

Waitin' on a sunny day: lizards pay steep thermal costs to hide from predators

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Most animals face predators in their daily life and have evolved antipredator strategies that promote survival and minimise escaping costs. For example, many animals hide into burrows or crevices into which their pursuers cannot access. Ectotherms rely on external sources of heat to raise their body temperature, and it can be expected that they pay costs in terms of heat loss when staying hidden. Indeed, refugia are often thermally more unsuitable than the external environment. Unfortunately, it is challenging to quantify ectotherms body temperature both before and after a predation attempt and the thermal costs of hiding. Here we took advantage of infrared technology to measure the body temperature of the Ocellated lizard *Timon lepidus* before individuals escaped and hid from a simulated predation attempt, and after they emerged back from the refuge. We quantify the drop in body temperature that lizards experienced while hiding and used multi-model inference to show that heat loss largely depends on the time spent in the refuge. In turn, the time spent hidden depends on the initial lizards' body temperature and the temperature inside the refuge. Warmer lizards or lizards hiding in warmer refugia spent more time hidden. All other variables considered did not contribute significantly to heat loss or time spent hidden. Thus, lizards perceive and evaluate the thermal quality of their refugia and integrate this information to react to predation attempts. Such findings have important implication concerning microhabitat choice and territorialism in lizards.