

ENTOMOLOGY Previous Year Question & Answers

Question 1. Can Mosquitoes Transmit Aids Or Hepatitis?

Answer :

No, despite testing by several laboratories, no conclusive evidence has been found to suggest that mosquitoes can transmit these diseases. The virus that causes AIDS can not survive in the mosquito like some other viruses such as Ross River virus. The mouthparts of a mosquito (the proboscis) are not like a syringe, i.e with a single channel where blood can go up and down. Rather, the proboscis has separate channels for saliva flow and blood intake, hence these diseases are not likely to be transmitted in the manner they can be with syringes.

Question 2. Does Ross River Only Occur In Northern Australia?

Answer :

No, the disease occurs right across Australia in all states, including Tasmania. The locations that have little disease include those areas that are very dry such as the deserts (although disease transmission may occur after heavy rains), much of the mountain range of eastern Australia, and the major southern cities (although there may be cases on the outskirts).

Question 3. Can I Get Ross River Disease In Sydney?

Answer :

The chances are small. Within Sydney there are none of the animals (such as kangaroos) that act as the major host for the virus. However, there are known

mosquito vectors present and with infected people returning from country areas where the virus is present, it is possible that human-mosquito-human transmission (normally the cycle is animal host-mosquito-human) may occur, although this has never been documented. Occasionally outbreaks of Ross River virus occur on the fringes of major cities, where both mosquito vector and animal hosts occur together, and this has happened in Perth, Brisbane, and in Sydney in the summer of 1996-97.

Question 4. How Do I Prevent Mosquito Bites?

Answer :

Prevention of mosquito bites can be achieved either through undertaking active mosquito control or by the use of personal protective measures. A variety of active mosquito control measures are available, including habitat modification in order to reduce water availability for breeding of the larval stage, through to the use of appropriate insecticides for controlling the larval or adult stage. These are large scale control measures which can only be undertaken by government bodies such as local councils. On a small scale, householders can ensure that their own backyard does not contain water holding containers which can provide suitable mosquito larval habitats (e.g. undrained pot plants, blocked gutters, disused bottles, old tyres, etc). Personal protective measures include: avoiding known mosquito infested areas, especially at dawn and dusk when mosquitoes are most active; ensuring that houses are adequately fly screened; using insect repellents that contain the chemical DEET, and reapplying it regularly; and wearing long sleeved shirts and pants. Other preventative measures include government based programs that undertake mosquito monitoring and virus surveillance from mosquitoes. These programs aim to act as an early warning system for virus activity by monitoring weather patterns, mosquito populations and viruses such as Ross River, Barmah Forest, Murray Valley encephalitis and Kunjin. In New South Wales, such a program has been running for several years at the Department of Medical Entomology at Westmead Hospital.

Question 5. How Do I Treat Mosquito Bites To Stop The Itch?

Answer :

Cold water and ice can be useful, although ice should not be applied directly to the skin. A variety of commercial preparations can be obtained from the chemist including Eurax and Stingose. In severe cases, oral antihistamines may have to be administered and if symptoms persist, a physician should be consulted.

Question 6. How Many Species Of Mosquitoes Are There?

Answer :

In Australia there are around 400 species but only approximately 10 are commonly abundant and represent a serious pest threat because of their nuisance biting or their ability to transmit disease.

Question 7. How Long Does A Mosquito Live?

Answer :

This varies with the mosquito species and the time of the year. Some species may only live for less than a week, while others can live for several months over the winter months.

Question 8. Mosquitoes Are Coming Into The House, How Do I Stop Them?

Answer :

Intact flyscreens on all windows and doors will prevent mosquitoes entering. The main species that tend to enter houses are those that breed around houses. Thus it is important that any container that can hold water be emptied or removed.

Question 9. Will Global Warming (from The Greenhouse Effect) Result In An Increase In Mosquito-borne Diseases?

Answer :

This is very difficult to determine. Currently there are different theories as to the level and amount of climate change. Some models predict large changes in rainfall patterns, while other predict small changes. We may expect with increases in rainfall there would be an increase in mosquito numbers and a subsequent increase in mosquito-borne diseases, however this may not be the case. The biology of mosquito-borne diseases is a very complex issue and involves the mosquito vector, reservoir hosts and even sociological factors. In some areas, an increase in rainfall may even lead to a decrease in mosquito numbers! All we can be certain of, with global warming, is that there will be a change in the amount and distribution of disease, but to what extent, it is not known.

Question 10. Are Mosquitoes From Wetlands A Health Or Pest Risk?

Answer :

They can be under certain circumstances, this is described in detail in the Fact Sheets on "Mosquito Production and Management - Saline Wetlands, Freshwater and Constructed Wetlands, and Irrigation Wetlands".

Question 11. Is There Lyme Disease In Australia?

Answer :

There is some debate as to the presence of Lyme disease in Australia. Some workers believe that it is here. However, the most comprehensive tick survey undertaken in Australia to date, found no conclusive evidence for any spirochaete bacteria that may be responsible for the disease (see fact sheet on Lyme Disease for

more information). If Lyme Disease is present in Australia, then that it must be very rare.

Question 12. I Left The Head Of The Tick Behind, What Should I Do Now?

Answer :

When a tick is removed, commonly a portion of the head or the mouthparts are left behind. Generally this does not cause any problems as the head of the tick will fall out as the skin sloughs off in time. However, if a local reaction does occur, then a physician should be consulted.

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Question 13. Is It Ok To Use Kerosene On The Tick To Remove It?

Answer :

No, this often causes the tick to inject its saliva into the host and can increase the risk of transmitting disease causing organisms, or increase the risk of death from paralysis.

Question 14. How Do I Remove A Tick?

Answer :

Insect repellent may be applied to the tick, which will kill it. The tick should be removed with the aid of a pair of fine tipped forceps; the tick needs to be grasped as close the skin of the host as possible, and then forcibly removed.

Question 15. How Do I Prevent Tick Bite?

Answer :

A variety of methods exist to reduce the possibility of tick bite and prevention is best achieved via some form of personal protection. People who bushwalk in tick infested areas need to use an insect repellent, particularly one containing the chemical DEET, and this should be applied regularly to clothing. Wearing light coloured clothing is useful as ticks can be more easily spotted. Bushland locations which are highly tick infested should be avoided.