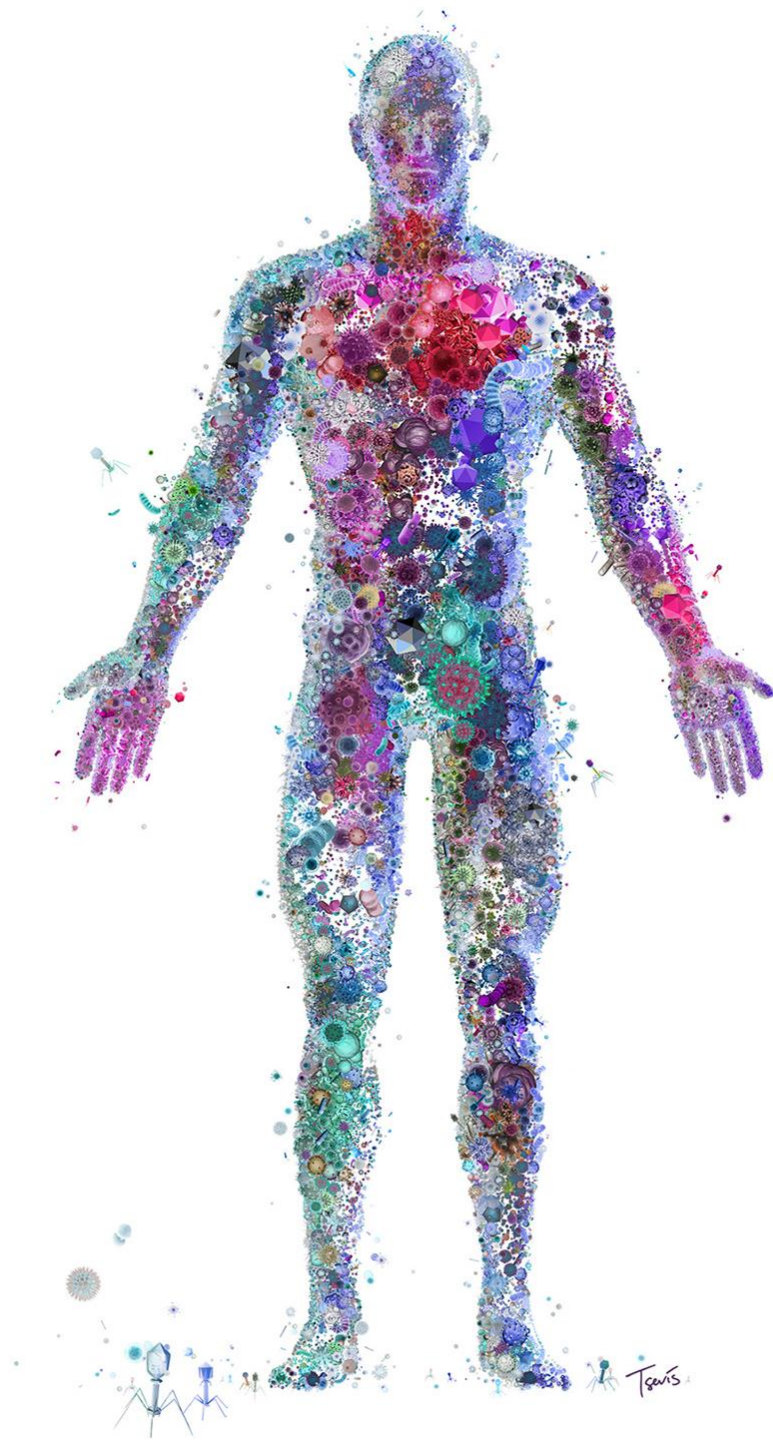


ESCUELA CHILENA DE ACUPUNTURA
Curso de Medicina Occidental
Módulo II: Anatomía y Fisiología



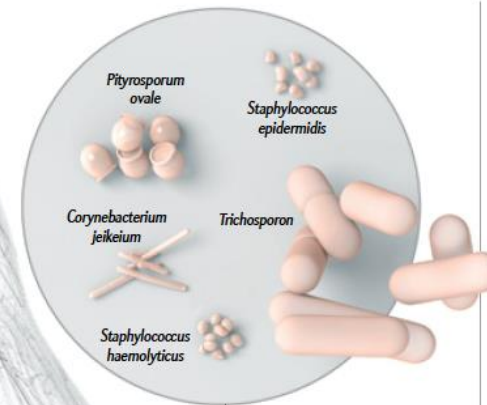
Sistema linfático Sistema Inmunológico

DRA. VALENTINA QUINTANA S.

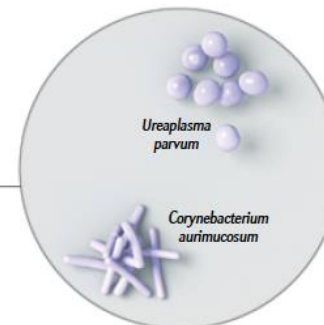


Different Species for Different Reasons

Various types of microbes congregate everywhere in and on the human body. Their presence maintains their host's health in part by making it hard for disease-causing germs to gain access to the body. Several species, such as *Bacteroides fragilis*, also perform specific useful functions, including aiding in the development and regulation of the immune system (below, right).

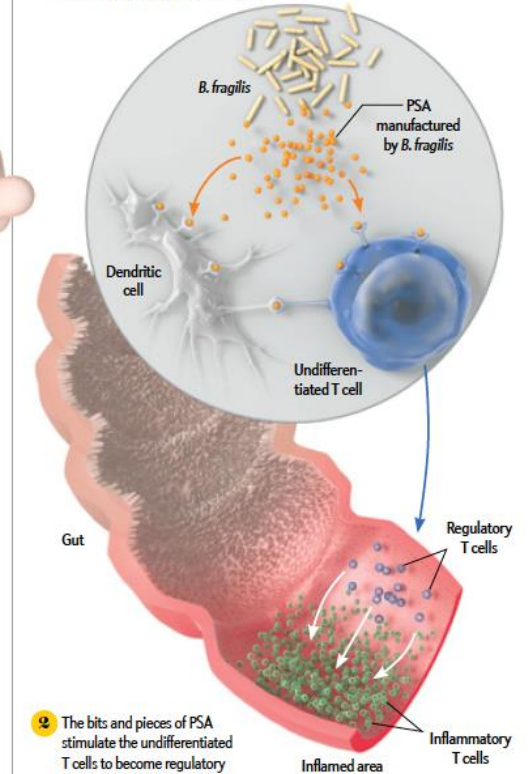


Skin



Urogenital tract

- 1 Immune cells called dendritic cells pick up a molecule called polysaccharide A (PSA) from the *B. fragilis* cells and present it to undifferentiated T cells.

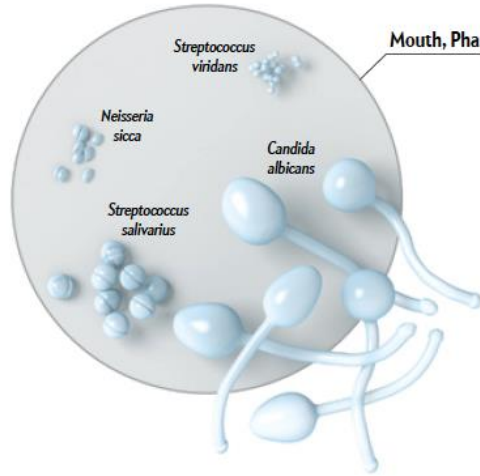


- 2 The bits and pieces of PSA stimulate the undifferentiated T cells to become regulatory T cells, which in turn produce substances that tamp down the aggressive efforts of inflammatory T cells.

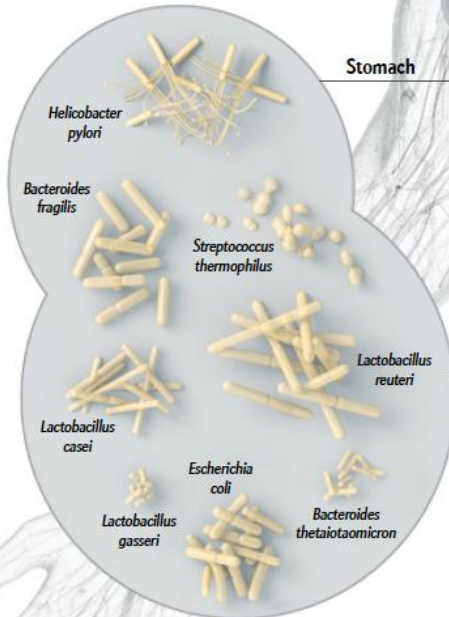
Case Study: How One Bacterial Species Helps

Studies on mice raised in sterile conditions reveal that *B. fragilis* bacteria are crucial to maintaining the health of the intestines. In one experiment, germ-free mice that were given a strain of *B. fragilis* bacteria that produced the complex carbohydrate polysaccharide A did not develop inflammation of the intestine (colitis), whereas mice that were given a strain of *B. fragilis* bacteria that did not make PSA developed chronic inflammation of the gut. Investigators showed that the presence of PSA stimulated the development of regulatory T cells that in turn switched off the inflammatory T cells, thereby restoring health.

Mouth, Pharynx, Respiratory System

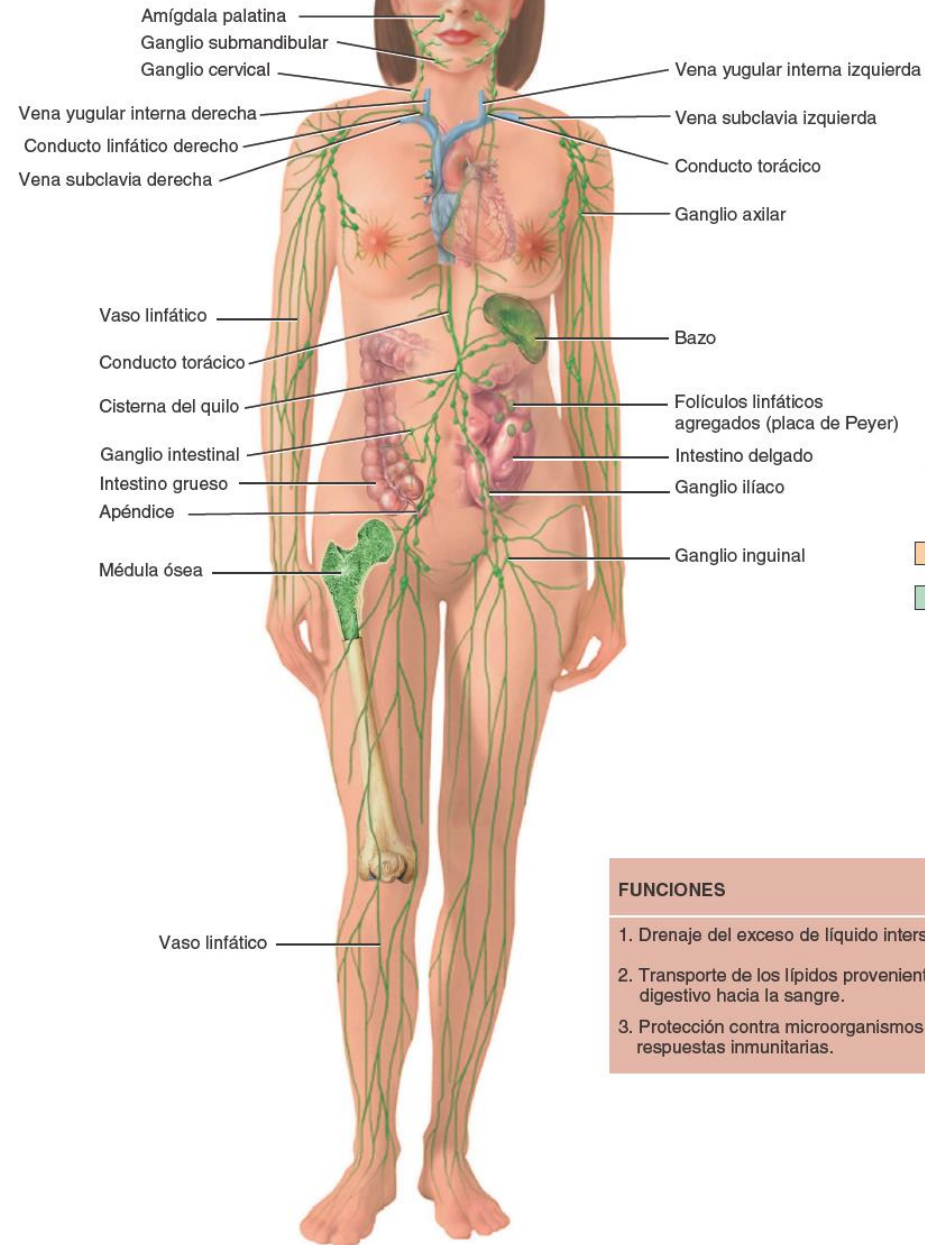
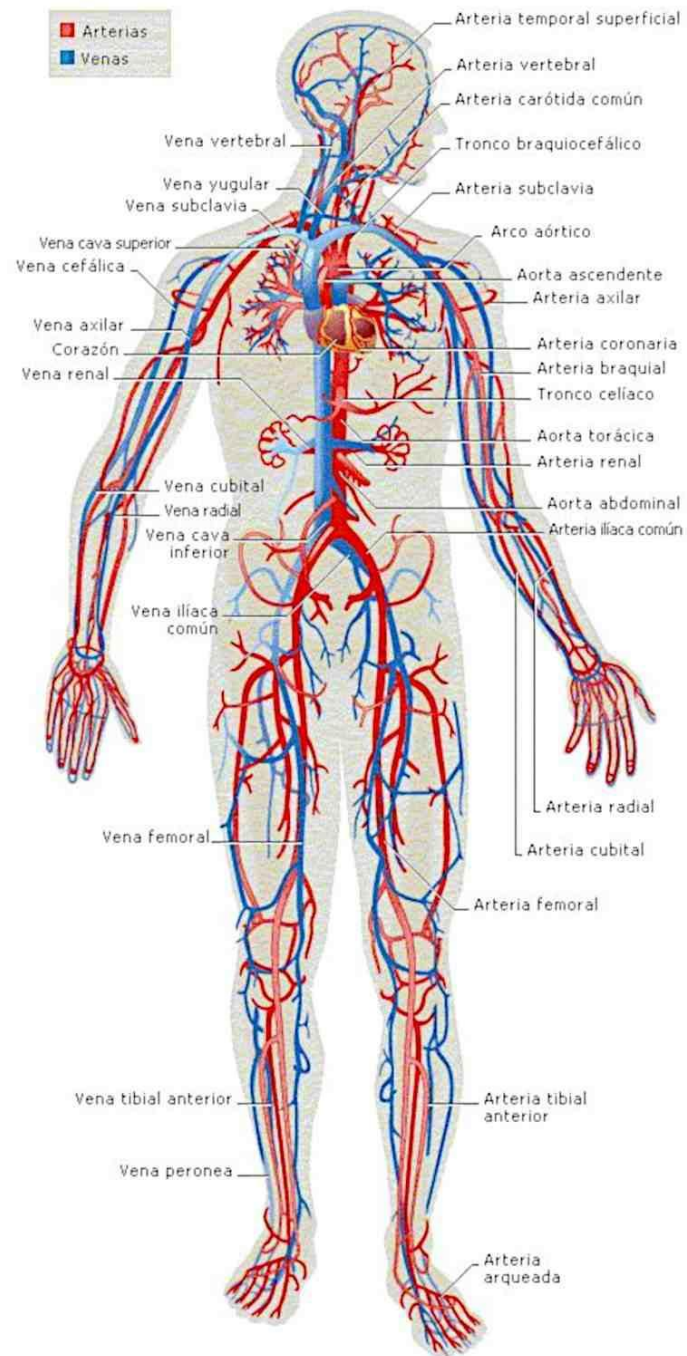


Stomach



Intestines

Urogenital



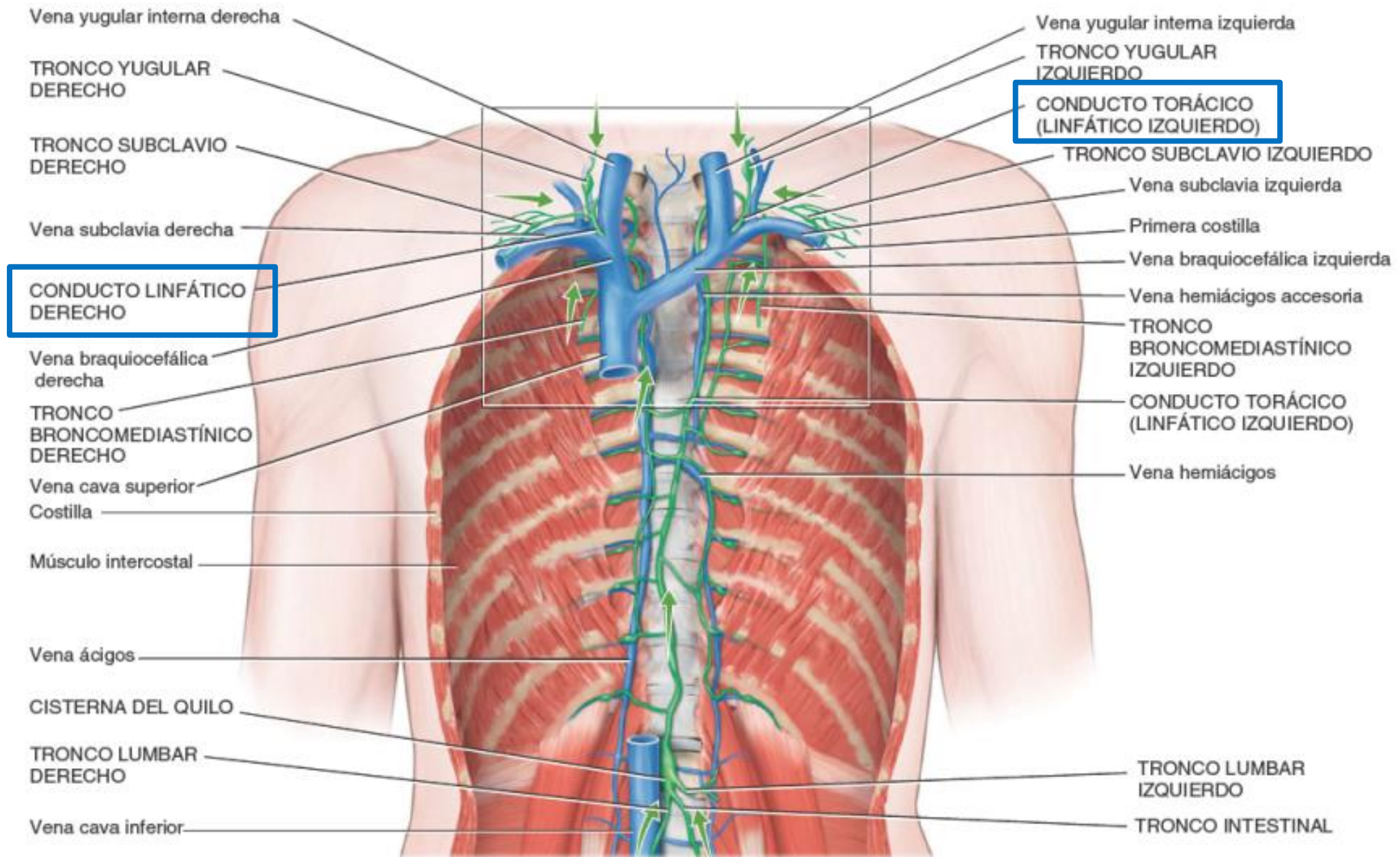
(b) Áreas drenadas por los conductos linfático derecho y torácico

Área drenada por el conducto linfático derecho
Área drenada por el conducto torácico

FUNCIONES

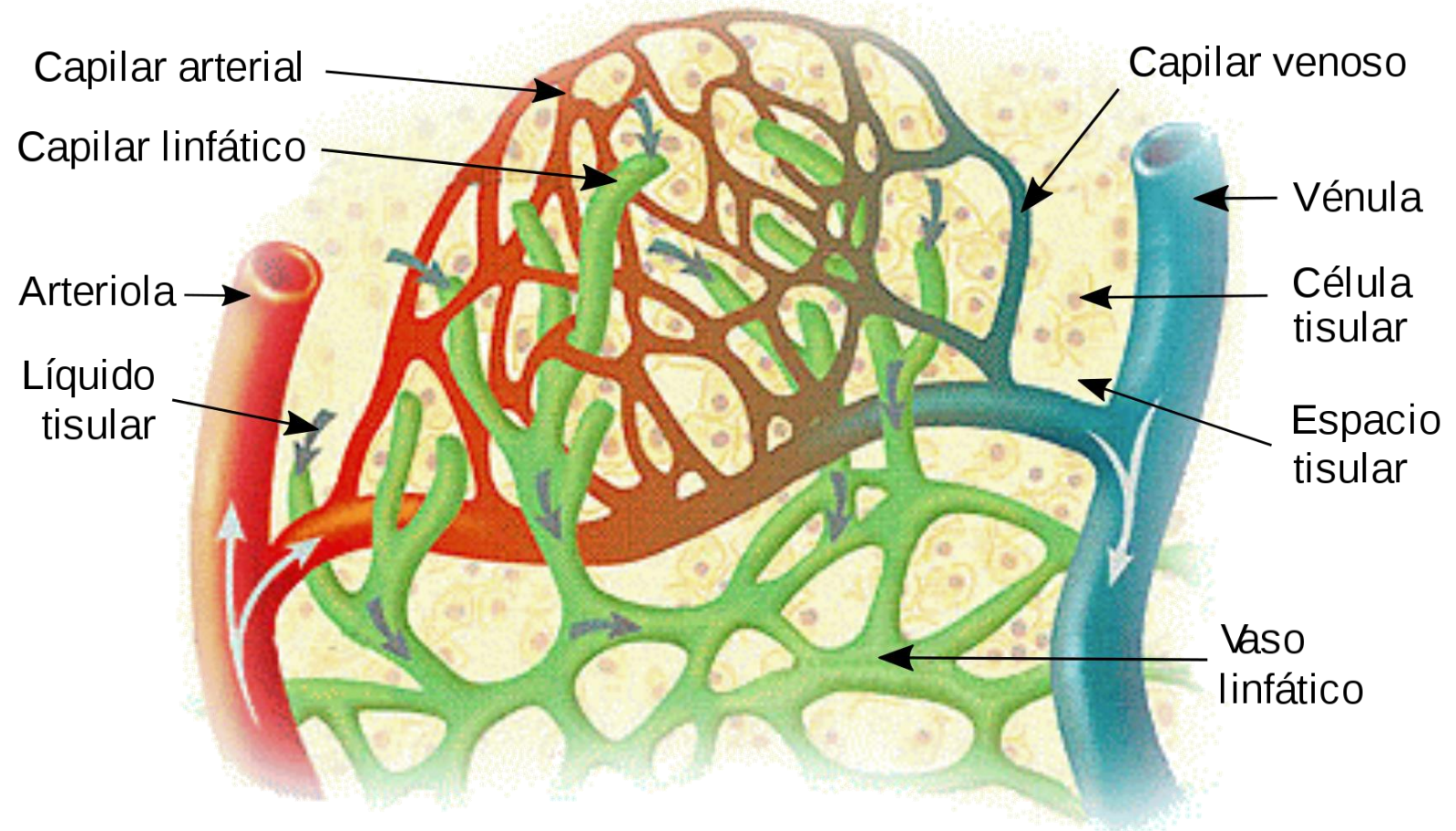
1. Drenaje del exceso de líquido intersticial.
2. Transporte de los lípidos provenientes de la dieta, desde el tubo digestivo hacia la sangre.
3. Protección contra microorganismos invasores a través de las respuestas inmunitarias.

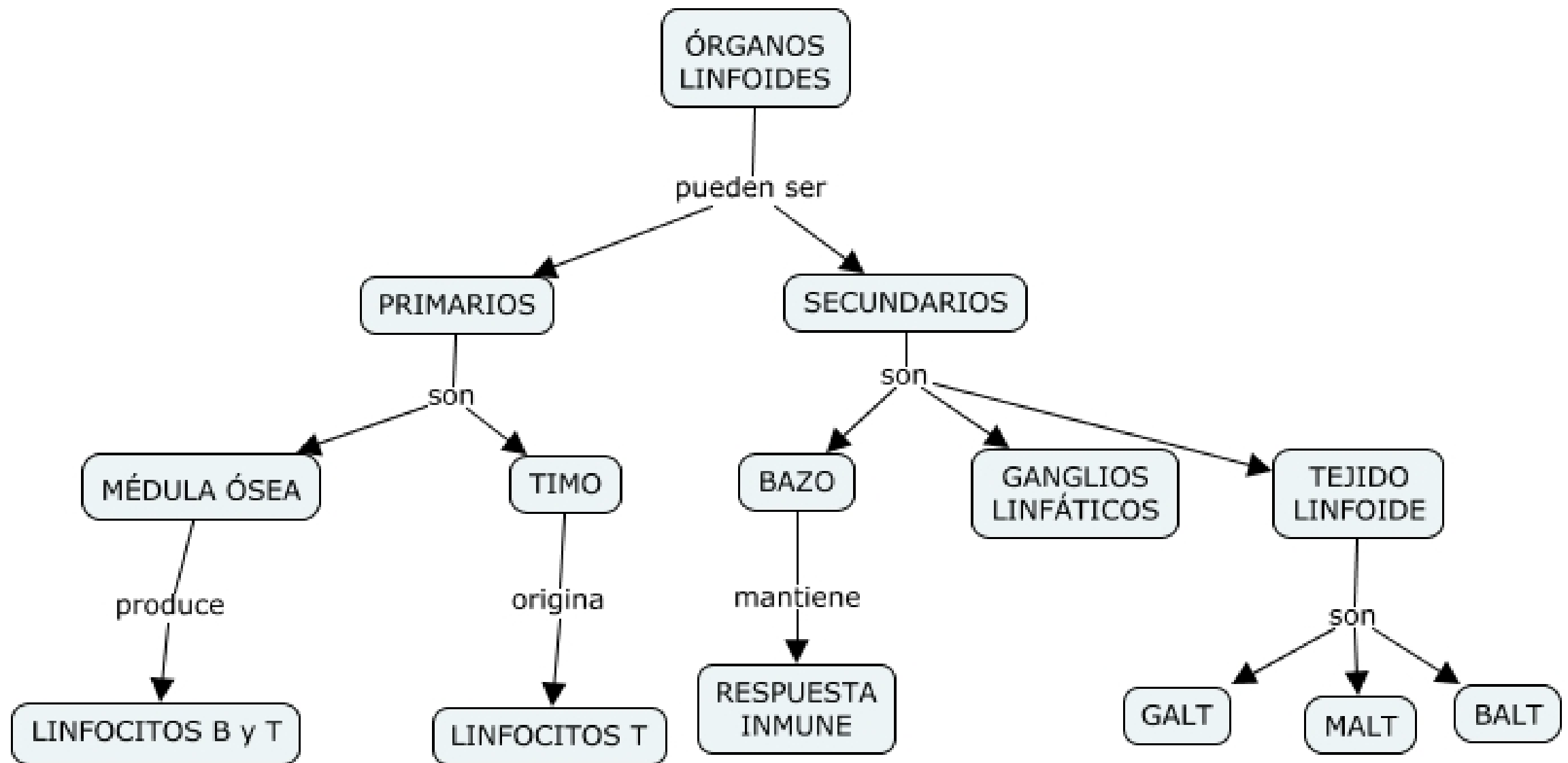
(a) Vista anterior de los componentes principales del sistema linfático



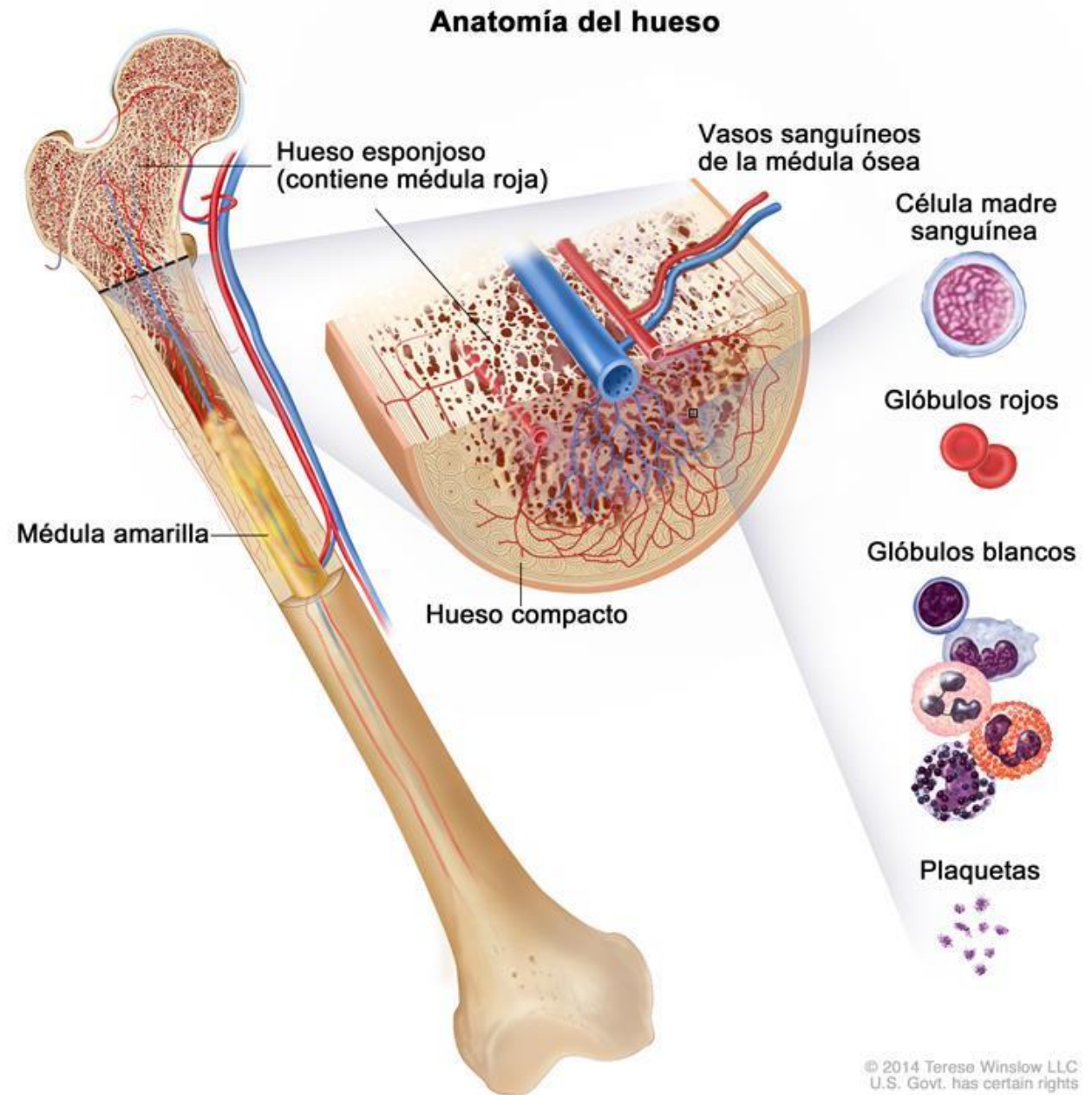
La linfa: composición

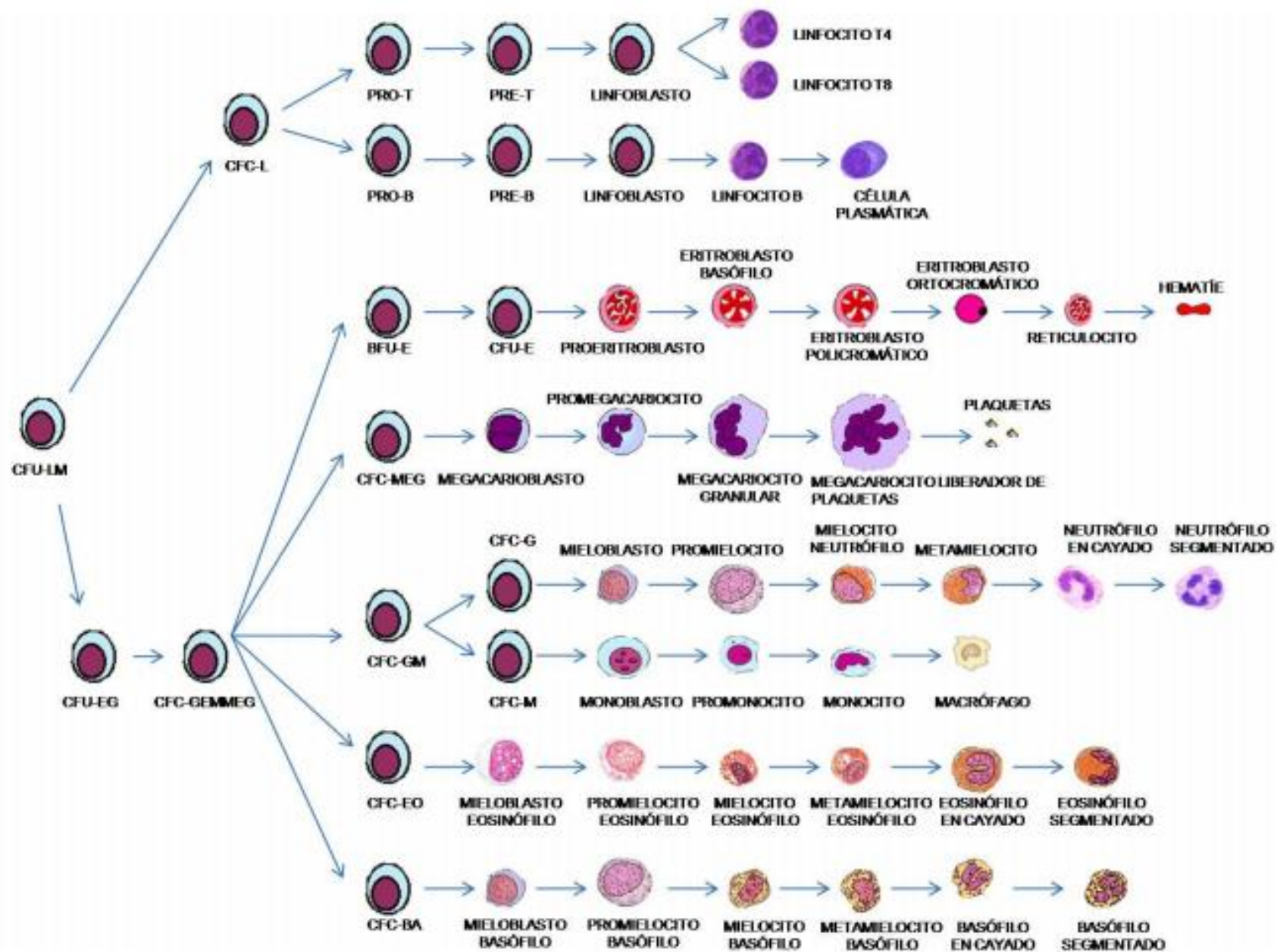
- Agua
- Proteínas (fibrinógeno)
- Grasas (quilomicrones)
- Linfocitos
- Gérmenes capturados
- Desechos metabólicos



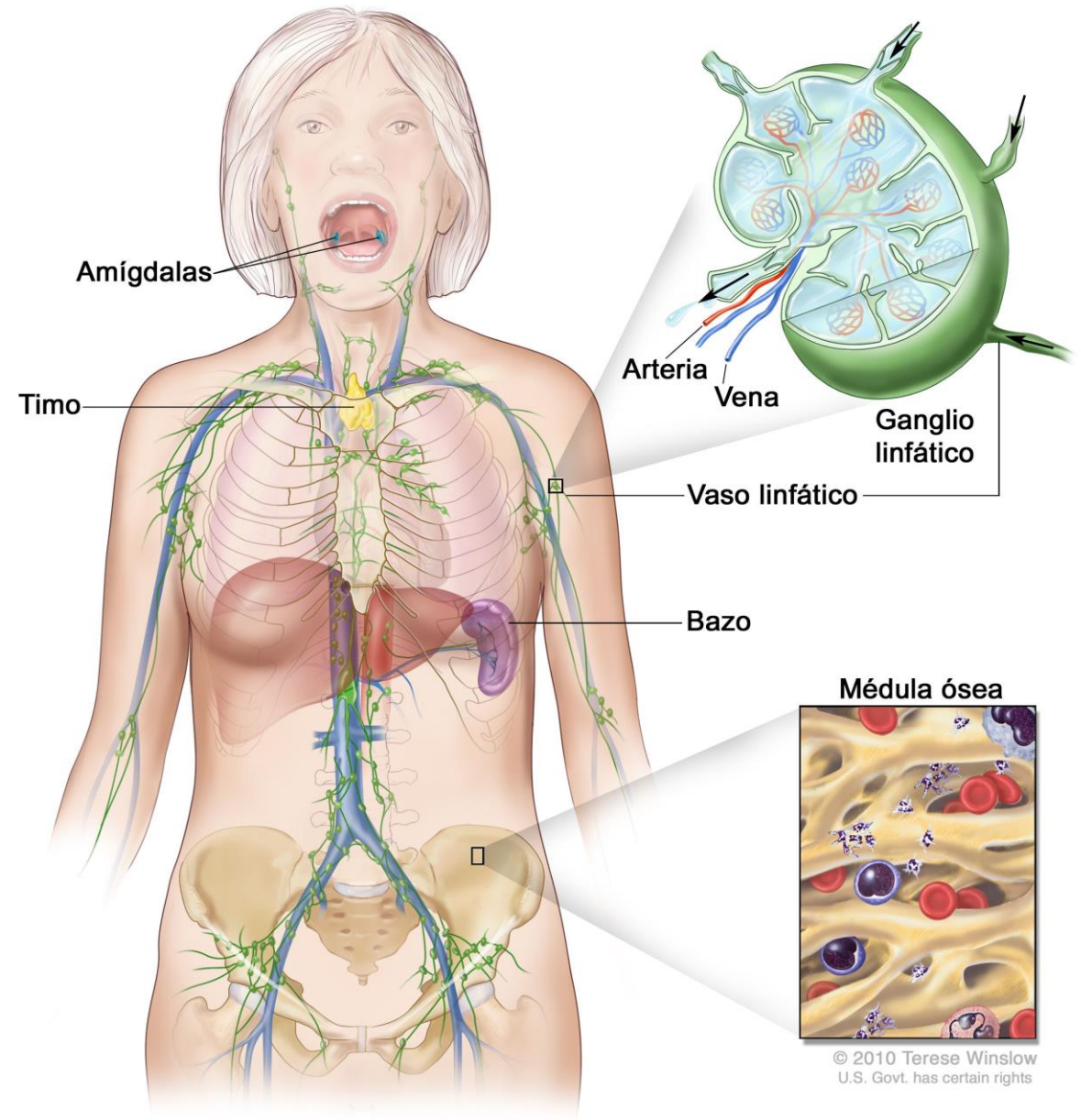
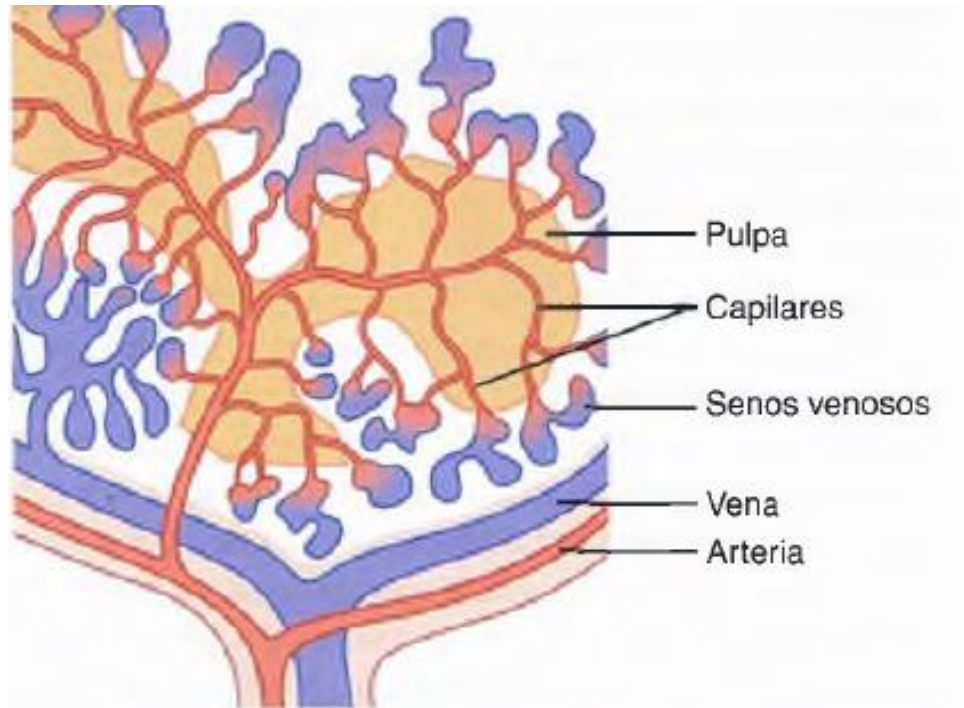


Médula ósea

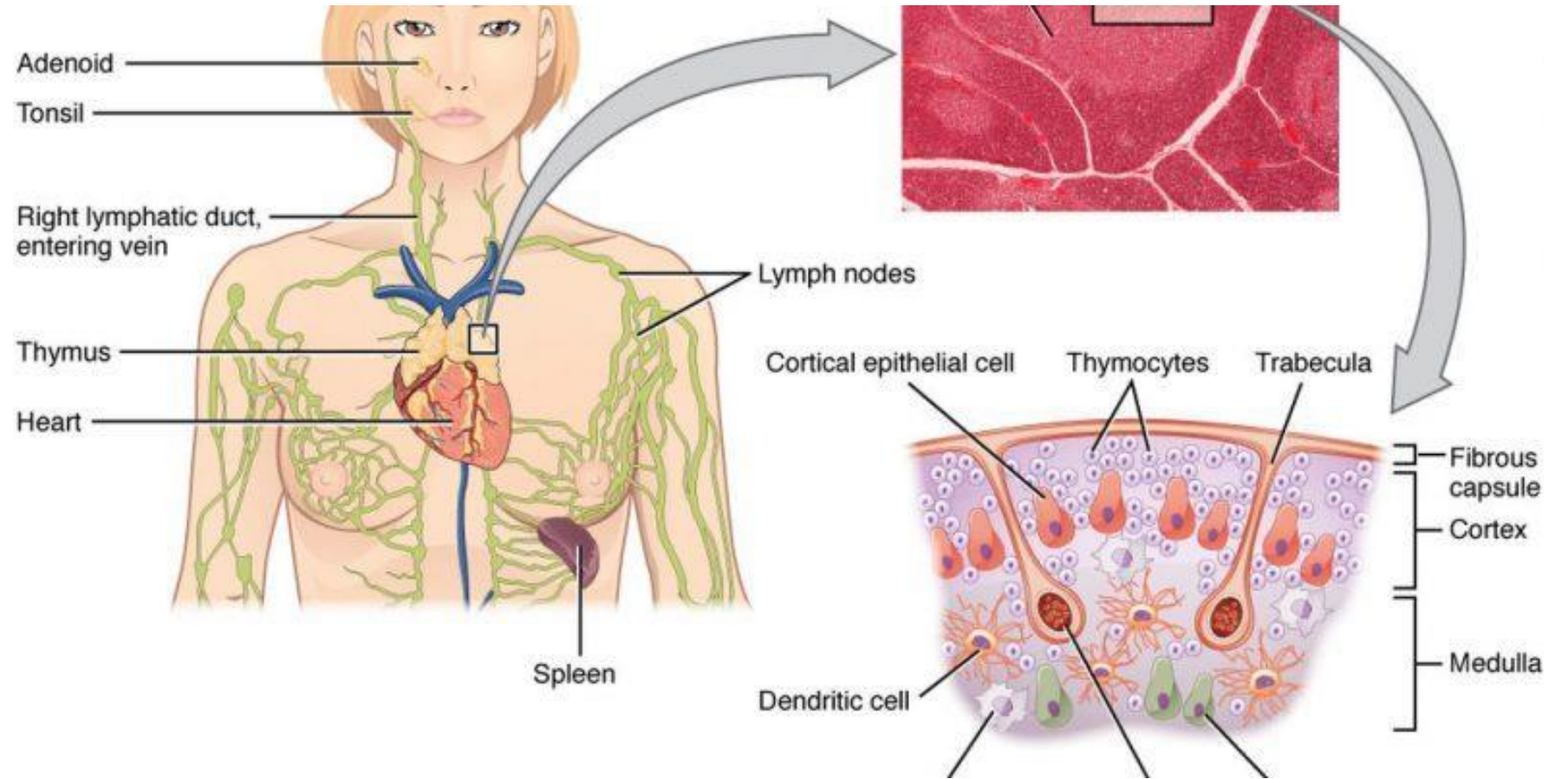




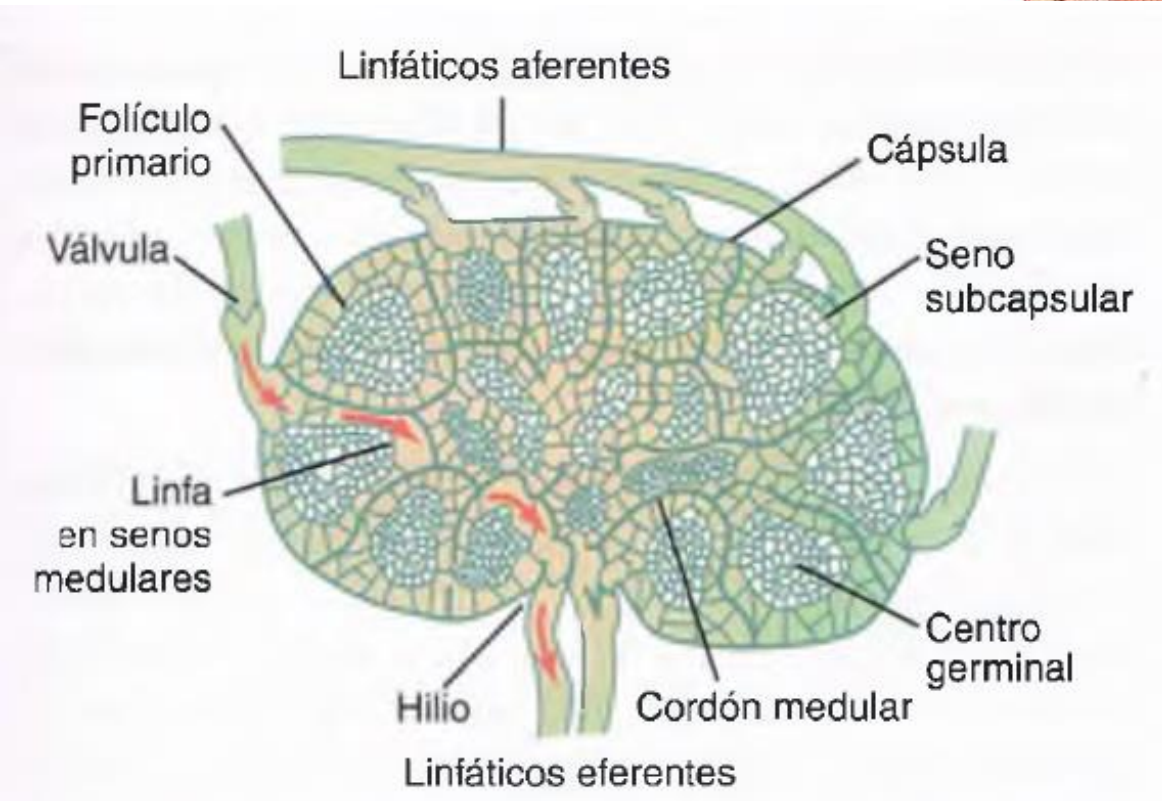
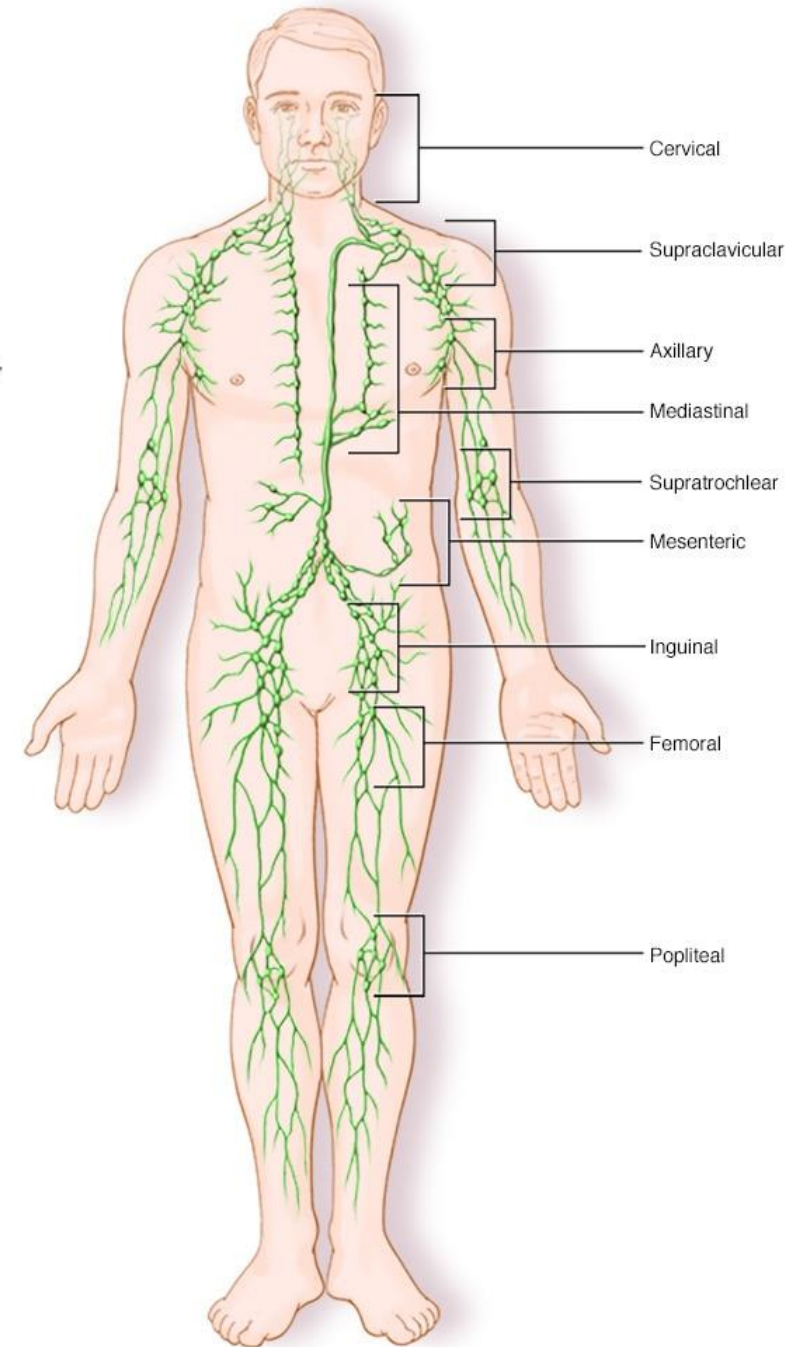
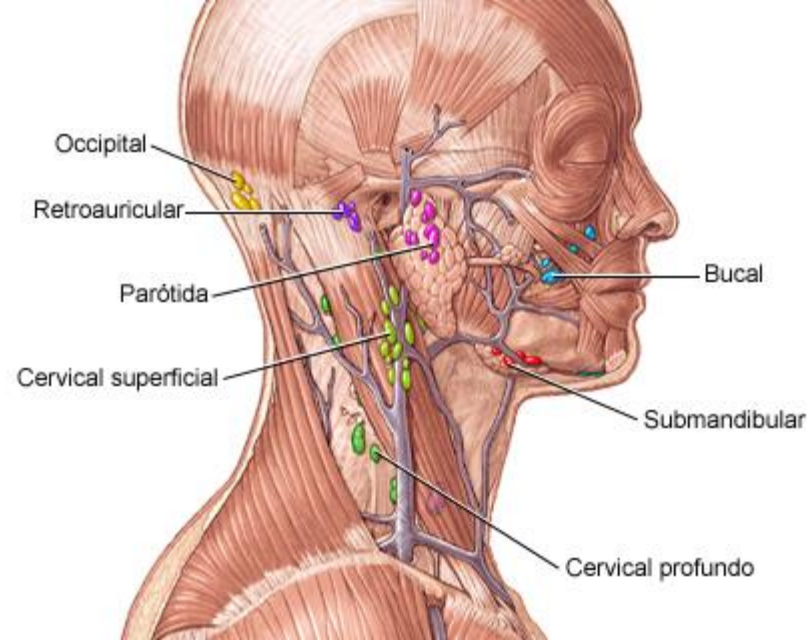
Bazo



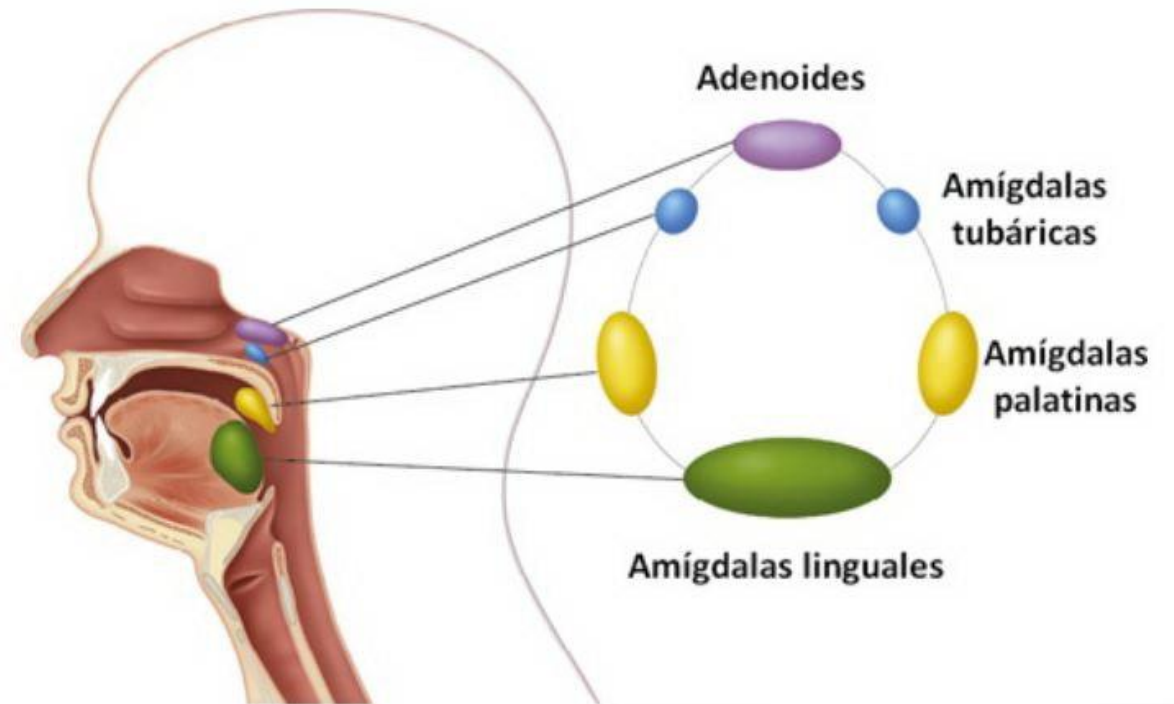
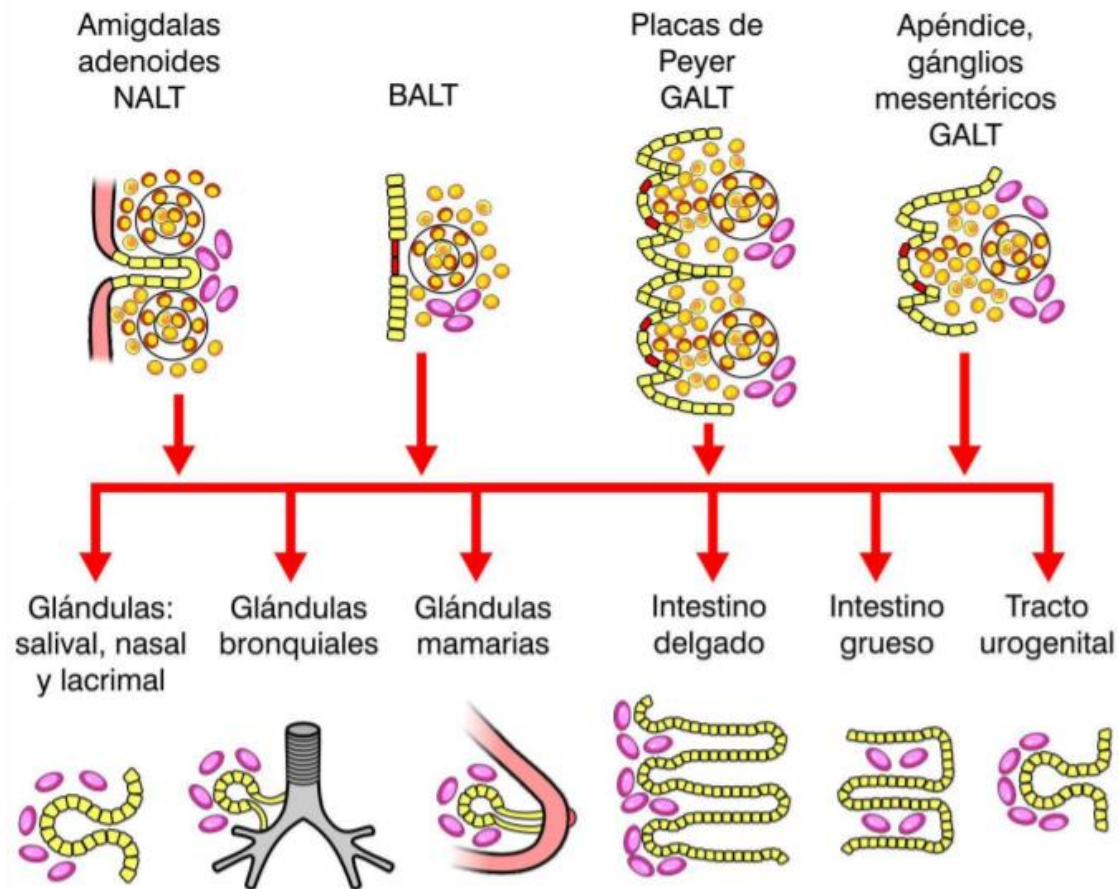
Timo



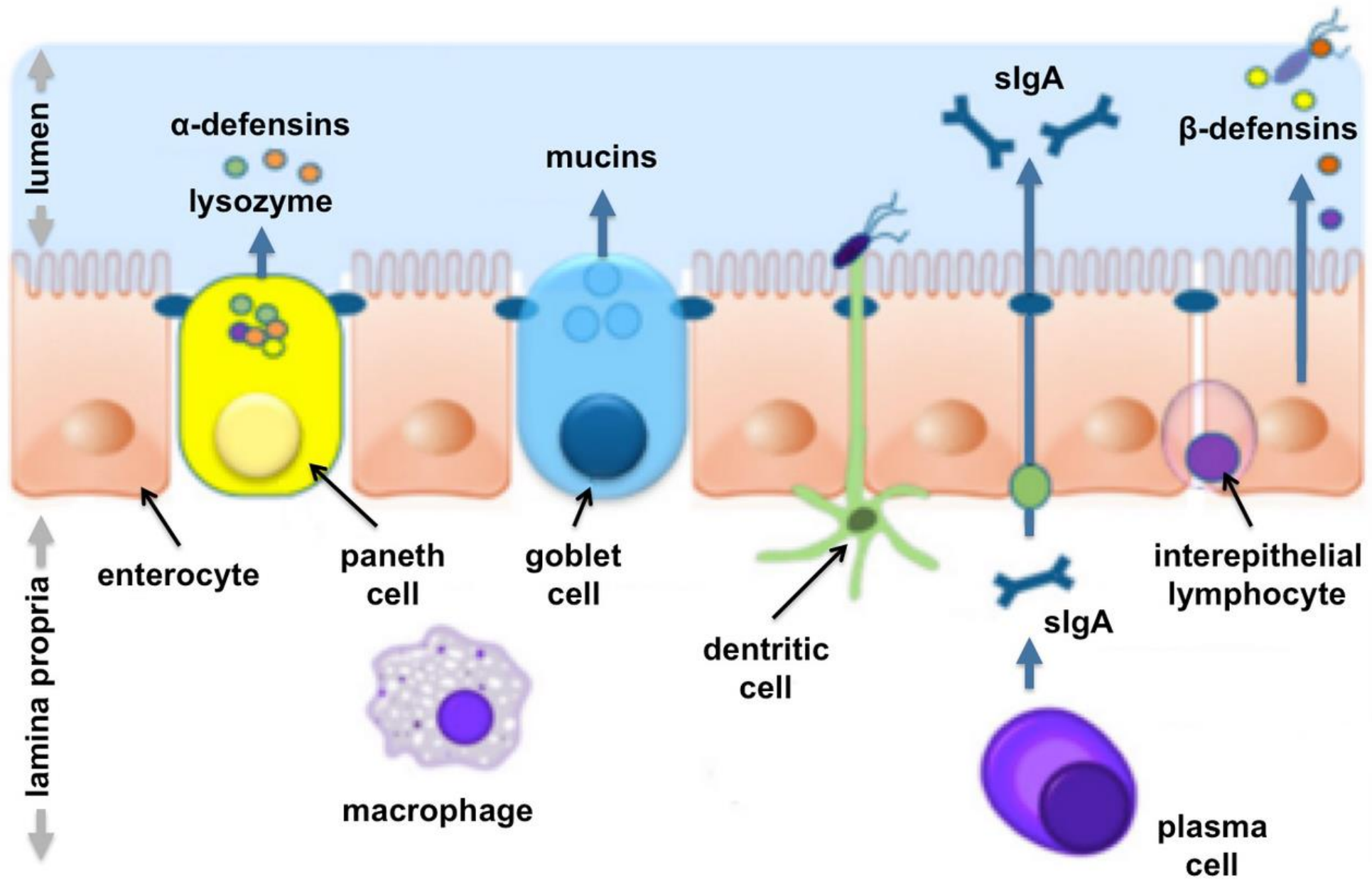
Linfonodos



Tejido linfoide asociado a mucosas (MALT)



Anillo de Waldeyer: sistema de defensa de la faringe



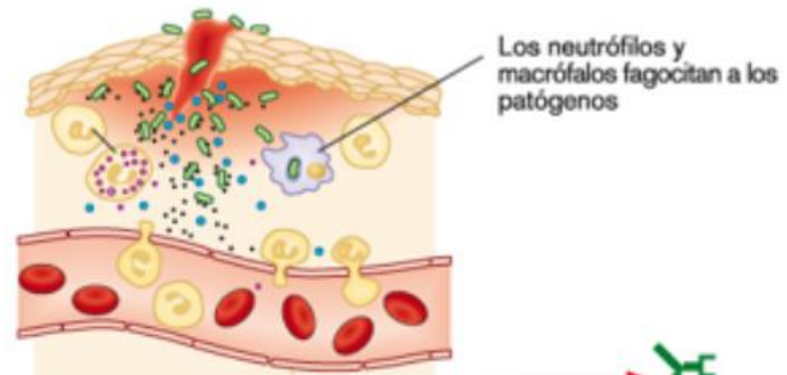
Inmunidad innata

inespecífica

Defensas externas: barreras



Defensas internas: respuesta inflamatoria



Inmunidad adquirida

específica

intervienen

Linfocitos

Tipos

segregan anticuerpos.
Inmunidad humoral

B

Activan

Inmunidad humoral y celular

Th

Activan

Detecta células infectadas por virus. Inmunidad celular

Tc

ANTÍGENOS

reconocen

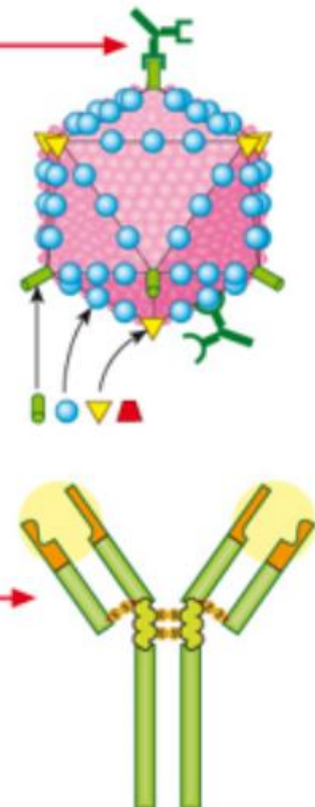
producen

ANTICUERPOS

marcan a los antígenos para su eliminación

2 respuestas:

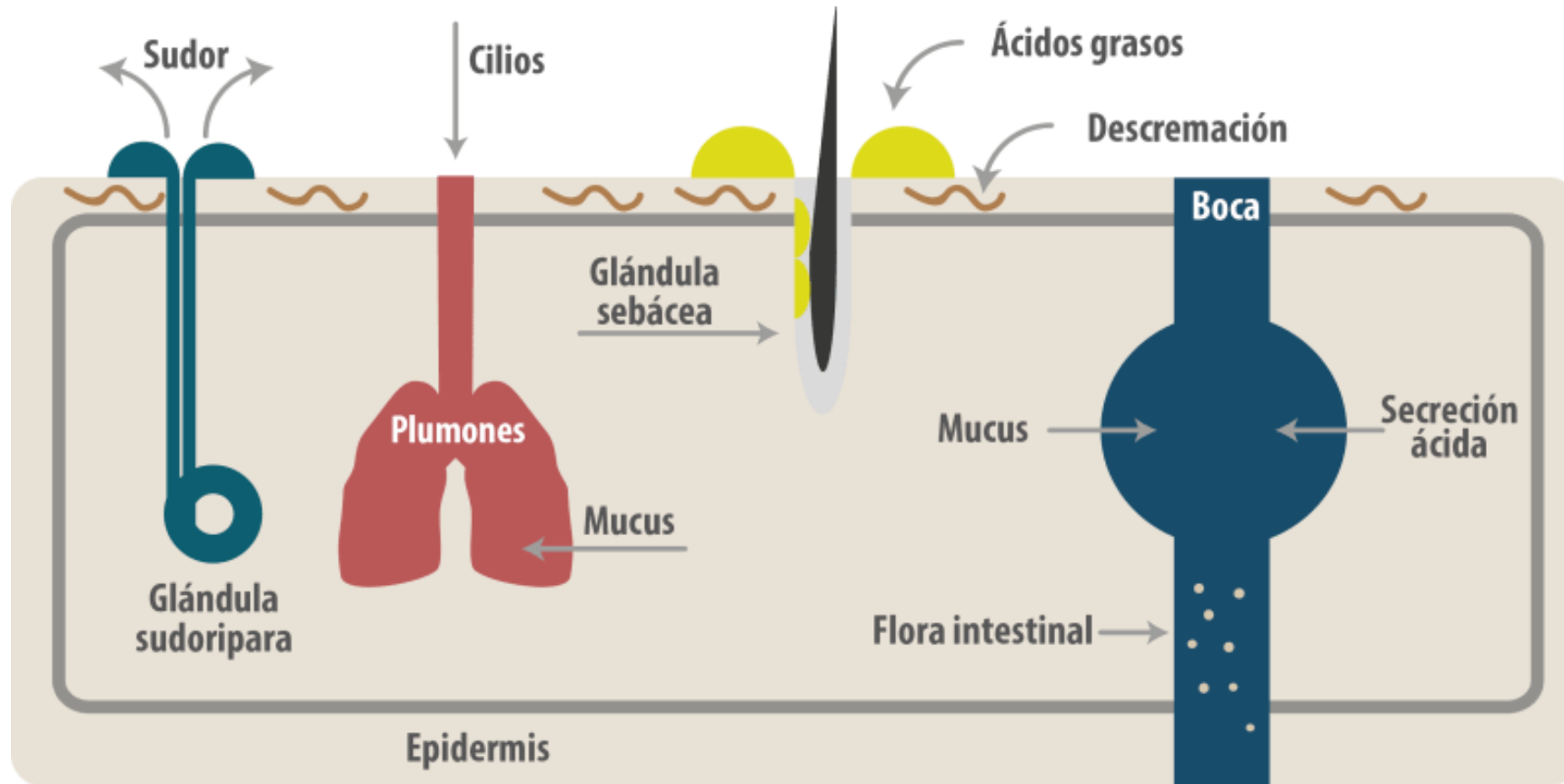
- Respuesta inmunitaria humoral
- Respuesta inmunitaria celular

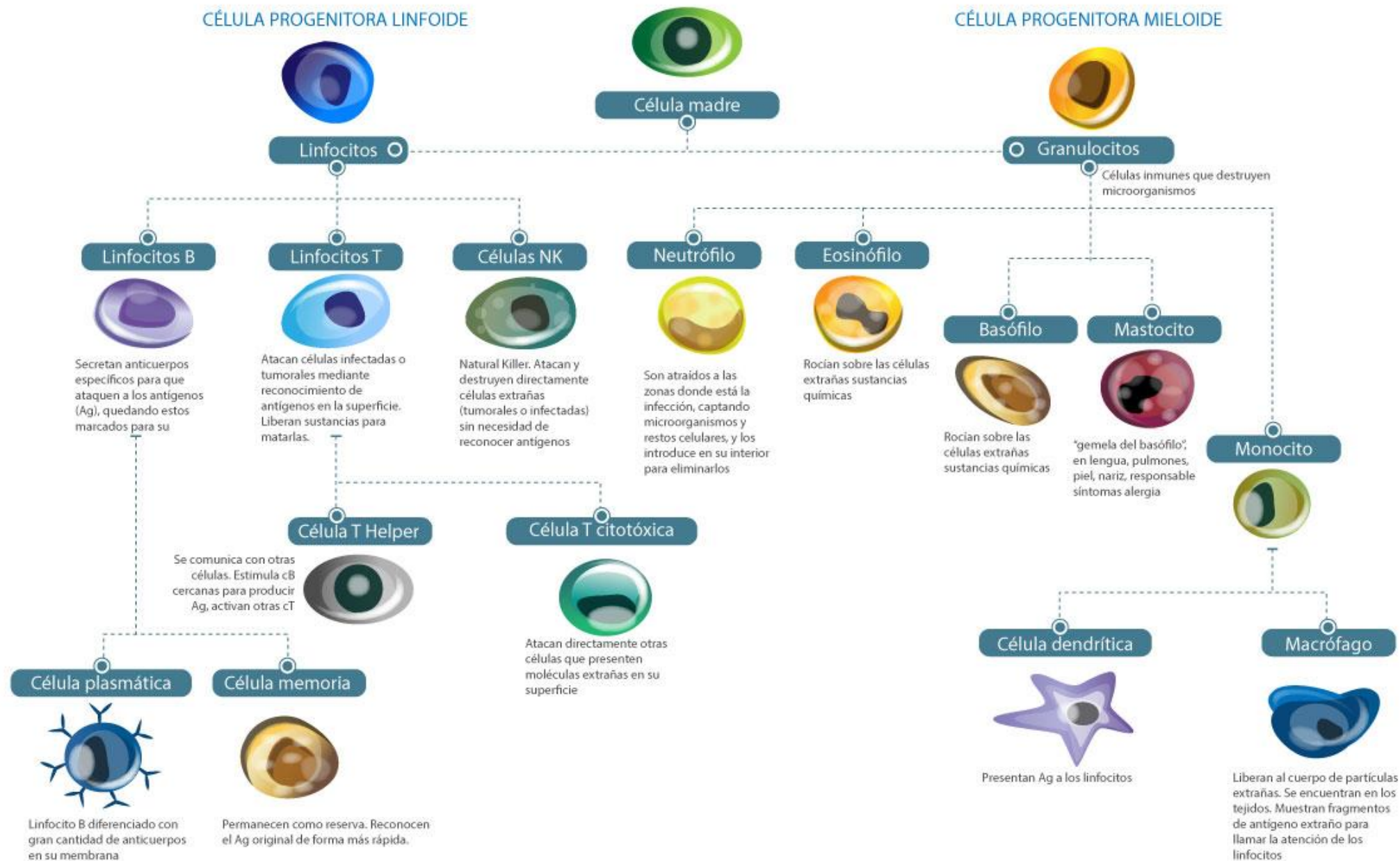


Características	Natural	Adquirida
Especificidad contra microbios	Relativamente baja.	Alta.
Diversidad	Limitada.	Amplia.
Memoria	No.	Sí.
Barreras fisicoquímicas y biológicas	Piel, epitelio mucoso, sustancias químicas antimicrobianas.	Anticuerpos secretados E inmunidad celular.
Proteínas sanguíneas	Proteínas del Complemento , Citoquinas y Quimioquinas	Anticuerpos circulantes, Citoquinas y Quimioquinas
Células	Fagocitos (macrófagos, Neutrófilos, células dendríticas), Eosinófilos, basófilos, células asesinas naturales.	Linfocitos T y B

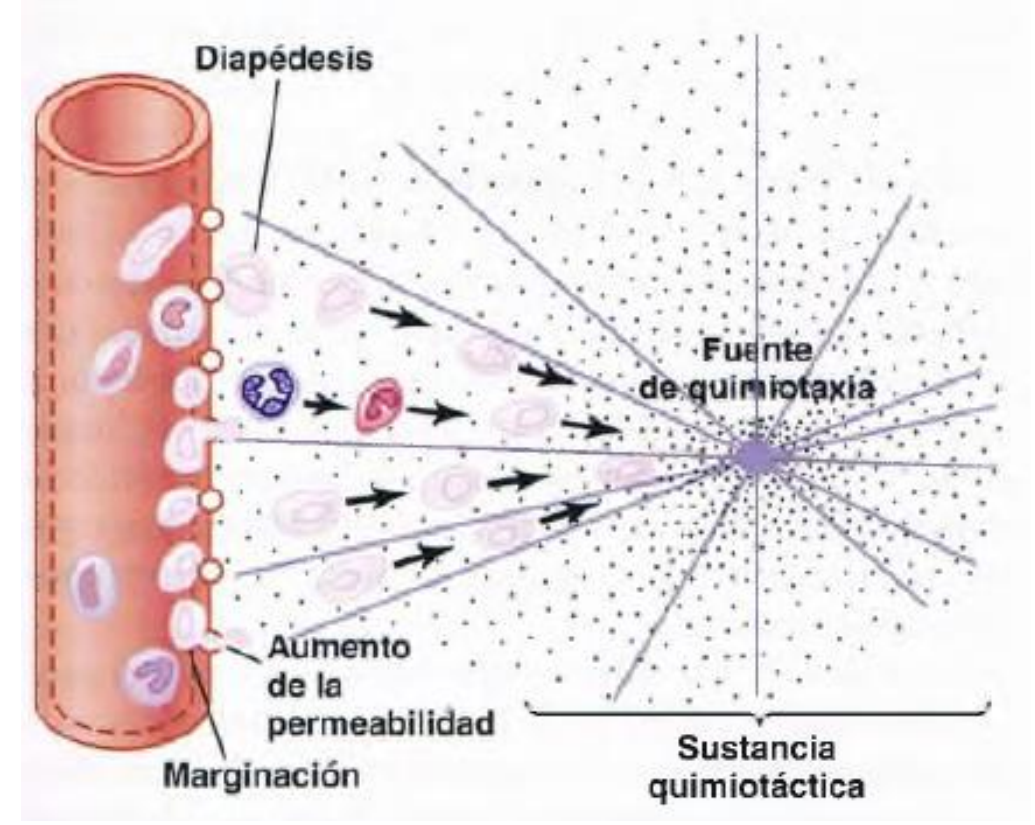
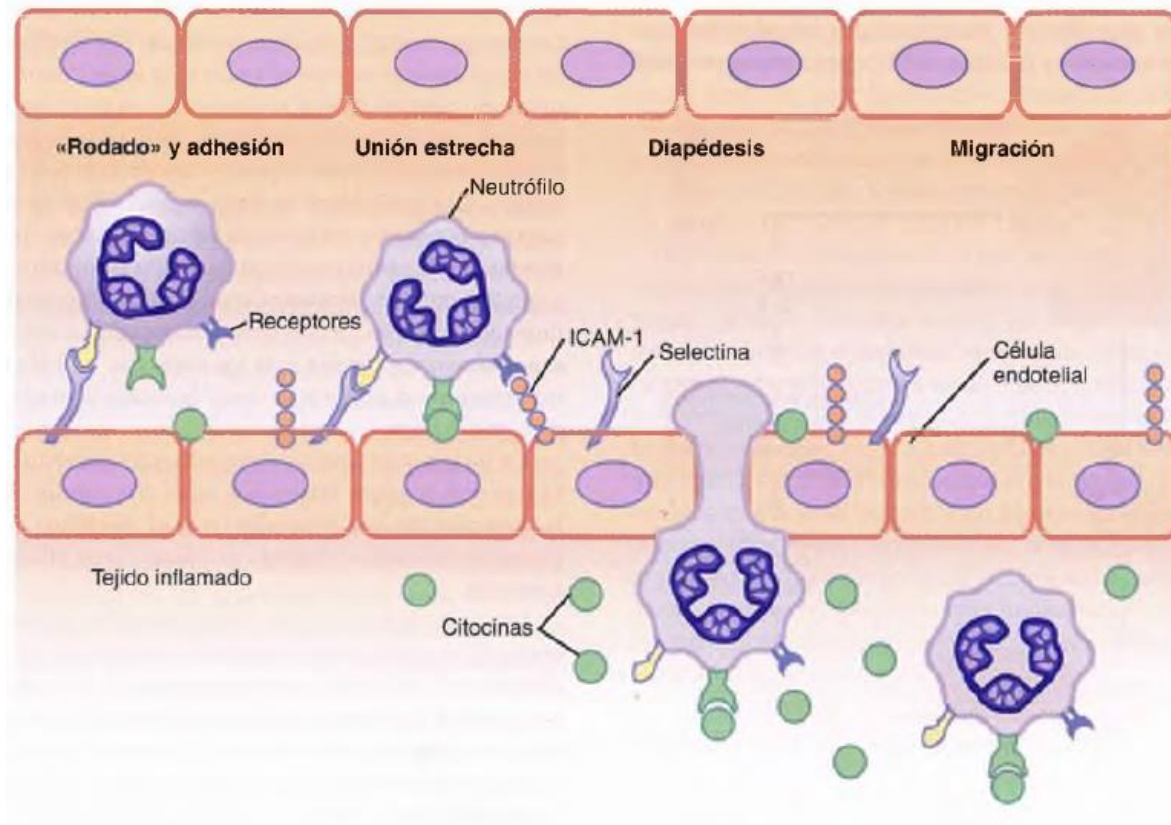


Piel y mucosas: Barrera física y química

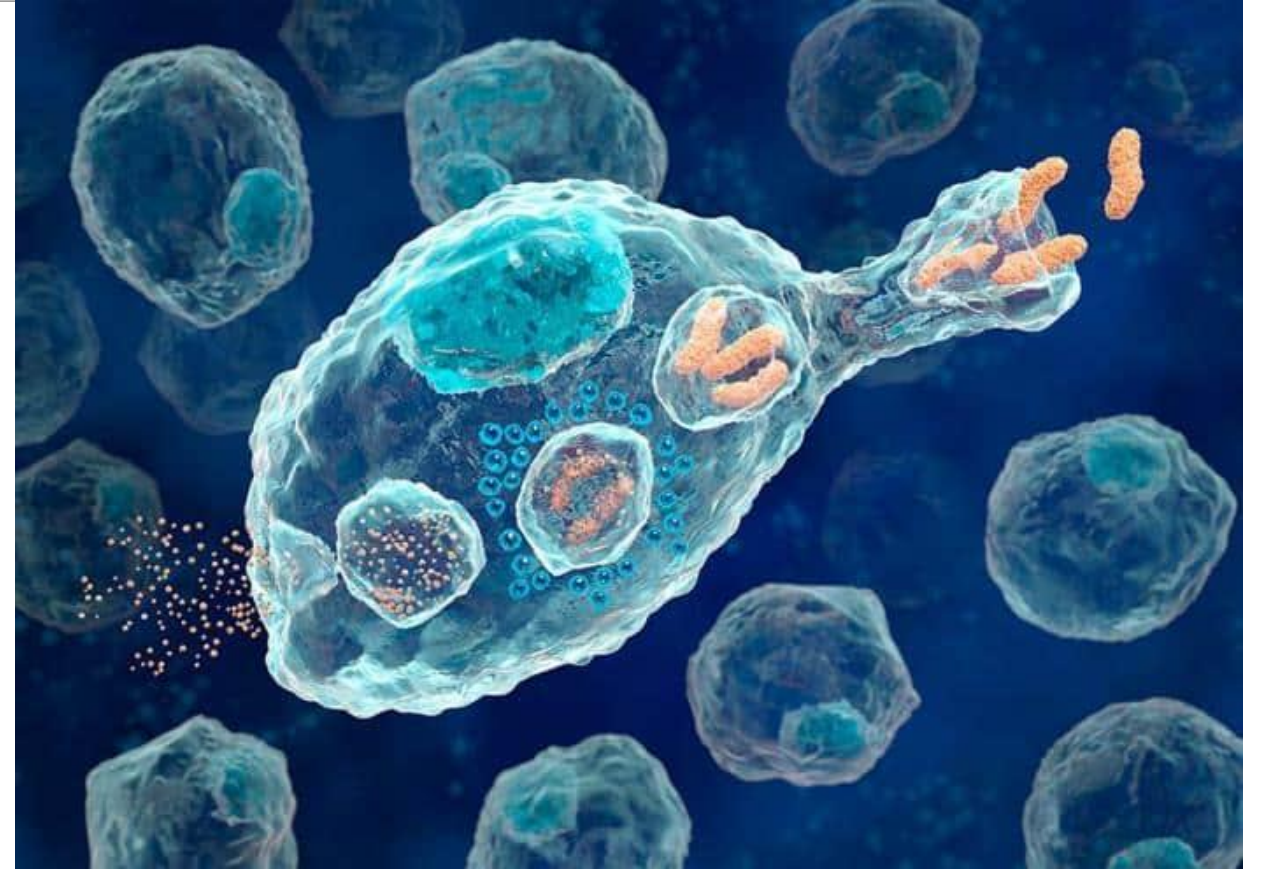
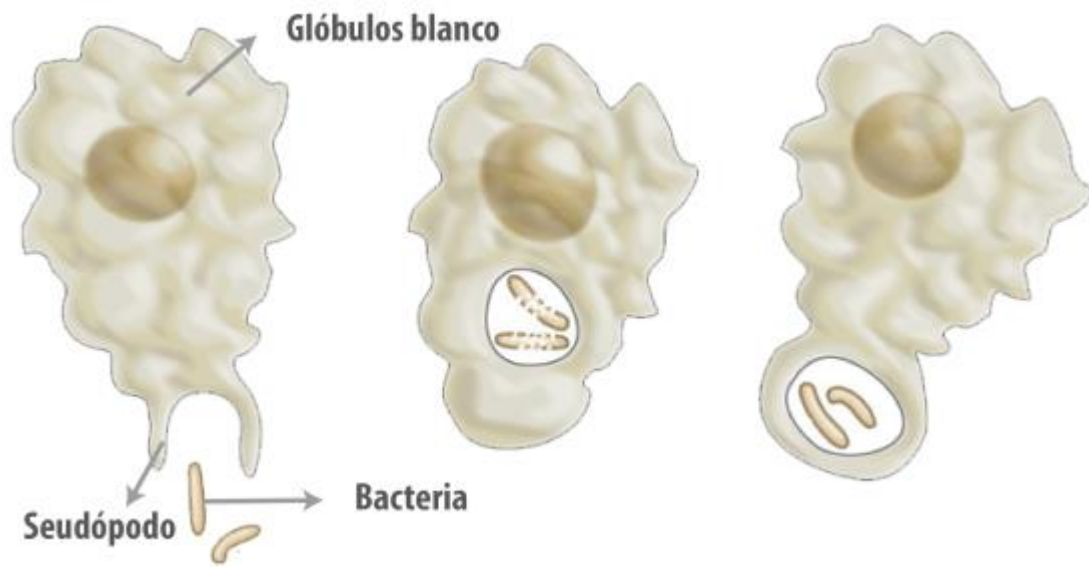




Diapédesis y quimiotaxia

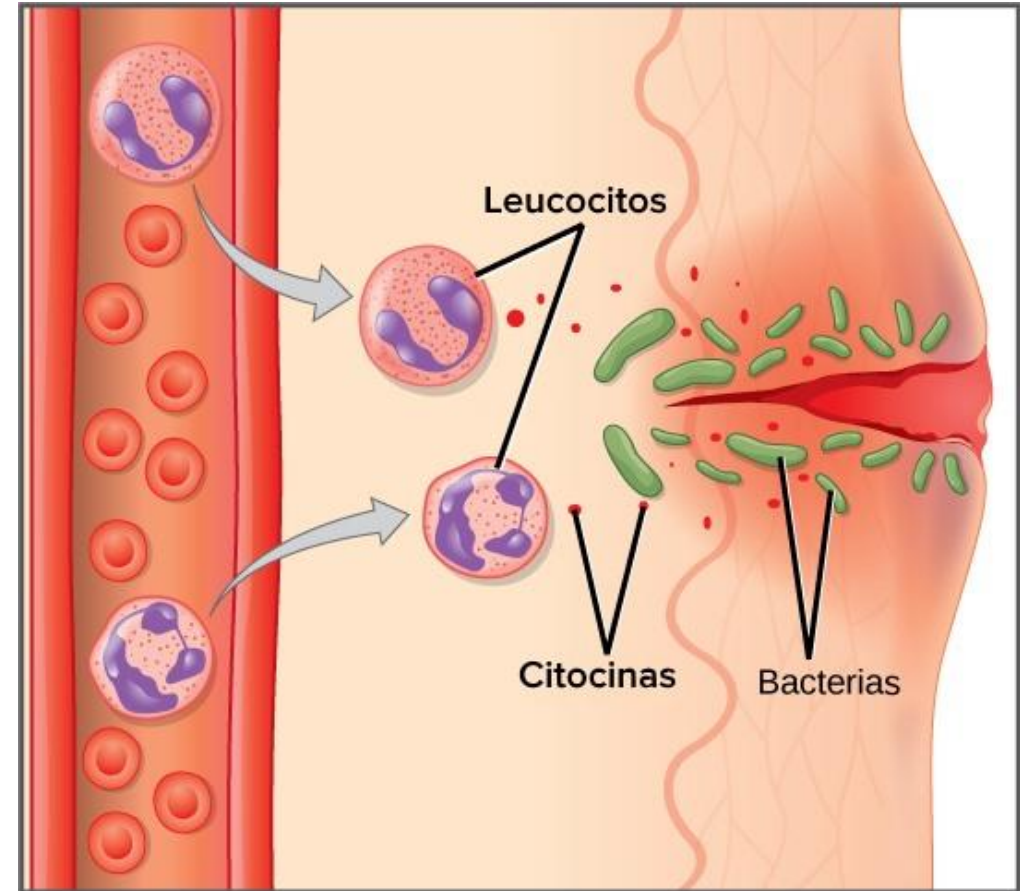


Fagocitosis

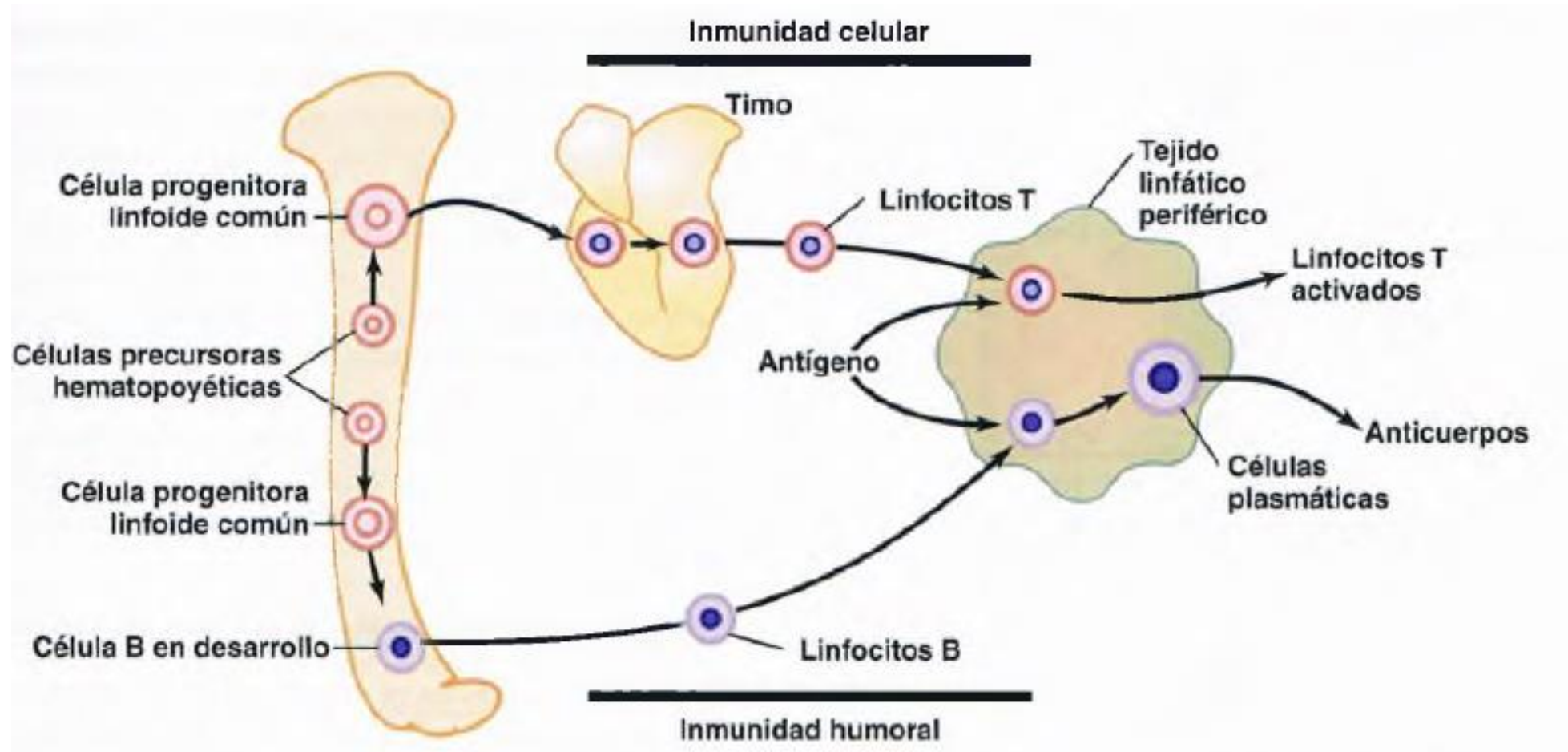


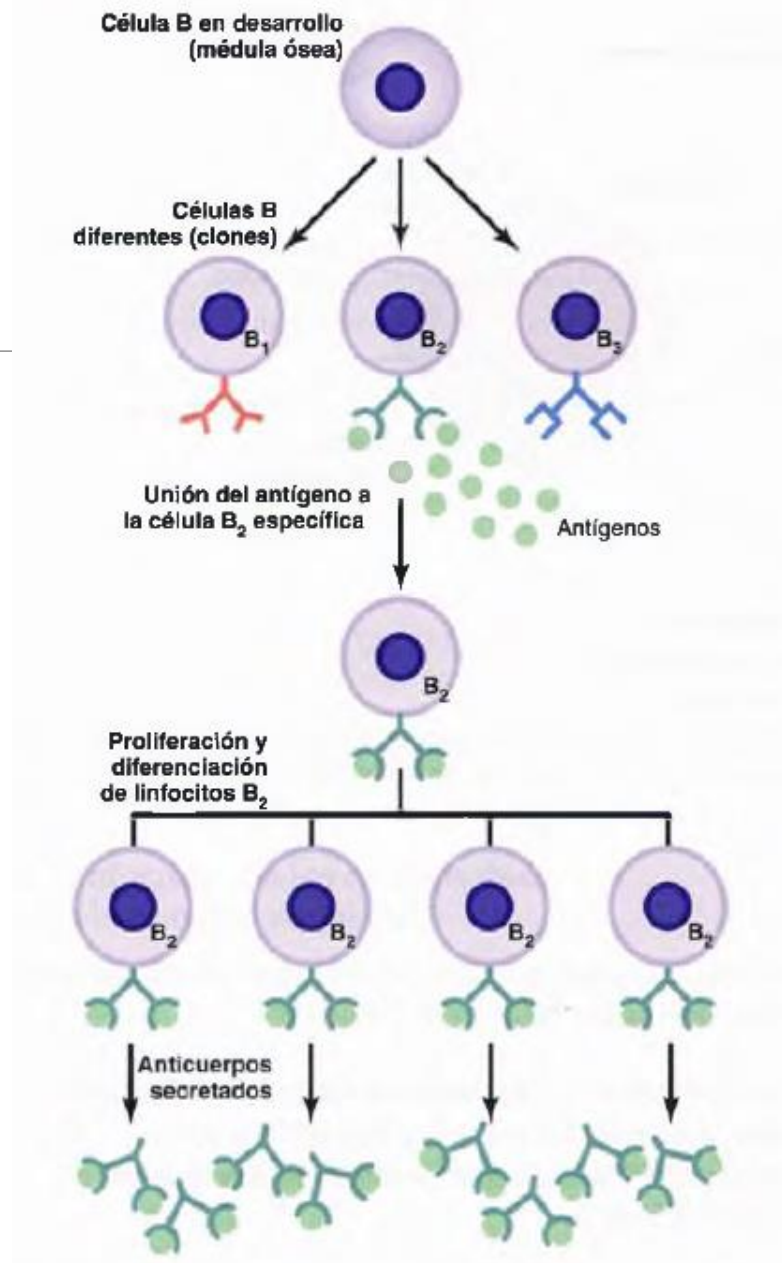
Segunda línea de defensa: Inflamación

- Vasodilatación
- Aumento de la permeabilidad de los capilares
- Coagulación del líquido intersticial
- Migración de granulocitos y monocitos
- Tumefacción
- Producción de múltiples sustancias
- Efecto “tabicador” – evita diseminación



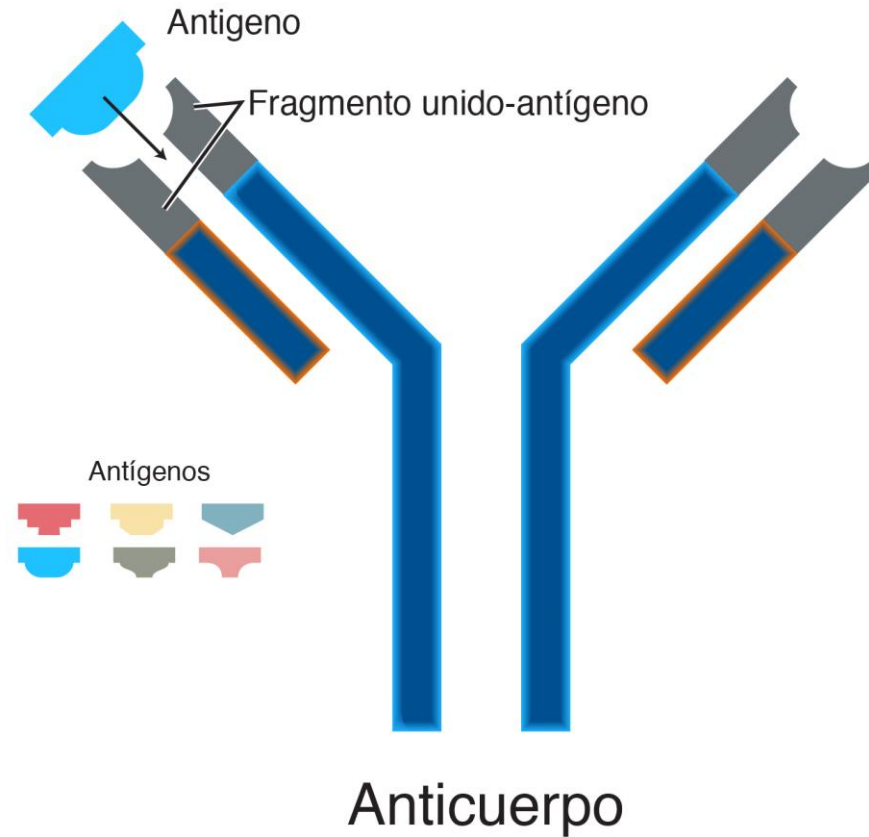
Inmunidad adquirida: Linfocitos





Tercera línea de defensa: Anticuerpos

- Aglutinación
- Precipitación
- Neutralización
- Lisis



Gracias

