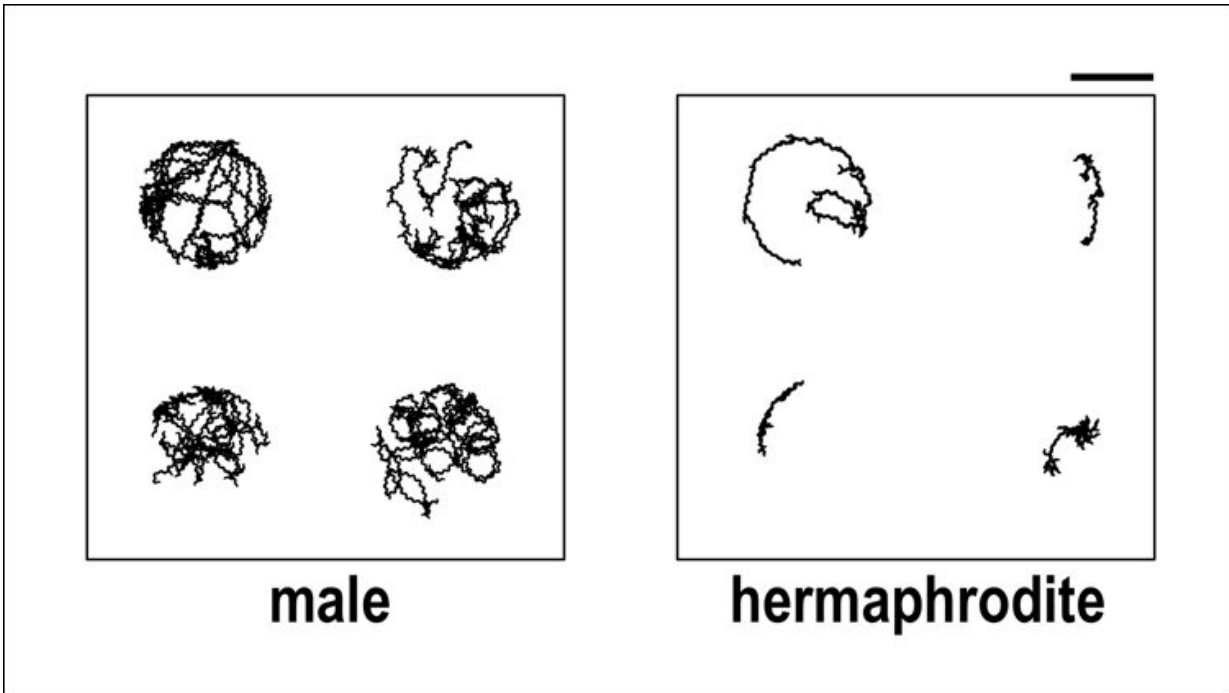


Dopamine regulates sex differences in worms

April 15 2019



Representative tracks left by worms. Four tracks each are shown. Males move around more than hermaphrodites. In mutants that cannot produce dopamine, the sex difference in locomotor activity is smaller. Scale bar = 5 mm. Credit: Satoshi Suo

Dopamine is responsible for sex-specific variations in common behaviors, finds a study of worm movements published in *JNeurosci*.

The research demonstrates how the same neurotransmitter can contribute

to sex differences, a finding that could have implications for [mental disorders](#).

Male and hermaphrodite roundworms (*Caenorhabditis elegans*) have distinct strategies for finding food and mates.

Satoshi Suo and colleagues found the [neurotransmitter dopamine](#) has opposite effects on these behaviors that supports each sex's strategy.

Dopamine increases locomotor activity in males, which need to move around to find a mate, while reducing the same activity in hermaphrodites, which can reproduce asexually and may conserve energy by staying in place.

The researchers show that dopamine acts through different molecular pathways to give rise to these [sex differences](#).

More information: Sexually Dimorphic Regulation of Behavioral States by Dopamine in *Caenorhabditis elegans*, *JNeurosci* (2019). [DOI: 10.1523/JNEUROSCI.2985-18.2019](#)

Provided by Society for Neuroscience

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