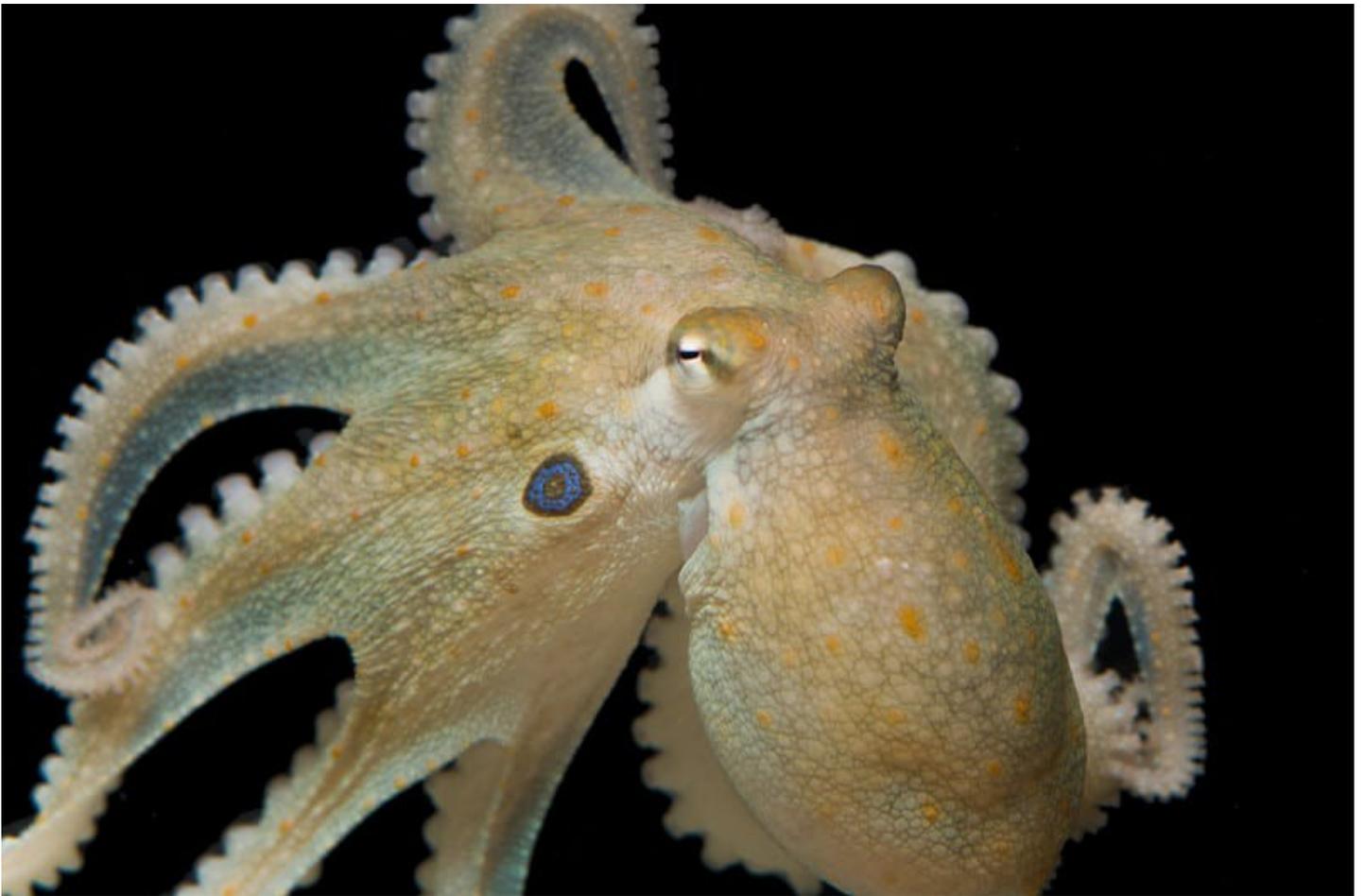


[Daily news](#)

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Octopuses taking MDMA get all huggy and loved-up with each other



Social clues
Tom Kleindinst

By Michael Le Page

Octopuses given the drug ecstasy become far more social and try to hug other octopuses, a small study has found. The fact that octopuses respond [in a similar manner to people](#) suggests the [molecular basis for social behaviour](#) evolved more than 500

million years ago in our shared ancestor.

Octopuses are normally solitary creatures. "During reproduction they are social for three minutes while they mate and then they go back to wanting to kill each other," says Gul Dolen of the Johns Hopkins University School of Medicine in Maryland, who studies the neural basis for social behaviour.

She set up aquaria divided into three chambers connected by open doorways. In the chamber on one side she placed an octopus inside a perforated plastic container. In the chamber on the other side an object was put in an identical container. In the central chamber, Dolen placed another octopus and allowed it to freely explore either side chamber for 30 minutes.

Eight-legged hug

Normally the octopus allowed to explore did not spend much time in the chamber with the other octopus and touched it very cautiously, by extending a single arm towards it. But if it was placed in water containing dissolved ecstasy (MDMA) for 10 minutes before the experiment began, it spent much more time in the chamber with the other octopus and tried to "hug" it, wrapping its whole body around the container.

"Right now in neuroscience there's a really big focus on understanding circuits, how neurons are connected to each other," says Dolen. "This study tells us that is not really the business end of things. MDMA is able to induce the same behaviour in an animal with totally different circuit architecture. It doesn't even have the brain regions we think are important for social behaviour. I think that's a profound insight."

Dolen chose to study octopuses because [they are capable of very sophisticated behaviours](#), yet are only very distantly related to vertebrates like us. It's impossible to say whether those given ecstasy experienced the [same feelings of euphoria](#) that people do, in addition to becoming more social. However, none of the animals in the experiment appeared stressed – it's easy to see when octopuses are stressed because they squirt ink – and all are still alive and healthy.

Other groups are experimenting with giving octopuses hallucinogenic drugs such as LSD. The idea is that skin colour changes might give researchers some insight into what hallucinations, if any, the animals experience.

Meanwhile, the prosocial effects of ecstasy are also being studied in people. [A small trial involving 12 people with autism](#) suggests it can reduce social anxiety, researchers reported last month.

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