

Why do guppies jump? The answer is evolutionary (w/ video)

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Male and female guppies (*Poecilia reticulata*). Image: Wikipedia.

(Phys.org) —If you've owned a pet guppy, you know they often jump out of their tanks. Many a child has asked why the guppy jumped; many a parent has been stumped for an answer. Now a study by University of Maryland biologist Daphne Soares reveals how guppies are able to jump so far, and suggests why they do it.

Soares, an expert in the [brain circuitry](#) that controls animal behavior, decided to study jumping [guppies](#) while researching unrelated [evolutionary changes](#) in the brainstems of *Poecilia reticulata*, a wild guppy species from the island of Trinidad and the forebear to the familiar pet shop fish. During that 2011 project, a guppy jumped out of a laboratory tank and into Soares' cup of chai.

"Fortunately it was iced chai and it had a lid on, so he stayed alive," Soares said. "That was enough for me. I had to use a [high speed camera](#) to film what was going on."

Soares, an assistant professor of biology, and University of Maryland biology lecturer Hilary S. Bierman used high speed videography and digital imaging to analyze the jumping behavior of nine guppies from the wild Trinidadian species.

In a research paper published April 16 in the online peer-reviewed journal *PLOS One*, Soares and Bierman reported the jumping guppies started from a still position, swam backwards slowly, then changed directions and hurtled into the air. By preparing for the jump – a behavior never reported before in fish, according to the two biologists – the guppies were able to jump up to eight times their body length, at speeds of more than four feet per second.

Soares and Bierman concluded that guppies jump on purpose, and apparently not for the reasons other fish do – to escape from predators, to catch prey, or to get past obstacles on seasonal migrations.

The biologists hypothesize that jumping serves an important evolutionary purpose, allowing guppies to reach all the available habitat in Trinidad's mountain streams. By dispersing, they move away from areas of heavy predation, minimize competition with one another, and keep the species' genetic variability high.

"Evolution is truly amazing," said Soares, who spent her own money on fish food, but otherwise conducted the study at no cost.

More information: "Aerial jumping in the Trinidadian guppy (*Poecilia reticulata*)," Daphne Soares and Hilary S. Bierman, published April 16, 2013 in *PLOS One* www.plosone.org/article/info

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