

THE IMMUNE SYSTEM

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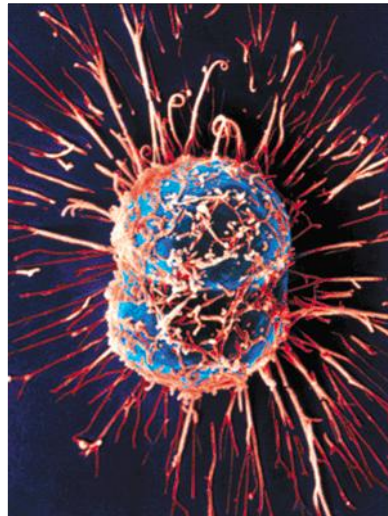
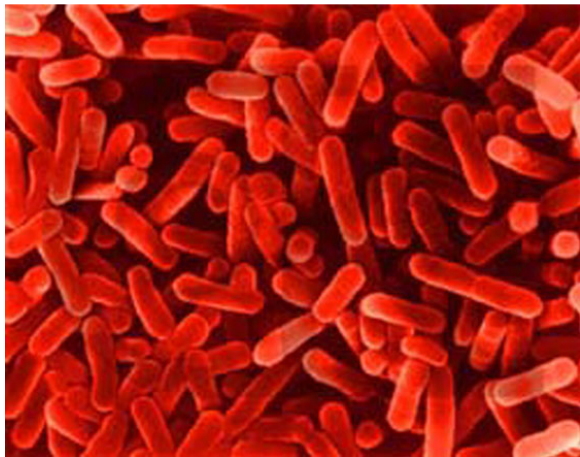
November 10, 2020



The Human Immune System

What is the immune system?

- The body's defense against disease causing organisms (bacteria, viruses, parasites, fungi, worms), malfunctioning cells, and foreign particles



Immune System

Organs tonsils, adenoids, lymph nodes, spleen, appendix, marrow

Cells lymphocytes, macrophages, neutrophils, eosinophils

Molecules antibodies, cytokines, interferon

Three Lines of Defense



1. **Physical barriers** prevent bacteria and viruses from entering the body



2. **Innate immune system** provides an immediate, but non-specific response

- found in all plants and animals



3. **Adaptive immune system** adapts its response during an infection to improve its recognition of the pathogen (antibodies)

The First Line of Defense

Provides a physical
barrier preventing
microbial access

1. Skin – shield against microbes and chemicals; shed 40-50K cells a day
2. Mucus –in the respiratory system
3. Saliva- has enzymes to break down bacteria
4. Stomach acid –to kill microbes
5. pH of different tissues
6. Chemicals like nitric oxide, enzymes

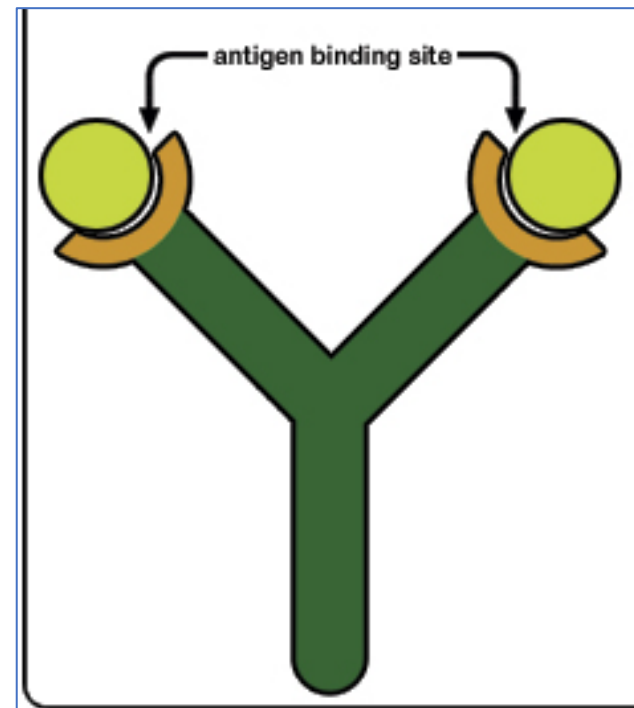


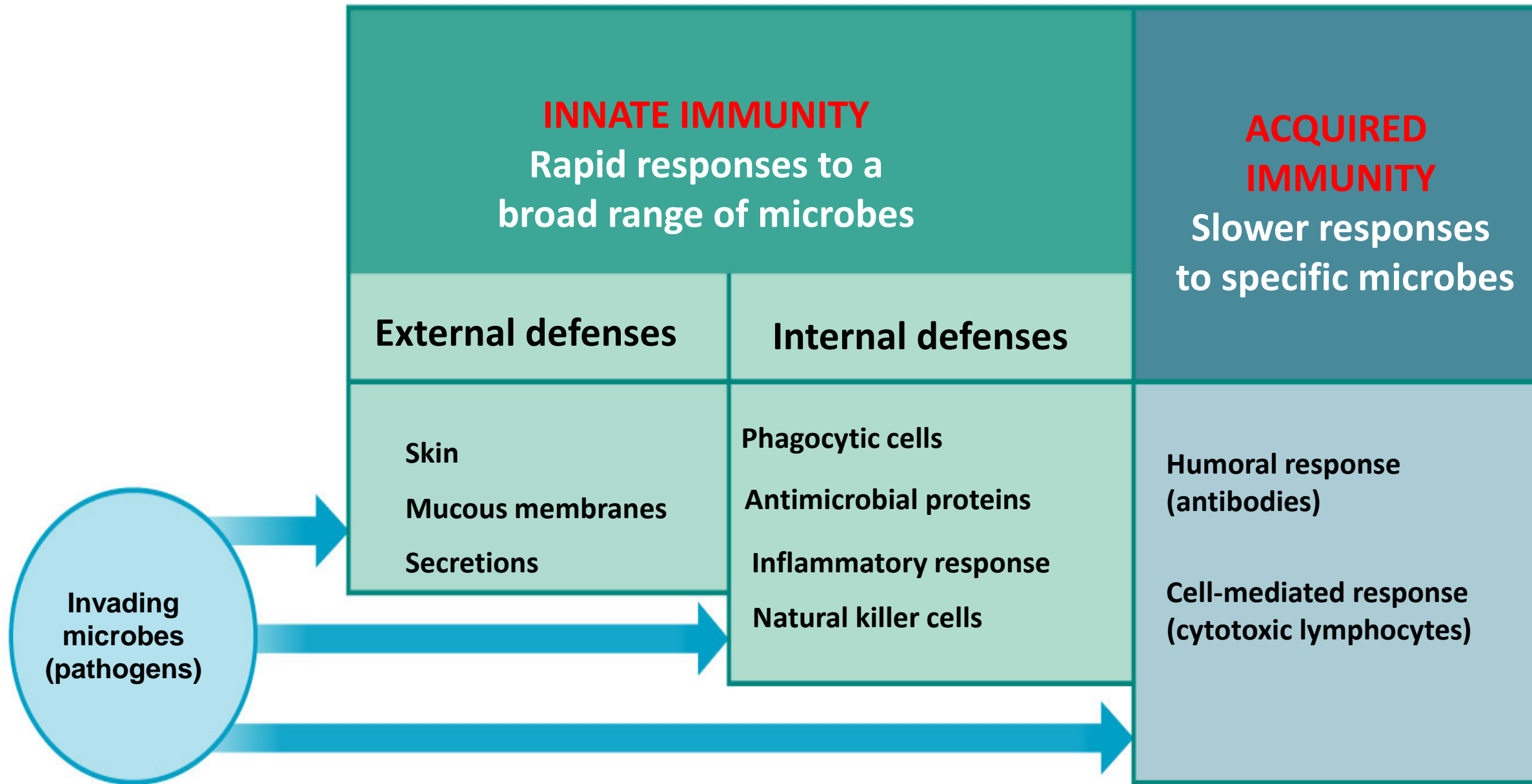
Second Line of defense

1. Inflammation - redness, swelling, heat and pain as white blood cells (neutrophils) arrive
2. Innate immunity -non-specific response via cells that phagocytose microbes

Third Line of Defense

1. Adaptive immunity, develops after exposure to microbes
2. Recognition is by white blood cells called lymphocytes
3. Lymphocytes produce antibodies





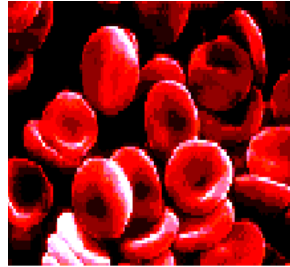
Optimizing Your Immune System

The key support is to have highly efficient immune organs, cells and molecules

We need HEALTHY Organs and Tissues



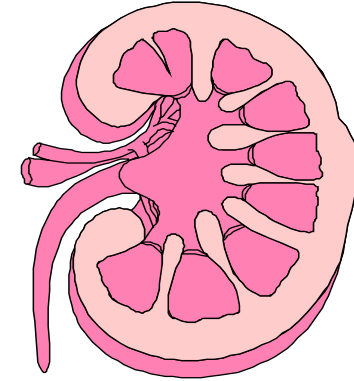
Lymph



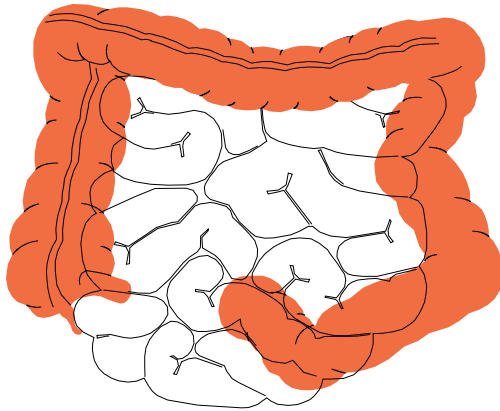
Blood



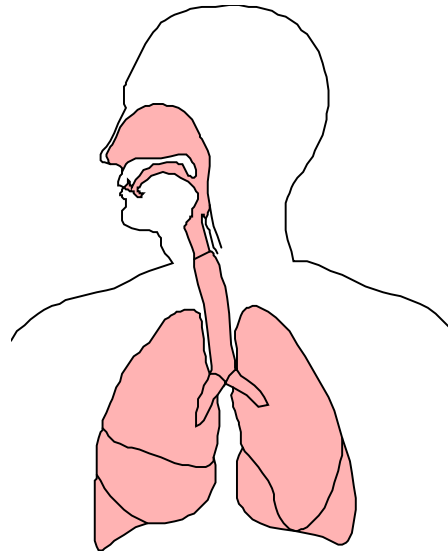
Skin



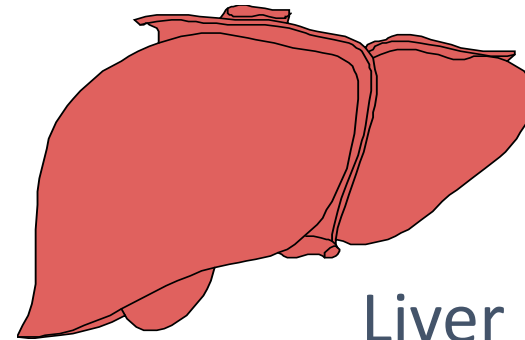
Kidneys



Colon



Lungs



Liver

BASIC TREATMENT GUIDELINES

- Sunshine
- Play, Fun
- Deep Breathing
- Water
- Movement
- Hydrotherapy
- Dry skin brushing, castor oil packs
- Sleep hygiene

- Diet- many options
- Apple cider vinegar
- Essential fatty acids
- Probiotics
- Nutraceuticals (many)
- Meditation
- Prayer

ALL are required for a
HEALTHY IMMUNE SYSTEM

Many Nutraceutical and Herbal Options

- Arginine
- Black Currant
- Beta 1, 3, glucan
- Borage oil
- Boswellia
- Bromelain
- Cat's claw
- Chlorophyll
- DMSO
- Colostrum
- Digestive enzymes
- DHEA
- Fish oil
- Garlic
- Ginkgo
- Ginseng
- Glucosamine
- Glutathione
- L-Glutamine
- Lavender
- Licorice
- Pantothenic acid (B5)
- Papain
- Para-aminobenzoic acid
- Peony
- Probiotics
- Propolis
- Pycnogenol

More Options

- Reishi mushroom
- Selenium
- Stinging nettle
- Thymus extract
- Turmeric
- Vitamin A
- Vitamin B
- Vitamin C
- Vitamin D
- Vitamin E
- Zinc
- Acupuncture
- **Exercise**
- The ability to **Forgive** and be compassionate
- Having **long-term Goals**.
- **Positive Attitude** and **Prayer**
- Yoga