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Scots scientists discover what makes malaria such a devastating killer

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ACADEMICS in Scotland may have solved the puzzle of why malaria is so deadly.

A team of scientists at Edinburgh University found the disease is so dangerous because the parasites which carry it are competitive and battle each other for survival.

The disease kills around a million people each year and accounts for the death of one in five of all child mortalities in Africa. The new research by academics at the university has shed light on how it thrives inside the human body.

Parasites, they found, are skilled survivors, developing sophisticated strategies to fight off rival infections.

When they enter the bloodstream of their victims, they alter their plan of attack if they face competition from other, competing, strains of the infection. The malaria parasites then focus on producing cells that replicate quickly to cause infection, rather than cells capable of being taken up by a feeding mosquito and spreading the disease.

Laura Pollitt of the School of Biological Sciences, who led the study, said: "Our results explain a long-standing puzzle of parasite behaviour.

"We found that when parasites compete with each other, they respond with a sophisticated strategy to safeguard their long-term survival.

"They opt to fight it out in the bloodstream rather than risk everything on the chance of infecting mosquitoes in the short term."

Malarial infections usually consist of multiple, competing strains of the parasite which are transferred to humans or animals via mosquito bites.

However, the parasites pay a high price for the competitive strategy, as it means they have fewer resources left to spread the disease.

The research, published in the *American Naturalist*, was funded by the Wellcome Trust, the Biotechnology and Biological Sciences Research Council and the Natural Environment Research Council.

Malaria, which is spread by mosquito bites, affects people and animals across sub-Saharan Africa in particular.

The *World Malaria Report* published by the World Health Organisation (WHO) in 2010 is based on investigations in 106 malaria-endemic countries.

It said international funding for malaria control had risen steeply, reaching the highest ever levels, but was still not enough.

It said: "The amounts committed to malaria, while substantial, still fall short of the resources required for malaria control, estimated at more than $6 billion [£3.75bn] for the year 2010."

Key methods of prevention include distributing mosquito nets for people to sleep under.

The report warned: "Failure to replace these nets could lead to a resurgence of malaria cases and deaths."

The WHO reports the number of cases of malaria rising from 233 million in 2000 to 244 million in 2005 but falling to 225 million in 2009.

The number of deaths due to malaria is estimated to have decreased from 985,000 in 2000 to 781,000 in 2009. However, incidents have increased in Rwanda and Zambia.

Last month, actor George Clooney was reported to have contracted malaria for the second time during a recent trip to the Sudan.

Singer Cheryl Cole was seriously ill with the disease after a trip to Tanzania last year.

"Our results explain a long-standing puzzle of parasite behaviour"
Laura Pollitt

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A bite from an infected mosquito can set off a deadly parasitical battle for survival in the human bloodstream

Picture: PA

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