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Why Young Lovers Have Sons

The odds of having a son or daughter aren't always even. Many kinds of animals will preferentially bear more males, or females, to increase the chances of passing on their genes. Female fruit flies, for example, bear more sons after mating with younger males than with older ones. Why? The reason, researchers have learned, is that the sons of young lovers are much more likely to turn out to be virile studs.

Sexual discrimination. Fruit flies have more sons or daughters depending on the age of their mates.
CREDIT: Chippindale Lab

To solve the puzzle, evolutionary biologists Tristan Long, now at the University of California in Santa Barbara, and Alison Pischedda, at Queen's University in Kingston, Canada, mated virgin female *Drosophila* to males of various ages. The team found that the sons of young (1-day old) males produced more offspring than sons of old (13-day old) males; whereas there was no difference in numbers of offspring produced by daughters of young and old males. This indicates that it pays to produce more sons when mated to a high quality (in this case, young) male, the researchers report online 20 July in *Proceedings of the Royal Society B*.

Older males may give rise to poorer quality sons because they've accumulated harmful mutations during their lives, and these will have a bigger effect on sons than daughters because males experience more intense selection pressure when it comes to mating, the team speculates. But the researchers don't know how fruit flies skew their progeny's sex ratio towards sons or daughters.

"A study like this raises more questions than it answers, but the questions ... are very intriguing," says John Werren, an evolutionary geneticist at the University of Rochester in New York State. For instance, are females somehow choosing between X- and Y-bearing sperm by some subtle mechanism, or "are Y-bearing sperm from young males better swimmers?" he asks. As to why young males produce higher quality sons, the idea that they carry fewer mutations than old males is "reasonable," but the whole question merits further study, he adds.

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