

Fat, thin caterpillars are studied

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A U.S.-led international team of scientists says there's no obesity epidemic among insects and the researchers believe they now know why.

Spencer Behmer, an entomologist with the Texas Agricultural Experiment Station, and colleagues conducted a series of experiments to determine whether caterpillars could adapt to extreme changes in their nutritional environment.

By manipulating the nutritional environment of diamondback moth caterpillars, the researchers found the insects evolved different physiological mechanisms related to fat metabolism. Which mechanism was used depended on whether the caterpillars were given carbohydrate-rich or carbohydrate-poor food.

The scientists theorize caterpillars -- and animals in general -- can evolve metabolically to adjust to extreme nutritional environments.

When the caterpillars were reared in carbohydrate-rich environments for multiple generations, they developed the ability to eat excess carbohydrate without adding fat to their bodies, Behmer said. On the other hand, those reared in carbohydrate-poor environments showed an ability to store ingested carbohydrates as fat.

The research was detailed recently in the Proceedings of the National Academy of Science.

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