

Life cycle of malaria

[Science](#), [Biology](#)



28 March The Life Cycle of Malaria i. The Basic Life Cycle The comprehension of the life cycle of Malaria is important for several reasons. One, it aids researchers in the design and implementation of interventions that can be used to hinder transmission, infection and develop Malaria treatments. This is the purposes of this research. Four known plasmodium species are known to cause malaria; Plasmodium vivax, ovale, malariae and falciparum. It has been proved that it is the female anopheline mosquitoes that transmit the Plasmodium.

a. Sporozoite Stage

They suck human blood as a meal and in turn inject beings with the sporozoite stage parasites that are infectious. These sporozoite stage plasmodiums enter into the blood circulation (Hall and Fauci, 1640).

b. Liver Stage

The sporozites migrate to the liver once they enter into circulation. In the liver, they invade liver cells and go through replications differentiating into merozoites (Hall and Fauci, 1640).

c. Blood Stage

The merozoites invade and enter vulnerable erythrocytes from where they go through differentiation and replicate over several days. They are produced in large numbers and soon rupture the erythrocytes. These results in their release back into the circulation to begin the blood stage again (Hall and Fauci, 1640).

d. Gamete Reproduction

The parasites may differentiate into gametocytes while in the blood stage. On been taken up by a feeding mosquito, the gametocytes replicate and

mature into male and female gametes which fuse forming zygotes that go through differentiation and replication in the mosquito gut to form sporozoites that move to the salivary glands of the mosquito from where they can be transmitted (Hall and Fauci, (1640).

This research examines these life cycle stages and the unique features that define each stage.

Keywords: Plasmodium, Sporozite, merozoite, gametocyte

1. Methods

i. The use of microscopy

a. Intravital microscopy that allows direct visualization of the plasmodium cell movement in the host.

b. Transmission electron microscopy that gives detailed pictures of each phase (Kakkilaya, n. p).

2. Results

i. Reproduction of the gametes

a. Kuehn and Pradel state that reproduction occurs in the mosquito midgut.

ii. Transmission of the plasmodium cells

a. Eckhoff (4) found that main features of the adult female mosquito like host seeking and blood feeding are vital features for malaria transmission.

iii. The Liver Stage

a. Derbyshire, Mota, and Clardy (n. p.) state that the plasmodium cells move to the liver where they move through the endothelium and invade the hepatocytes.

iv. Blood stage

a. Hall and Fauci, (1640) state that merozoites kick off the blood stage by

invading the vulnerable erythrocytes.

3. Discussion and Conclusion

i. Occurrence of the life cycle of Malaria

a. Public Library Science (n. p.) states that it is complex and involves distinct stages and habitats.

ii. Characteristics of each life cycle

a. Modifications of the plasmodium cells, the infected erythrocytes, and changes in transcript abundance during maturation of the parasite within the erythrocytes as Bozdech, Llinas, Pulliam et al., (n. p.) found out.

iii. The importance of the research

a. Understanding drug resistance in malaria as Pongtavornpinyo, Hastings, Dondrop et al. (52 – 61) explained.

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