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Motherly love is all inbred beetles need to live longer, study shows

Young beetles whose parents are closely related could have their survival prospects improved with extra care from their mother, a study suggests.

The inbred offspring of burying beetles have a longer lifespan if they are raised by an attentive mother who can shield them from threats to their wellbeing, researchers say.

In this way, maternal care appears to enable the species of burying beetle – *Nicrophorus vespilloides* – to overcome the health disadvantages linked with inbreeding.

Findings from the study could help explain why some animal species inbreed more than others, the team says.

The young beetles are less physically fit, and often live shorter lives, than offspring born to unrelated parents. The study shows maternal care protects inbred beetles from environmental factors – such as predators and other species competing for food – which could further reduce their chances of survival.

The study shows maternal care increases the lifespan of inbred beetles but has no effect on insects born to unrelated parents.

The University of Edinburgh team found inbred beetle larvae reared by an adult female were more likely to make it to adulthood than those raised without their mother nearby. The team say the positive effects of maternal care continued to benefit beetles even after they had grown up and become independent.

Researchers believe the protective effects of maternal care seen in burying beetles are likely to be widespread in other species in which adults raise their offspring.

The study is published in the journal *Proceedings of the National Academy of Sciences*.

Natalie Pilakouta, of the University of Edinburgh's School of Biological Sciences, who led the study, said: "It is quite impressive that parents have the capacity to compensate for the negative effects of inbreeding in their offspring. These findings can help us understand why some animals don't avoid mating with their relatives."

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