

The Immune System and Its Response

the immune system detects potential threats based on the presence of **unfamiliar or abnormal molecules**, which could indicate infection or cancer

healthy cells unfamiliar or abnormal molecules

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local immune cells detect a threat and call for backup by releasing **chemokines** and **cytokines**

healthy cells unfamiliar or abnormal cell I detect a threat!

local immune cells

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Certain immune cells are able to engulf or "eat" infected, damaged, or dead cells. This process is called **phagocytosis**.

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dendritic cells bring **pieces** of a potential threat to the **lymph nodes**, causing **T cells** and **B cells** that recognize the **antigens** to become activated

lymph node

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activated **T cells** and **B cells** multiply rapidly, forming an immune army

these cells then flow out into the body to hunt and attack the **specific threat**

lymph node

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antibodies

target binding sites

immune cell binding site

B cells that are activated against a **specific threat** release **antibodies**, which spread throughout the body and coat the surfaces of target cells

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activated **T cells** multiply rapidly, forming an immune army that flows out into the body to hunt and attack the **specific threat**

lymph node

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when **cytotoxic T cells** encounter the **antigens** they are programmed to recognize, they release molecules to attack and kill target cells

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helper T cells provide signals that support other immune cells

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regulatory T cells slow down or suppress immune responses

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