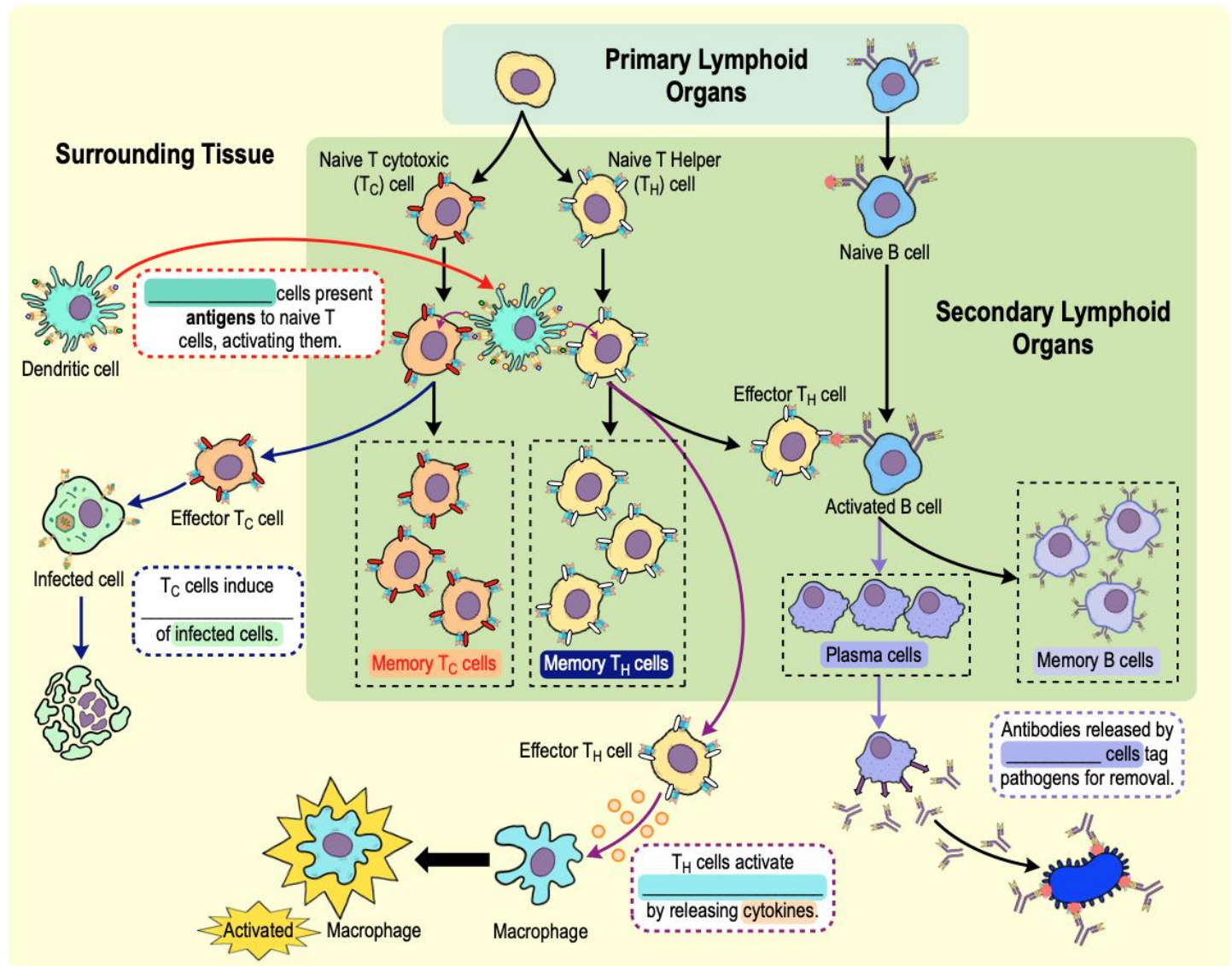


CONCEPT: REVIEW OF ADAPTIVE IMMUNITY

● Let's review all of the functions that our adaptive immune system performs to keep us healthy.



PRACTICE: Why would a person who has their tonsils removed be more susceptible to certain types of infections of the throat and respiratory tract?

- Tonsils produce high levels of lactoferrin, a strong natural antibacterial compound.
- Tonsils produce large amounts of interferons, natural antiviral compounds.
- Tonsils are secondary lymphoid organs where immune cells aggregate providing easy immune response to oral microbes.
- Tonsils are the location where T cells develop and mature. Without tonsils, the T cells would not be able to fully mature and the individual's immune system functions would suffer.

CONCEPT: REVIEW OF ADAPTIVE IMMUNITY

PRACTICE: How are T cell receptors similar in function to B cell receptors?

- a) Both receptors are composed of two chains, a heavy and a light chain.
- b) Both receptors bind epitopes (small unique sections of antigen molecules).
- c) Both bind structures directly on the surface of microbes.
- d) Both can be secreted from lymphocytes to bind to extracellular pathogens.

PRACTICE: Which of the following is **not** typical of an immunogenic antigen?

- a) Viral protein.
- b) Foreign nucleic acid.
- c) Molecules not made by the host organism.
- d) Cytoplasmic proteins commonly found in host skin cells.

PRACTICE: In opsonization with IgG, why would it be important that IgG react with the antigen BEFORE a phagocytic cell recognizes the antibody molecule?

- a) If the IgG is bound to the phagocyte before opsonization, it would most likely be ingested by the phagocyte before it could bind to a pathogen.
- b) Binding of IgG by phagocytes would block the antigen binding sites on the IgG molecules, preventing them from binding to the microbes.
- c) Binding of IgG by phagocytes changes the conformation of the antibody's antigen binding site making it less effective at binding the correct foreign antigen.
- d) Binding of an antibody by phagocytes results in immediate release of damaging hydrolytic enzymes to the outside of the cell which would destroy all remaining antibodies.