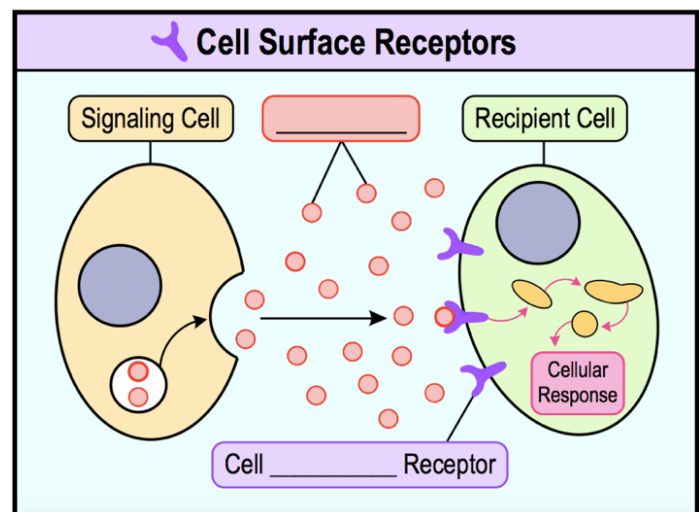
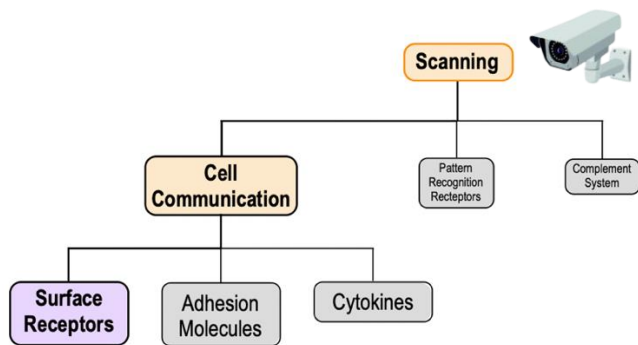


CONCEPT: CELL COMMUNICATION: SURFACE RECEPTORS & ADHESION MOLECULES

- Cell surfaces contain many types of _____ proteins & *adhesive molecules* for communication during infection.
 - These allow cells of the immune system to signal an infection & migrate to that location in the body.

Cell Surface Receptors

- **Surface Receptors:** proteins on the cell surface that allow a cell to *sense* & _____ to external signals.
 - Protein spans the *entire* _____ membrane, connecting the *outside* & *inside* of the cell.
 - Each receptor has a *specific* molecule it will bind to called a _____ that elicits a response inside the cell.
 - Cells alter the number/type of receptor allowing them to change the response rate/sensitivity to a certain ligand.



PRACTICE: Which of the following is likely to be a response by a receptor protein to an approaching signal molecule?

- Recognize the receptor protein having the correct 3-D shape.
- Receptor protein binds to signal if having complementary shape.
- Once a signal binds to a receptor protein it induces a change in the receptor protein's shape.
- Change in the receptor protein's shape results in a cellular response to the signal.
- All of the above are correct.

PRACTICE: Which of the following statements about cell surface receptors is *incorrect*?

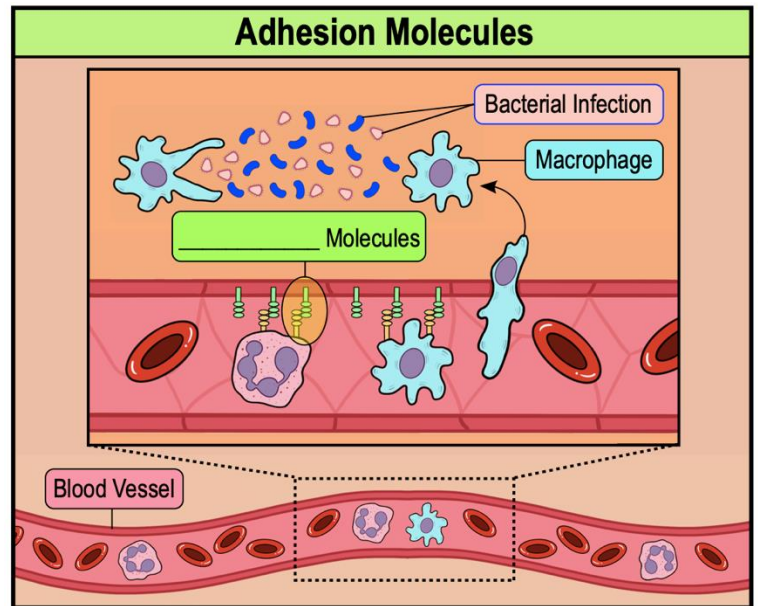
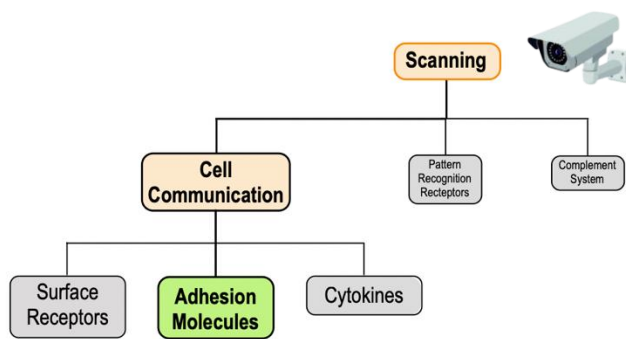
- Cell surface receptors can span the entire plasma membrane connecting the exterior and interior cell environments.
- Once differentiated, cells cannot change the number or type of cell surface receptors that they possess.
- A cell has a wide range of surface receptors to allow it to respond to varying types of signals.
- The immune system uses ligands and cell surface receptors to provide immune support for infected tissues.

CONCEPT: CELL COMMUNICATION: SURFACE RECEPTORS & ADHESION MOLECULES

Adhesion Molecules

● **Adhesion Molecules:** cell surface proteins involved in _____ to *other cells*.

- Immune system cells _____ to adhesion molecules of endothelial cells lining blood vessels to *enter* tissues.
- Cells also use them to attach to other cells & _____ deliver signaling molecules.



PRACTICE: Why are adhesion molecules considered a form of cell communication in immune responses?

- a) Adhesion molecules allow immune cells to attach to infected cells & signal immune responses.
- b) Adhesion molecules allow immune cells to attach to endothelial cells & trigger immune cell entry into tissues.
- c) Adhesion molecules act as channels that allow signals to travel between two neighboring cells.
- d) Adhesion molecules are signals sent from immune cells to infected cells to trigger apoptosis.
- e) A and B.
- f) C and D.
- g) All of the above.

PRACTICE: If the endothelial cells of the blood vessels in the body did not possess adhesion molecules, which of the following would occur?

- a) The immune cells which respond to infection or injury would not be able to leave the blood stream.
- b) The immune cells would not be able to detect where the infection is in the body.
- c) The immune cells would not be able to phagocytose the infecting microbes and damaged tissue.
- d) The blood vessels would adhere to the immune cells allowing them entry to infected regions of the body.