

Study: Crickets 'forewarn' unborn babies about spiders

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Just because cricket moms abandon their eggs before they hatch doesn't mean they don't pass wisdom along to their babies. New research in the *American Naturalist* shows that crickets can warn their unborn babies about potential predator threats.

Researchers Jonathan Storm of the University of South Carolina Upstate in Spartanburg and Steven Lima of Indiana State University placed pregnant crickets into enclosures containing a wolf spider. The spiders' fangs were covered with wax so the spiders could stalk the crickets, but couldn't kill them. After the crickets laid their [eggs](#), Storm and Lima then compared the behavior of those [offspring](#) to offspring whose mothers hadn't been exposed to spiders. The differences were dramatic.

When placed into a terrarium with a hungry wolf spider, the crickets born of spider-exposed mothers were more likely to seek shelter and stay there. They stayed hidden 113 percent longer—and as a result had higher survival rates—than offspring from mothers that hadn't been exposed to spiders. Another experiment showed that the "forewarned" crickets were more likely to freeze when they encountered spider silk or feces—a behavior that could prevent them from being detected by a nearby spider.

The results suggest that "the transfer of information from mother to offspring about predation risk, in the absence of any parental care, may be more common than one might think," Storm said.

And it appears that this effect isn't limited to lab-reared crickets. Storm and Lima collected pregnant crickets from the wild—some from habitats where wolf spiders are common, others from places where spiders are scarce. Babies from mothers caught in spider-rich habitats tended to be more cautious around spider cues, much like the lab-reared crickets.

It's not clear from this study exactly how [cricket](#) mothers influence the behavior of their offspring. It's possible, the researchers say, that stressful events like predator attacks trigger the release of a hormone that influences the development of the embryo.

More information: Jonathan J. Storm and Steven L. Lima, "Mothers Forewarn Offspring about Predators: A Transgenerational Maternal Effect on Behavior." *American Naturalist* 175:3 (March 2010).

Provided by University of Chicago

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