



## ***Malaria: Human Host***

The malaria parasite is an ancient organism. It has been with us since before we were human. Famous victims include Alexander the Great, Genghis Khan, and George Washington. The malaria life cycle follows a devious path, swapping back and forth between mosquitos and humans. This mosquito is infected with the malaria parasite. Because she is pregnant, she has become hungry for human blood. During the bite she injects saliva to stop the blood from clotting. Her infected saliva also carries the malaria parasite. The parasite rides the bloodstream like a network of roads seeking its first target: the core of your bodies blood filter system ----- the liver. Sensing its arrival in the liver the parasite searches for an exit. A sentinel Kupffer cell is the entry point to liver tissue. Leaving the blood, the parasite infects a liver cell, killing one or more other cells on its way. Over the next few days the parasite undergoes hundreds of nuclear divisions, copying its DNA over and over again. A single infected liver cell can create thousands of new parasites. The next generation of parasites are modified to infect a new target --- red blood cells. Inside a red blood cell, the parasite can hide from the body's immune system. The parasite slowly devours the contents of the infected cell and creates more parasites. The infected cell becomes sticky and grips onto blood vessel walls. Once mature, the infected cell bursts spreading more parasites through the blood stream. Malaria victims suffer fever, loss of blood, convulsions, brain damage, and coma. This year 10% of people on Earth will be struck down with malaria. Countless millions have been killed by it. Most people who die from the disease are pregnant women and children under the age of five.