



## The Resistant Mosquito

### Video Transcript

#### Wrap-up

FREDROS: You have made it to the end of your first week in this course! Well done!

KEZIAH: In this first week of our journey, we saw that malaria is still a great threat to the health, wellbeing, and livelihoods of millions of people. We learnt that it is transmitted, or vectored, between people by Anopheles mosquitoes.

FREDROS: The Plasmodium parasite that causes malaria has a highly complex life cycle that involves both the Anopheles mosquitoes and humans. It was the discovery that mosquitoes vectored the Plasmodia between people that led to great advances in malaria control. By preventing people from being bitten by the malaria mosquitoes, the life cycle of the plasmodium could be stopped. Firstly, by modifying the environment and removing the larval breeding sites, and later by using insecticides.

KEZIAH: However, life doesn't stay still, and we've seen how the use of insecticides to control the mosquitoes has applied a tremendous selection pressure on them. Mosquitoes that can survive exposure to the insecticides and successfully reproduce will come to predominate in the population. Mosquitoes that can survive our vector control interventions and bite people are also able to transmit malaria.

FREDROS: It was discoveries about the biology of the Plasmodium that allowed us to identify mosquitoes as the vector of malaria. As our understanding of the biology of the mosquitoes increased, it helped us to identify ways of controlling them. Advances in chemistry and biochemistry enabled us to develop the insecticides that have been so effective at preventing malaria transmission. And molecular biology and modelling has helped us to understand how and why insecticide resistance develops and spreads in a mosquito population. These are also the tools we will need to help us to prevent, manage and mitigate insecticide resistance.

KEZIAH: In week two, we will continue our journey, looking in greater depth at insecticide resistance and the mechanisms that underpin it. We will see the impact and costs resistance can have. We will also look at why it is so important to include measures designed to minimise insecticide resistance development in all our vector control activities, and also in some surprising other activities. This will help to build the platform of knowledge we need, before finding out what we can do practically to maintain effective vector control in the final week of the course.



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FREDROS: While we will be travelling around the world to look further into insecticide resistance and insecticide resistance management, we should never forget that the real impact of this is felt here, in villages like Nsuhya, where insecticide resistance isn't an academic challenge, but a matter of life and death.

KEZIAH: Before we leave you, be sure to play the game Resistance 101, where you can immerse yourself in the world of mosquitoes and insecticide resistance first-hand.

FREDROS: Have fun and see you soon!