**iGCSE (AQA Cert) Malaria**

**The malaria parasite has a number of different forms that are adapted to living in different regions of both humans and mosquitos**

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| WORD | DESCRIPTION |
| Malaria parasite | Single-celled organism *(Plasmodium*) |
| gametocytes | * infect mosquitoes (in the blood they suck) * reproduce sexually * pass into salivary glands of the mosquito |
| sporozoite | * develop from gametocytes * passed on to humans when the mosquito bites, injecting its saliva into blood * travel with the blood to the liver and enter the liver cells. * In the liver the sporozoites divide and become thousands of merozoites |
| merozoites | * released from the liver into the blood when the liver cell bursts * enter the red blood cells where they divide rapidly * some turn into schizonts   In the figure, do not worry about the gamete – zygote – ookinete – oocyst pathway (on the left). Just know that gametocytes become gametes in the gut of the mosquito before moving to the salivary gland where the fertilised gametes form sporozoites.  Animation: yourgenome.org/malariachallenge – it will help you to remember the life cycle  Symptoms: Appear 9-14 days after infection, in 48-hr cycles (coincides with release of toxins from burst RBCs)  Fever, shivering, vomiting, flu-like symptoms  Can be deadly if not treated    Whilst in the liver and red blood cells, *Plasmodium* is protected from the host’s immune system  Malaria is very difficult to treat medically and scientists have still not developed an effective vaccine against the disease. Think about why Plasmodium is such an effective parasite, and why it is such a difficult disease to develop medicines and vaccines against |
| schizonts | * burst the red blood cells, releasing more merozoites (which go on to reinfect red blood cells) * bursting of red blood cells releases toxins which cause fever attacks, chills and sweats |
| some merozoites (in the red blood cells) | * enter a sexual phase of reproduction * produce gametocytes which can be transferred to the mosquito when it takes a blood meal |
| Gametocytes | * develop into gametes in the gut of the mosquito * fertilisation of gametes occurs * from these fertilised gametes, thousands of sporozoites develop in the salivary gland of the mosquito * …and so the cycle continues |

