

## CONCEPT: INTRODUCTION TO INFLAMMATION

- **Recall: Inflammation** is a coordinated set of events that occur when the body detects an *infection* or *tissue damage*.
- There are \_\_\_\_ cardinal signs of inflammation ("SHARP"):

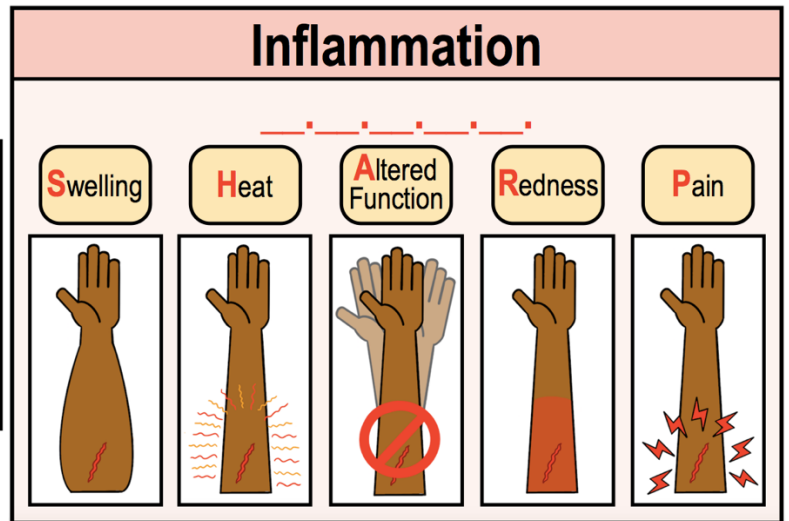
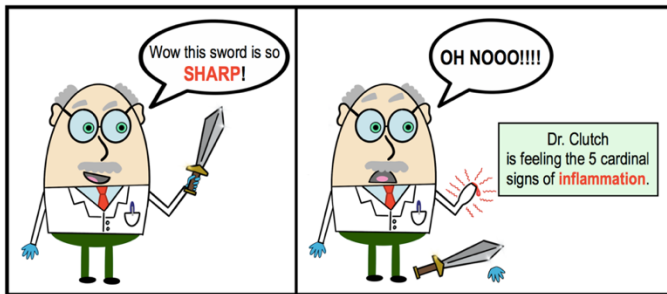
1) \_\_\_\_welling

2) \_\_\_\_eat

3) \_\_\_\_ltered function

4) \_\_\_\_edness

5) \_\_\_\_ain



## Types of Inflammatory Responses

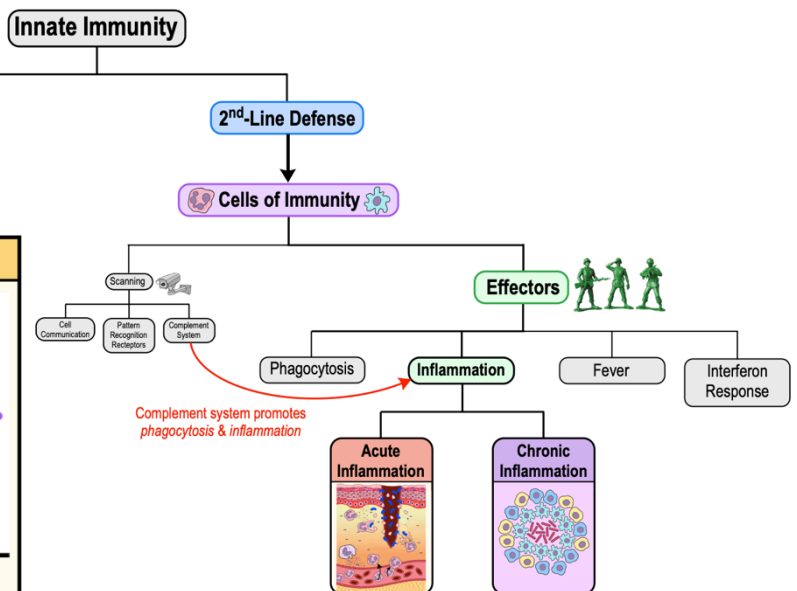
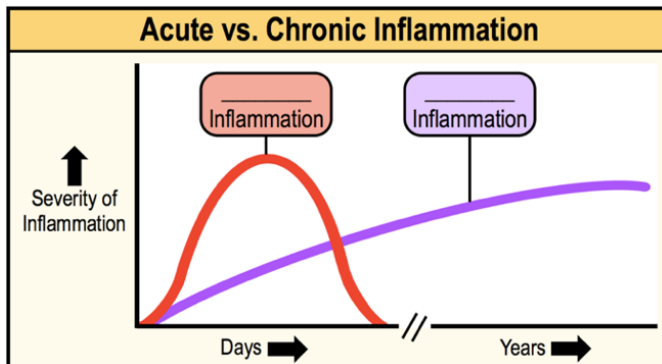
- The 2 types of inflammatory responses are:

1) **Acute Inflammation**: \_\_\_\_\_-term immune response; symptoms develop rapidly & last a short time (days).

- Examples include inflammation due to *common cold, flu, headache, & joint pain*.

2) **Chronic Inflammation**: \_\_\_\_\_-term immune response; symptoms develop slowly & last a long time (years).

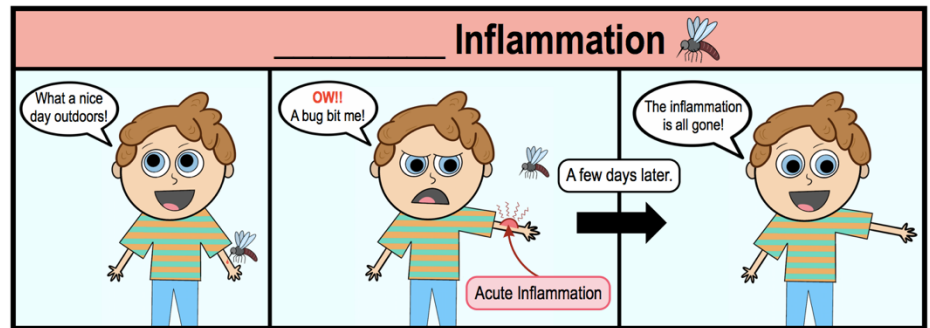
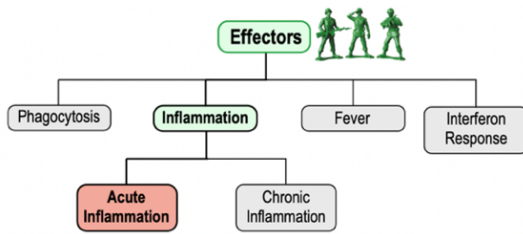
- Examples include inflammation due to *heart disease, cancer, Chron's disease, & arthritis*.



## CONCEPT: INTRODUCTION TO INFLAMMATION

### Acute Inflammation

- **Recall: Acute Inflammation:** *short-term* immune response where symptoms develop \_\_\_\_\_ & last a short time.
  - Characterized by an abundance of \_\_\_\_\_ in the infected/damaged area.
  - Goal is to *quickly* recruit immune cells to location of damage/infection (neutrophils are recruited \_\_\_\_\_).



**PRACTICE:** Which of the following answers is an inflammatory mediator that stimulates vasodilation allowing immune cells to enter the site of infection?

- a) Collagen.
- b) Serotonin.
- c) C3b protein.
- d) Histamine.

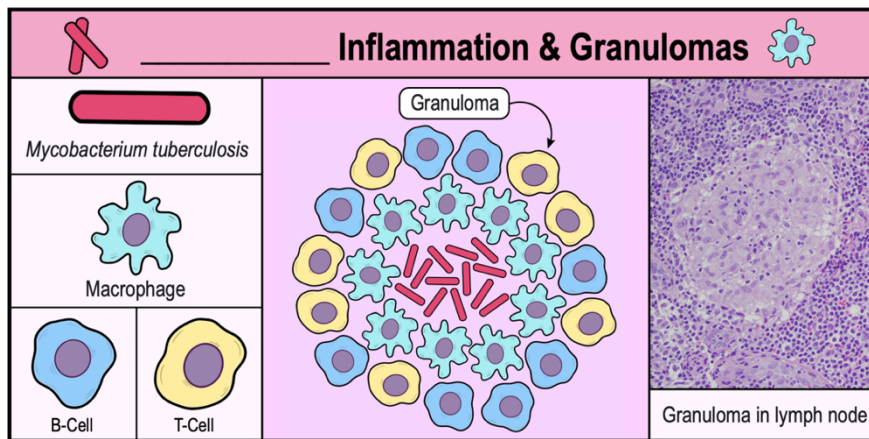
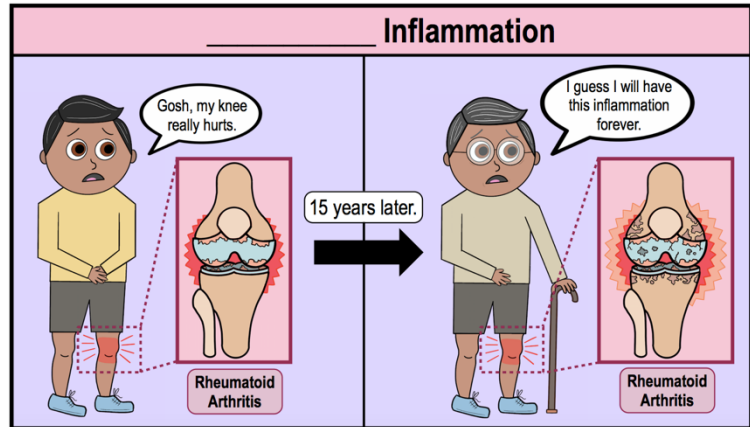
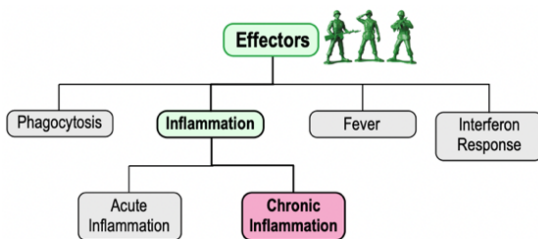
**PRACTICE:** Which of the following scenarios would *not* result in an episode of acute inflammation?

- a) An individual having rheumatoid arthritis, an inflammatory disease that degrades the joints over a lifetime.
- b) An individual having a painful sensation around a vaccine injection site for a few days after vaccination.
- c) An individual having a swollen ankle for a week after falling down a set of stairs.
- d) An individual having a painful, red wound for a few days after being scratched by a cat.

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### Chronic Inflammation

- **Recall: Chronic Inflammation** is *long-term* immune response; symptoms develop \_\_\_\_\_ & last a long time (years).
  - Characterized by an abundance of \_\_\_\_\_, *giant cells* & *T lymphocytes*.
  - Macrophages, giant cells, & T lymphocytes accumulate to form \_\_\_\_\_.
  - **Granulomas**: concentrated groups of cells that *retain* (or wall-off) microbes that can \_\_\_\_\_ be destroyed.



**PRACTICE:** A scientist is analyzing the cells from a granuloma tissue sample. Which type of immune cell is the scientist *least* likely to find in this sample?

- a) T cells.                      b) Macrophages.                      c) Neutrophils.                      d) Giant cells.

**PRACTICE:** The disease tuberculosis (TB) is a serious bacterial infection characterized by granulomas typically found in the lungs. What characteristics would a TB granuloma have?

- a) A large mass of immune cells surrounding the *Mycobacterium tuberculosis* thus stopping the spread of bacteria.  
b) A region of scar tissue created by *Mycobacterium tuberculosis*.  
c) A region of tissue growth to heal the damage caused by *Mycobacterium tuberculosis*.