# INTRO TO IMMUNOLOGY

#### Resilience, Immune Responses, and Gut Health



HONEST MEDICINE

## What is Resilience?

Immunological resilience enables our bodies to maintain good health or recover more swiftly after encountering a virus, harmful bacteria, or toxins.

A robust and resilient microbiome is essential for both our mental health and immune system. Although developing resilience is a gradual process, there are various practices we can adopt to enhance our overall immunological resilience.

## Did you know?

Trillions of microbes reside in the intestines, creating a complex ecological community that impacts both normal bodily functions and vulnerability to diseases.

Engaging in regular, mindful practices that promote gut health can help establish a solid foundation and bolster our body's resilience against external threats.



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Immune response: When you contract a cold virus, your body's innate immune response triggers symptoms like a runny nose, cough, itchy eyes, and more.

#### **Front-Line Defense**

Our skin and mucous membranes act as the initial barrier against external threats by preventing pathogens from entering our bodies. These mechanisms are specifically designed to capture foreign materials and expel them through actions like coughing and sneezing. They also contain antimicrobials, acids, or enzymes that work to inhibit the growth of or eliminate microorganisms.

#### **Innate Response**

The innate immune response serves as the body's initial defense against invading pathogens—such as viruses, bacteria, or other microorganisms—and injuries. This response includes the activation of various cells, including phagocytes, neutrophils, dendritic cells, mast cells, and eosinophils, which ideally collaborate to eliminate the invading pathogens, initiate the healing process, and trigger the adaptive immune response.

#### **Adaptive Response**

Although the innate immune response acts quickly, the adaptive immune response is more specialized and often more effective. It can specifically identify a pathogen and 'remember' it for faster response upon future exposure. For example, once a person has been exposed to the chickenpox virus, they develop immunity to it, thanks to the adaptive immune system.

### GUT HEALTH & IMMUNITY Why it's important

Seventy percent of your immune system resides in your gut, which means that your gut health significantly influences your overall immune health.

Your gut houses more than 100 trillion bacteria, collectively referred to as your gut microbiome. Within this community, some bacteria are considered "good," while others are deemed "bad." These gut bacteria interact with your immune cells and can affect your body's response to infections.

This is why maintaining a balanced gut is essential for a robust immune system. Here are two ways to nurture your gut:

#### **Probiotics**

Probiotics are foods or supplements packed with live beneficial bacteria. Incorporating probiotics into your diet aids in replenishing helpful microbes, which contributes to maintaining a balanced microbiome.

Here are some foods rich in probiotics that can assist in restoring your friendly flora:

- Yogurt
- Sauerkraut
- Kefir

• Miso

- Kimchi
- Kombucha
- TempehNatto

You can also take probiotic supplements to repopulate your gut with good bacteria.

#### **Prebiotics**

If you want your friendly flora to flourish, it's essential to nourish them properly. This is where prebiotics come into play. Prebiotics are a unique type of fiber that serves as food for your gut bacteria.

Here are some foods rich in prebiotic fiber:

- Chicory root
- Jerusalem artichoke
- Dandelion greens
- Burdock root
- Green bananas

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- Asparagus
- Leeks
- Garlic
- Onions
- Apples
- Oats
- Flaxseed
- Barley



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