

# Fish study links brain size to parental duties

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A male common stickleback and his babies are shown. Credit: Nicole Bedford

Male stickleback fish that protect their young have bigger brains than counterparts that don't care for offspring, finds a new University of British Columbia study.

Stickleback fish are well known in the [animal kingdom](#) for the fact that the male of the species, rather than the female, cares for offspring. Male

[sticklebacks](#) typically have bigger brains than females and researchers wanted to find out if the difference in size might relate to their role as caregivers.

In the study, published recently in *Ecology and Evolution*, researchers compared regular male sticklebacks to male white sticklebacks, which do not tend to their [offspring](#). They found evidence that this change in male behaviour – giving up caring for the young – occurred at the same time the white stickleback evolved a smaller brain.

"This suggests that regular sticklebacks have bigger brains to handle the brain power needed to care for and protect their young," says Kieran Samuk, a PhD student in UBC's Dept. of Zoology and the study's lead author. "This is one of the first studies to link parental care with brain size."

The white stickleback is a relatively young species that only diverged from other sticklebacks 10,000 years ago, offering researchers some insight into how quickly brains can evolve.



A white stickleback (above) and common stickleback are shown. Credit: Kieran Samuck

"Our study tells us that brains might change in very drastic ways in a relatively short period of time. This helps us understand how physical changes such as [brain size](#) can lead to more complex behavioural changes," says Samuk.

**More information:** *Ecology and Evolution*,  
[onlinelibrary.wiley.com/doi/10 ... 2/ece3.1175/abstract](https://onlinelibrary.wiley.com/doi/10.1111/ece3.1175/abstract)

Provided by University of British Columbia

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