

Elephants form joints with trunk to pick up small objects to eat

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A team of researchers with members from the Georgia Institute of Technology, the Atlanta Zoo and the Rochester Institute of Technology has uncovered the means by which elephants are able to quickly and easily grab and very quickly eat small objects. In their paper published in *Journal of the Royal Society Interface*, the group describes their study and what they found.

The researchers note that because of their huge size and the type of foods they eat, elephants have to eat a lot every day. Prior research has shown that adults consume an average of 200 kilograms of food each day—most of it vegetation. Because of their enormous appetite, elephants must be able to eat a wide variety of food, whether small or large. In this new effort, the researchers wondered how [elephants](#) are able to pick up and eat things like grain or even flour with their trunk. To find out, they filmed a female adult at the Atlanta Zoo picking up rutabagas and carrots that had been cut up into different sized portions. They also fed her bran, which was in near powder form.

The researchers found that the elephant formed a joint with her trunk that allowed her to pile the bran, and then to crush it so hard that it melded into a form that she was able to pick up and eat. To make the joint, the elephant bent her snout at a tight angle, using part of it as a backplate of sorts. The other part of the snout then squeezed the food against the backplate, compressing it into a solid mass. Once formed, the elephant easily picked up the mass and brought it to her mouth. The team noted that the elephant formed backplates of different heights depending on the type of food. They were also able to measure the force exerted by the [trunk](#) on the [food](#) matter—47 Newtons to crush a 50-gram pile of [bran](#).

More information: Jianing Wu et al. Elephant trunks form joints to squeeze together small objects, *Journal of The Royal Society Interface* (2018). [DOI: 10.1098/rsif.2018.0377](https://doi.org/10.1098/rsif.2018.0377)

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