

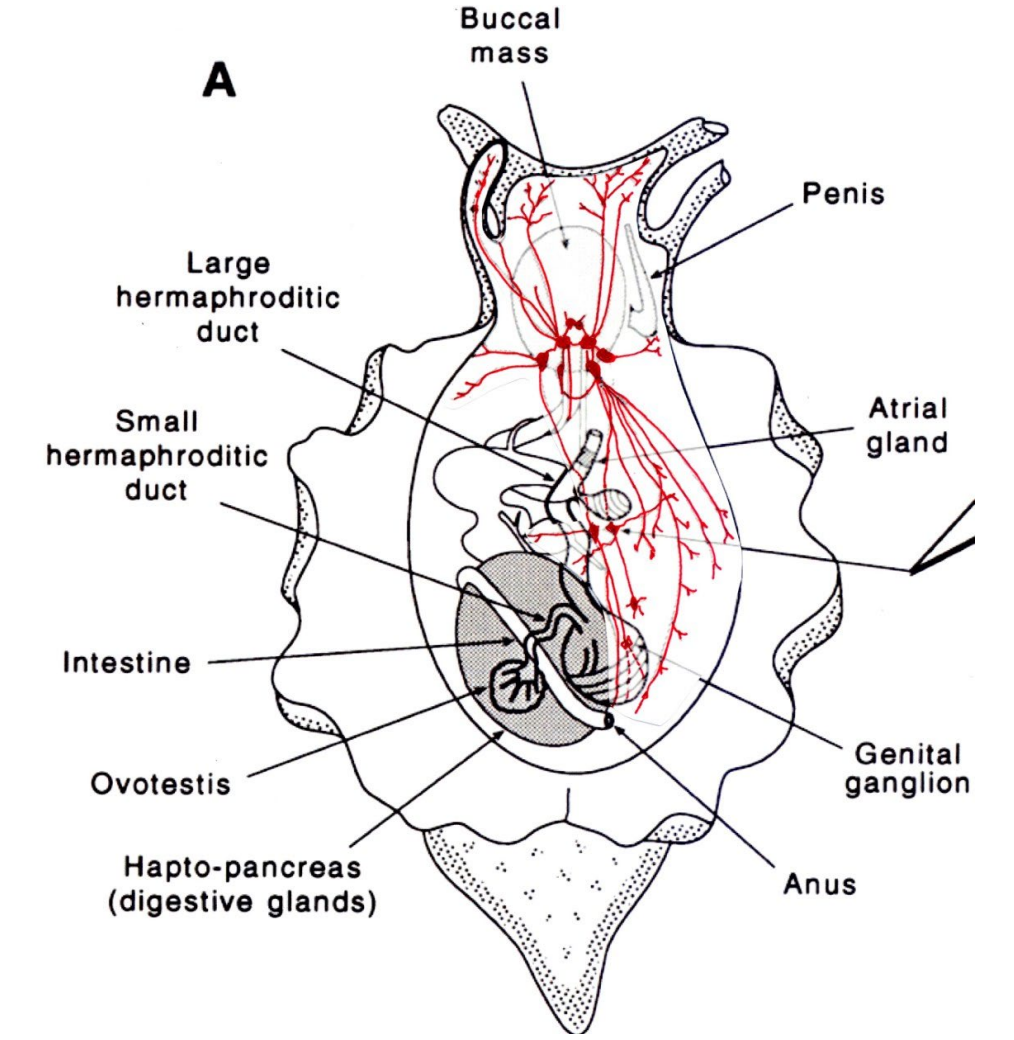


The Effects of Chronic Hypoxia on *Aplysia californica*

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Introduction

- *A. californica* is a model organism for neurological research due to their simple nervous system
- The overall goal of this study was to record the effects of chronic hypoxia on the physiology of *A. californica*



Anatomy of *Aplysia californica*

Methods

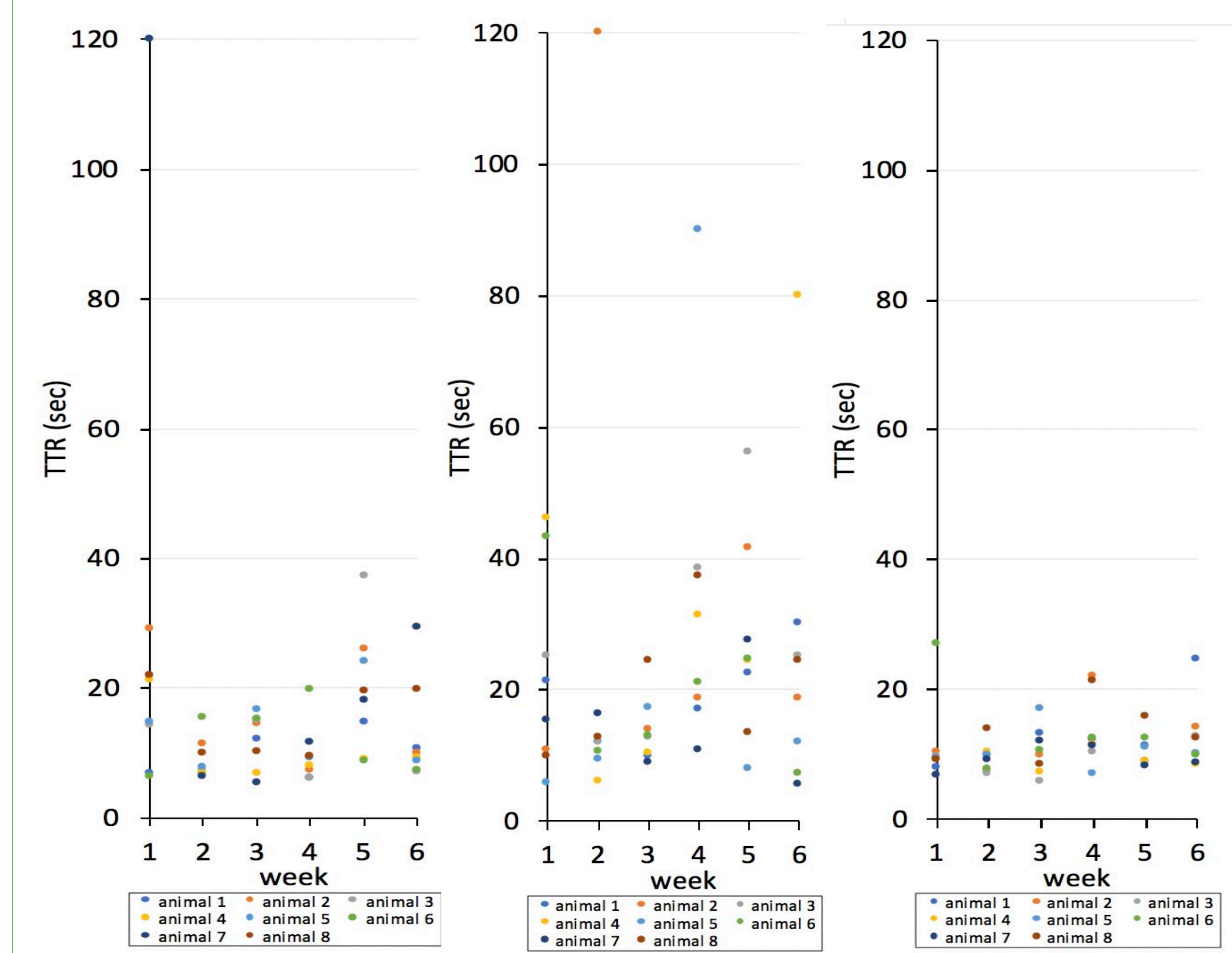
The righting reflex (TTR) and tail withdrawal reflex (TWR) were studied in sea hares each week for 6 weeks during repeated exposures to air-induced hypoxia. Chronic hypoxia, 1-time hypoxia, and no-hypoxia control sibling animal behaviors were compared.



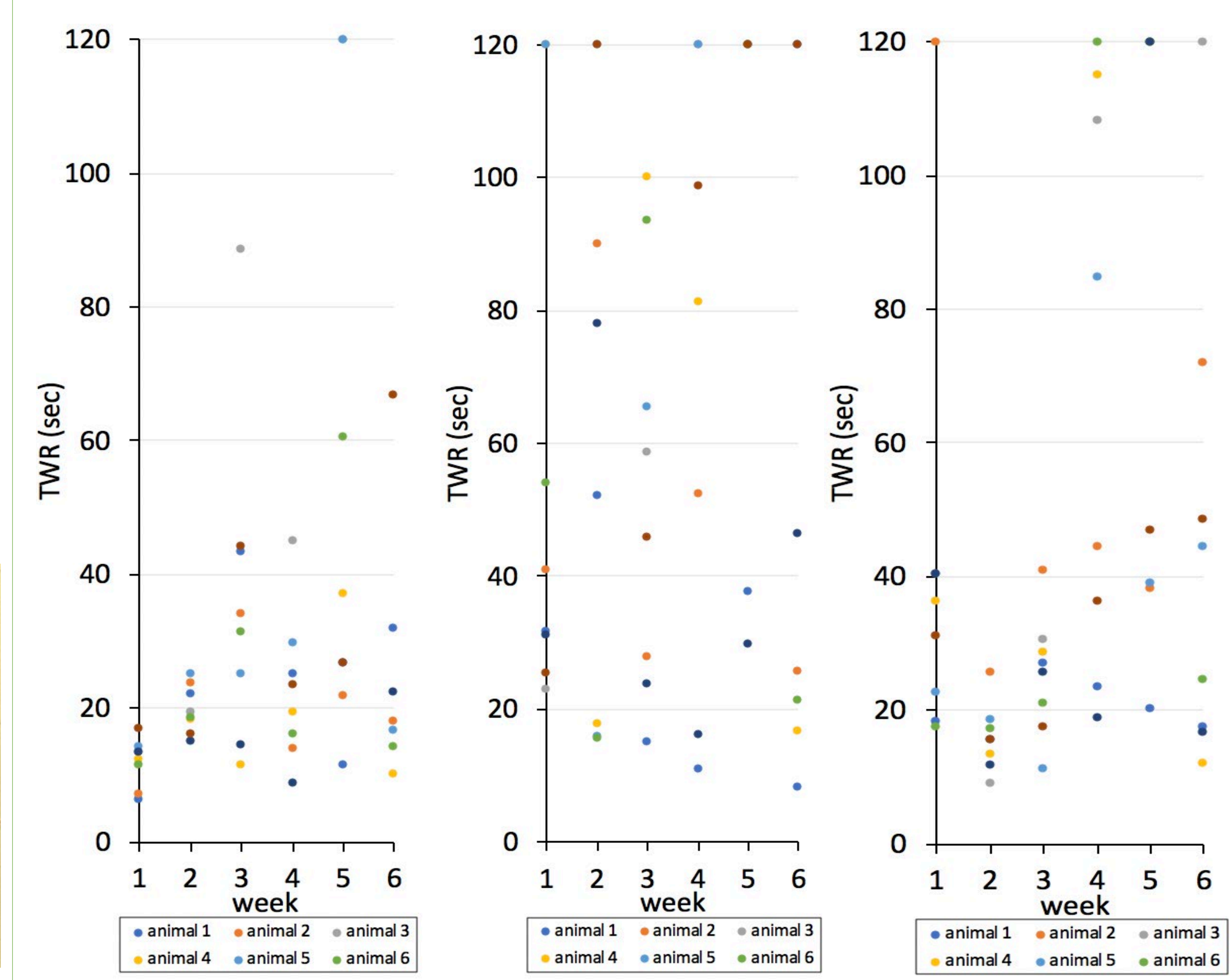
A. californica performing a TTR reflex

Results

TTR reflex times for the animals before, immediately after, and the morning following hypoxic exposure for 6 weeks.

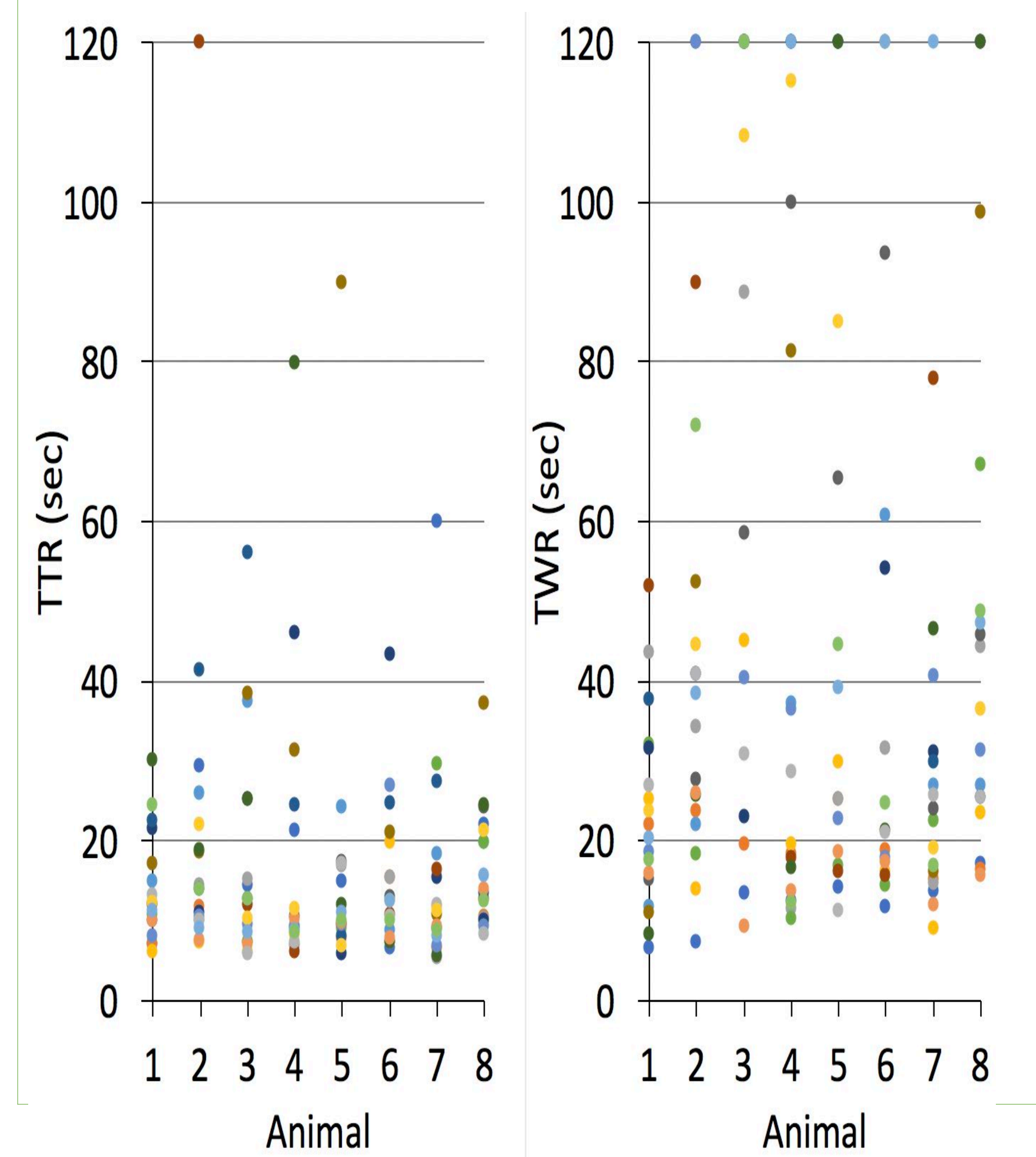


TWR reflex times for the animals before, immediately, after, and the morning following hypoxic exposure for 6 weeks.



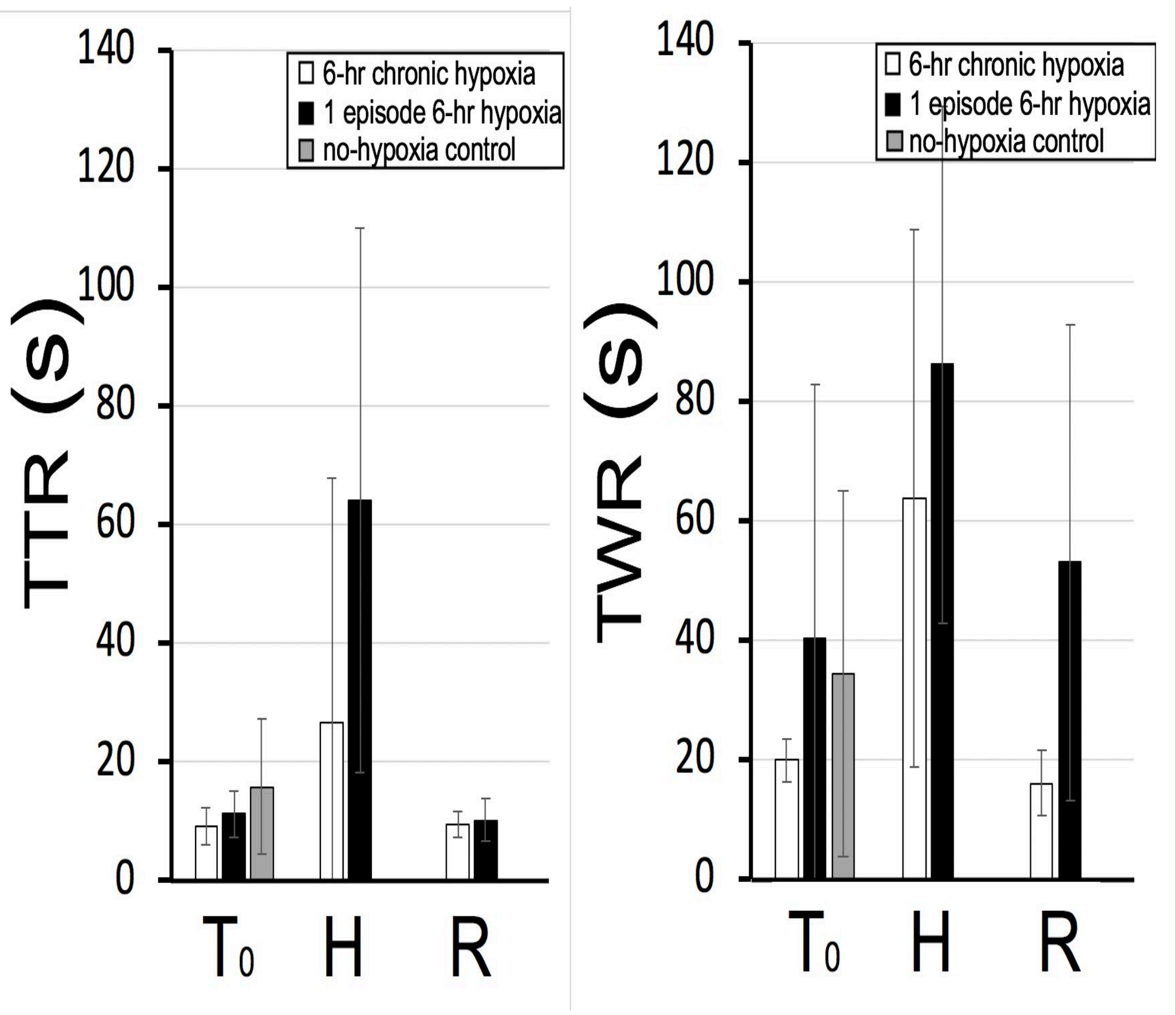
Results

All TTR and TWR times for animals exposed to 6 weeks of hypoxia



Results

Mean+SD reflex behavior times for chronic, 1-time, and no hypoxia animals. Reflexes are just before hypoxia (T_0), immediately after hypoxia (H), and the following morning (R).



Conclusions

Overall, it was determined that neurological functions were negatively impacted as the weeks progressed. However, there were significant differences in TTR and TWR recovery before and after hypoxia. Due to the fact that these reflexes recruit different neurons, it was determined that sections of the *Aplysia* nervous system are impacted differently. Furthermore, it was also concluded that recovery from hypoxic exposure was highly individualistic. Certain animals adapted to chronic hypoxia far more effectively than others.

Acknowledgements

Special thanks to the National Resource for *Aplysia*, Dr. Lynne A. Fieber, Dr. Michael C. Schmale, Dr. Justin B. Greer, and NIH grant P40 OD010952.