

Mice mothers devote energies to offspring when life is threatened

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An Iowa State University researcher has found that sick female deer mice devote their energy to producing healthier offspring.

Lisa Schwanz, a researcher in the department of ecology, evolution and organismal biology, studied the size of offspring for both infected and healthy mice and found that females that had been infected with a parasite produced larger offspring than healthy females.

This finding was unexpected because most mammals tend to focus on their own survival when they are threatened with sickness or infection.

Schwanz's research findings have been published in *New Scientist* magazine.

She writes, "Organisms are predicted to decrease investment in current reproduction when parasitism has the greatest impact on current reproductive ability."

In other words, "infection in animals typically leads to responses that invest in the survival, not offspring," Schwanz said.

In deer mice, however, the opposite was happening.

In the study, Schwanz infected 30 female deer mice with a parasite that lowers the future reproductive ability and eventually kills the mice. By producing larger babies now, the mice are probably compensating for

this loss in future reproduction, she said.

She also kept 21 deer mice healthy as a control.

After several weeks, all the mice were paired with mates. When the baby mice were born to both infected and healthy mothers, the offspring were tagged and weighed.

The results show that the offspring of the infected mothers were bigger. In deer mice, larger offspring are more likely to survive and reproduce.

"This shows there is a lot of diversity in the ways animals deal with infection," she said.

As the results of this study are not what she was expecting, and Schwanz feels that makes the results were noteworthy.

"It is really striking to find such strong results," she said.

The type of parasite used in the study was an indirect parasite, meaning that it cannot be passed from one mouse to another. A deer mouse can only get infected from a source other than deer mice. That way Schwanz was able to ensure that mothers did not infect their offspring.

Source: Iowa State University

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