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Dear Editor,

Please consider our manuscript entitled “*The effect of prenatal environment on brain metabolic function and perception in a lizard*” for publication in ***Proceedings of the Royal Society B: Biological Sciences.***

Cognitive processes are crucial for animals’ survival and reproduction. However, individual differences often emerge due to several factors among which prenatal conditions appear particularly influential. Environmental conditions during early life can significantly affect cognition through alterations in brain function and physiology. While temperature and stress hormones are recognised as factors influencing cognitive abilities, the interaction between these factors remains poorly understood. Additionally, the physiological mechanisms shaping cognition in some taxa are not yet well defined. In our study, we investigated the effects of early temperature and stress hormones on brain metabolic function and perceptual abilities in the Delicate skink. We found that prenatal CORT and temperature shape oxidative damage in the brain, while metabolism and ROS production remains unaffected. Perceptual abilities are influenced by CORT but are surprisingly decoupled from brain metabolic function or oxidative damage.

Our novel findings have significant implications for the field of physiology and cognitive ecology and are likely to inspire new research on how developmental environments influence cognition. This is essential for understanding animal responses to environmental changes. Given the broad relevance of our findings, we believe this makes our work particularly suitable for a journal like *Proceedings of the Royal Society B: Biological Sciences*, and we hope you share this perspective.

We confirm that this manuscript has not been published elsewhere and is not currently under consideration for publication in any other journal. All authors have approved the manuscript for submission and declare no conflicts of interest.

Thank you for considering our manuscript for publication. We look forward to hearing from you.

Sincerely,

Pablo Recio Santiago

Research Associate

Flinders University