

Seychelles warblers with silver spoons: juvenile condition is a lifelong predictor of annual survival, but not annual reproduction or senescence

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Abstract

1) The environment experienced during development, and its impact on intrinsic condition, can have lasting outcomes for adult phenotypes and could contribute to the individual variation in senescence trajectories. 2) However, the nature of this relationship in wild populations remains uncertain, owing to the difficulties in summarizing environmental complexity and long-term monitoring of individuals from free-roaming long-lived species. 3) In this study, we determine whether juvenile condition (derived from measures of body mass and size) is associated with senescence-related traits of a closely monitored population of Seychelles warblers (*Acrocephalus sechellensis*). 4) Juveniles with a higher condition index were more likely to survive to adulthood – suggesting these juveniles experienced better developmental conditions. Furthermore, these juveniles as adults were in better condition and had higher rates of annual survival, independently of age. In contrast, there was no association between juvenile condition and declines in adult telomere length (a measure of somatic stress) nor annual reproduction. 5) These results indicate that juvenile condition, while not associated with senescence trajectories, can influence the likelihood of surviving to old age due to silver-spoon effects. This study shows that measures of intrinsic condition in juveniles can provide important insights into long-term fitness of individuals in wild populations.

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