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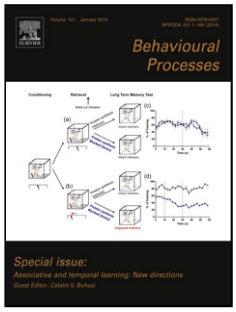

Title: Factors that influence the onset of parental care in zebra finches: Roles for egg stimuli and prolactin

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Factors that influence the onset of parental care in zebra finches: Roles for egg stimuli and prolactin

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Research Highlights:

- Zebra finches that have begun incubating eggs will care for foster chicks
- Vasoactive intestinal peptide (VIP) injections increase PRL to post-hatch levels
- VIP treated male-female pairs showed more correlated chick feeding behavior

Abstract

Parental care is a critical component for determining reproductive success both for a current set of offspring but also over the lifetime of the individual. The hormone prolactin has often been implicated as a parental care hormone across taxa but causal relationships have only been strongly demonstrated in mammals and few select species of birds. For instance, in mammals, maternal care towards foster pups can be induced by exogenous treatment with prolactin, in concert with other reproductive hormones involved in pregnancy. We aimed to address this causal mechanism in birds by artificially elevating prolactin during the nest building and egg laying stages using vasoactive intestinal peptide (VIP) and then exposing them to foster chicks. We predicted that increasing prolactin would increase brooding and feeding behaviors towards foster chicks compared to the saline control group. Parental behavior towards foster chicks was only shown by individuals who had initiated clutches regardless of treatment. VIP treatment had no effect on parental behavior; however, a positive relationship was found between male and female feeding rates in the VIP but not control group. Our results suggest that both eggs and chicks are sufficient to stimulate foster care, perhaps through endogenous prolactin