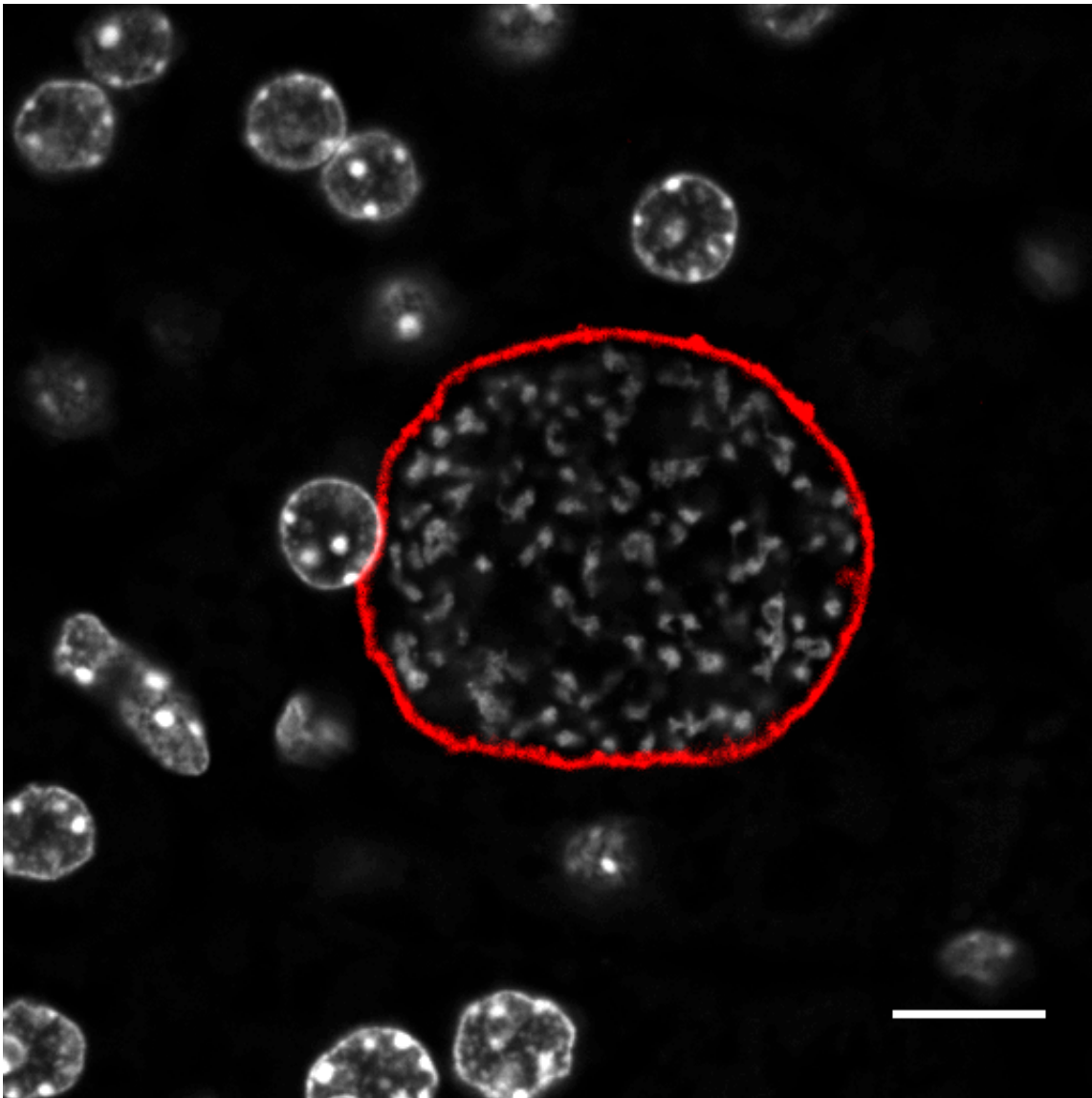


Metabolism directly impacts the odds of developing malaria

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Plasmodium parasite developing inside an hepatocyte (liver cell) 48 hours after infection. Credit: Maria Mota lab, IMM Lisboa

The progression and development of an infectious disease is directly dependent not only on the characteristics of the infectious agent but also on the genetic characteristics of the host, which also dictate the efficiency of the infection. Researchers from Instituto de Medicina Molecular (iMM) Lisboa have found that a host's susceptibility to malaria depends on his or her metabolic state, which can be easily manipulated through external stimuli such as dietary patterns.

In recent years, research has suggested that external factors independent of the host-parasite dichotomy, such as eating habits, can impact in the establishment, progression and endpoint of infections. A team led by Maria Mota manipulated the diet of lab mice for very short periods of time and evaluated the level of infection caused by the malaria parasite.

The results, now published in *Nature Microbiology*, show that an increase in the levels of pro-oxidants caused by dietary shifts leads to a 90 percent reduction in parasite load during the hepatic phase of the infection and consequently lowers the severity of the disease. The mechanism used by the host to eliminate the [malaria parasite](#), now revealed in this study, may explain how certain genetic alterations are associated with high levels of oxidative stress, such as sickle-cell anaemia or beta thalassemia, which have been selected in the population due to their protective effect against malaria.

More information: Vanessa Zuzarte-Luís et al, Dietary alterations modulate susceptibility to Plasmodium infection, *Nature Microbiology* (2017). [DOI: 10.1038/s41564-017-0025-2](https://doi.org/10.1038/s41564-017-0025-2)

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