



HOW DOES OUR BODY PROTECT US FROM PATHOGENS?



Our **immune system**, consists of an intricate network of numerous cell types, works hard to prevent or limit infection.

Antigen refers to any substance that causes an immune response (you know this from the COVID-19 Rapid Antigen Test!).



INNATE IMMUNITY

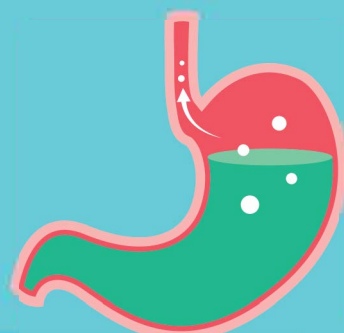
is a **rapid immune response** that starts when an intrusion is detected. It **cannot remember** which pathogen attacked us.

Examples of our innate immunity mechanisms



- Mechanical barrier
- Acidic environment slows growth of microbes

- Acidic pH of stomach kills most undigested microbes.



LOW PH



WHITE BLOOD CELLS

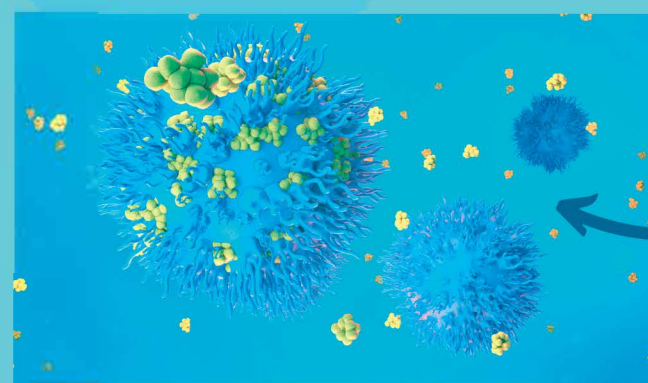
- Our immune cells that can digest pathogens.

ADAPTIVE IMMUNITY

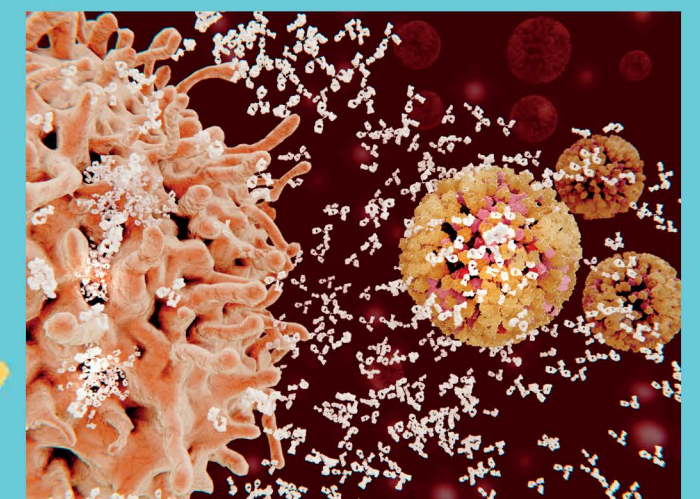
can **remember which pathogen attacked us before**, and helps us come up with a **more rapid and efficient counter-attack**.

Examples of our adaptive immunity mechanisms

T-CELLS



- Wipes out infected cells
- Help B cells to eliminate invading pathogens
- Creates a type of protein called an antibody.
- Antibodies bind pathogens to neutralize them.



B-CELLS

VACCINES FACILITATE ADAPTIVE IMMUNITY!

HOW DO VACCINES WORK?



1

Vaccines include a non-dangerous antigen

2

Our body learns to build a specific antibody for that antigen

3

If the body encounters the real antigen later, it can react quickly and effectively as it already knows that antigen.