

The Impact of Physiological Demands on Foraging Decisions Under Predation Risk: a Test With the Whelk *Acanthina monodon*
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Abstract

We study whether and how physiological demands affect foraging decisions under predation risk, by evaluating the effect of starvation on the rate of food consumption and prey-size preferences and the potential trade-off between starvation and predation risk on foraging behavior in the whelk *Acanthina monodon*, a gastropod inhabiting the intertidal rocky shores of central Chile. These whelks appear to adjust their foraging strategy to physiological (nutritional) demand and predation risk. Starvation reduced the effect of predation risk on the rate of food consumption by *A. monodon*. Thus, in the absence of the predator sea star, the rate of food consumption by starved and satiated whelks was similar. When a predator was present, starved whelks fed faster than satiated whelks. Our results indicate that foraging behaviour represents an integrated and hierarchical response to environmental conditions and the physiological conditions of the forager.