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# The Effects of Early Life Stage Thyroid Disruption on Reproductive Behaviors in Fathead Minnows (*Pimephales promelas*)

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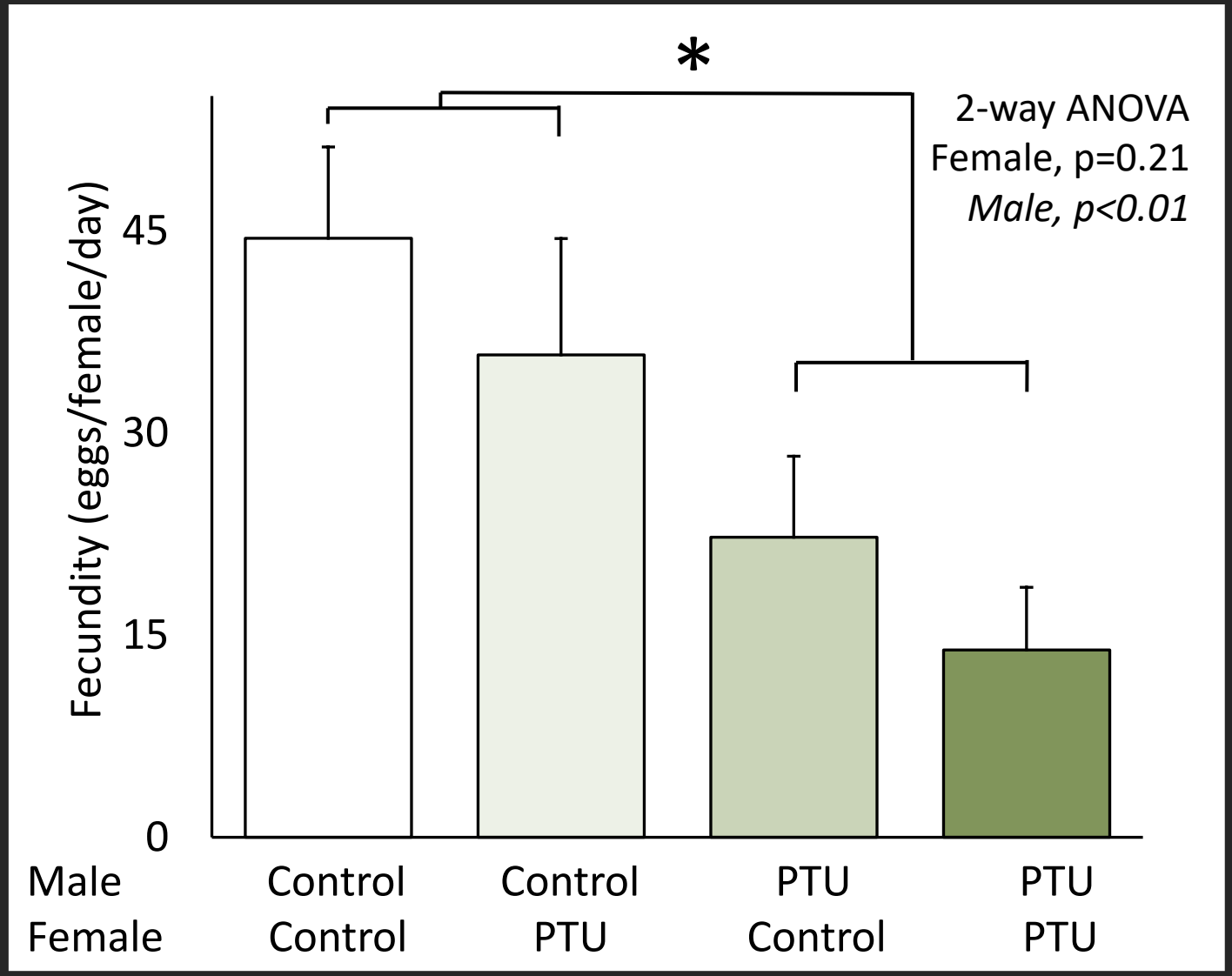
# Background and Introduction

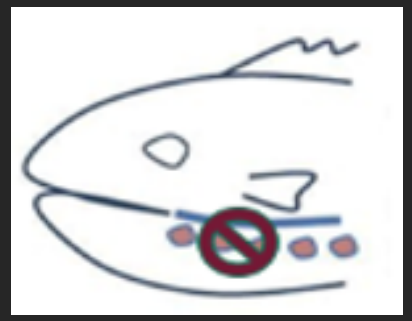
In males, but not females, early life stage thyroid disruption leads to a decrease in fecundity

Early life stage thyroid disruption alters the expression of genes associated with neurogenesis



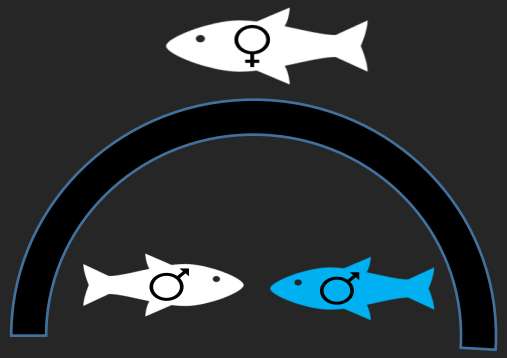
# Study Objective

Determine if reproductive behaviors differ between exposed and control males

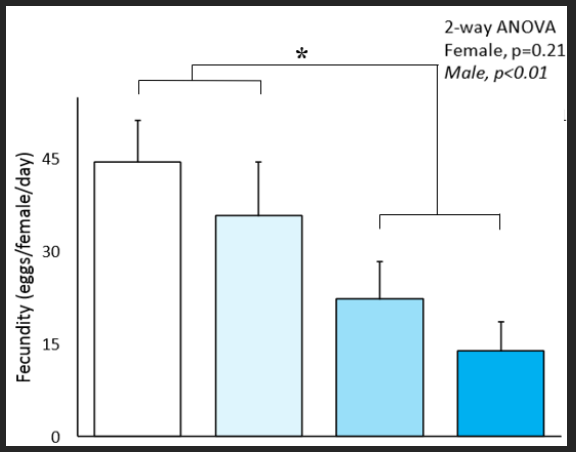


Early-life-stage thyroid disruption

✓ Altered expression of genes involved in neural development

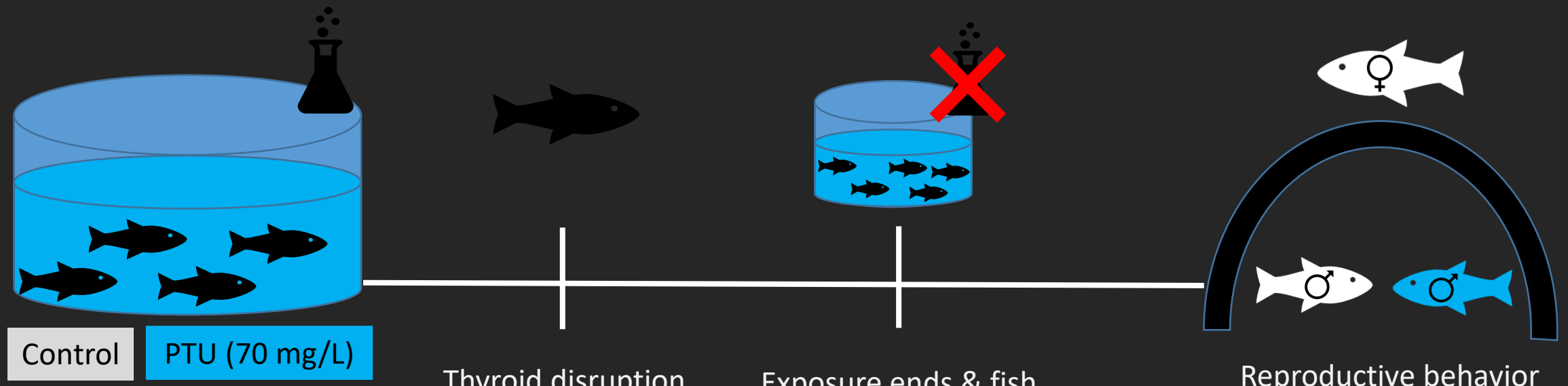


? Altered reproductive behavior




✓ Reduced fecundity

# Experimental Design



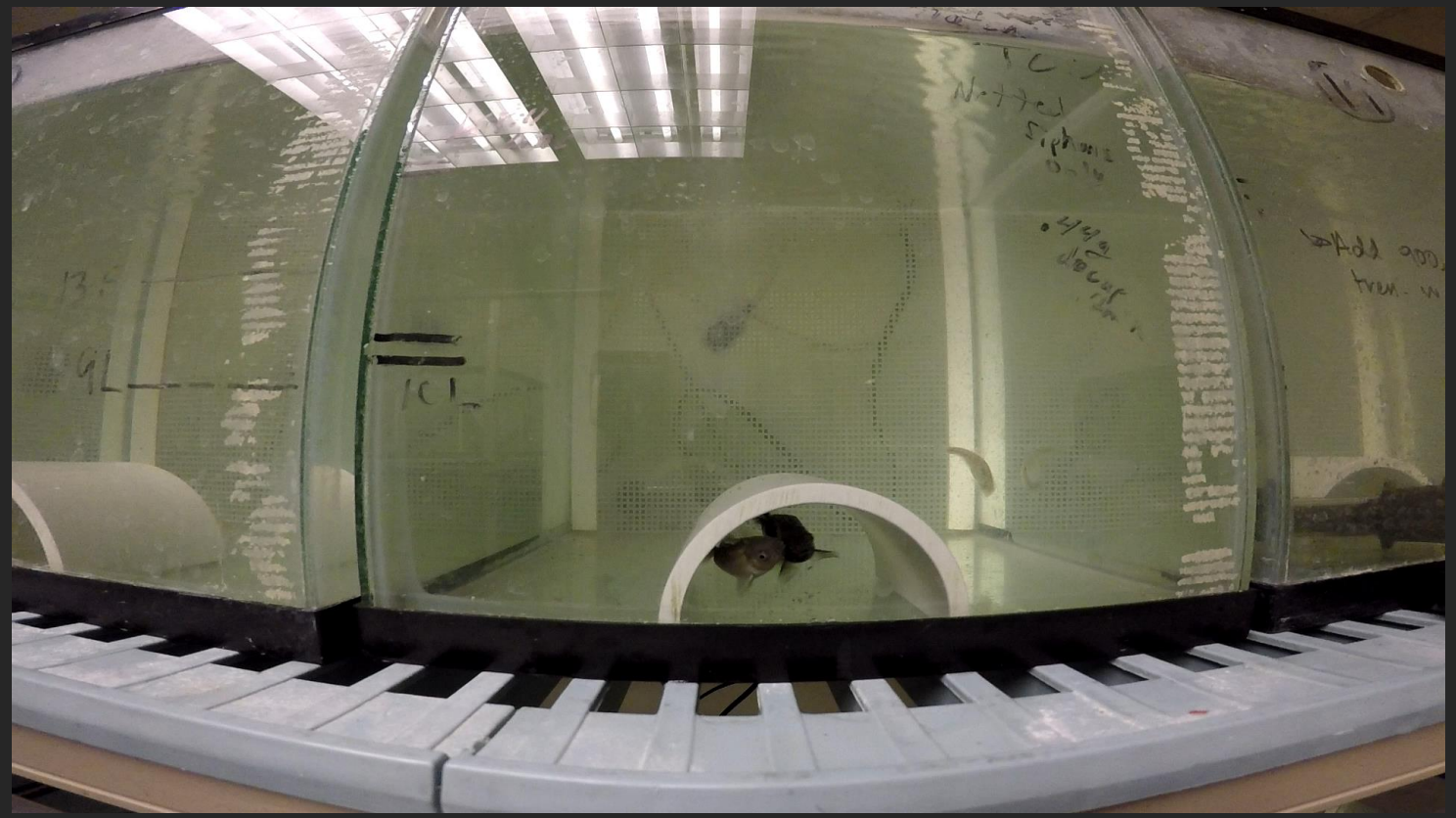
# Assessment of Reproductive Behaviors

Competition Behaviors

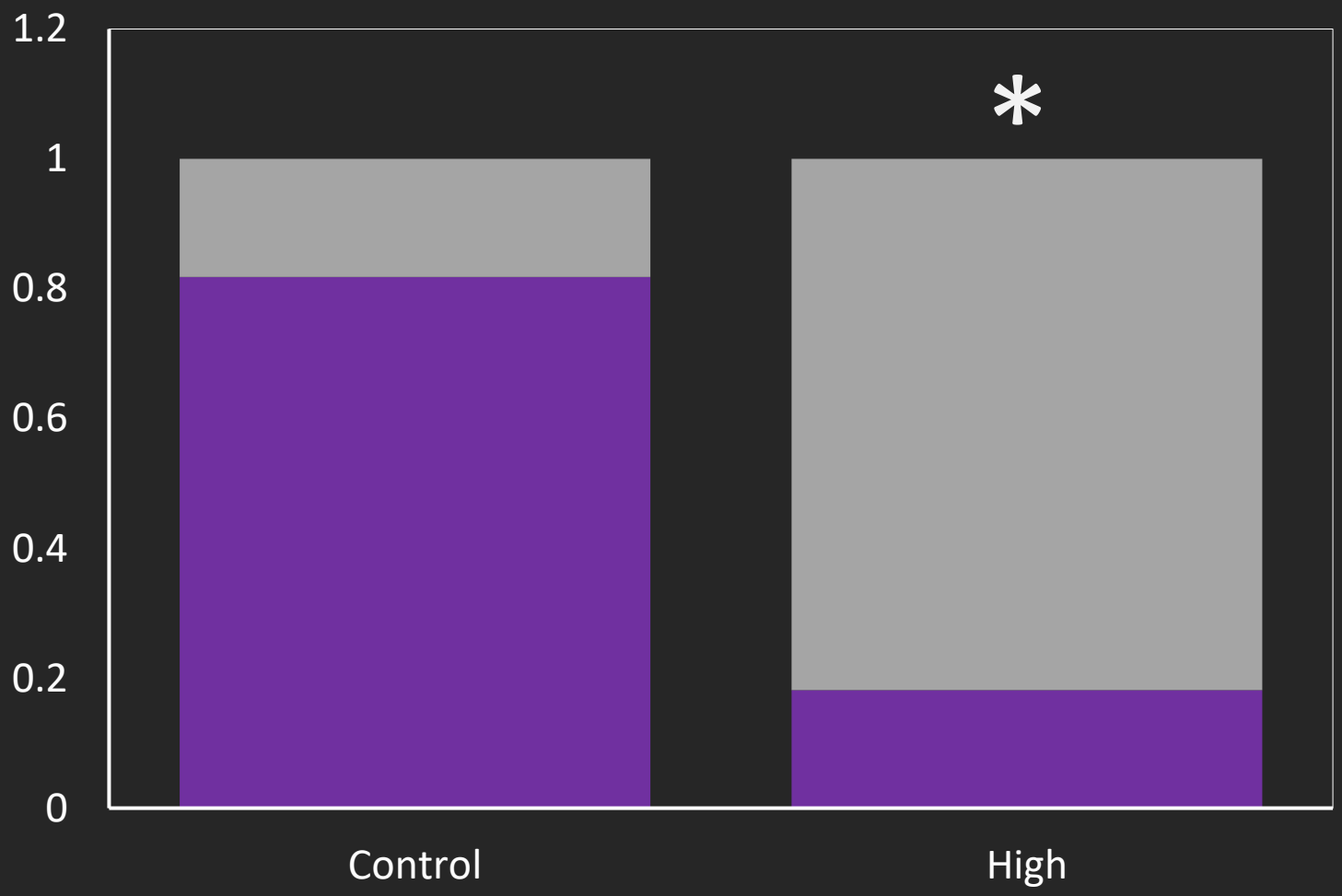
- Headbutting
- Chasing
- Tail-whipping

Courtship Behaviors

- Headbutting
- Lateral Display
- Spawning



# Assessment of Reproductive Behaviors



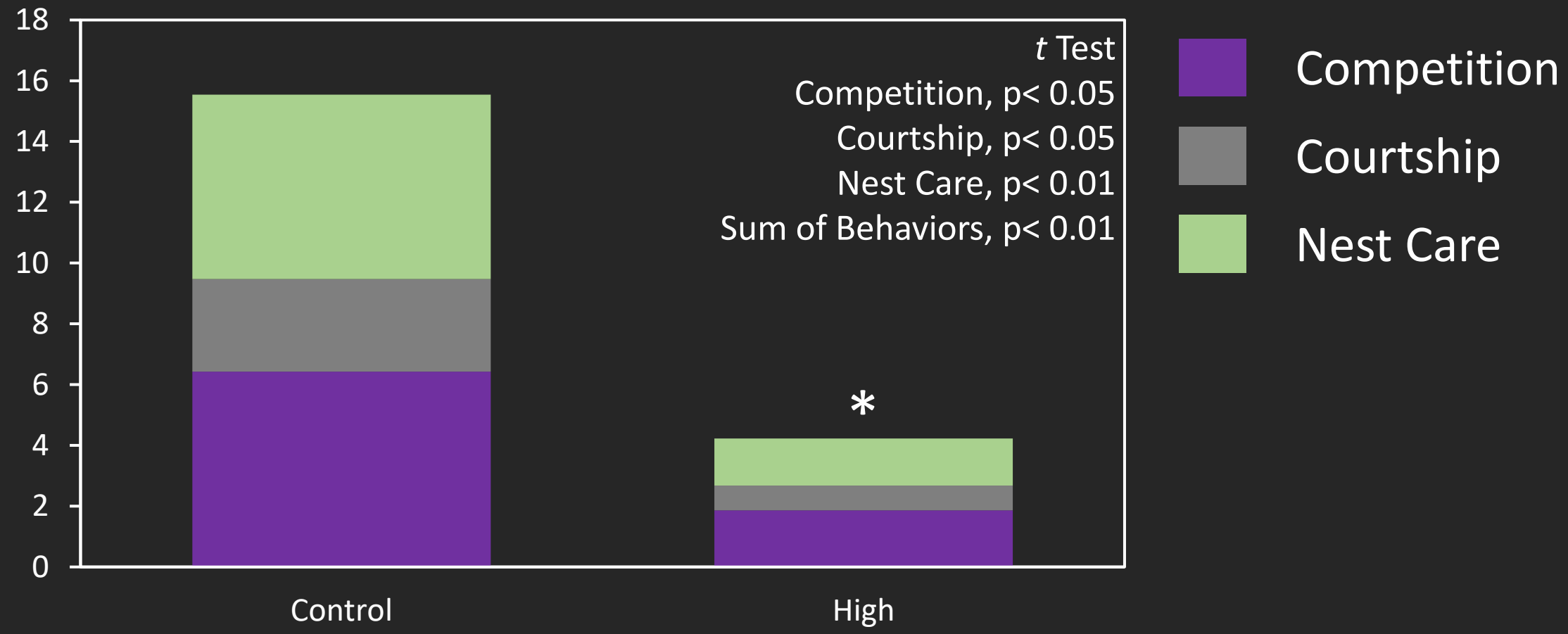

Win

Loss

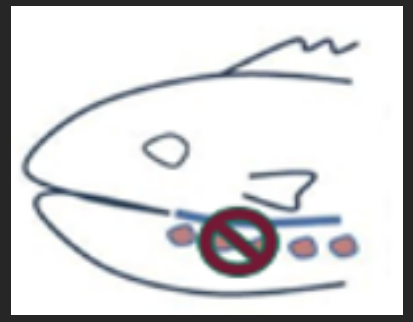
Chi Square Test

$p < 0.01$

# Assessment of Reproductive Behaviors

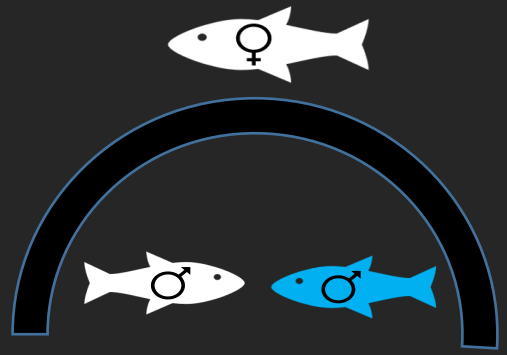


# Conclusions

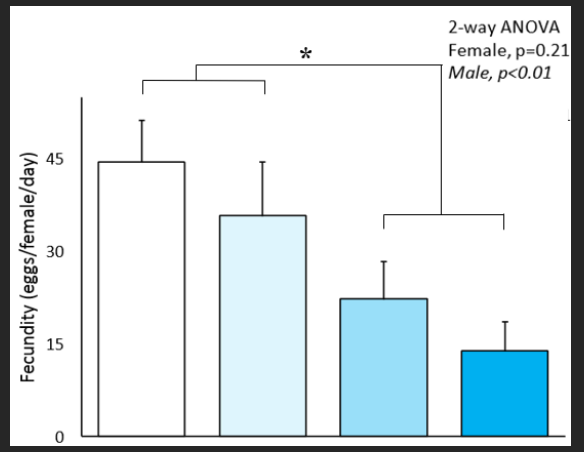


Early-life-stage thyroid disruption

✓ Altered expression of genes involved in neural development



✓ Altered reproductive behavior




✓ Reduced fecundity

Early-life-stage thyroid disruption alters male reproductive behavior and may be responsible for previously-documented alterations in fecundity

# Questions?

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