

Yale *Environmental Health & Safety*

Plasmodium falciparum

P. falciparum

P. falciparum is a risk group 2 parasite. It is considered a **reproductive pathogen** as it causes placental malaria, which can result in spontaneous abortion, stillbirth, premature delivery, low birth weight, and fetal growth restriction. It is associated with high rates of maternal morbidity and mortality.

How can I be exposed to *P. falciparum*?

- Exposure is primarily via mosquito transmission.
- Human infection can occur via blood transfusion and organ transplantation although it is rare in non-endemic countries.
- Fetal transmission occurs via the placenta.
- Laboratory workers may be exposed primarily by parenteral inoculation, including mosquito bites, needlesticks, puncture from contaminated glassware, and sharps injury during necropsy.

How can I protect myself from exposure?

- Avoid direct skin contact by wearing protective clothing and gloves.
- Avoid mucous membrane exposure by using eye/face protection for procedures that may produce splashes.
- Avoid respiratory exposure by using a biosafety cabinet or other primary containment device and wearing a respirator for procedures that may produce aerosols, particularly centrifugation, resuspension of pellets, and washing.
- The use of needles, syringes, and other sharp objects should be strictly limited, and additional precautions should be taken when working with animals.

What should I do if I think I've been exposed?

Wash the affected area immediately for 15 minutes with soap and water and seek medical attention.

What symptoms should I look for after a potential exposure?

Mild malaria symptoms include fever, chills and sweats, headache, muscle/joint pain, vomiting, and diarrhea. After 1-3 days, symptoms in adults become more severe including jaundice, seizures,

impaired consciousness, pulmonary edema, acidosis, and organ dysfunction. In children, severe symptoms include impaired consciousness, seizure and coma, respiratory distress, severe anemia, and hypoglycemia.

How long does it take for symptoms to develop?

Symptoms usually develop within 7-27 days.

Is there a treatment or vaccine?

Vaccines are available for children and others living in areas of moderate to high malaria transmission. Artesunate is used as a malaria treatment.

Can I transmit it to other people?

It is possible to transmit malaria via blood transfusion, organ transplant, and vertical transmission.

Can I transmit it to my pets?

There is some evidence of human malaria in non-human primates, but it is not primarily transmitted from humans to animals

Can it survive on surfaces?

P. falciparum relies on human blood/plasma or a mosquito vector to survive. It is not stable in the environment.

See Pathogen Safety Data Sheet for More Information

