Pathology Class 2:

Immune Response and Microbial Challenge – Friends, Foes, and Allergies

ANSWER KEY: Pre-Assessment Quiz: Pathology Week 2 (Ages 10-13yo)

1. What is inflammation?
   a) A type of germ
   b) A broken bone
   c) **A coordinated body response to injury or threat**
   d) A kind of allergy

2. Which is a common sign of inflammation?
   a) Sneezing
   b) Fever
   c) **Redness**
   d) Sleepiness

3. What does swelling (edema) usually mean?
   a) Extra air in the skin
   b) **Extra fluid in tissues**
   c) Broken bones
   d) Loss of blood

4. What causes fast itching and swelling from a bee sting?
   a) Antibodies
   b) **Histamine**
   c) Viruses
   d) Bacteria

5. Which immune cells are usually first to arrive at an injury?
   a) B cells
   b) **Neutrophils**
   c) Plasma cells
   d) Tregs

6. Which immune cells act like messengers and show germs to Helper T cells?
   a) Mast cells
   b) **Dendritic cells**
   c) Eosinophils
   d) Red blood cells

7. Which best describes the difference between innate and adaptive immunity?
   a) Innate immunity is learned, adaptive is not
   b) Adaptive immunity works without cells
   c) **Innate immunity is fast, adaptive immunity learns over time**
   d) Adaptive immunity is always faster

8. A poison ivy rash is best explained as:
   a) A bacterial infection
   b) A viral infection
   c) **A delayed immune reaction**
   d) A parasite infection

9. What does it mean if a germ is very virulent?
   a) It spreads slowly
   b) **It causes a lot of damage**
   c) It is always a virus
   d) It only affects skin

10. Which statement best fits what you learned in Pathology Week 2?
    a) Germs always cause disease no matter what
    b) The immune system never makes mistakes
    c) Only bacteria cause inflammation
    d) **Disease depends on germs, the immune response, and the body's balance**

Home Activity – ANSWER KEY

Allergy or Infection? — Answer Key

Issue	Allergy or Infection?	If Infection: Bacteria, Virus, Fungus, or Parasite
Peanut food sensitivity	**Allergy**	—
Poison ivy rash	**Allergy** (Type IV hypersensitivity)	—
Common cold	**Infection**	**Virus**
Flu (influenza)	**Infection**	**Virus**
Bee sting	**Allergy**	—
Athlete's foot	**Infection**	**Fungus**
Warts	**Infection**	**Virus**
Head lice	**Infection**	**Parasite**
Pinworm	**Infection**	**Parasite**
Chicken pox	**Infection**	**Virus**
Red, swollen cut on hand	**Infection**	**Bacteria**
Strep throat	**Infection**	**Bacteria**
Impetigo (skin infection)	**Infection**	**Bacteria**
Acne flare	**Infection + inflammation**	**Bacteria**
Asthma flare (from hay fever)	**Allergy**	—

Immune Cell Matching Game — Answer Key

Immune Cell	What They Do (Correctly Matched)
1. Neutrophils	First responders that rush to the scene
2. Macrophages	Eat up germs and clean up trash
3. Dendritic cells	Fast messengers that take samples, present them to Helper T cells, and alert the rest of the immune system
4. Natural Killer (NK) cells	Sharpshooters that look for suspicious or infected cells
5. B cells	Memory and planning, antibody developers (blueprint)
6. Plasma cells	Antibody factories that pump out large amounts of antibodies
7. Helper T cells	Coaches that coordinate the immune response
8. Cytotoxic T cells	Grim reapers that cause programmed cell death to specific cells that are identified precisely
9. Regulatory T cells (Tregs)	Stop and calm down the immune response
10. Eosinophils	Parasite fighters and allergy helpers
11. Mast cells	Release histamine and cause itching and swelling