

# PARTICIPANT INFORMATION PICTORIAL GUIDE: BIO-004

## Understanding how the immune system responds to repeated malaria infections

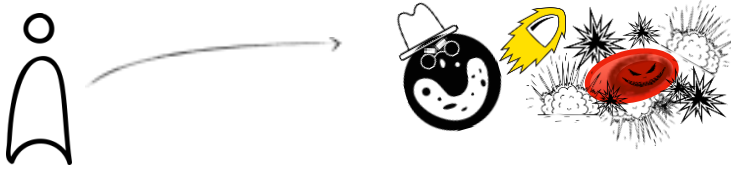
Please read the patient information sheet carefully - this pictorial guide is not a substitute.

Why are we conducting this study? (see page 4 in the participant information sheet)

We aim to track how the body's immune cells react to repeated malaria infections. This will allow us to work out strategies to use natural responses from immune cells to combat severe life-threatening disease in children.

**Malaria is a major public health problem that kills over a million children each year**

### First Malaria Infection



Immune cells launch a full-scale attack against malaria parasites causing damage and harm

### Third Malaria Infection



Immune cells learn to live with malaria parasites (tolerance) - if you can't get rid of them, don't harm yourself trying

### We ask: How do immune cells learn to live with malaria and stop causing harm?

What does the study schedule look like? (see page 5 to 9 in the participant information sheet)

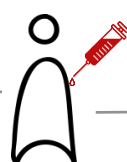
20 months  
~74 visits\*  
Up to £9,955

group 1  
11 participants

### Malaria challenge #1



### Malaria challenge #2



### Malaria challenge #3



Bone marrow test



\*Average no. of clinic visits expected. No. of visits may vary between 53 to 95.

### Malaria challenge #1



Bone marrow test

### Malaria challenge #2



### Malaria challenge #3



11 participants  
group 2

20 months  
~70 visits\*\*  
Up to £9,325

\*Average no. of clinic visits expected. No. of visits may vary between 51 to 88.

Are you eligible to take part? (see page 11 to 12 in the participant information sheet)



- healthy adult aged 18-45
- willing to meet all study requirement and attend visits over the 20-month study period
- never had malaria
- never had yellow fever or the yellow fever vaccine
- CMV seropositive
- willing to never donate blood again

We will test if you have antibodies against cytomegalovirus (CMV) because a past infection with this virus will affect your immune response to malaria.

\*This list is not exhaustive - see patient information sheet for full criteria

# PARTICIPANT INFORMATION PICTORIAL GUIDE: BIO-004

## Understanding how the immune system responds to repeated malaria infections

Please read the participant information sheet carefully - this pictorial guide is not a substitute.

Procedures involved in this study (and why they are important)

Malaria challenge 

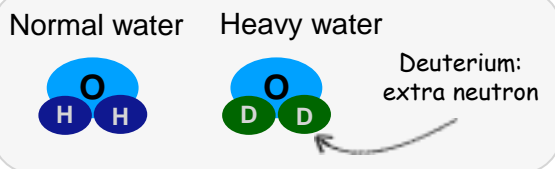
A small amount of malaria infected blood will be injected into your vein through a cannula

in **group 1** you will be infected with *Plasmodium falciparum* three times  
in **group 2** you will be infected twice with *Plasmodium falciparum* and the third malaria challenge will be with a slightly different malaria parasite called *Plasmodium vivax*

We will conduct three malaria challenges to compare the immune response between your **first infection** of life (when your immune system launches a full-scale attack) and your third infection (when your immune system has learned to tolerate malaria parasites)

Marks the immune cells that respond to malaria so we can track them across all three infections

Heavy water 



How much will you drink?

3 days  
4 x 55 ml



~ 14 days  
2 x 40 ml



Yellow fever vaccine 

This will tell us whether tolerance towards malaria affects your response to a vaccine


Blood tests 

A blood sample will be taken at most study visits:

- ❖ to check blood counts, liver and kidney function
- ❖ to monitor parasite growth after malaria challenge
- ❖ to understand your immune response

How much blood will be taken?  
between

2 mL (less than a teaspoon)  
and  
83 mL (~ eight tablespoons)  
depending on visit

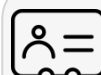
Bone marrow test 

To understand how the immune system remembers to tolerate malaria parasites we need to study long-lived immune cells, which live in your bone marrow

A sample of the liquid & spongy inside of your pelvic bone will be taken once during the trial



If you are interested in taking part in our study please read the participant information sheet carefully. You are welcome to get in touch with any questions.



e-mail  
phone

[info@ovg.ox.ac.uk](mailto:info@ovg.ox.ac.uk)  
01865 611400