

Scared snails opt for single parenthood rather than wait for a mate

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These *Physa acuta* snails prefer to mate with a partner rather than fertilize themselves. But if a suitor is nowhere to be seen, solitary snails change their dating and mating strategy when danger is near. Credit: Photo by Josh Auld

Solitary snails in search of a mate put off parenthood as long as possible in the hopes that a partner will appear. But when *Physa acuta* snails smell predators, they don't wait as long for a mate. Scared snails settle for single parenthood much sooner than their calm counterparts, says a new study by biologist Josh Auld of the National Evolutionary Synthesis Center in Durham, NC.

"They can't wait for a mate indefinitely - especially if the risk of mortality is high," said Auld.

A brown speckled snail found in rivers, lakes, and streams, the

hermaphroditic snail *Physa acuta* has everything it needs to reproduce — each snail is both male and female at the same time. Because each snail can produce sperm as well as eggs, they have more than one option when it comes to having kids - they can either find a mate, or they can fertilize themselves.

Going solo comes at a price. Baby [snails](#) produced by self-fertilization have lower chances of survival. "Self-fertilization is a last-ditch effort," said Auld.

But single parenthood becomes less distasteful when snails detect danger, says a new study in the journal *Evolution*.

To find out how long snails wait for a mate before reproducing on their own, Auld raised more than 700 snails in separate containers in the presence and absence of partners. Chemical cues in the water alert snails to the presence of [predators](#). By spiking containers with water from a tank where crayfish once fed, Auld allowed half the snails in each group to catch a whiff of crayfish cues. He then measured how long they waited before laying eggs.

Single snails waited two months longer than their coupled counterparts before starting a family and laying their first batch of eggs. But they changed their dating and mating strategy when the risk of being eaten seemed high: Scared snails settled for single parenthood much sooner, said Auld. What's more, the ill effects of inbreeding weren't as bad for snails born in water laced with [predator](#) scents.

"The waiting time is shorter when there's a higher risk of mortality," said Auld. "It's better to have inbred offspring than no offspring at all," he added.

Provided by National Evolutionary Synthesis Center

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