

Transparent fish helping to shine new light on how we move

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(PhysOrg.com) -- The natural transparency of young zebrafish has allowed neuroscientists to use light, much like we use a remote control, to turn on and off neurons that may be responsible for how we move our bodies.

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Dr Ethan Scott's young team of researchers at UQ's School of Biomedical Sciences are working with light sensitive proteins which, when expressed in these neurons, causes them to be activated or inactivated by light.

"There are a couple of reasons why we study zebrafish. One is that certain parts of their brain and [spinal cord](#) are arranged similarly to those in humans," Dr Scott said.

"Secondly, zebrafish are transparent when they are very young, so we can look at structures inside of them, while they are still alive and intact."

Dr Scott recently had a paper he collaborated on published in *Nature*, which demonstrated how light could be used to stimulate specific neurons that led to spontaneous swimming behavior in zebrafish.

"My role in the project was to develop transgenic tools that they used in their study to allow for the expression of various light sensitive proteins in specific neurons," he said.

"It is these same line of tools that I brought here to the University of Queensland, to learn more about different neurons and their functions, in particular more complex circuits related to coordinated movement."

"In the long run such research should provide insight into how the healthy [brain](#) produces certain behaviours, and how these processes go wrong in patients with mental disorders."

Given that such a goal is a long way off, Dr Scott and his team are just happy to try and understand the purpose of other neurons associated with movement in [zebrafish](#).

"In the next 10 years the challenge will be to keep track of all the tools that are being developed and use these wisely to address the functions of behavioural circuits," he said.

Provided by University of Queensland ([news](#) : [web](#))

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