

Male kangaroos woo mates with bulging biceps

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Male kangaroos often adopt poses designed to show off their guns. Credit: Terry Mercer

A male kangaroo's forearm size could be a sexually selected trait and help them find a mate, a new study has found.

In fact, male kangaroos frequently adopt poses to show off their muscly arms to females, the authors have said.

The study, conducted by researchers from Murdoch University and Curtin University and published in Biological Journal of the Linnean Society, centred on data gained from dissecting 13 grey [kangaroo males](#) and 15 females.

Each forelimb was dissected and the weight relationships between the individual [muscle mass](#) and body mass were examined.

The [body mass](#) of each animal was calculated by femur ([thigh bone](#)) circumference, measuring the bone at the narrowest point. Forelimb [muscle](#) mass in males was found to be heavier than the equivalent muscles in females, suggesting different applications for the same limb between the sexes.

Study co-author, Associate Professor Trish Fleming, said male kangaroos use their muscles in wrestling matches with love rivals.

"We found a select group of muscles which are particularly used in grasping the other males and drawing them towards them, which were exaggerated in the larger males. The larger the males get, the more those individual muscles are worked up, so they are disproportionately larger than the rest of the body," she said.

"The reason this study is unique is because it tells us a bit more about the functional morphology of their [forelimbs](#). It tells us which muscles they could be using to gain a select advantage over other males."

Sexy forelimbs?

Associate Professor Rod Wells, an Australian marsupial expert from Flinders University, said big arm muscles may offer males "additional advantage from either females finding big forelimbs sexy or alternatively the males which win the right to access the females are then strong

enough to overpower any unwilling female."

"Males are not simply getting bigger but their forelimbs are getting disproportionately bigger not only in bone length and diameter but also in muscle mass. The authors relate this to male-male competition for right to inseminate females," he said.

However, Associate Professor Wells said that to demonstrate that a trait is a result of sexual selection, "there must be some evidence of differential mating success to those individuals carrying that trait."

"In the larger kangaroos, females reach reproductive age at two years, maturity is later in males. Both species continue to grow in stature after maturity but males at a greater rate than [females](#). So you get differences in body size of large male to female kangaroos 1.9:1 for greys and 2.5:1 for reds," said Associate Professor Wells, who was not involved in the study.

More information: [onlinelibrary.wiley.com/doi/10...
1/bij.12090/abstract](https://onlinelibrary.wiley.com/doi/10.1111/bij.12090/abstract)

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