

Identifying Alternative Marine Toxicity Testing Methods: Can Mysids and Fish Embryos Replace Larval Fish?

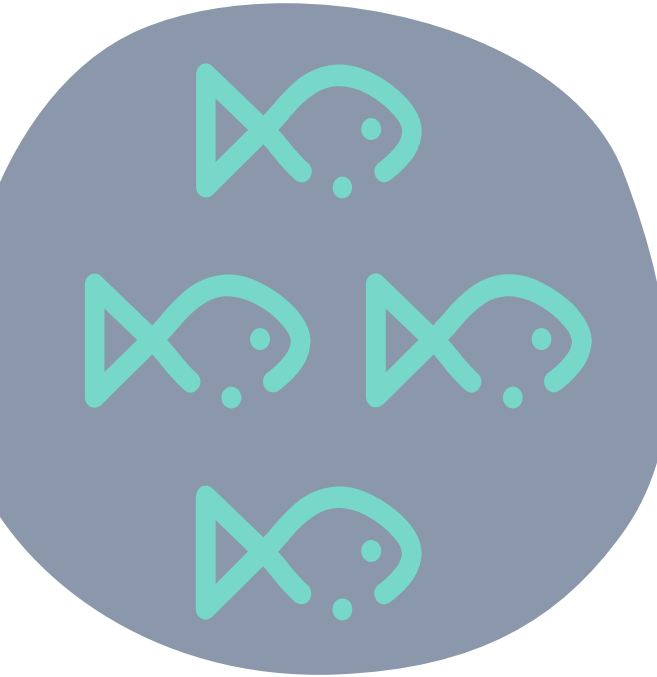
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Introduction



Routine toxicity testing is necessary to keep marine environments healthy

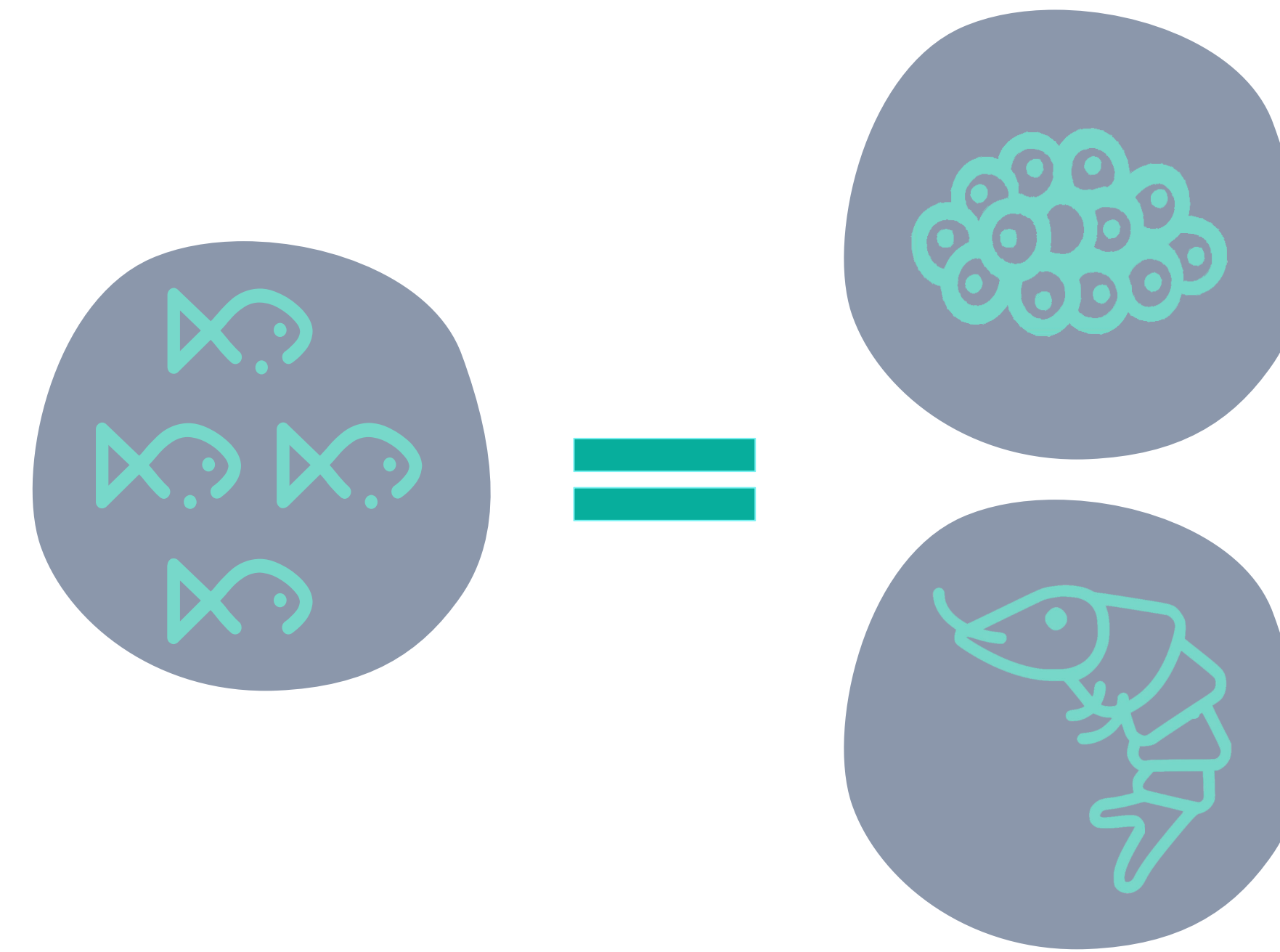
Current toxicity testing methods involve the use of larval fish, which is shown to cause stress to the animals



There is a need to improve animal welfare

Goals and Objectives

The objective is to determine if the FET test or the Mysid test is a viable alternative to the standard LGS test for Inland Silversides in marine toxicity testing.

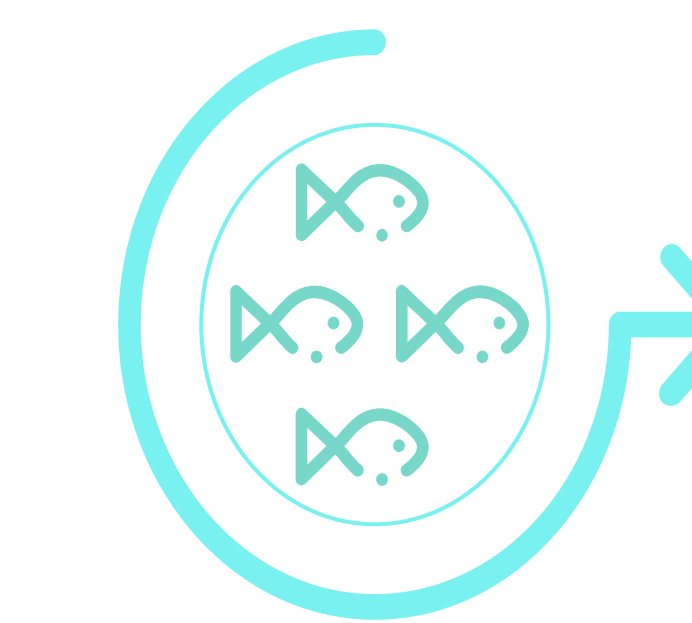
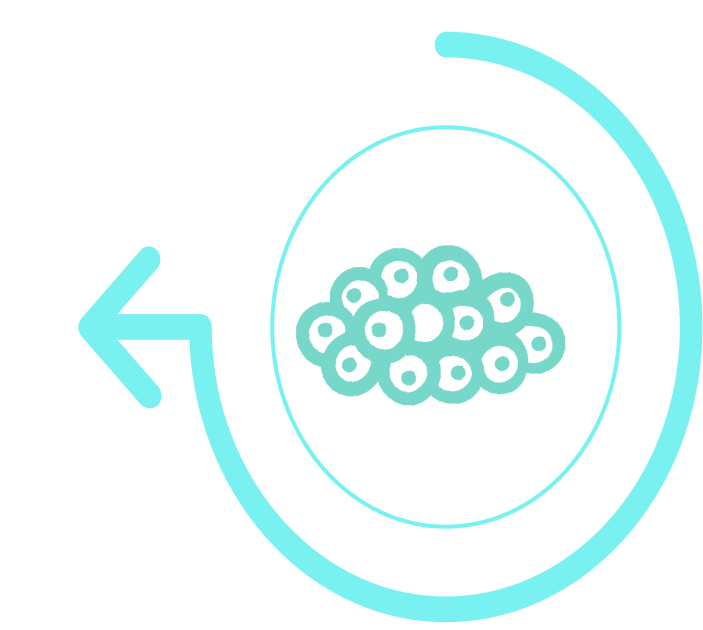
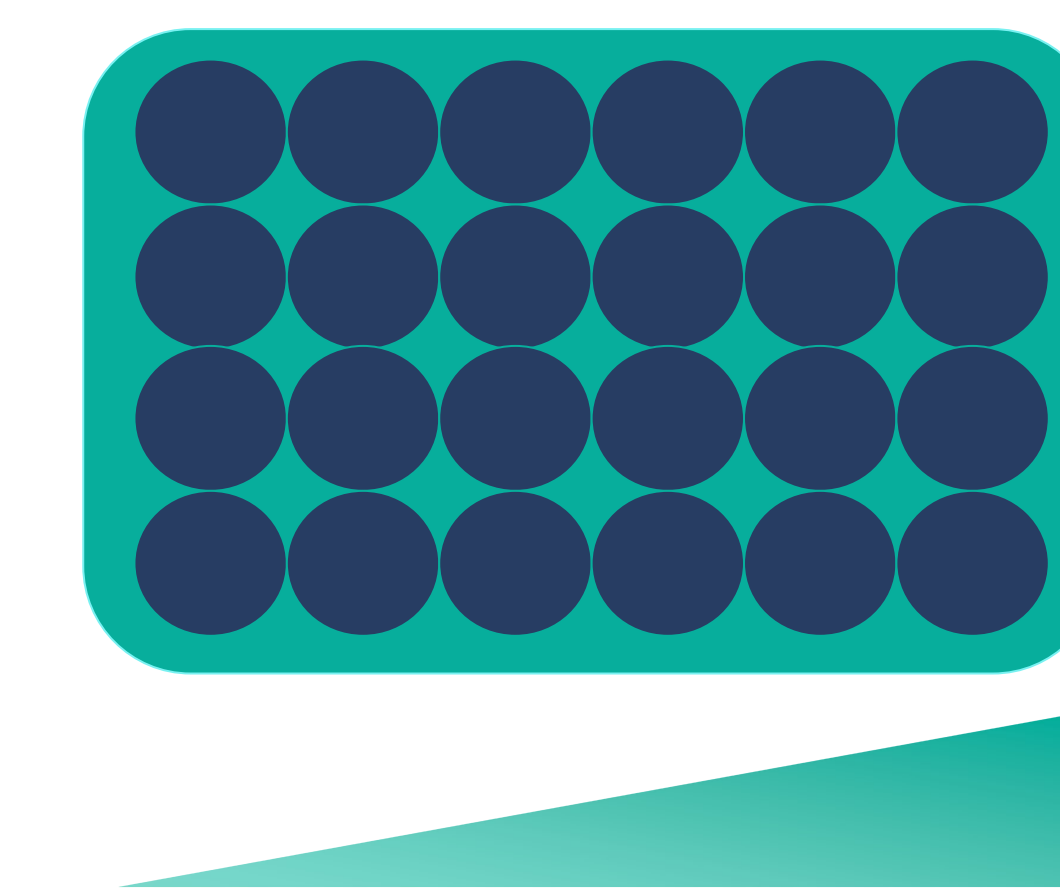


Approach



Mysid Test

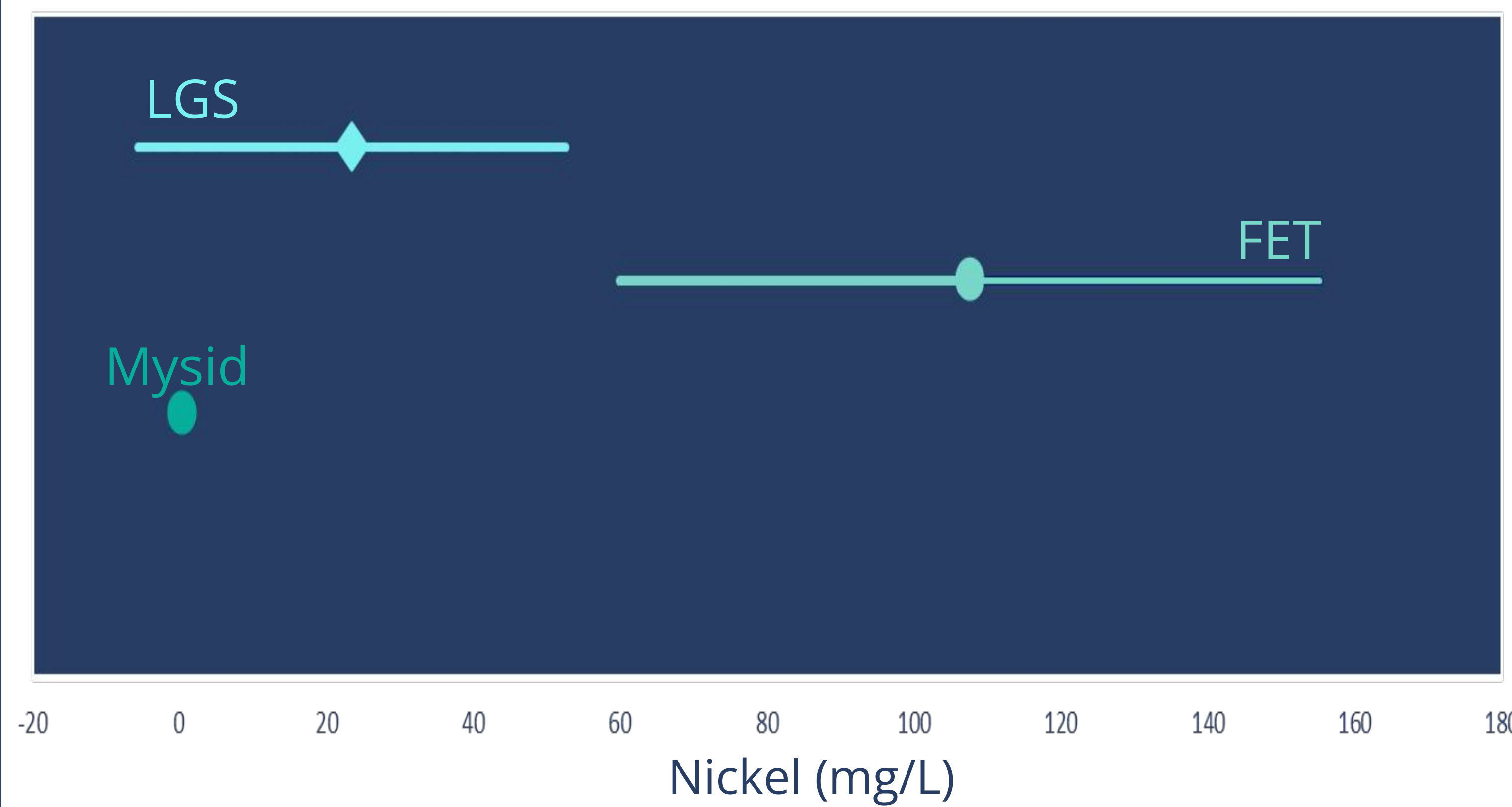
Fish Embryo Toxicity Test



Larval Growth & Survival Test

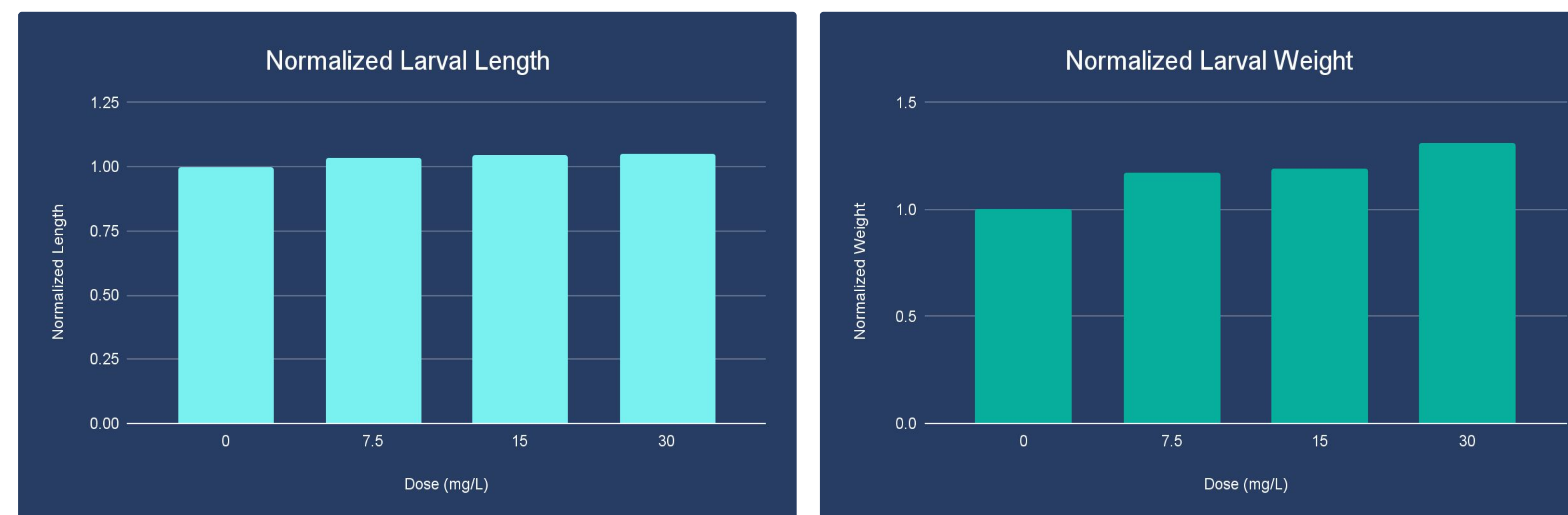
Results

Lethal Concentration: 50% Mortality

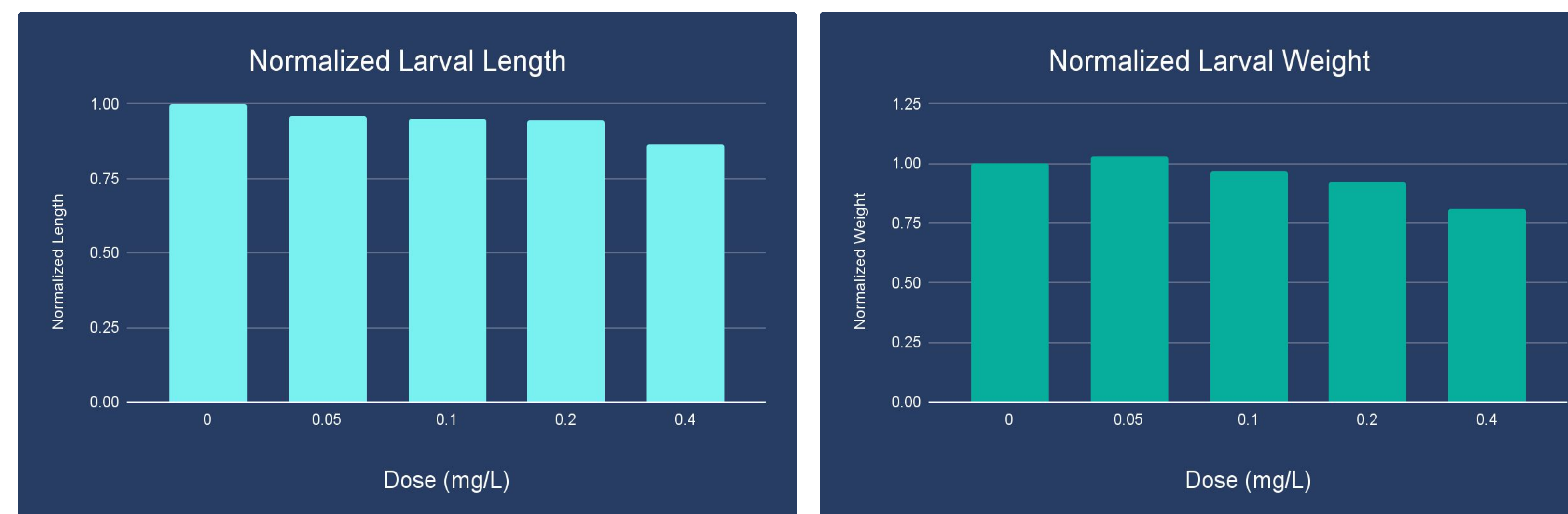


The LC50 value for the FET test is statistically different from that of the LGS test, so it would not be considered as a replacement for the LGS test. However, the Mysid test LC50 value is statistically the same as the LGS LC50 value, and should be considered when developing an alternative to the LGS test.

Larval Growth and Survival Test Growth Statistics



Mysid Test Growth Statistics



Future Directions



Additional Replicates



Effect of Nickel on Health of Animals



Other Chemicals