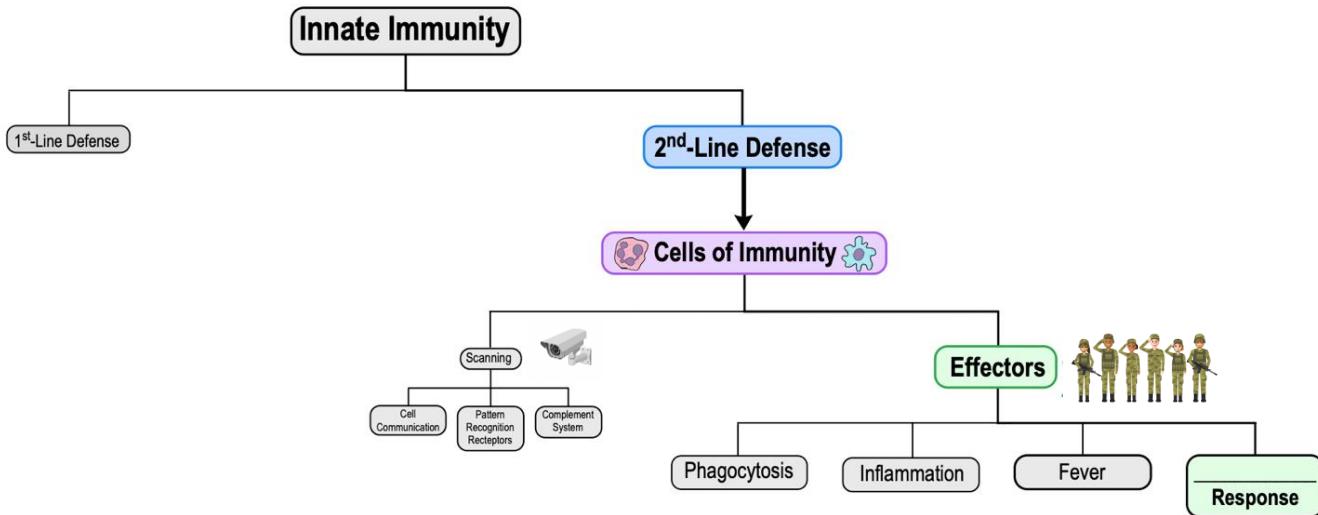


CONCEPT: INTERFERON RESPONSE

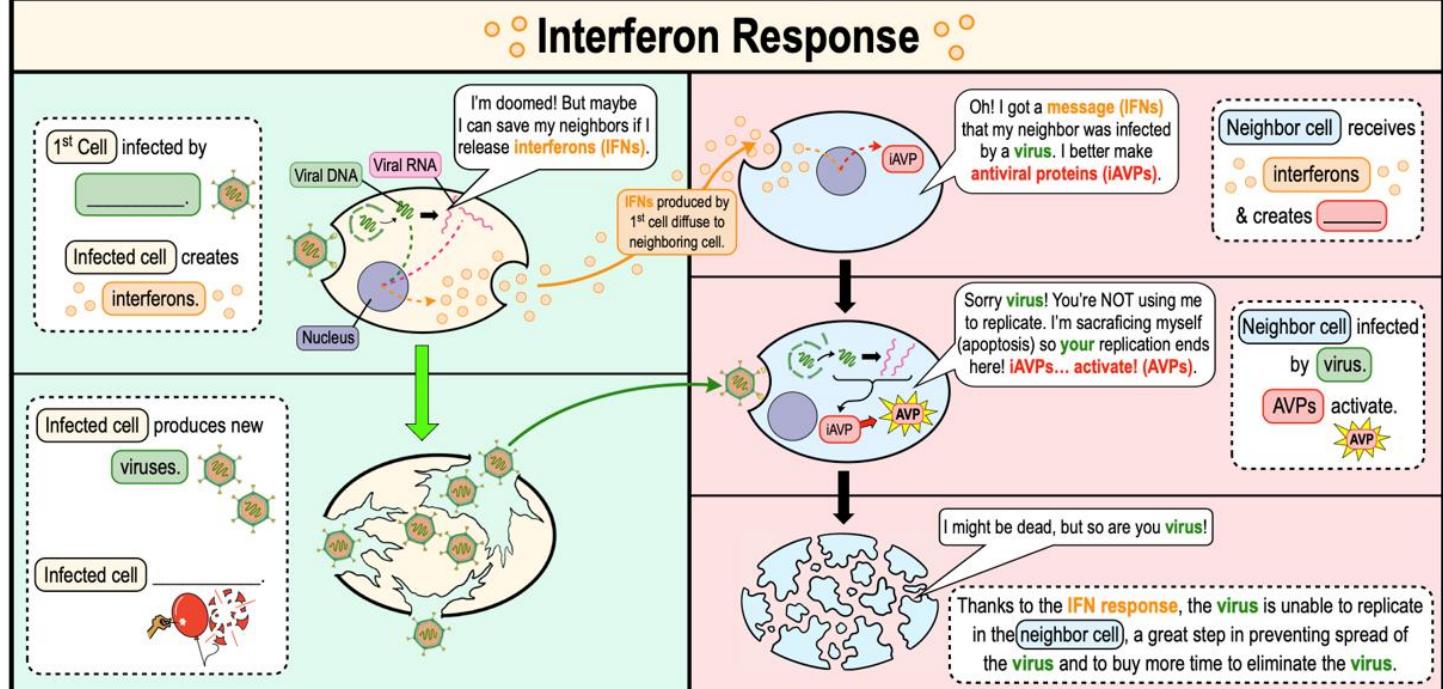
- Recall: **Interferons (IFNs)**: cytokines providing _____-viral effects (defense against viruses) to *neighboring* cells.



Steps of the Interferon Response

- When PRRs of an infected cell detect viral RNA, it can *produce* & secrete IFNs that _____ to & "warn" other cells.
 - IFN binds to neighboring cells (not yet infected) leading to production of *inactive antiviral proteins* (AVPs).
 - If neighboring cell is infected by virus; detection of *viral dsRNA* activates its iAVPS, forming _____ s.
 - AVPs stop translation of the cell by degrading the cell's mRNA, which triggers _____.
 - Apoptosis kills the cell but _____ the virus from using the cell as a host to replicate.

- In summary, IFNs function to prevent/limit viral replication by warning neighboring cells to build antiviral proteins.



CONCEPT: INTERFERON RESPONSE

PRACTICE: How does the interferon response provide anti-viral protection?

- a) Interferons bind to the virus neutralizing it.
- b) Interferons stimulate neighboring cells to produce anti-viral proteins.
- c) Interferons prevent the virus from entering the cell.
- d) Interferons prevent the virus from leaving the infected cell and infecting neighboring cells.

PRACTICE: If a cell produces antiviral proteins (AVPs) what occurs when that cell encounters dsRNA?

- a) The antiviral proteins trigger the production of iAVPs.
- b) The antiviral proteins cease protein translation in the cell so no viral proteins can be made.
- c) The antiviral proteins become activated and the cell undergoes apoptosis to stop the viral spread.
- d) The antiviral proteins trigger the production of interferon proteins to warn neighboring cells of viral infection.

PRACTICE: How does the interferon response to an invading virus result in the infected cell undergoing apoptosis?

- a) Detection of viral RNA triggers the degradation of host RNA and stops translation which results in cell death.
- b) Detection of viral proteins inactivates the AVPs which triggers cells death.
- c) Detect of viral RNA ceases all functions of the cell and results in cell lysis and release of newly made viruses.
- d) Detection of viral proteins causes pores to form in the surface of the cell resulting in apoptosis.

PRACTICE: Which of the following cells can induce viral-infected cells to undergo apoptosis?

a) Neutrophils.	d) B cells.
b) NK cells.	e) Basophils.
c) Eosinophils.	f) Red blood cells.

PRACTICE: Which of the following statements about interferon is incorrect?

- a) It only works on a enveloped viruses.
- b) It decreases the spread of the virus.
- c) It is a species-specific molecule.
- d) It does not directly inactivate viruses.