

Drug-resistant malaria strains pose challenge to disease prevention

The region around the Mekong River delta is infamous for its malaria parasites. Twice already—in the 1950s and the 1960s—they have developed resistance to key drugs, and the underlying mutations spread inexorably around the world, forcing public health officials to find new ways to fight the disease. Now it is happening again. Over the last decade, artemisinin, the most powerful drug available to cure malaria, has failed in more and more people in Cambodia, Myanmar, Vietnam, Laos, and border regions of Thailand. Researchers and public health experts worry that history will repeat itself and resistant parasites will go global. With any new drugs still years away from clinical use, that would be a disaster.

Money has poured into efforts to contain and eliminate the region's resistant strains, so far without success. This week, two papers online in *Science* offer new insights into the genes behind the threat. One helps explain which genetic changes allow the parasites to survive the drug (<http://scim.ag/JStrainer>). The other details how the mutations protect the parasites: by slowing their development and ramping up their defenses against the kinds of protein damage that artemisinin seems to cause (<http://scim.ag/SMok>). Such insights should help scientists identify and track resistant parasites and perhaps find better ways to kill them. The studies are “extremely interesting and important,” says Pascal Ringwald, who coordinates the malaria drug resistance and containment program for the World Health Organization in Geneva, Switzerland.

Read full, original article: [The genetics of resistant malaria](#)