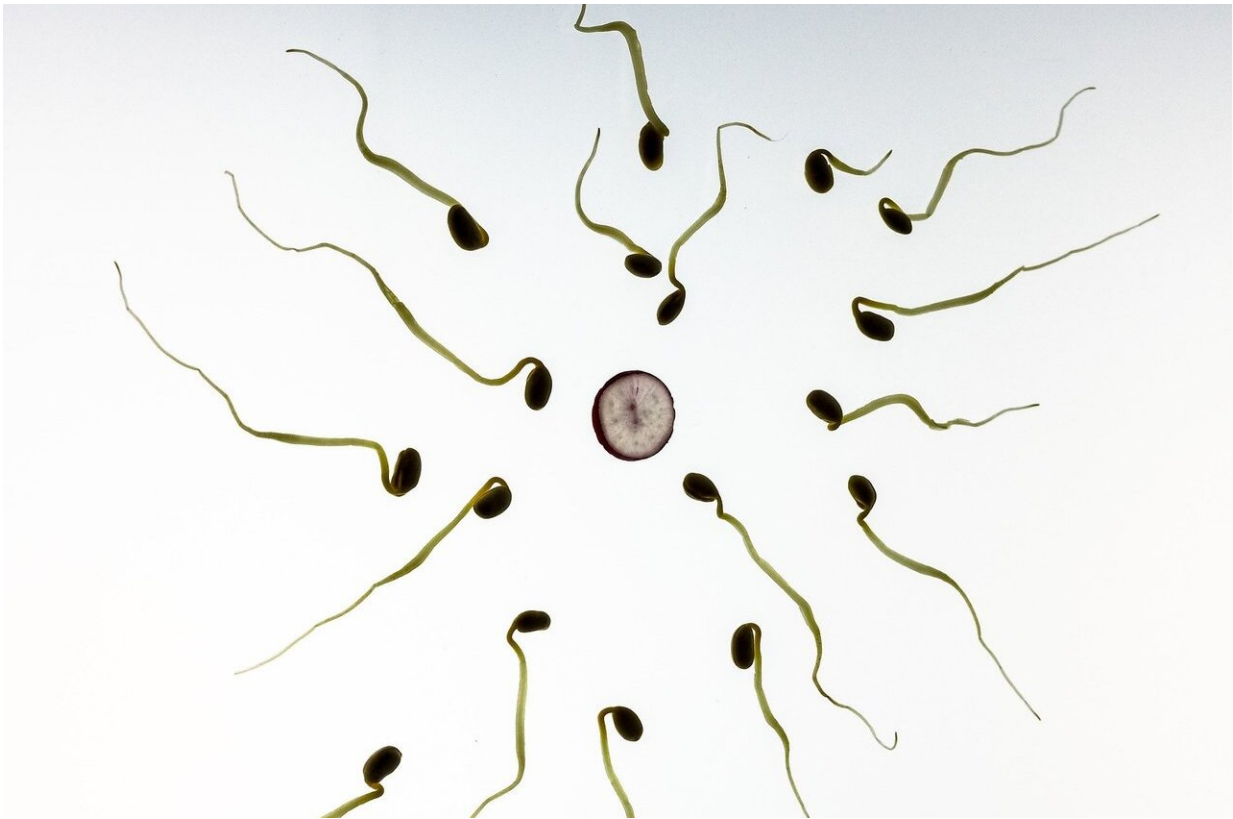


There isn't one kind of 'good sperm' – it depends on other qualities in the male

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In a study published in *Behavioral Ecology* researchers from Uppsala University show that the same type of sperm is not always the best for all male birds. Depending on how attractive or dominant you are you might

be more successful with longer or shorter sperm.

Getting a big family can be a difficult business in nature. If you are a male bird, you have to work hard to secure a territory where you will find food for your chicks and convince a lady that you are both good looking enough and also will be a good dad. But getting a mating partner is not the end of the story, you also need to fertilize her eggs, preferably all of them!

For this, you will need good [sperm](#): sperm that is good at fertilizing eggs, but not only, it also has to be BETTER than the sperm of your potential rivals, that is other [males](#) your partner might be copulating with before laying all of her eggs. This happens often in nature, because females do not want to put all of their eggs in the same basket and it might be advantageous instead to have some genetic variation among your offspring.

Determining what makes for a good or attractive male is not always easy, and measuring what makes a good sperm is even harder. Now these two important components of [fertilization success](#) are often also measured separately, and we do not really understand how they are linked.

The researchers studied this in collared flycatchers (small black and white birds), by catching close to 120 different males over 4 years, measuring their white forehead patch (used to attract females), their sperm morphology (under the microscope), and their paternity success (i.e. how many of the chicks in their nests were theirs, by analyzing the blood of over 400 six-days old nestlings).

The team found that different categories of males have different sperm morphology, depending on if they manage to secure a territory and have a social mating partner, but also on their age and attractiveness. But most interestingly, the researchers found that the type of sperm that allows

them to maximize the number of nestlings they father is different for different types of males. For males that have small forehead patches and are thus less dominant and less attractive, having long sperm is beneficial. This could be because they are more exposed to [sperm competition](#) and long sperm are likely to swim faster and reach the egg first.

But longer is not always better! For more attractive males, it is quite the opposite, and having smaller sperm allows them to sire more [eggs](#) in their nest.

"Many studies have attempted to link attractiveness and [sperm quality](#), trying to figure out if "sexier" males also have better sperm, with very inconsistent results between studies. Our study shows that what makes a good quality sperm might instead depend on how attractive, competitive, and how old a male is, so there is not one single kind of "good sperm," and we should more often look at the full picture and actually measure which phenotypes result in the highest fertilization success," says lead author Murielle Ålund, now researcher at Michigan State University.

More information: Murielle Ålund et al. Optimal sperm length for high siring success depends on forehead patch size in collared flycatchers, *Behavioral Ecology* (2018). [DOI: 10.1093/beheco/ary115](https://doi.org/10.1093/beheco/ary115)

Provided by Uppsala University

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