

Humble zebrafish helping researchers find new treatments for obesity and osteoporosis

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Dan Fraher

The fate of people suffering with obesity or osteoporosis could lie in the hands of Deakin University researchers who are looking into the way fat and bone cells develop, with the assistance of the humble zebrafish.

Dan Fraher, a [PhD student](#) with Deakin University's School of Medicine (Metabolic Research Unit), believes that manipulating the growth of fat and bone cells could open up new treatments for these debilitating diseases.

“With the rates of obesity and osteoporosis rising throughout the world there is a need to look at new treatments for people suffering these

conditions,” he said.

While [obesity](#) and [osteoporosis](#) are two different diseases, they do have a lot in common, at least at the cellular level.

“Fat cells and bone cells originate from the same stem cell population,” Mr Fraher explained.

“My project entails trying to force the fate of the stem cells to become bone cells rather than fat cells. Creating more bone cells could be a treatment option for either disease.”

Mr Fraher’s research uses the zebrafish to test two genetic signals involved in the development of fat and [bone cells](#), endocannabinoid and retinoic acid.

“Zebrafish are a great model to work with as they have biological structures, such as bone and fat cells, that are similar to humans,” Mr Fraher said.

“Preliminary results in treating the [zebrafish](#) with endocannabinoid and retinoic acid have shown that with these chemicals we can increase or decrease their bone and fat content.

“It is early days in the research but these results are a promising sign.”

Provided by Deakin University

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