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PhD: malaria paralyses immune cells

PATRICK NELSON

THE quest to develop a better malaria vaccine is a complicated business, but that hasn't deterred Dr Jessica Loughland, of the Menzies School of Health Research, who received a PhD yesterday from Charles Darwin University.

For the past four years Dr Loughland has studied the effect the malaria parasite *Plasmodium falciparum* has on particular cell types within the human immune system.

"There is a limited understanding of the effect this micro-organism has on the four blood dendritic cell subsets, which fulfil a variety of roles in the fight against malarial infection and are essential for developing immunity," Dr Loughland said.

"My experiments showed that *Plasmodium* affects different subsets in different ways, but in simple terms we found that they disrupted the ability of some dendritic cell subsets to do their job, which ultimately allows the parasite to thrive during the blood-stage of infection.

"They are results that give rise to the need for further clinical trials."

Dr Loughland said that malaria remained a major global health problem, with the World Health Organisation reporting 214 million cases and 438,000 deaths in 2015.

"Most of these deaths were the result of *Plasmodium falciparum* infections, in which African children under five years of age comprised the bulk.

"Malaria has evaded the attempts of dedicated researchers despite advancements in biotechnology, including molecular biology, genetics, immunology and vaccinology."