

Parasite sheds light on sleeping sickness

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Fresh insight into the survival strategy of the sleeping sickness parasite could help inform treatments for the disease.

University scientists have found that the parasite, which can transform itself into either of two physical forms, has developed a careful balance between these.

One of these types ensures infection in the bloodstream of a victim, and the other type is taken up by the tsetse fly and spread to another person or animal.

Balanced approach

The parasite maintains a trade-off between maintaining enough [parasites](#) to beat off the [immune response](#) and cause infection, and ensuring sufficient parasites to enable the spread of the disease.

Researchers used a combination of biological and mathematical techniques to show how the parasite balances production of each of the forms.

Their results enable fresh understanding of how the parasite reacts to its surroundings to ensure its survival in the short term as well as the long-term spread of the disease.

Millions at risk

Sleeping sickness, which is spread by the bite of the tsetse fly, affects some 30,000 people in sub-Saharan Africa. Many millions more are considered to be at risk.

The disease affects people and animals and without treatment is considered fatal.

The research, funded by the Wellcome Trust, was published in the journal [Cell Host and Microbe](#).

"[Sleeping sickness](#) parasites alter their form in order to ensure their survival and spread. We hope that, having discovered more about how these parasites behave, we will be able to develop ways of interfering with their survival strategy and interrupt the spread of this disease," said Professor Keith Matthews, School of Biological Sciences.

Provided by University of Edinburgh

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