

## CAN EXERCISE IMPROVE FISH WELFARE?

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Do the various effects of exercise in fish, include improvements in welfare? Animal welfare is a complex concept with varying definitions. A commonly used framework, serving as a basis for ensuring good animal welfare, is known as “The Five Freedoms”, which are as follows:

1. Freedom from hunger or thirst
2. Freedom from discomfort
3. Freedom from pain, injury or disease
4. Freedom to express (most) normal behaviour
5. Freedom from fear and distress

We will examine the effects of exercise upon fish in respect of the Five Freedoms, reviewing various relevant observations related to exercise, such as lower baseline cortisol levels and reduced levels of aggression. The possibility that exercise may at times lead to poor welfare will also be examined.