

The origins of human malaria

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The most widespread human malaria parasites are *Plasmodium falciparum* and *Plasmodium vivax*. It has been widely assumed that *P. falciparum* has always infected humans; i.e. our common ancestor with chimpanzees was infected by an ancestor of *P. falciparum*, and the parasite later emerged out of Africa with modern *Homo sapiens*, around 60,000 years ago. In contrast, the closest known relatives of *P. vivax* have been *Plasmodium* species infecting monkey species in SE Asia, and the origin of *P. vivax* has been attributed to cross-species transmission from those monkeys, with subsequent spread out from that Asian hub. We have been examining malaria infections in wild apes, by amplifying DNA sequences of *Plasmodium* species from a very large number of faecal samples from numerous locations across Central Africa. Phylogenetic analyses of these sequences reveal a number of previously undescribed *Plasmodium* species. The evolutionary relationships among *P. falciparum*, *P. vivax* and these ape parasites overturn the previous consensus views on the origins of both human malaria parasites and provide a new perspective on their phylogeography.