**Ethics**. All experimental procedures followed approved protocols by the ANU Animal Ethics Committee (ARA2019/17). Lizards were caught under NPWS permit LT201917.

**Data accessibility**. Experimental and meta-analytic datasets are available from: <https://github.com/kris-wild/Lampro_project.git> and archived in Zenodo (<https://doi.org/10.5281/zenodo.7700383>; Zang, Wild, Pottier et al.55)

**Authors’ contributions**. K.H.W., R.Y.Z., P.P., M.I.C., S.N. and D.W.N conceived, designed and executed the project. K.H.W, R.Y.Z., and P.P. conducted the statistical analysis. K.H.W., R.Y.Z., and D.W.N wrote the paper. All authors provided critical feedback on previous versions of the paper.

**Competing interests**. We declare no competing interests.

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