The human parasite Leishmania is a probiotic for the fly that carries it
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A sandfly, the vector that passes on the Leishmania parasite. Credit: Rod Dillon

Serratia marcescens, a naturally occurring disease in sandfly populations.

The team took a population of Lutzomyia longipalpis sandflies and fed them blood meal containing the Leishmania parasite, and a second group with uninfected blood meal. They then fed both groups with the Serratia pathogen. The group that were carrying the Leishmania parasite had a survival rate of 56% after six days, in contrast to the control group, which had a survival rate of just 11%. This showed that carrying both the Leishmania parasite and the bacterial pathogen protected the flies and increased their lifespan.

The authors say that this finding is important for efforts to develop biological controls against vectors of disease using bacterial pathogens, as these may have unexpected effects in the wild.

Dr Rod Dillon said: "We're looking at using bacteria to stop the spread of leishmaniasis, but it turns out that the Leishmania parasite works as a kind of probiotic and reduces the mortality of the fly."


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