










# [Understanding unpredictability: factors influencing how long antlion larvae play dead as an antipredator behaviour - ScienceDirect](https://www.sciencedirect.com/science/article/abs/pii/S0003347222002743)

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## Understanding unpredictability: factors influencing how long antlion larvae play dead as an antipredator behaviour

Aljando Farj-Rivera <sup>a</sup>, Ángel Cajal <sup>a</sup>, Adriana Campos-Añarado <sup>a</sup>, Michael Castaño-Díaz <sup>a</sup>, Michelle Estévez-Haro <sup>a</sup>, Yolanda M.G. Pihano-Espeja <sup>a</sup>

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Remaining immobile for an unpredictable time following contact with a predator (postcontact immobility) is a successful tactic to reduce predation. However, the mechanisms that may cause this variation are poorly known. We explored whether size, personality, substrate type and predation risk influence the duration of postcontact immobility in antlion larvae. Using field experiments on a large number of larvae, we detected a highly unpredictable postcontact immobility duration. This suggests that motor routines selected to improve the performance of this sit-and-wait predator larvae, such as staying immobile for an indefinite period, can also be adaptive to avoid predation. Postcontact immobility showed similar duration between low- and high-predation risk levels and was unrelated to larvae size. However, larvae showed longer postcontact immobility on compact soils than on loose soils. Antlions took longer to bury themselves in compact substrate, increasing the probability of being detected by a predator. Hence, it seems reasonable that, on compact soils, larvae showed longer postcontact immobility. On the other hand, larvae showed some degree of consistency in presenting short or long postcontact immobility independently of the nature of the treatments. Since repeated inductions of postcontact immobility in the same prey by a predator are rare, unpredictable variation at the population level may be an emergent property of consistency in postcontact immobility duration at the individual level. We conclude that factors generating unpredictable postcontact immobility duration may be intrinsic or extrinsic but are often associated with traits that predators cannot easily detect in advance, reinforcing the adaptive value of playing dead as an antipredator