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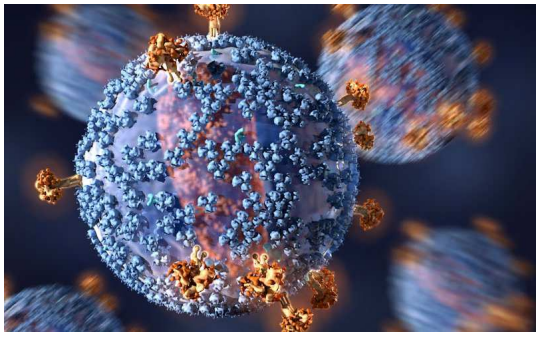

Your Health

Antibodies, HIV, and AIDS©

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Words are explained alongside the text

Stressed syllables are underlined and in bold*

Welcome to Your Health, brought to you by the medical frontier, Medical News, Simplified on twitter @MedFrontier

Antibodies. You may have heard of them, perhaps not. **Either way**, you probably didn't know just how important they are or what it is they do inside the body. First we'll discuss what they do and how they work, before talking about their importance for your **immune system**.

So what exactly is an antibody? **Put simply**, like many things in the body, it's a protein. These proteins are part of the immune system and they are vital for keeping you alive. If we didn't have antibodies, we could **get** extremely **ill**, very quickly – even a **common cold** could kill you. **A prime example** of a virus that can stop antibody production by killing **immune cells** is HIV or AIDS.

HIV **stands for** Human Immunodeficiency Virus. If it's left untreated, it takes about 10 to 15 years for it to develop into AIDS, which stands for **Acquired Immuno-Deficiency Syndrome**. HIV is a virus that slowly attacks your immune system's white blood cells. Specifically, a cell called your T helper cell. These cells act to support your other **white blood cells** in killing **harmful disease-causing pathogens** – which means a bacterium, virus, or another microorganism that can cause disease.

HIV is especially bad **as** it kills these T helper cells by injecting its own **genetic information** into the cell's most important area called the nucleus, essentially the cell's '**brain**'. This means that the T cell is now under the control of HIV and it will not only stop functioning as a cell that

either way (exp.) in both cases

put simply (exp.) expressed in an easy way to understand

to get (vb.) to become

ill (n.) sick, unwell

a prime example (exp.) a typical example

the common cold (exp.) an infectious disease, usually caused by the rhinoviruses, with symptoms like runny nose, sore throat, cough, sneezing

to stand for (phrasal vb.) to mean, to signify (often used when talking of an acronym)

harmful (adj.) destructive, dangerous

as (conj.) because

brain (n.) the organ inside your head that controls your body's activities and enables you to think and feel

kills pathogens, but actually starts to create more HIV! This **newly born** HIV that's been made inside the T cell, will be **released** into the **bloodstream** to infect other T cells. A person is said to have AIDS, also known as late stage HIV, when their T cell count is less than 200 cells in 1 milliliter of blood. It is at this stage that one is most at risk of getting very sick from bacteria or viruses that we encounter during our day-to-day lives.

So how do antibodies work? Why is it bad that HIV can stop them being made? And why does a **lack** of them cause such a problem?

Antibodies are actually made by another white blood cell in the immune system called the B cell. The B cell has the ability to see exactly what a pathogen **looks like** and can make antibodies specifically to **fight** it. When the B cell releases antibodies, they can catch and completely cover the **invader** – a bit like putting antibody **sprinkles** on a pathogen cupcake. What this means now is that other white blood cells can see the disease causing bacteria much more easily and can **target** it to be killed. Essentially antibodies can act like little **flags** on pathogens.

Now that we know what antibodies do and where they are made, how does HIV stop them being created if it only attacks T cells and not B cells? Well, in order for the B cell to start making antibodies, it needs to be activated by the T cell, which, as we described earlier, can be **disabled** by HIV. No T cells **means** no activation of B cells, which means no antibodies.

As you may have heard, HIV is now a very **treatable** condition. Before ending this week's article let's **touch on** how researchers stop HIV from **taking over** the immune system.

Today's main treatment for HIV is called Anti-Retroviral Therapy (ART for short). It isn't a **cure** for HIV but it can help you live longer and reduce the risk of **spreading** it to others. It works by stopping HIV's ability to create more of itself inside T cells, which reduces the amount of HIV in your body. Less HIV gives the body a chance to **fight off** infections and **slow** the progression to AIDS.

newly-born (exp.) just created

to release (vb.) to liberate

bloodstream (n.) flow of blood around the body

lack (n.) shortage, insufficiency

to look like (phrasal vb.) to resemble physically

to fight (vb.) to attack

invader (n.) attacker

to sprinkle (vb.) cover, scatter with small drops of a substance

to target (vb.) to identify and aim at

flag (n.) sign to attract attention

disabled (adj.) deactivated

to mean (vb.) to signify

treatable (adj.) able to be treated

to touch on (phrasal vb.) to talk about briefly

to take over (phrasal vb.) to control

cure (n.) treatment which brings complete recovery

to spread (vb.) to infect, to propogate

to fight off (phrasal vb.) to resist, to get rid of

to slow (vb.) to reduce the speed of sth.

This week's advice: There is great promise for antibodies in the future; we are now designing a new treatment called immunotherapy where we can create specific antibodies to target cancer cells. Watch this space!

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Specific medical vocabulary is often very similar in English and French. However note the word order in common noun phrases:

Immune system,
immune cells,
Acquired Immuno-Deficiency Syndrome (AIDS)
white blood cells,
disease-causing pathogens,
genetic information

***Tips**

The letter "I" can cause problems as it can be pronounced as a long or short vowel:

In the following words it is pronounced with a long sound as in the word "time":
vital, alive, prime, virus, white, lives (as a noun), fight, advice, designing

In the following words it is pronounced with a short sound as in the word "sit":
discuss, immune, kill, risk, sick, bit, live (as a verb), promise

The following 3-syllable words all have their stress on the middle syllable:

im**por**tant, ex**treme**ly, pro**duc**tion, de**ve**lop, en**coun**ter, con**di**tion, re**du**ces, in**fec**tions, pro**gre**ssion, spe**ci**fic