Early stress in starlings found to lead to faster aging

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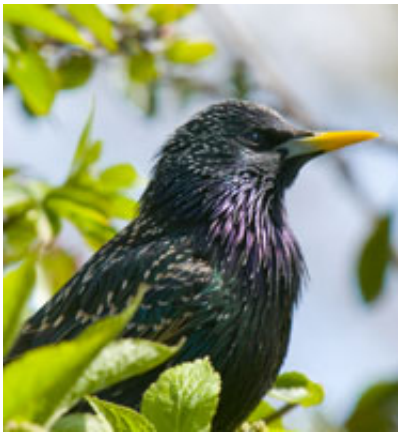

A starling (Sturnus vulgaris) Photo by Theo Webb

(Phys.org) —A combined team of researchers from Newcastle University and the University of Glasgow, both in the U.K. has found that stress in young starlings can lead to shortened telomeres—which prior research has suggested leads to faster aging and development and behavioral problems later on in life. In their paper published in *Proceedings of the Royal Society B*, the team describes how they stressed young starlings and then tested them to see what it might have done to them.

Prior research has found that telomeres—the caps on the ends of chromosomes—become shorter each time cells divide. Scientists have also found that it's this shortening that causes aging in humans and other

animals—and aging related illnesses such as diabetes, artery disease, some cancers and premature death. Other research has shown that shortening of telomeres doesn't happen at the same pace in every species or even in the same species, which explains why some animals seem to age faster or slower than others of their kind. In this new effort, the researchers found that the process can be speeded up by stress—at least in young starlings.

The researchers removed starling chicks from their nests and placed them in other nests, some with more hatchlings, others with less. Living with more hatchlings has been found to be more stressful for chicks as they have to compete more hardily for scarce resources from the mother. In testing the chicks 14 months later, the researchers found that those that had been placed in the more stressful nests had shorter telomeres. They also tested them for impulsiveness using delayed feeding techniques. Those raised in the more stressful nest, turned out to be more impulsive—they tended to go for immediate small meal rewards rather than wait a little longer for a much bigger reward.

The team suggests their findings may be transferable to humans, as telomere length in people has been linked to both aging and impulsiveness as well. They believe that it's likely that stress while young (due to a harsh or unpredictable home environment) can lead to premature aging and impulsiveness as a young adult, and likely age related illnesses later on in life.

More information: Developmental telomere attrition predicts impulsive decision making in adult starlings, *Proceedings of the Royal Society B*: rspb.royalsocietypublishing.or … .1098/rspb.2014.2140

Press release