The Effect of Transgenerational Epilepsy on Dementia Pathology in *C. elegans*

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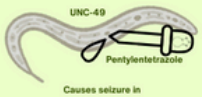
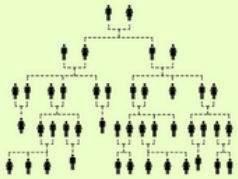
Research Question: How does dementia pathology in c. elegans change due to epilepsy over many generations?

Hypothesis: If more generations of C. elegans are given seizures, then the future generations will have more dementia pathology because of inherited epigenetic modifications



Control: testing decision-making



Training: Using OP50 attractant to train *c. elegans*

Testing: *c. elegans* will move to the side that had an attract[ant] the training

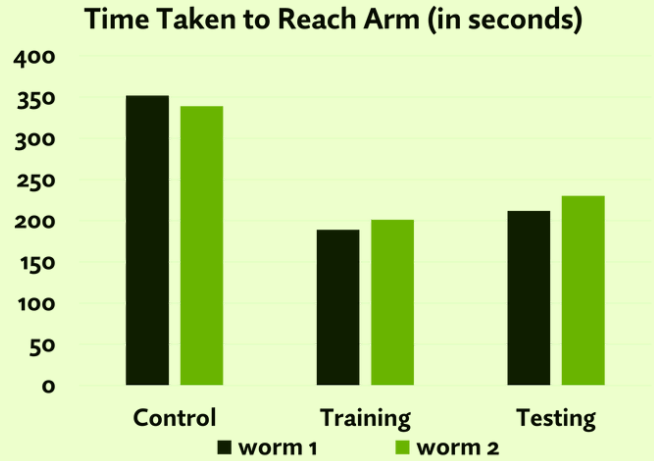
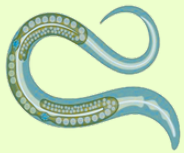


Figure 2: Control – time recorded to reach any side of the maze. Training – Time taken to reach arm with E. coli. Testing – Time taken to reach arm that had E. coli

All wild type worms demonstrated spatial learning ability

Methodology



Synchronize worms to isolate eggs. Wait 2 days to obtain worms of same age

Make maze using mold

Put C. elegans in maze

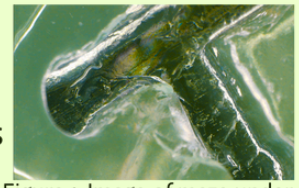


Figure 1: Image of maze under microscope with worm in one arm

Using the same worm,
Repeat in a maze with E. coli
Repeat again without E. coli

- Worms required a significant amount of time to decide an empty maze
- Training maze times were the fastest due to chemosensory cues
- Due to a decrease in time between the control and the testing, worms demonstrate the ability to learn spatially