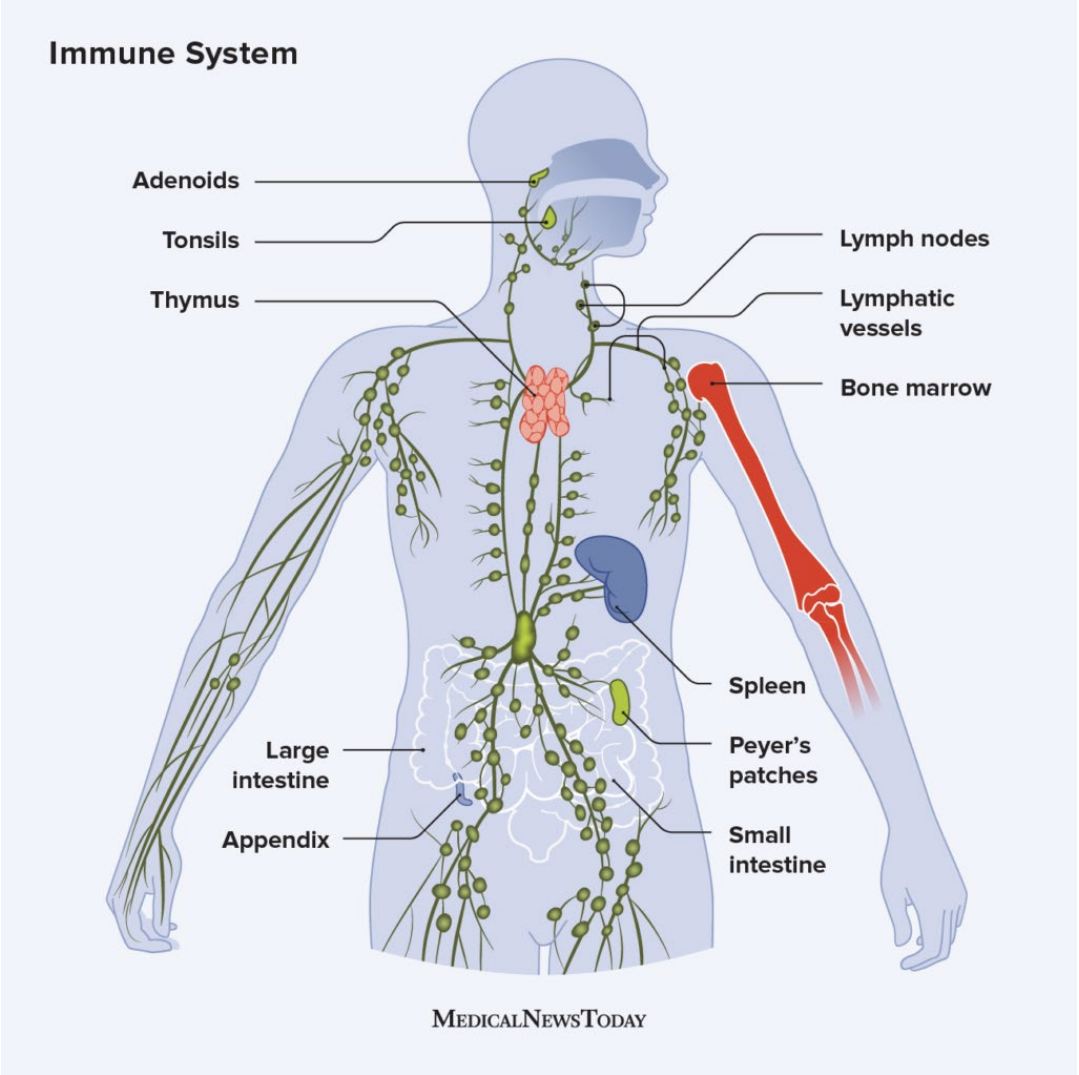
Bones of the pelvic girdle



CERVICAL INSTABILITY

- Defined as the inability of the spine under physiological loads to maintain its normal pattern of displacement so that there is no neurological damage or irritation, no development of deformity, and no incapacitating pain.

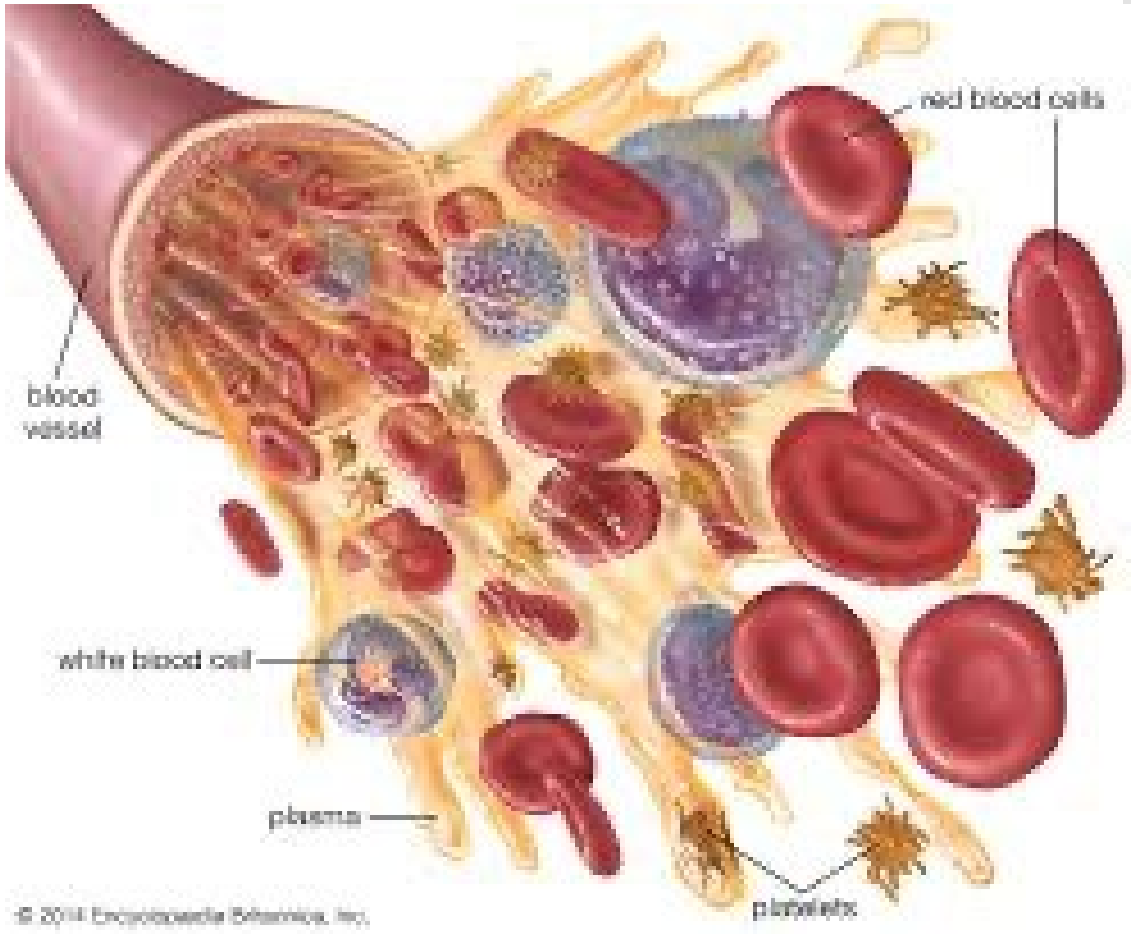
IMMUNE SYSTEM



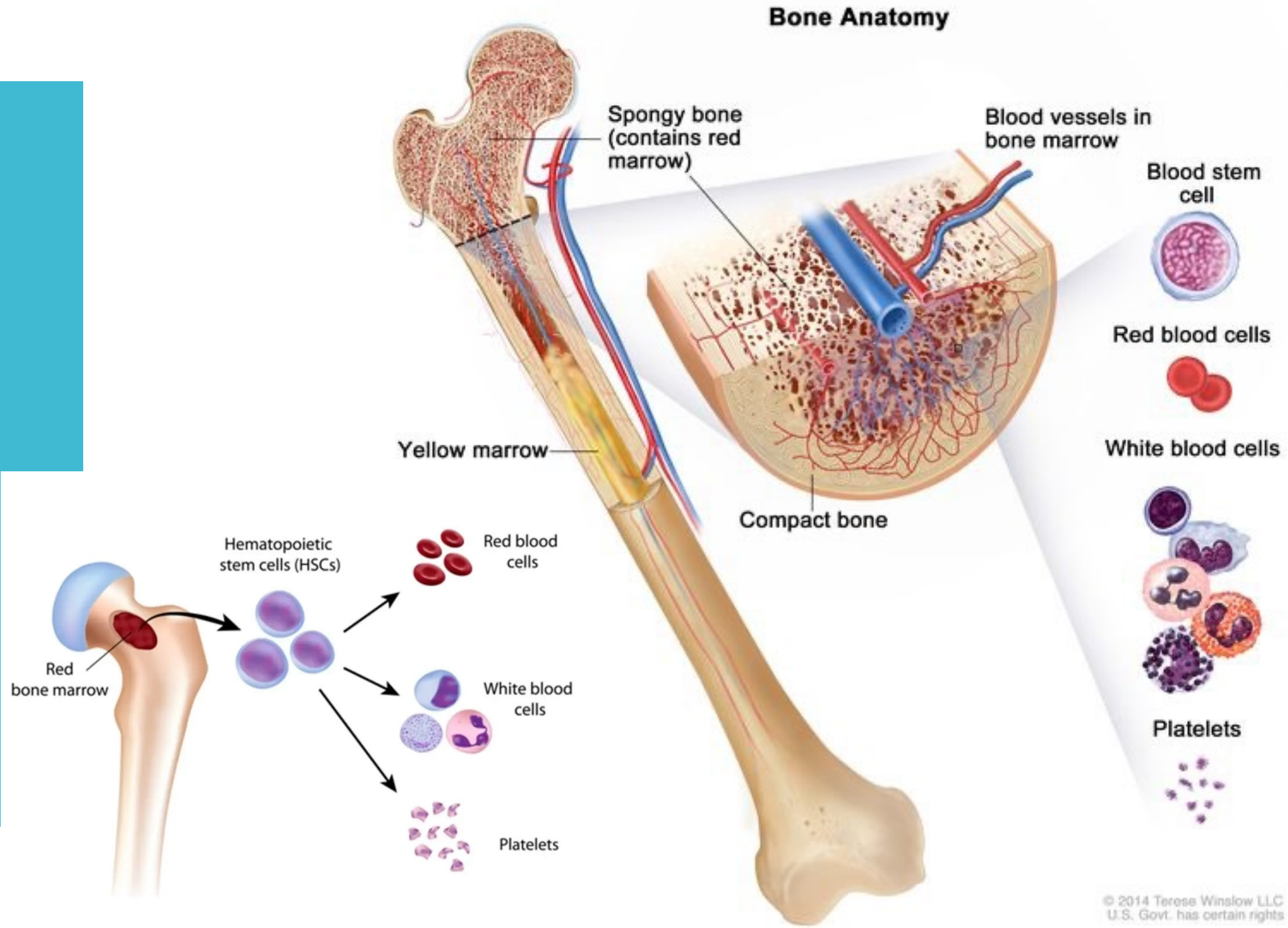
IMMUNE SYSTEM

- WHITE BLOOD CELLS
- RED BLOOD CELLS

- PROTEINS
- CHEMICALS



BONE MARROW


Bone Anatomy
Spongy bone (contains red marrow)
Blood vessels in bone marrow
Blood stem cell
Red blood cells
White blood cells
Platelets
Yellow marrow
Compact bone
Hematopoietic stem cells (HSCs)
Red blood cells
White blood cells
Platelets
Red bone marrow
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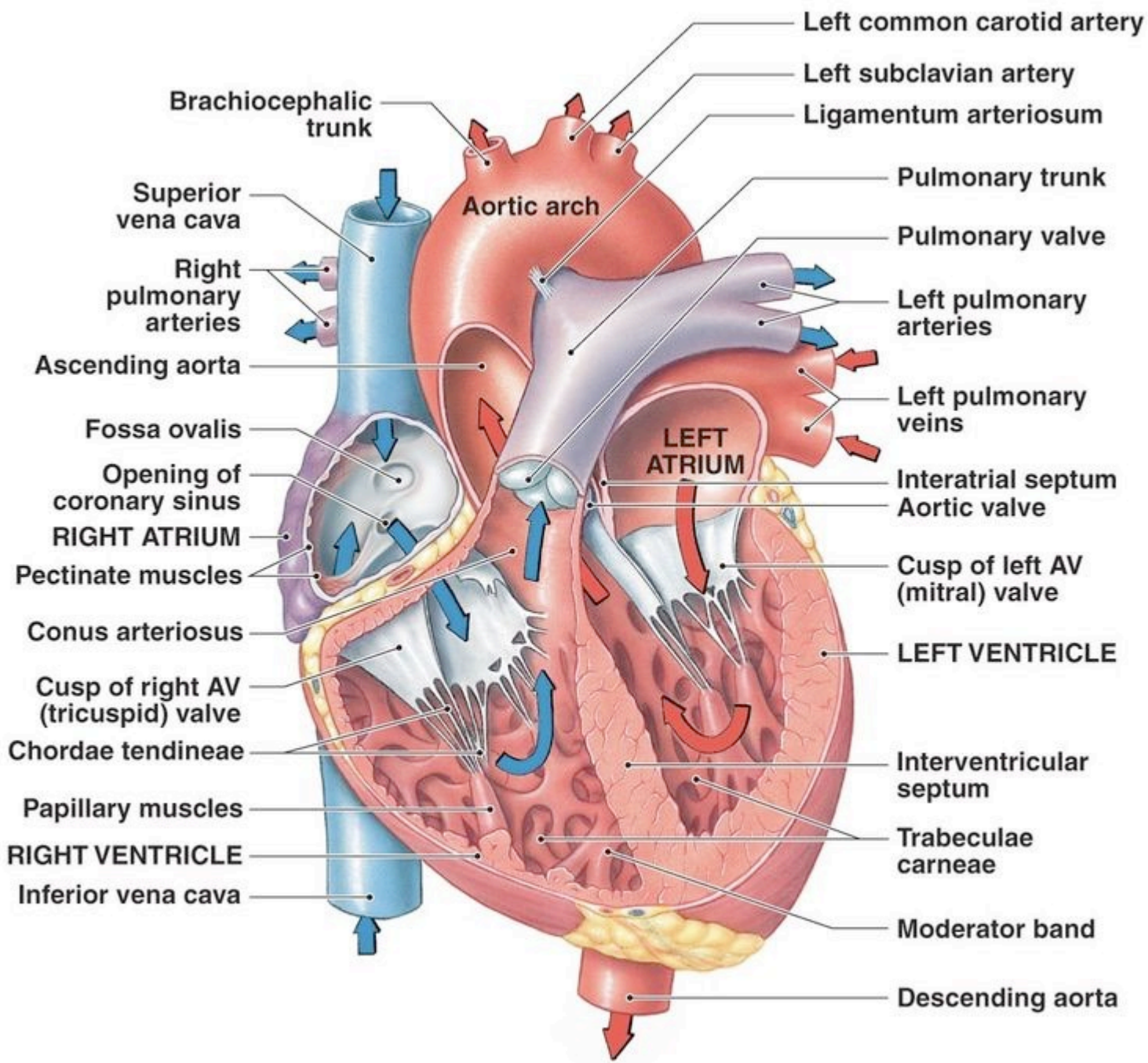
CARDIOVASCULAR SYSTEM

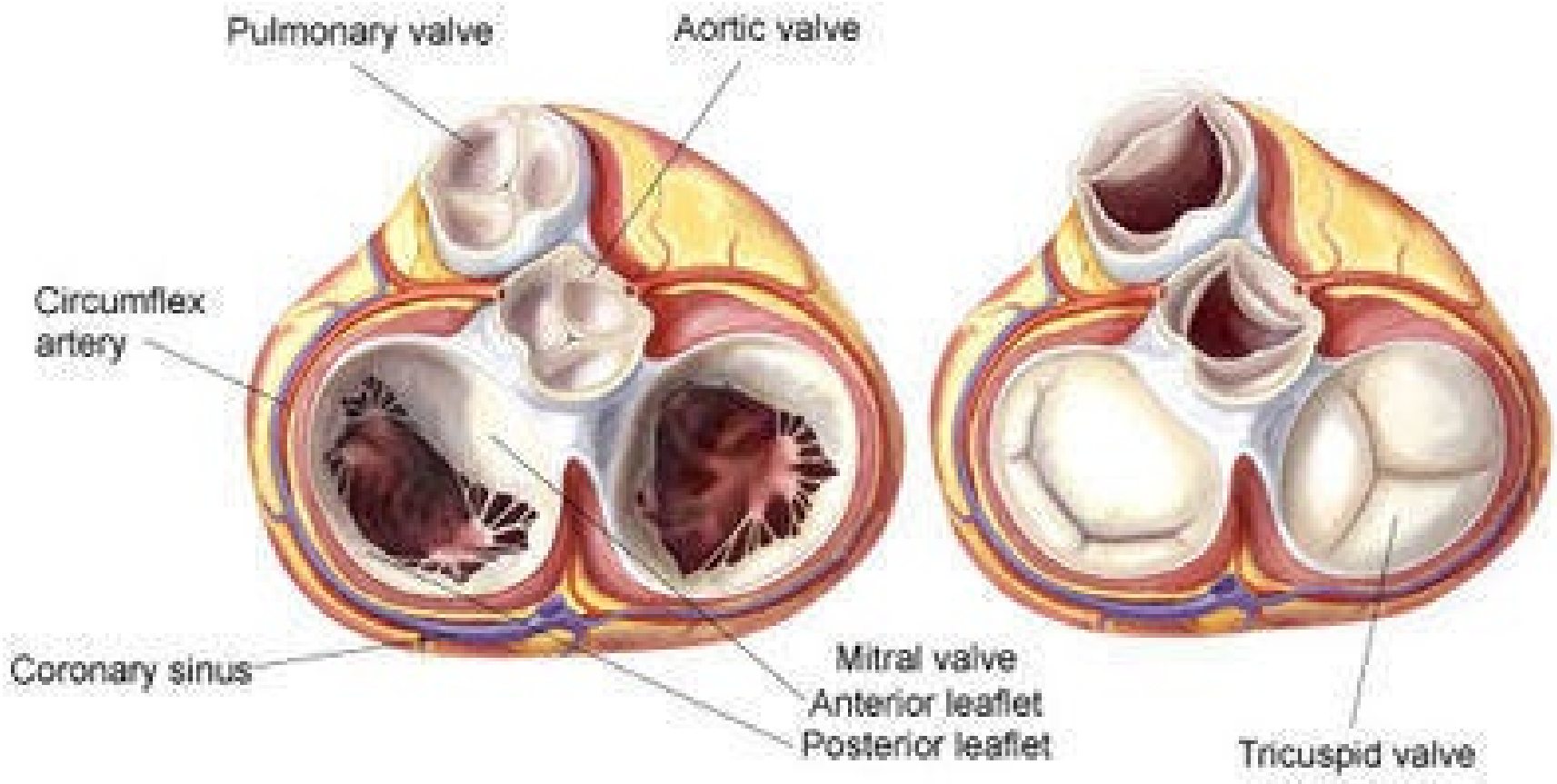
HEART



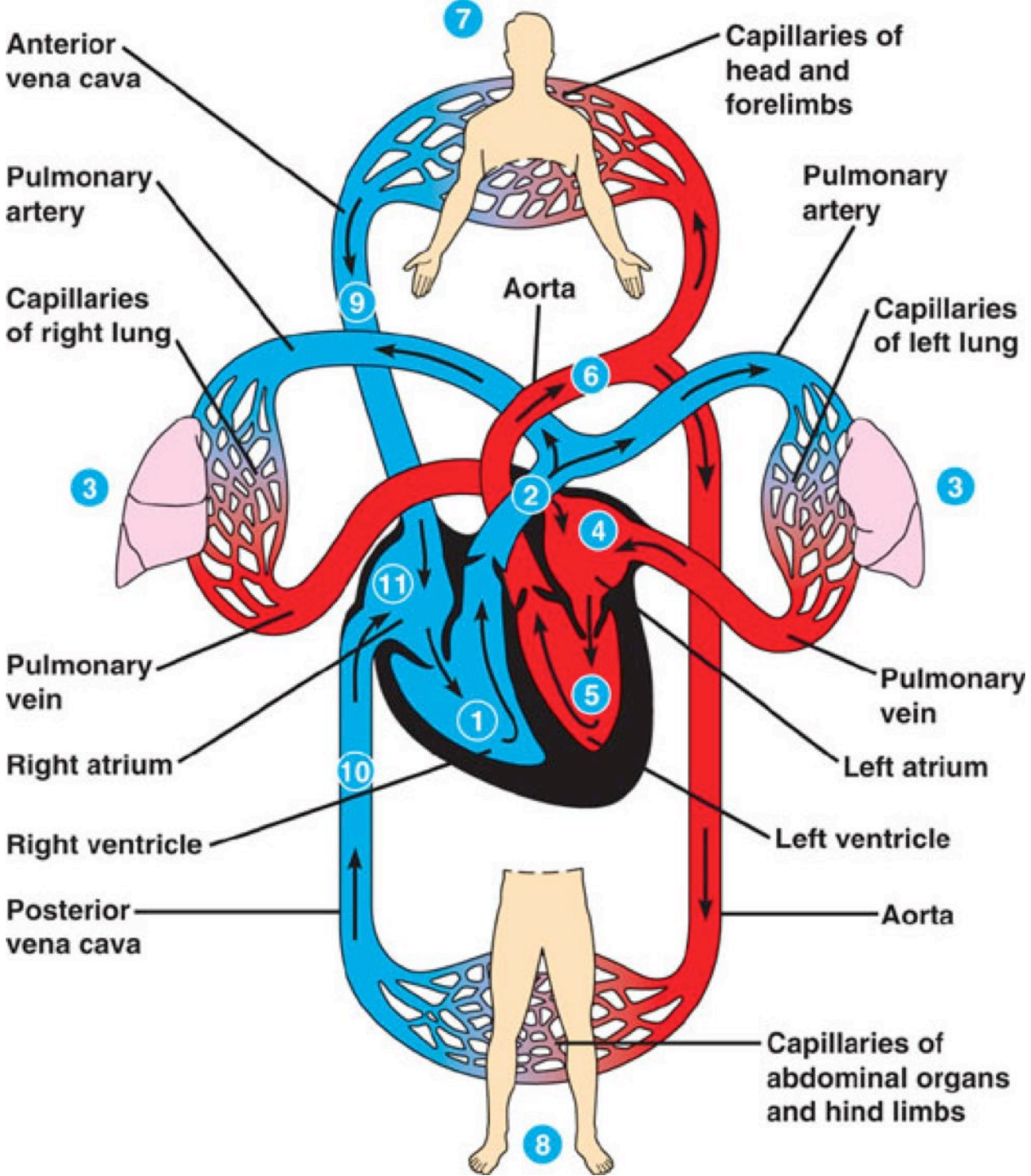
(a) Frontal section through the heart

MITRAL
&
TRICUSPID
VALVES

PULMONARY
&
AORTIC
VALVES



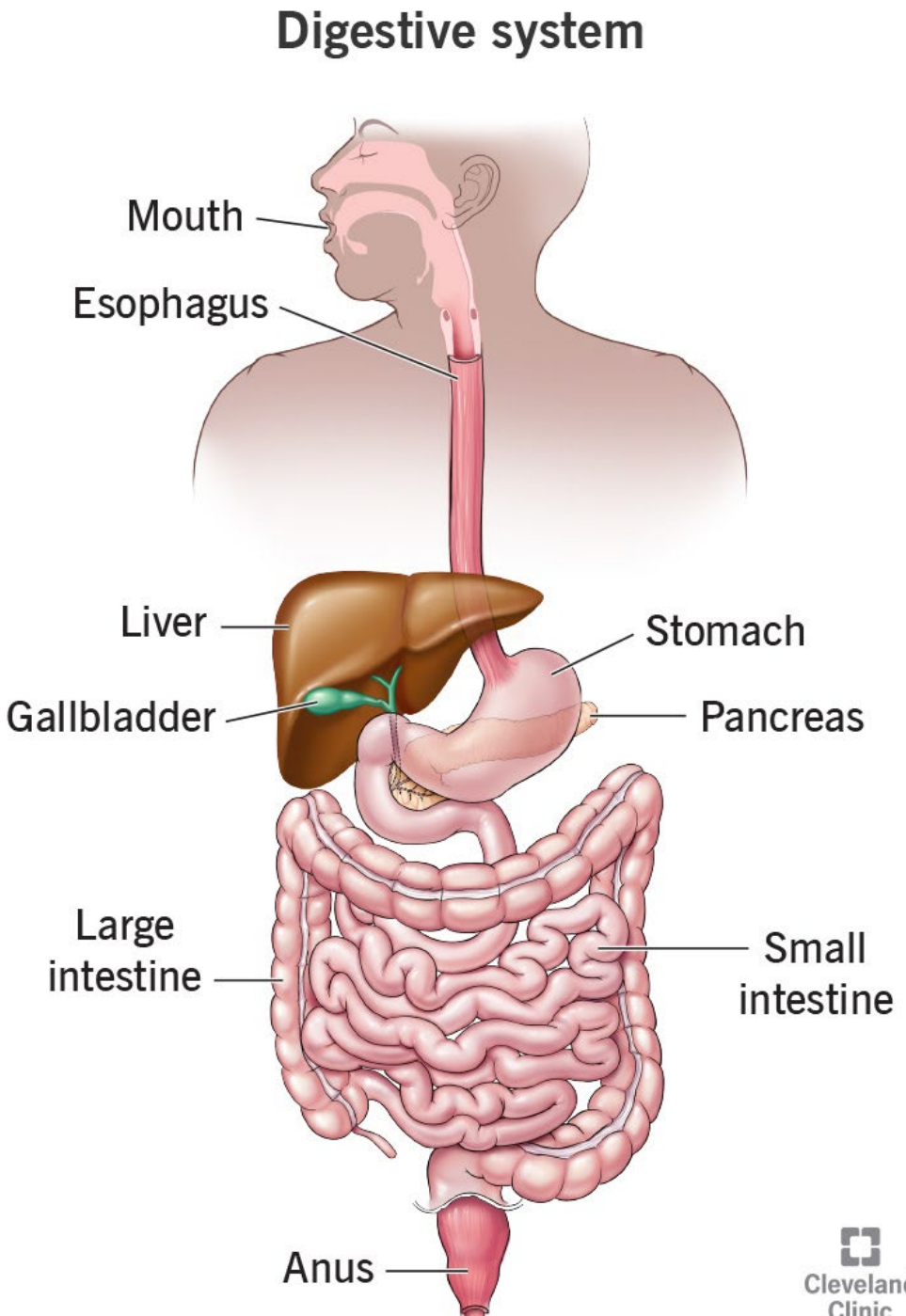
CARDIOVASCULAR SYSTEM



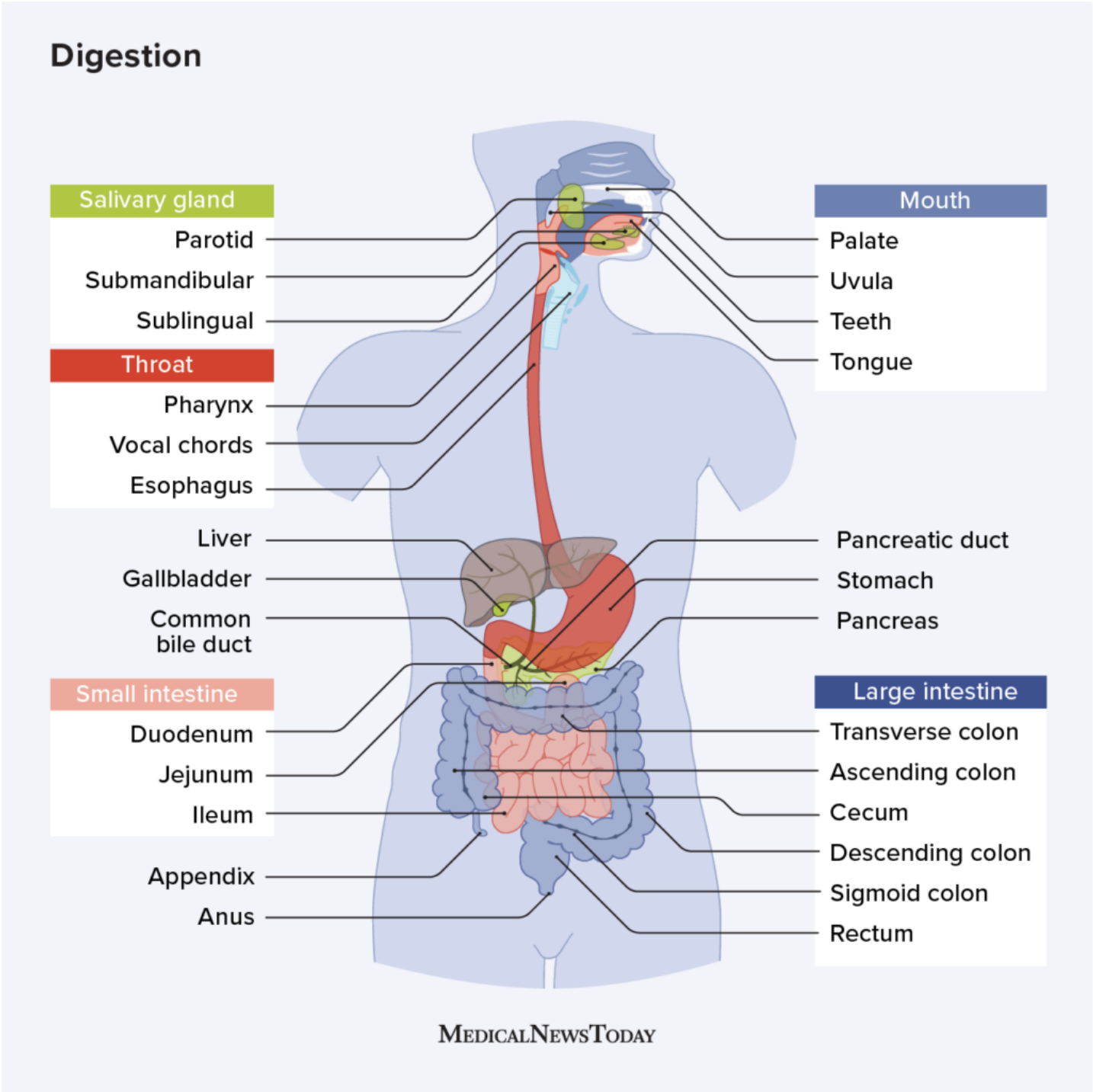
DIGESTIVE SYSTEM

- CONVERTS FOOD WE CONSUME INTO SIMPLIST FORMS
  - GLUCOSE (SUGARS)
  - AMINO ACIDS (PROTEIN)
  - FATTY ACIDS (FATS)
- ABSORBED INTO THE BLOODSTREAM FROM SMALL INTESTINE
  - NUTRIENTS – CARRIED INTO EVERY CELL IN THE BODY

DIGESTIVE SYSTEM

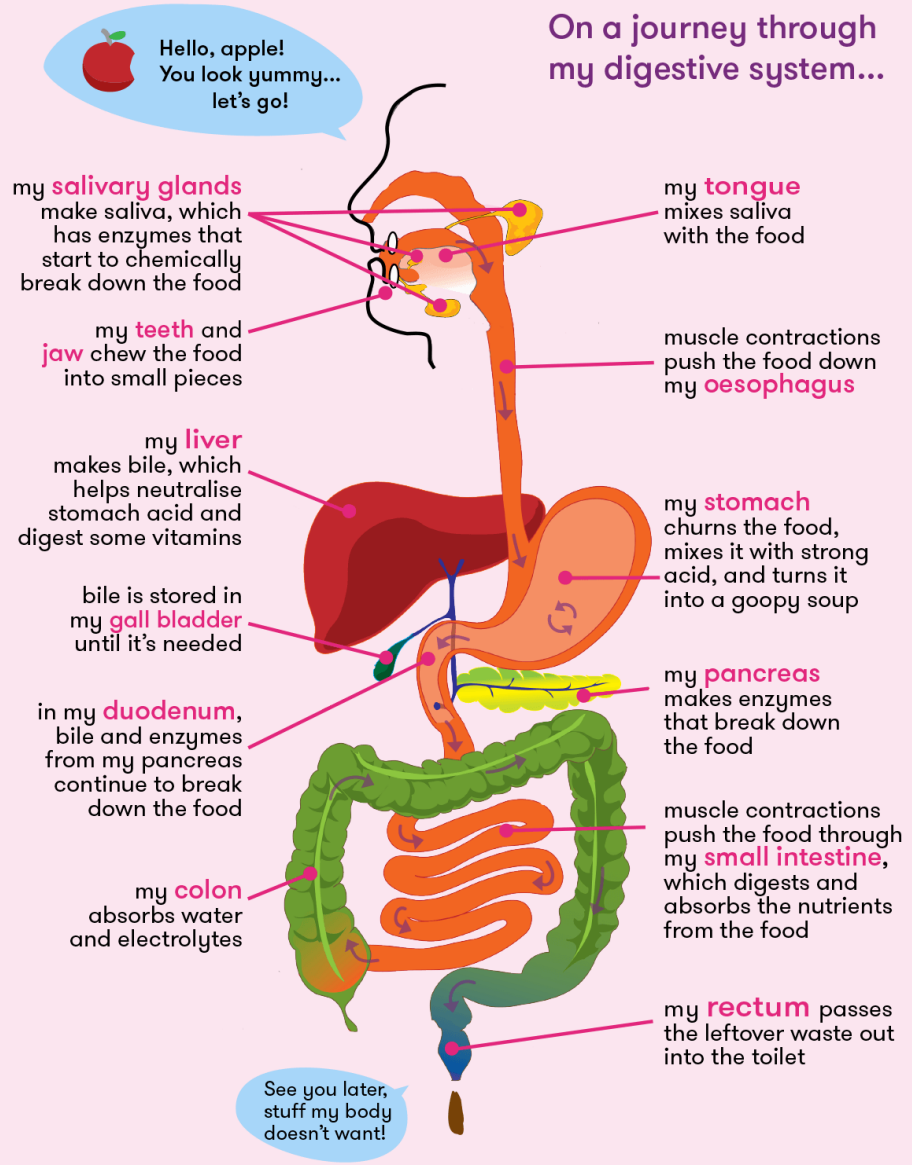


DIGESTIVE SYSTEM



DIGESTIVE PROCESS

WHERE DOES MY FOOD GO AFTER I EAT IT?



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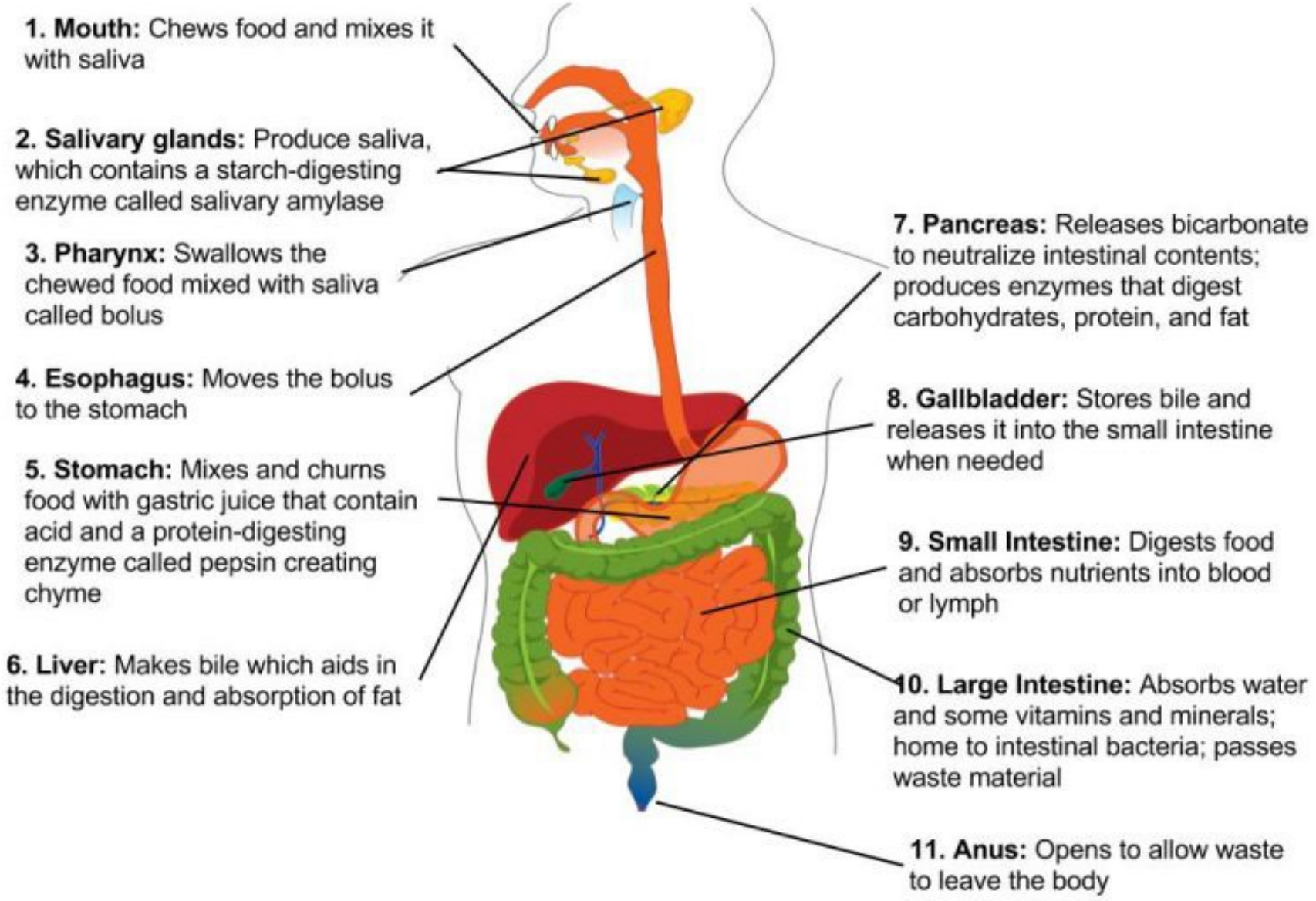
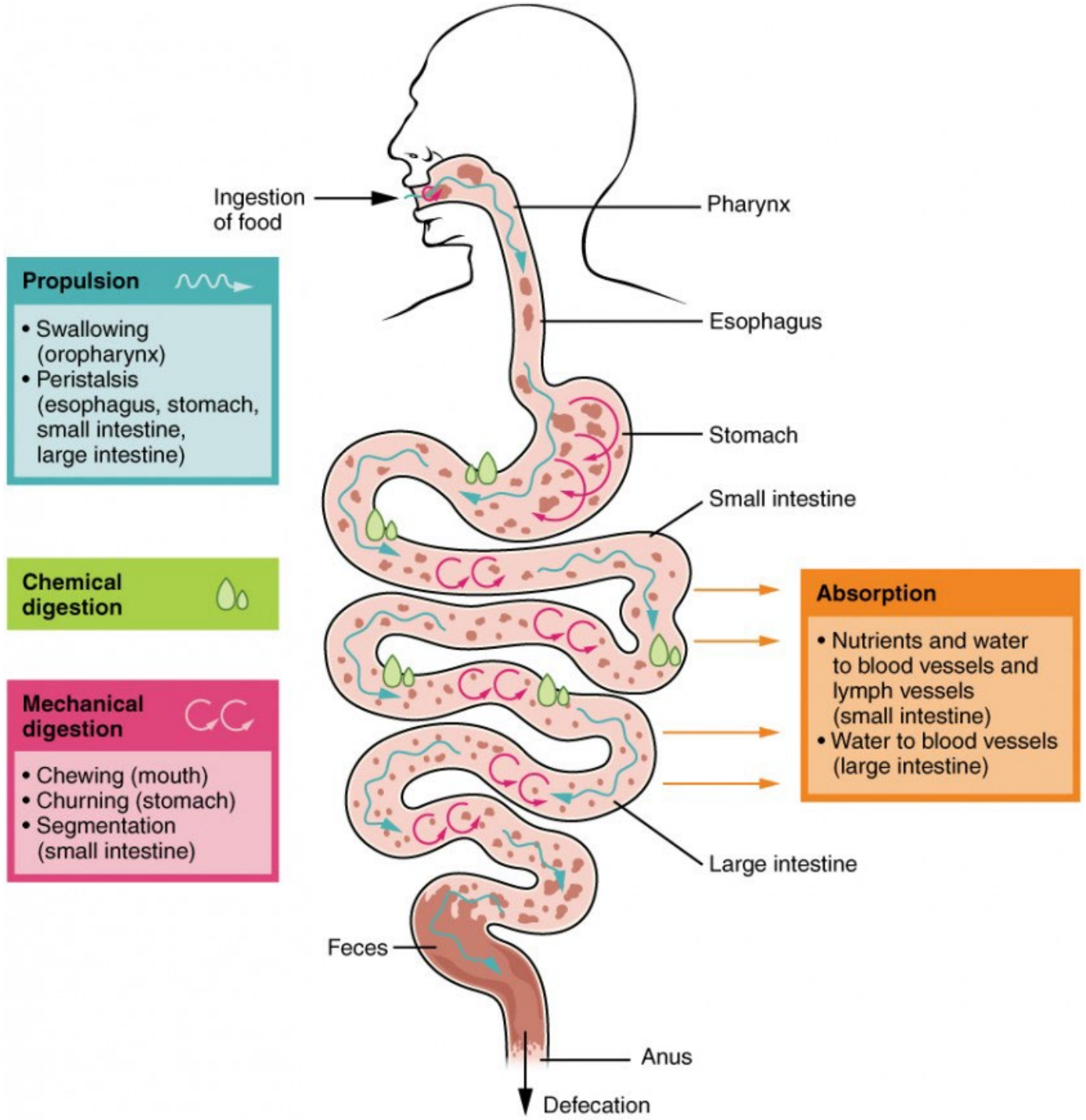
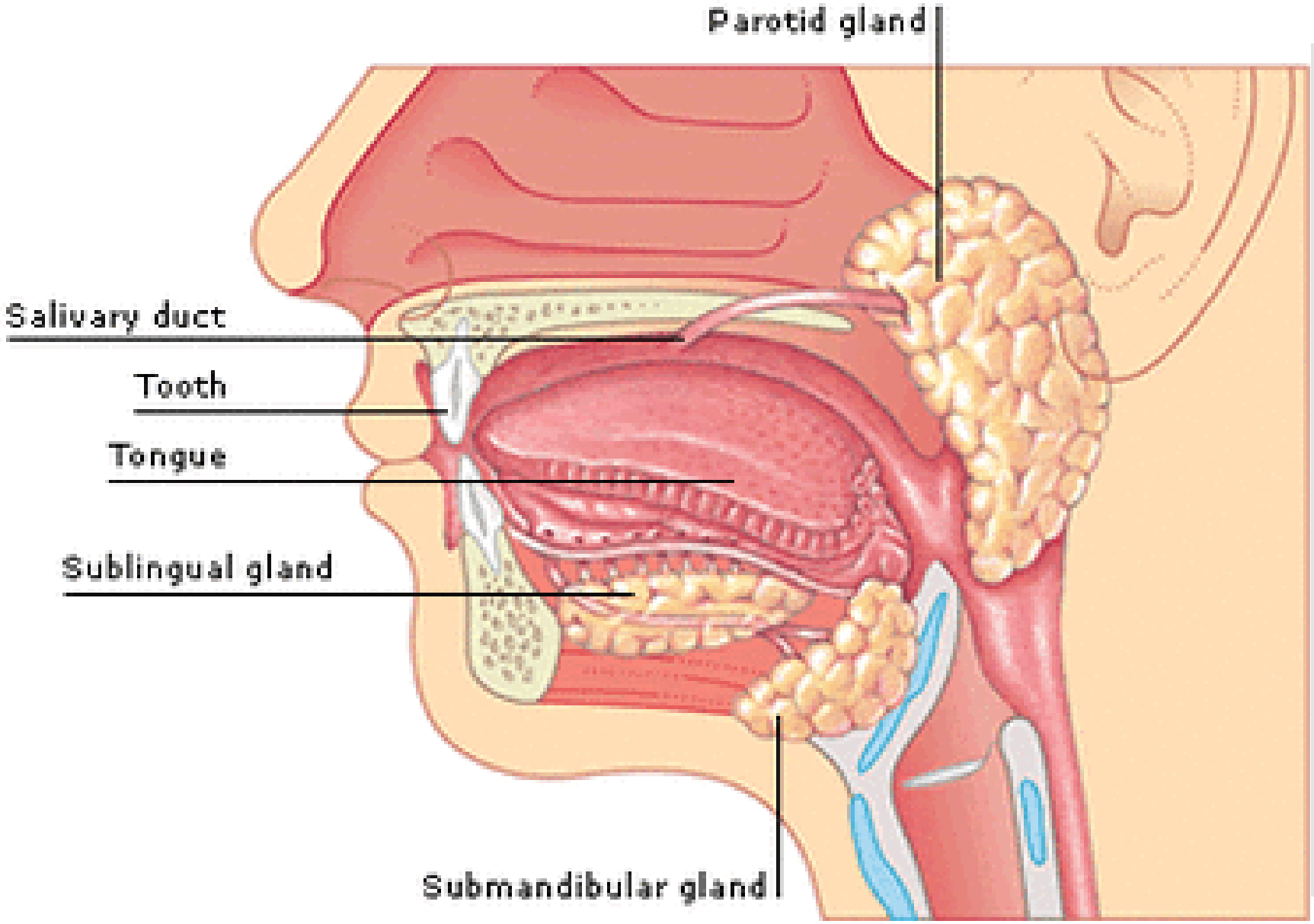
DIGESTIVE PROCESS



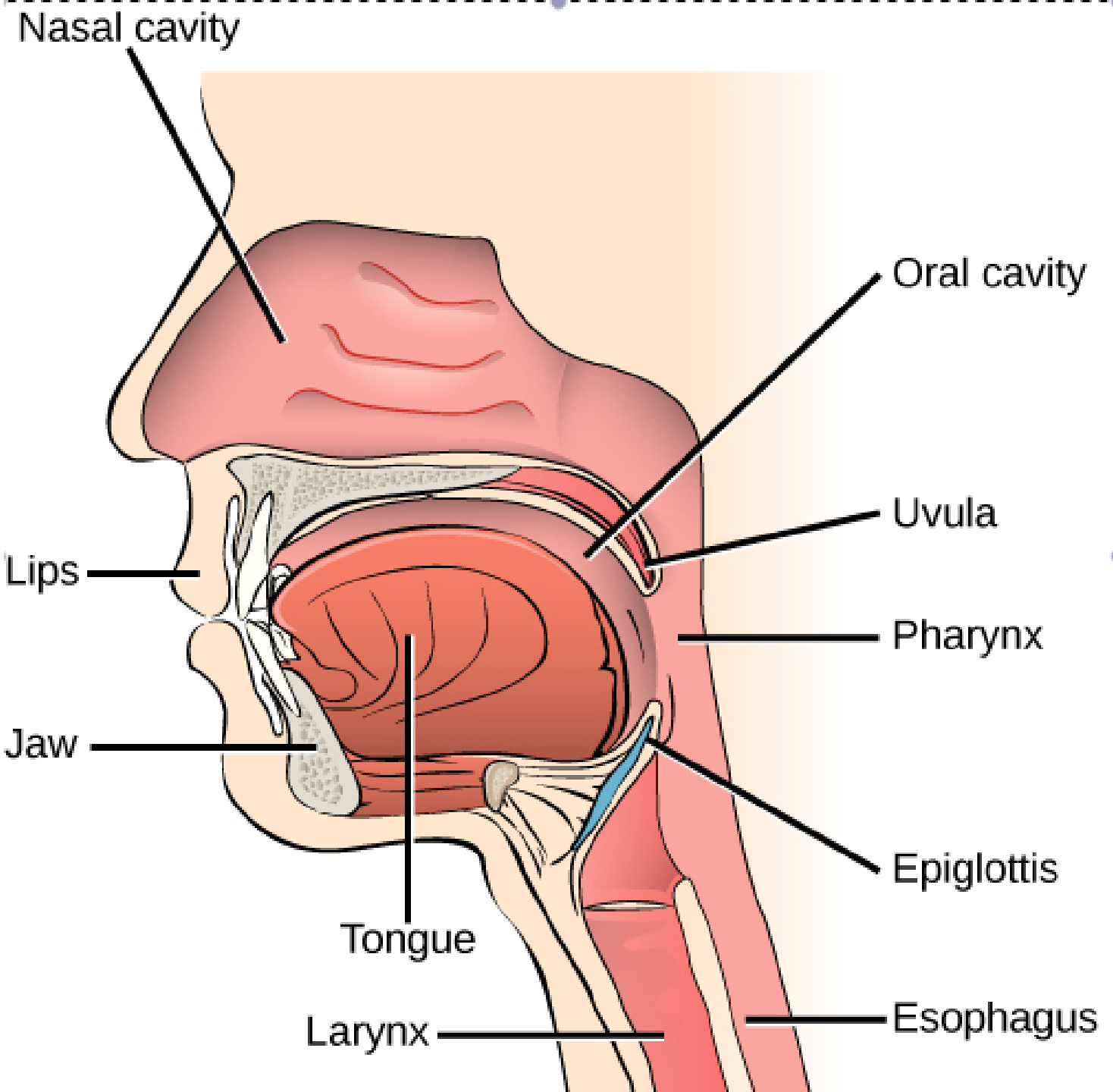
DIGESTIVE PROCESS



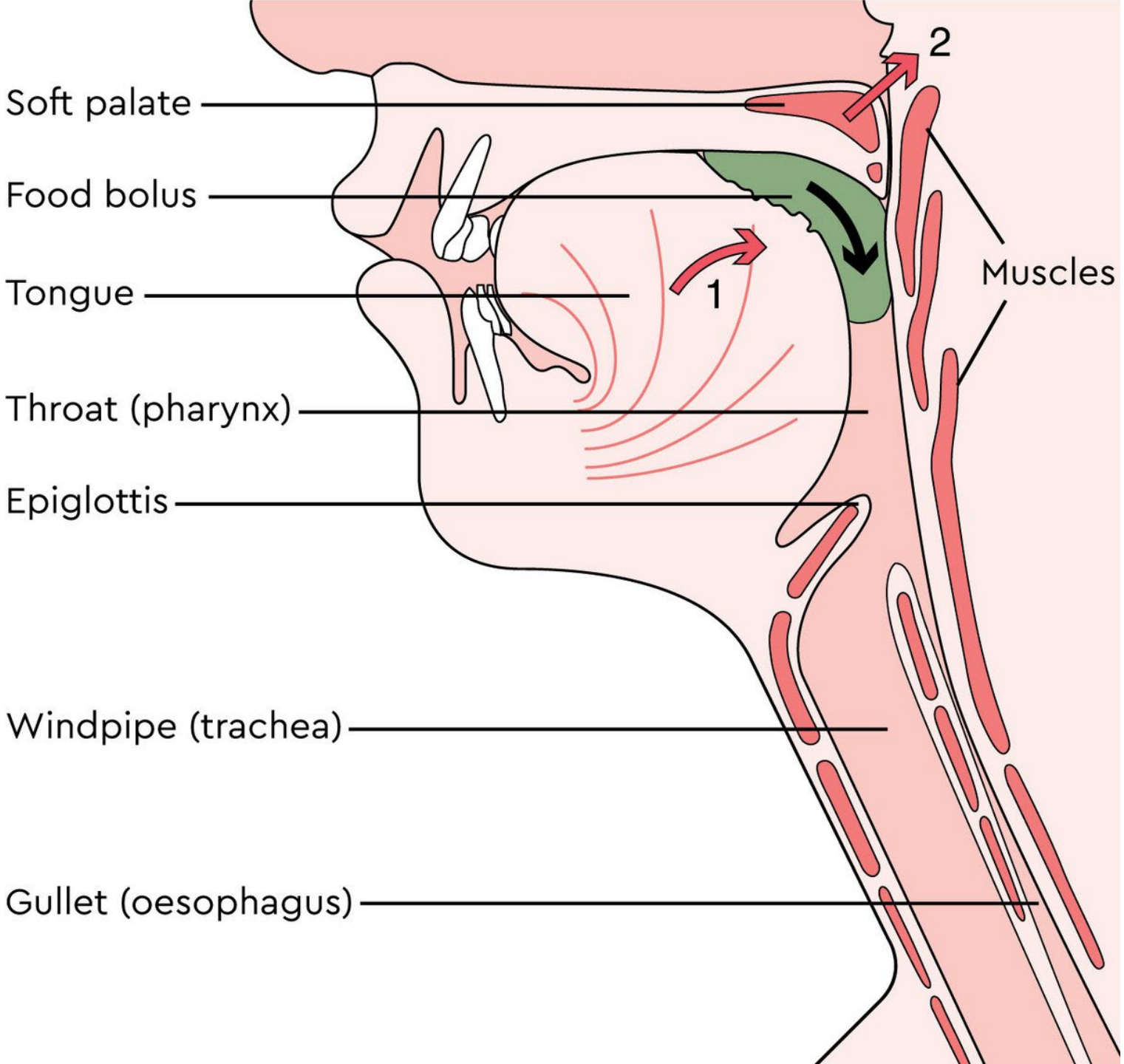
CHEWING & GLANDS



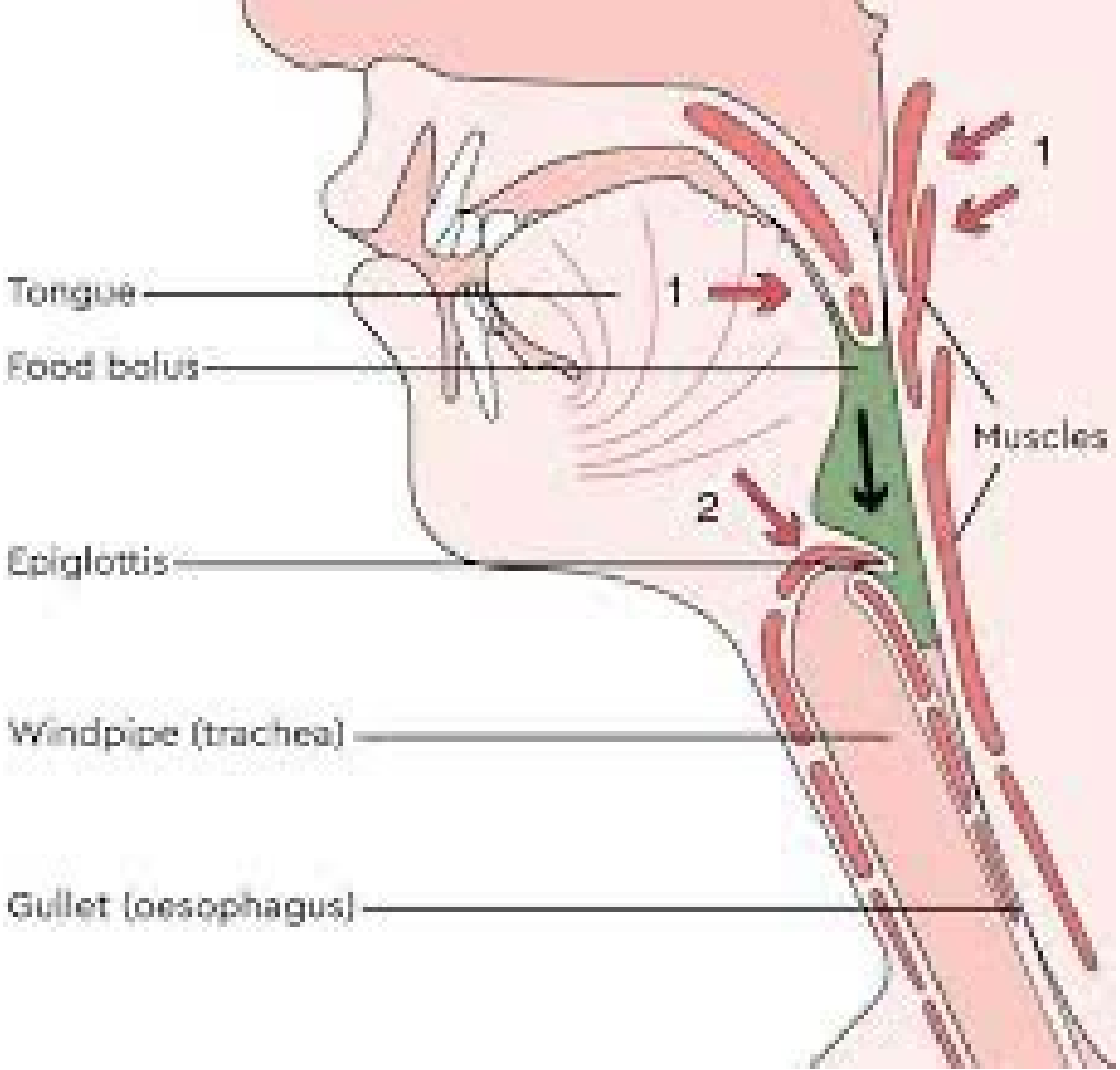
EPIGIOTIS -
SWALLOWING

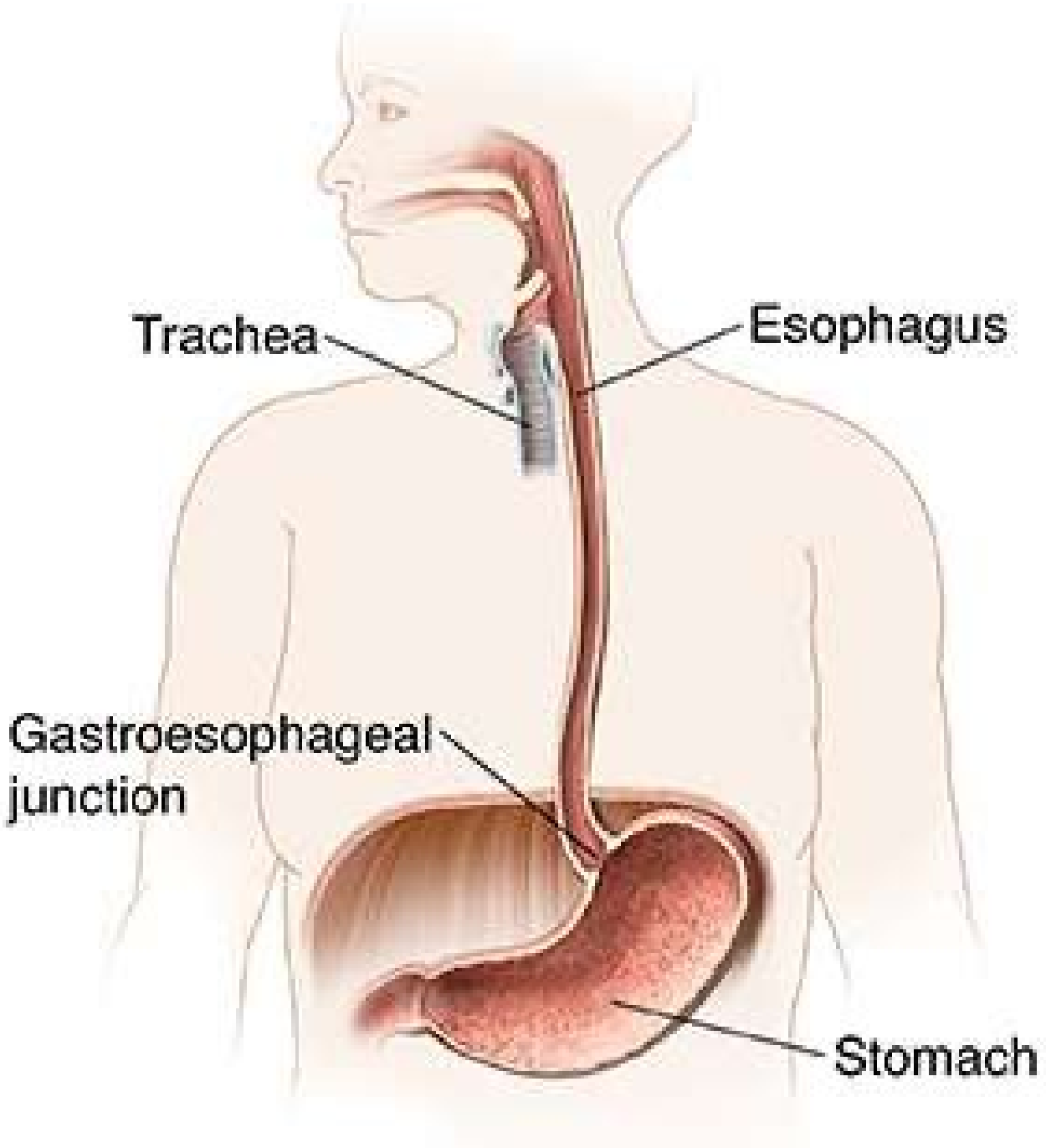


SWALLOWING PROCESS

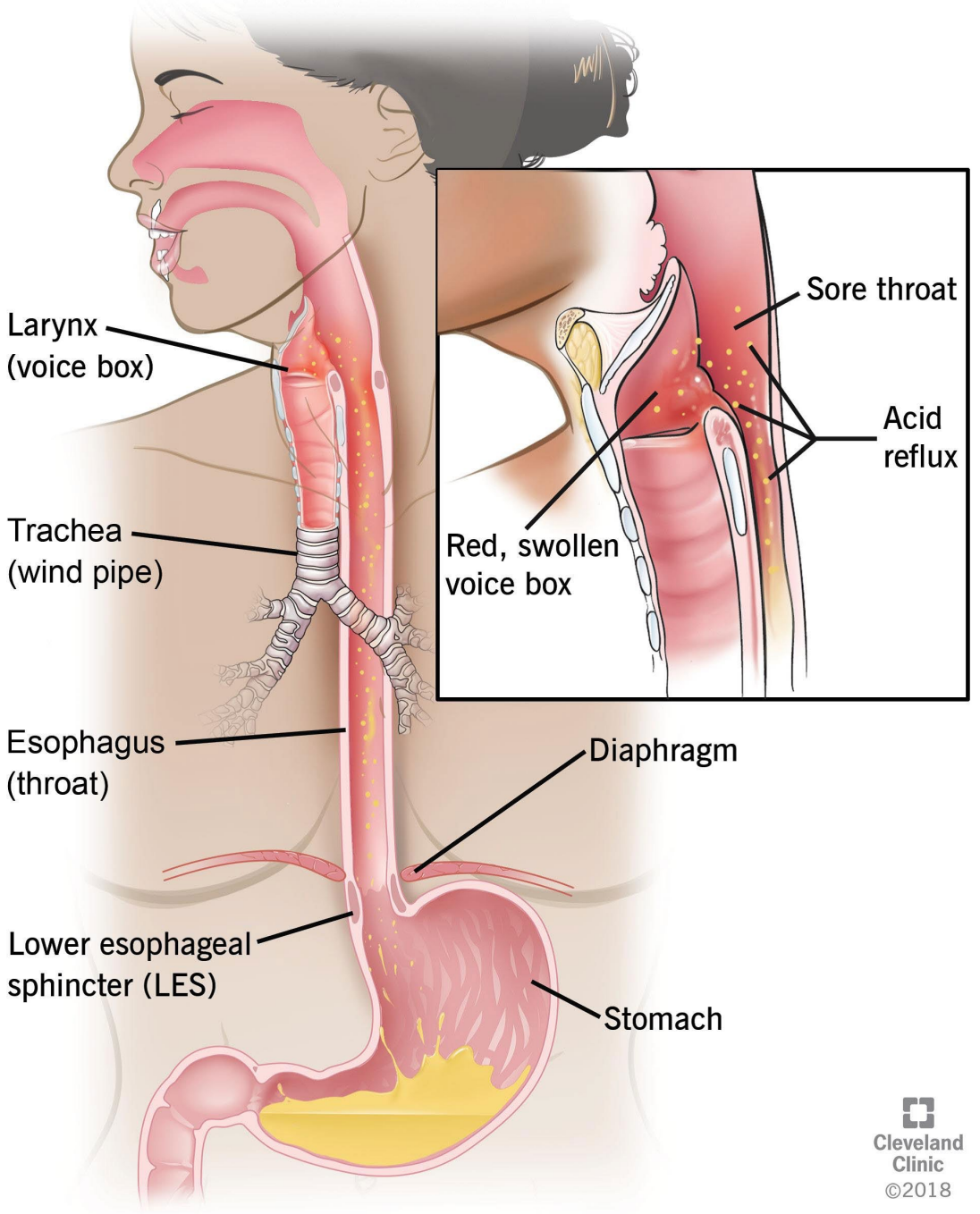


SWALLOWING PROCESS




Trachea
Esophagus
Gastroesophageal junction
Stomach

ESOPHAGUS


Larynx
(voice box)
Trachea
(wind pipe)
Esophagus
(throat)
Lower esophageal
sphincter (LES)
Diaphragm
Stomach
Sore throat
Acid
reflux
Red, swollen
voice box
Cleveland
Clinic
©2018

STOMACH

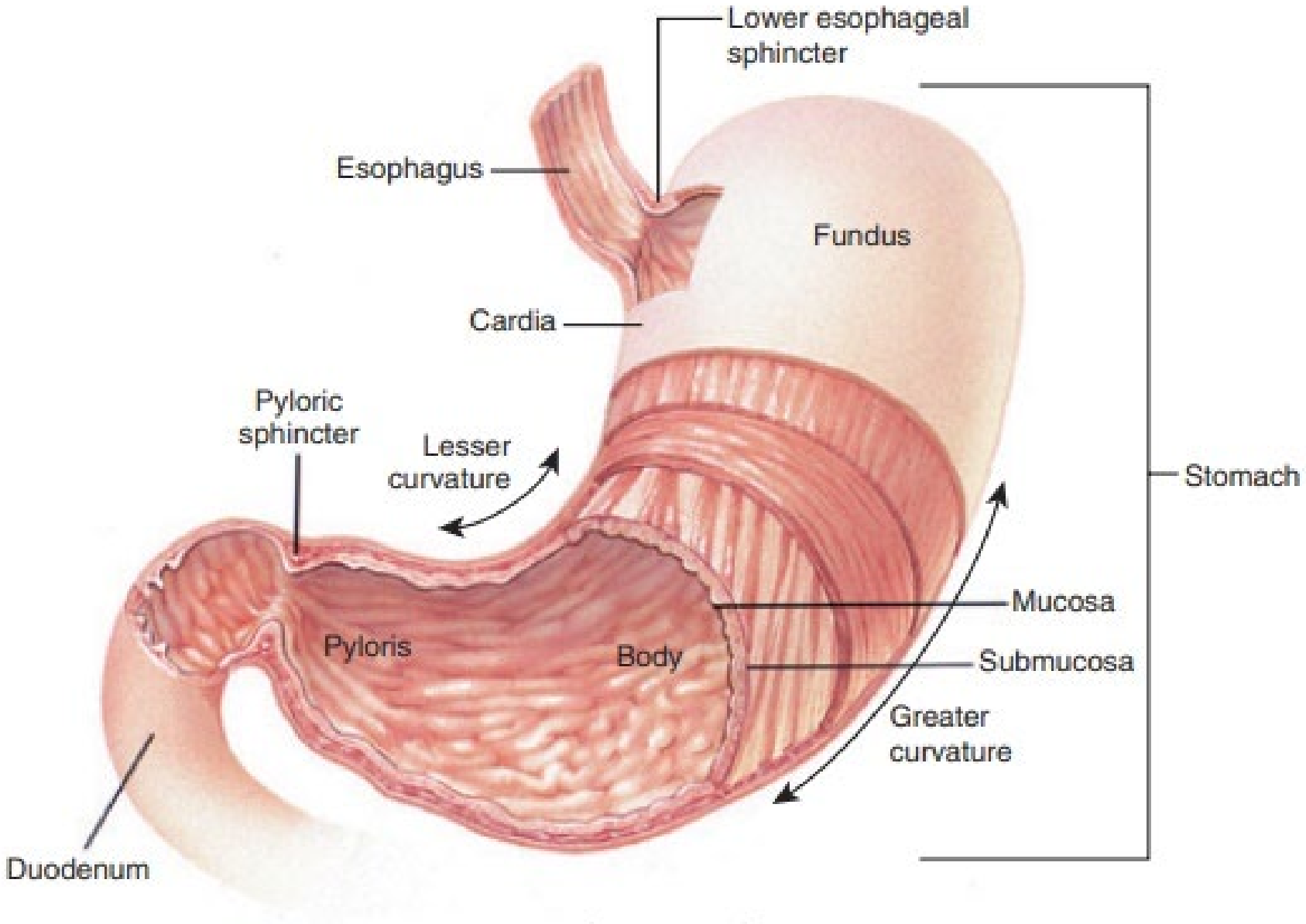
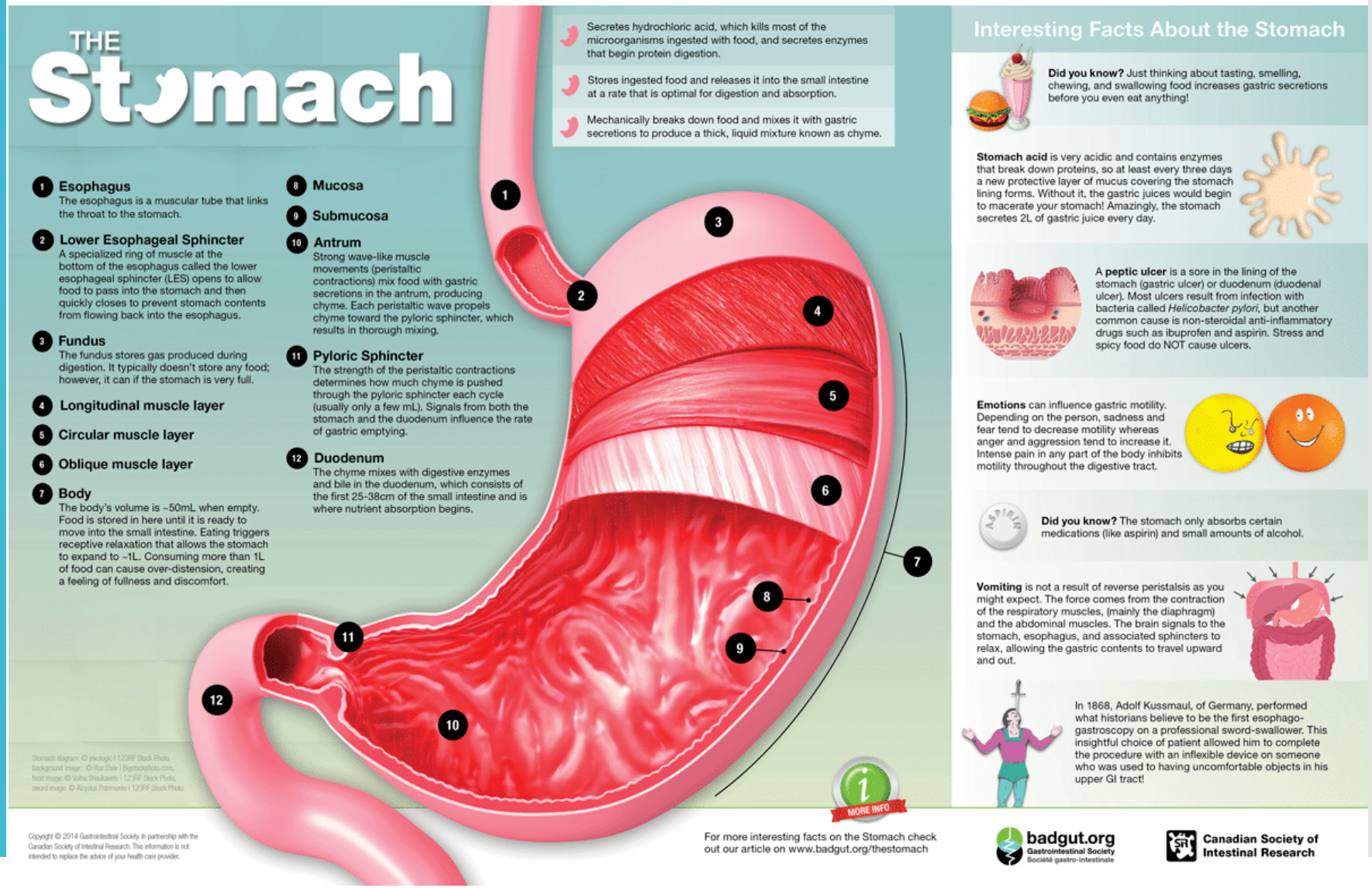
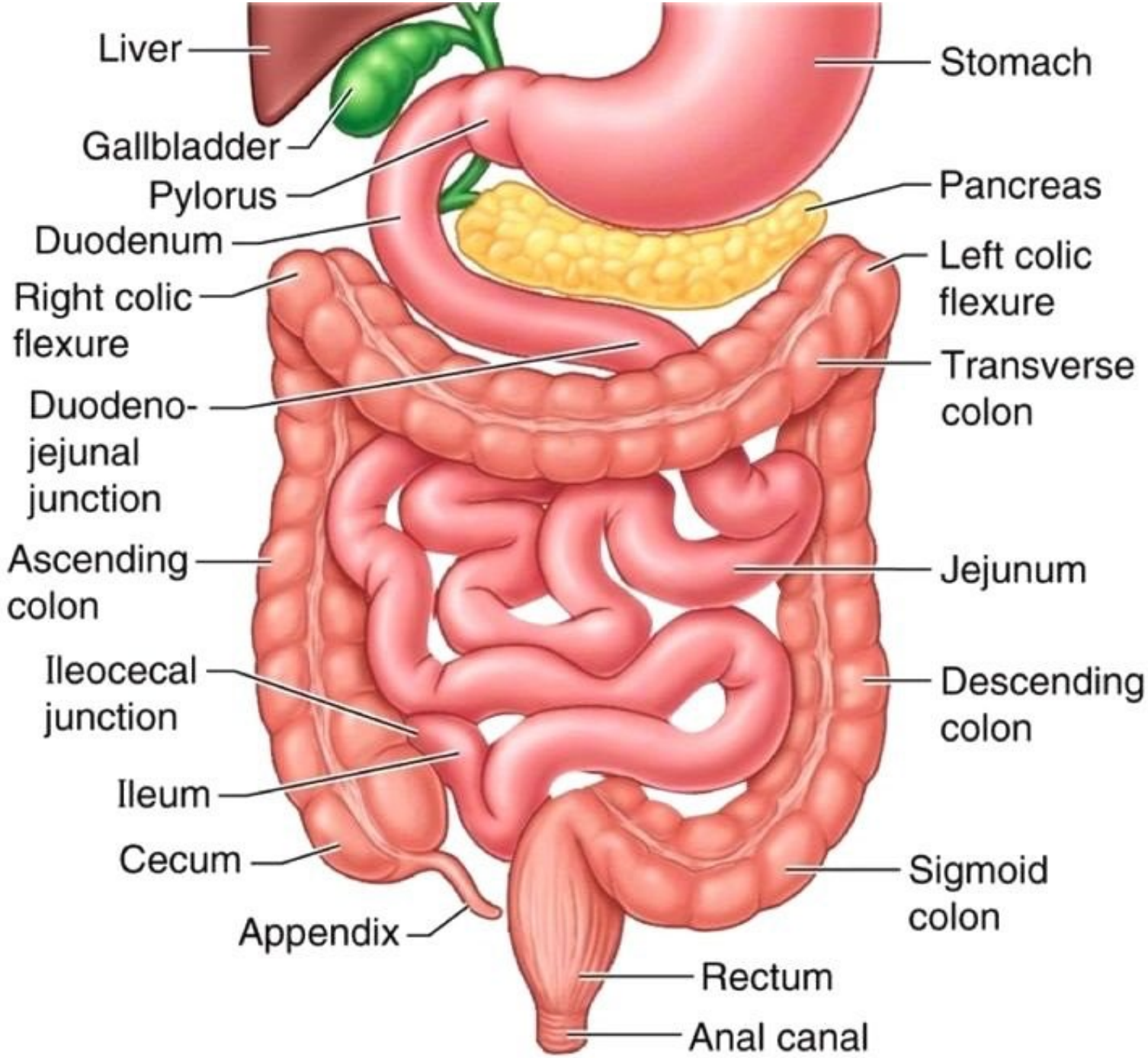


FIGURE 24-8 The stomach.

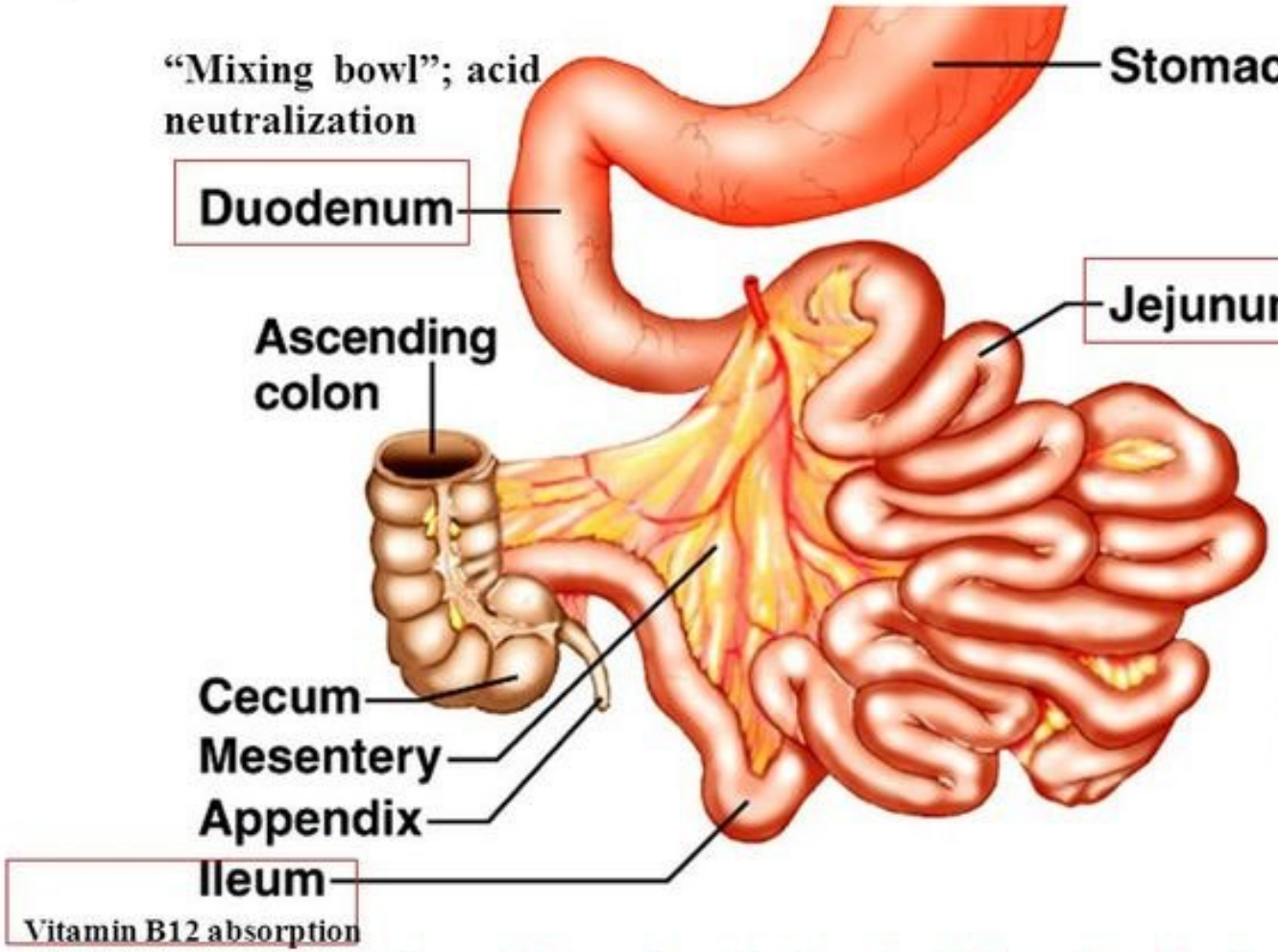
STOMACH FUNCTIONS



SMALL INTESTINE

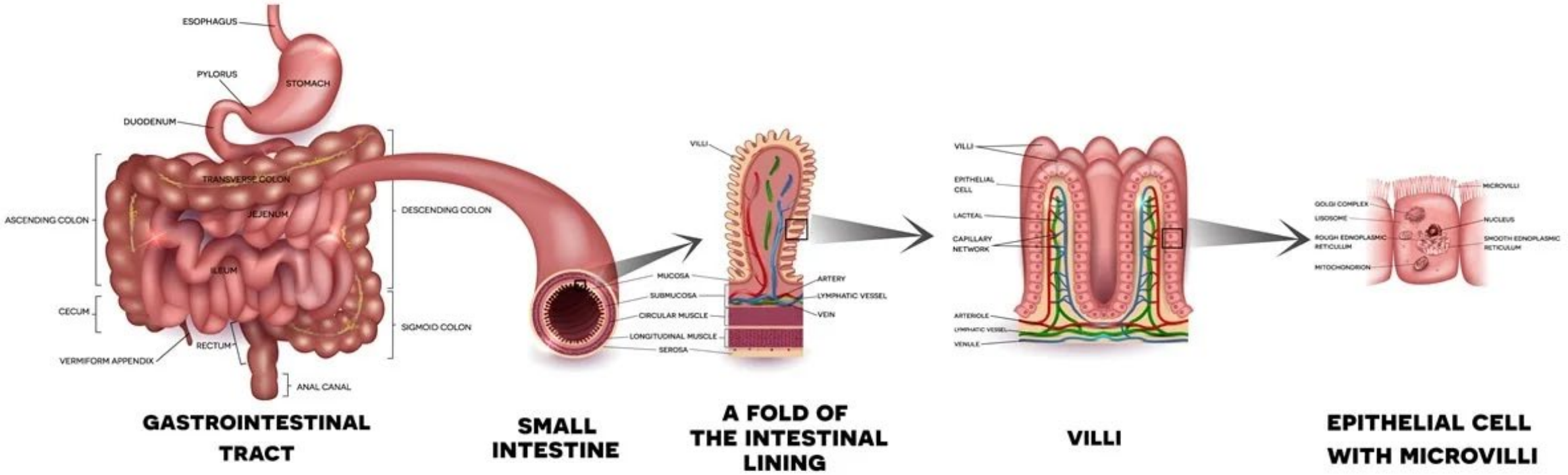


Three Parts of Small Intestine



Main functions of small intestine: 1) chemical digestion 2) absorption of nutrients (90%) from chyme

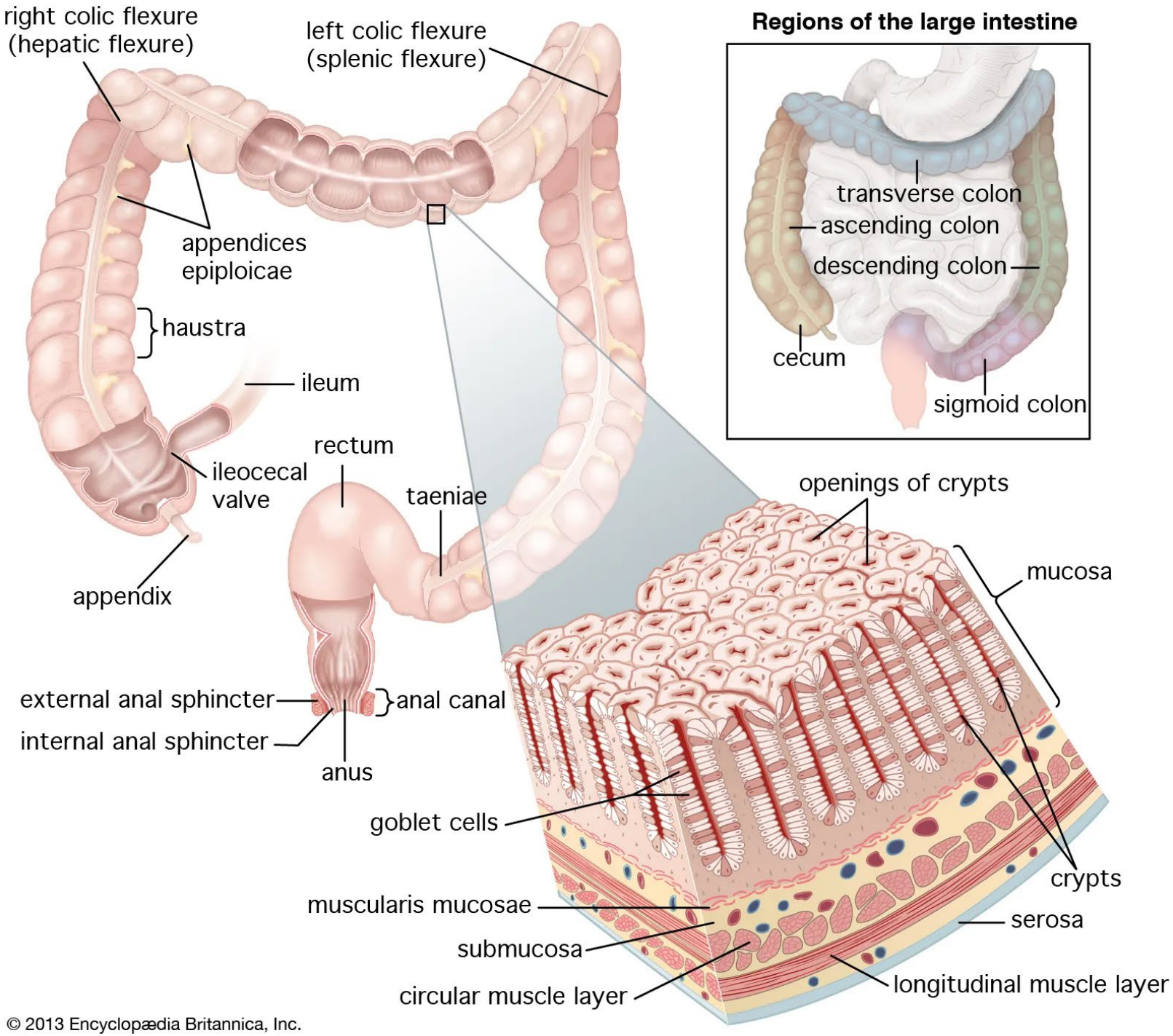
FUNCTIONS OF SMALL INTESTINE



ABSORBING
- WATER
- ELECTROLYTES
- VITAMINS

PRODUCING
- VITAMINS

FORMING/PROPELLING
- FAECES



THANK YOU!