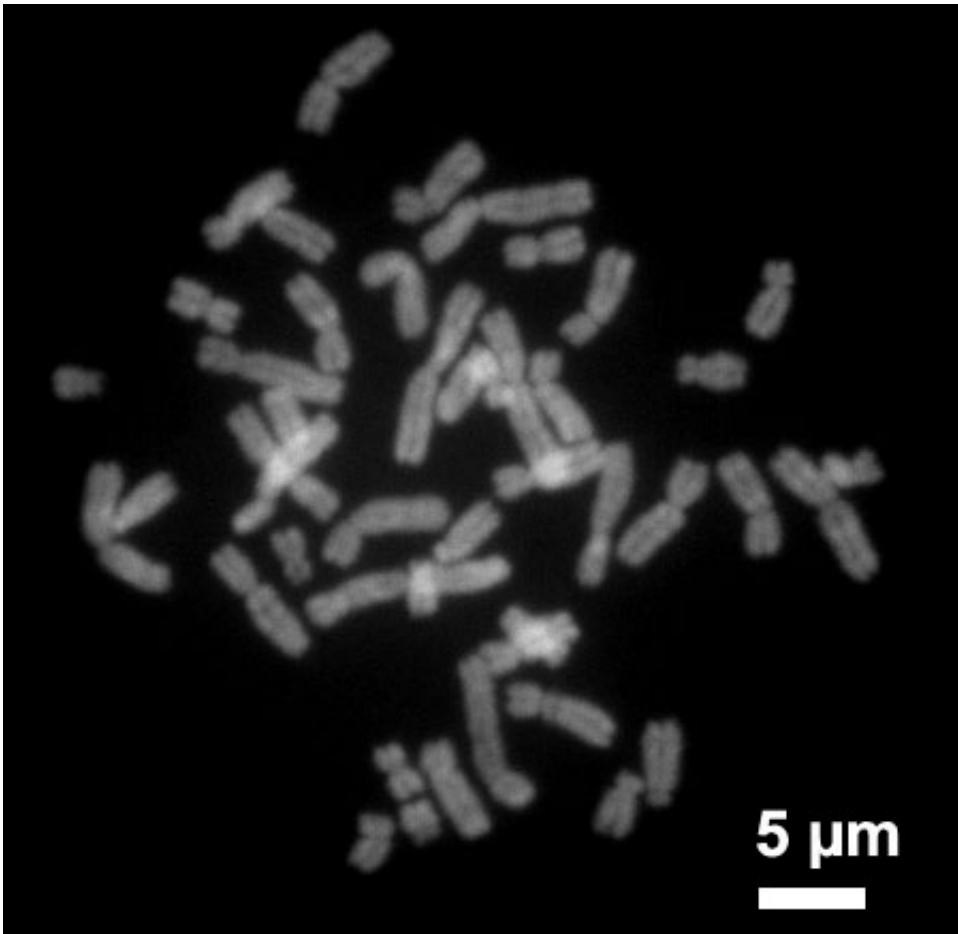


Male mice found able to bias gender ratios of offspring

August 30 2017, by Bob Yirka



Human chromosomes during metaphase. Credit: Steffen Dietzel/Wikipedia

An international team of researchers has discovered that contrary to conventional views, a male mammal was found able to exert inadvertent

gender bias ratios in his offspring. In their paper published in the journal *Proceedings of the Royal Society B*, the team describes a study they carried out with inbred mice and what they found.

The traditional view among scientists is that only female mammals are able to exert influence on the male-to-female ratio of [offspring](#)—for instance, by exerting influence over which sperm fertilize their eggs or by aborting to get rid of undesired offspring. While it is true that the male provides the X or Y chromosome that ultimately determines gender, it has been shown that they do so in ways they cannot control—male [mice](#) naturally produce slightly more Y chromosome-laden sperm, for example. But now, it appears that they are able to exert influence in another way—by changing the ratio of X and Y chromosome [sperm cells](#) they produce.

To find out if male mice could influence the gender ratio of their offspring, they paired 58 normal, healthy white-footed [female mice](#) with 58 males for mating. But some of the males came with a genetic disadvantage induced by inbreeding. Such inbreeding, prior research has shown, generally tends to result in males that produce more daughters. The researchers also studied sperm cells taken directly from the testes, making note of X and Y chromosome counts. Those males that had been inbred tended to produce more X chromosome-carrying sperm cells than normal male mice (which normally produce more [sperm](#) with Y chromosomes). The difference in the chromosome count ratios was also reflected in the genders of the mice that were born to the pairs, favoring female mice. This, the researchers claim, suggests that the [males](#) were exerting some degree of control over the gender of their offspring.

The findings suggest that male mammals in general might be able to influence offspring gender ratios, which would mean biologists would have to revise reproductive theories.

More information: "A father effect explains sex-ratio bias,"
Proceedings of the Royal Society B (2017). [DOI: 10.1098/rspb.2017.1159](https://doi.org/10.1098/rspb.2017.1159)

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