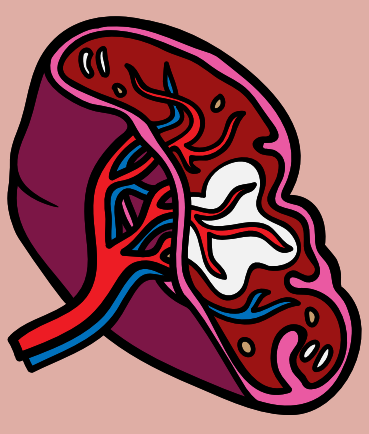
SICKLE CELL EDUCATION SERIES
Episode 2 Summary
The Immune System: With Us or Against Us

THE IMMUNE SYSTEM

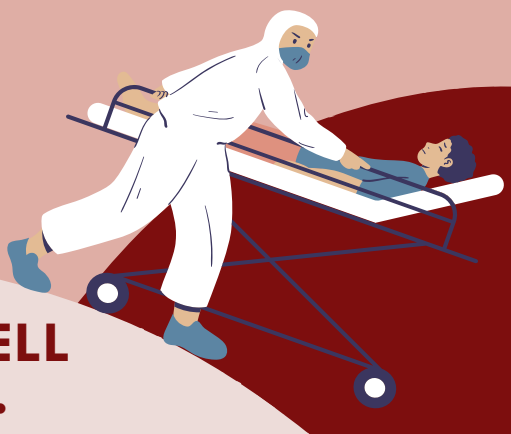
The immune system protects us from harmful substances, such as germs and damaged cells. When the immune system detects something harmful it instigates an inflammatory response, causing redness, swelling and heat. This sirens specialised cells to gather and address the problem.

In the case of infection, the specialised cells are **White Blood Cells**. They target infections in different ways depending on the type of infection and the type of White Blood Cell.

Our immune systems can remember information about previous harmful encounters this is called **immunity**. So that, if we are faced with the infection again, our immune system can mount a quicker response.



The spleen is an important part of the immune system. It filters blood and destroys infection.



IN SICKLE CELL DISEASE...

Spleen

The sickling of red blood cells affects the blood supply to the spleen, affecting its function against infections. This impairs immunity and increases vulnerability to infections. Resulting in frequent and severe infections.

SEPSIS

Sepsis is a **life-threatening emergency** that needs urgent medical attention and treatment.

It happens when your immune system mounts an extreme inflammatory response to infection.

Antibiotics

Because of this, people with Sickle Cell Disease need precautionary (prophylactic) daily antibiotics. This is to reduce the risk of infection.

Vaccination

Furthermore, it is strongly advised that people with Sickle Cell Disease receive the recommended vaccinations. This provides immunity against certain infections.

BLOOD RESULTS

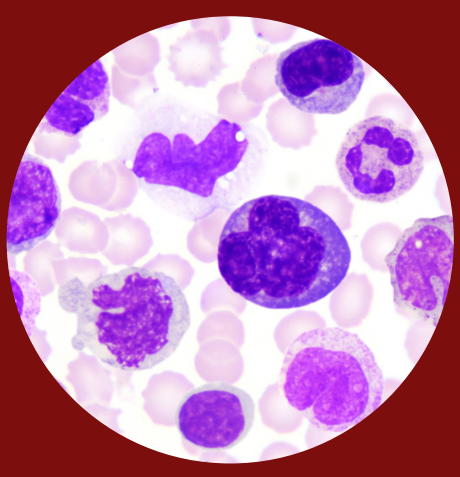
Infection and inflammation can be detected by looking at markers in the blood. These help make decisions about treatment.

White Cell Count (WCC)

A high number of White Blood Cells suggests infection or inflammation. A rise in a specific type of White Blood Cells can indicate the underlying problem.

C Reactive Protein (CRP)

CRP in a non-specific indicator of inflammation and infection. It is also useful to monitor when assessing response to treatment.



This is a blood film showing the different types of White Blood Cells.

BACTERIAL VS VIRAL INFECTION

Bacterial Infections

Can be cleared by a healthy immune system. Some may need treatment with antibiotics. Bacterial infections usually cause a rise in **Neutrophils**, a type of White Blood Cell.

Bacteria can adapt and become resistant to antibiotics. To reduce this, it is important that the use of antibiotics are carefully considered.

Viral Infections

More common than bacterial infections. They cause a rise in **Lymphocytes**, a type of White Blood Cells.

Viral infections are usually managed with rest, hydration and pain relief. Antibiotics do **not** work against viral infections.