

INSIDE JEB

Low prolactin allows blackbird mums to dispose of imposter cuckoo eggs



The urge to protect offspring is strong and primeval. In many species, parents of vulnerable and defenceless young nurture and care devotedly for their charges until the youngsters are capable of forging their own path. But how do bird parents manage to overwhelm this driving instinct when faced with a cuckoo in the nest? 'Blackbirds remove parasitic eggs from their nests by grasping them in their beaks and flying away with them', says Francisco Ruiz-Raya from the Universidad de Vigo, Spain. Knowing that prolactin is one of the key hormones behind parenting, Ruiz-Raya, Juan Diego Ibáñez-Álamo and Manuel Soler, both from the Universidad de Granada, Spain, wondered whether a decline in the hormone might allow female Eurasian blackbirds (*Turdus merula*) to make the decision to despatch imposter eggs.

Heading to the Lecrin valley, near Granada, in spring, Ruiz-Raya went in search of blackbird nests containing eggs. Then, he captured soon-to-be blackbird

mums and gently implanted a tiny biodegradable pellet in their backs, to temporarily reduce the amount of prolactin hormone circulating in their blood. Once the pellets were in place, Ruiz-Raya cunningly sneaked a blackbird egg disguised as a cuckoo egg into the nests and waited to see how the mothers responded to the fraudulent eggs. In addition, Charline Parenteau and Olivier Chastel from Centre d'Études Biologiques de Chizé, France, measured the amount of hormone in the birds' blood.

Impressively, the duped mums with lower prolactin levels caught on that there was an intruder in the nest far faster than mums whose prolactin levels continued rising over the course of incubation. The mother birds with less prolactin began dislodging the charlatan eggs within 12 h of the imposter's arrival, in contrast to normal blackbird mums, which only began to turn out the interlopers after 2.5 days. The mothers with lower prolactin levels were also far more

efficient at disposing of the uninvited guests, evicting 75% of Ruiz-Raya's egg frauds from the nests, while the mothers with regular levels of prolactin only discarded 25%.

A fall in prolactin seems to help blackbird mothers override their instincts and toss out an egg that isn't their own. But why might mothers experience a drop in prolactin while incubating their young? The team suspects that blackbird mums that are aware of cuckoos touring the vicinity become stressed and may suffer a prolactin dip, which could be sufficient to allow them to eject egg imposters that pose a threat to their progeny.

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