P6 - Predation pressure as a determinant of locomotor performance: Lizards run slower on islands without predators

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Endemic reptile species confined to islands are both ecologically unique and more likely to be endangered. More than 60% of the species known to have gone extinct to date used to occur on islands (Spatz et al. 2017). While there are several reasons why island reptiles tend to be threatened, susceptibility to exotic species, such as invasive predators, is an important contributor. Earlier research has suggested that loss of antipredator defenses in island species is at least partially responsible for this. Locomotor abilities, including sprint speed and stamina, are traits that are essential to escape predation. Here we tested the hypothesis that island species that have evolved in predator-poor environments have lost their ability to run fast – a key trait for escaping invasive predators. We examined maximal sprint speed and maximal stamina in the Aegean wall lizard (*Podarcis erhardii*). The species is widespread throughout the Aegean archipelago (Greece, Mediterranean Basin) and is found on islands with varying levels of predation pressure making it an ideal study organism. We show that on islands with predators, lizards run at higher speeds relative to lizards on predator-free islands. Not all predator categories however are of equal importance: presence of mammalian - but not other - predators was significantly associated with higher sprint speeds in island lizards. In contrast to sprint speed, stamina was not related to predation environment suggesting that this is not a trait that is under selection by predators. Stamina may therefore be less useful for predicting endangerment by introduced predators. The results of this study suggest that conservation funding may be best allocated to protect the most susceptible wildlife populations that live explicitly on low-predation islands as well as on islands isolated for long periods of time.