

Student solves snail fever mystery

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(Medical Xpress) -- Scientists have solved an 80-year old mystery linked to an ancient but neglected tropical disease that affects more than 100 million people in sub-Saharan Africa.

Researchers have discovered how people naturally build up immune resistance to snail [fever](#) - an infection caused by [parasitic worms](#) - and the process by which this is triggered.

Researchers from the University of Edinburgh found that the body's immune response was only triggered once the parasitic worms - which can live in human blood for several years - start to die.

People contract snail fever - also known as bilharzia or [schistosomiasis](#) - when worm larvae, released into freshwater ponds and rivers by infected snails, burrow through their skin.

It is particularly common in children, and can affect growth, development and cognition and damage internal organs.

People can build up resistance to the infection over time.

However, until now [scientists](#) were unclear what eventually triggers an effective immune response and why, unlike many other diseases, this happens after a number of years of repeated infection.

The dying or dead worms release proteins known as antigens.

These antigens are then recognised by the body's immune system, which in turn creates antibodies that fight against the infection.

They prevent the remaining worms from laying eggs, which work through the body's tissues to cause the disease.

The study will help the development of effective vaccines, which has been slowed down by the uncertainty over the body's immune reaction.

The findings were made using sophisticated computer models.

Data collected from Zimbabwe over 20 years was checked against different theories relating to the body's [immune](#) response.

Millions of computer simulations were run to find out which theory was correct.

The findings could also help maximise the effectiveness of drug treatment programmes.

This would ensure the disease is treated without hampering a person's ability to build up their own immunity.

The study was published in the journal *PNAS*.

"This study will help further research to inform the optimum duration and intensity of drug programmes to target the disease, while ensuring an individual's ability to build up immunity to it is not hampered, as well as help research to find vaccines for [snail fever](#)," said Kate Mitchell, study author, PhD student at the School of Biological Sciences.

Provided by University of Edinburgh

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