

Title: VAMPIRE BATS AS POTENTIAL MAMMALIAN SOURCE OF RABIES VIRUS TRANSMISSION

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Keywords Rabies, Vampire Bats

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Review Article

Vampire Bats as potential mammalian source of Rabies virus transmission

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ABSTRACT

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Introduction

Vampire bats primarily feed on blood. This kind of their feeding habit is known as hematophagy. The common vampire bat (*Desmodus rotundus*), the hairy-legged vampire bat (*Diphylla ecaudata*) and the white-winged vampire bat (*Diaemus youngi*) are the three bat species which feed only on blood diet. These bat species are believed to have a common decendency belonging to different genera. They belong to family Desmodontidae, but taxonomists have now grouped them as a subfamily, the Desmodontinae, in the American leaf-nosed bat family, Phyllostomidae. These three species of vampire bats are the inhabitants of South and Latin America.¹

Feeding behavior

Vampire bats feed during the dark hours. They are non-insectivorous and emit low frequency sound waves. The vampire bats mainly feed on the blood source from mammals, birds (hairy-legged vampire bat and white-winged vampire bat) and occasionally human.²

After locating the host, the vampire bat approaches towards the ground. The thermal heat from the body of the host is the warm spot on the body of the host for its biting. It creates a small incision on the skin from where the blood oozes out and does not clot easily. The bat feeds on this oozing fluid.³

Mode of feeding

The vampire bats use its canine and cheek teeth to shave away the body hair of the host. The sharp incisor teeth (upper jaw) makes nearly a 7 mm long and 8 mm deep incision. These incisor teeth lack enamel and are very sharp like a blade.²

The saliva ejected from the bat's mouth during biting contains anticoagulants which prevents the blood clotting from the bite wound. These compounds present

in the saliva also prevent the constriction of blood vessel near the bite wound.

Source for rabies transmission with scarcely reported incidences

Only 0.5% of bats act as carrier for the rabies virus. The bats do not possess rabies originally, but the clumsy and disabled bats unable to take proper flight when come in contact to human beings get infected. The most infected vampire bats causing rabies are found in South America. However, the livestock exposed to bite from bats are more prone to acquire rabies than the bitten human beings.⁴

The latest information report registered in Year 2010 where four children in Peru died after being bitten.⁵ The reported incidences in human beings are rare.

Medical implication

The anticoagulant factors present in the bat's saliva finds its implication in the human medicine. It was reported in a study in the January 10, 2003, issue of Stroke: Journal of the American Heart Association tested a genetically engineered drug called desmoteplase, which uses the anticoagulant properties of the saliva of *Desmodus rotundus*, and was shown to increase blood flow in stroke patients.

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