



# 2021-2022 STUDENT PROJECT OPPORTUNITY Gametocytes and malaria in pregnancy

MASTER BY RESEARCH



# Gametocytes and malaria in pregnancy: prevalence and effects of prevention

GLOBAL AND TROPICAL HEALTH

MASTER BY RESEARCH

Pregnant women in malaria-endemic areas are more vulnerable to malaria than non-pregnant women because of changes in existing immunity. Pregnant women harbour higher density infections, and may harbour higher densities of gametocytes, the sexual parasite stages taken up by the *Anopheles* spp. mosquito upon a blood meal. As such, pregnant women may represent an important reservoir for malaria transmission. This is of particular concern as some tools used in current efforts to eliminate malaria cannot be used in pregnant women because of safety concerns; these include their participation in some types of mass drug administration, or treatment with primaquine or ivermectin. To date, the role of pregnant women for malaria transmission remains unclear. Furthermore, the impact of malaria prevention strategies on gametocyte carriage and dynamics requires further assessment to ensure that these reduce infection burden and infectiousness.

In this study, we will examine existing literature containing information on gametocyte prevalence in pregnant women (*Plasmodium falciparum*). Additionally, information will be collected on the effect of preventive measures on gametocytaemia; these preventive measures would include insecticide-treated net use, intermittent preventive treatment with an antimalarial, intermittent screening and treatment, and chloroquine prophylaxis.

Studies included will be surveys (prevalence), trials evaluating impacts of preventive measures on gametocytaemia, or studies which present gametocytaemia by preventive measure. If possible, a control group may be used, such as gametocytaemia among children or a non-pregnant adult population. The effect of malaria treatment in pregnancy on gametocytaemia will not be evaluated, given the availability of a recent individual participant data analysis on this topic.

Data will be extracted and matched with an indicator of malaria transmission intensity (malaria atlas project) and analysed using meta-analysis; if sufficient information is available, meta-regression will be used to understand factors affecting gametocytaemia in pregnancy.

**Dr Holger Unger**

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**Eligibility:** The successful applicant will meet the eligibility criteria for admission to a Master by Research or Doctor of Philosophy degree at Charles Darwin University.

**Scholarship Provisions:**

Candidates will be encouraged to seek Research Training Program (RTP) scholarship funding through Charles Darwin University. Further information about RTP scholarship application process, eligibility criteria and key dates can be found on this [CDU webpage](#)

A successful candidate who is a recipient of a primary scholarship such as RTP will be eligible to apply for a Menzies top-up scholarship to the value of \$10,000 per annum for up to 3.5 years. Successful candidates will receive \$3,500 per annum for up to 3.5 years to cover direct costs of the research.

**Application Process**

Applicants should submit the following:

- Brief summary of why they want to complete the project
- Current CV
- Copies of certified academic transcripts
- Proof of Residency (not required for Australian citizens)

All applications should be submitted to Dr Holger Unger [holger.unger@menzies.edu.au](mailto:holger.unger@menzies.edu.au) by 30<sup>th</sup> September 2021.