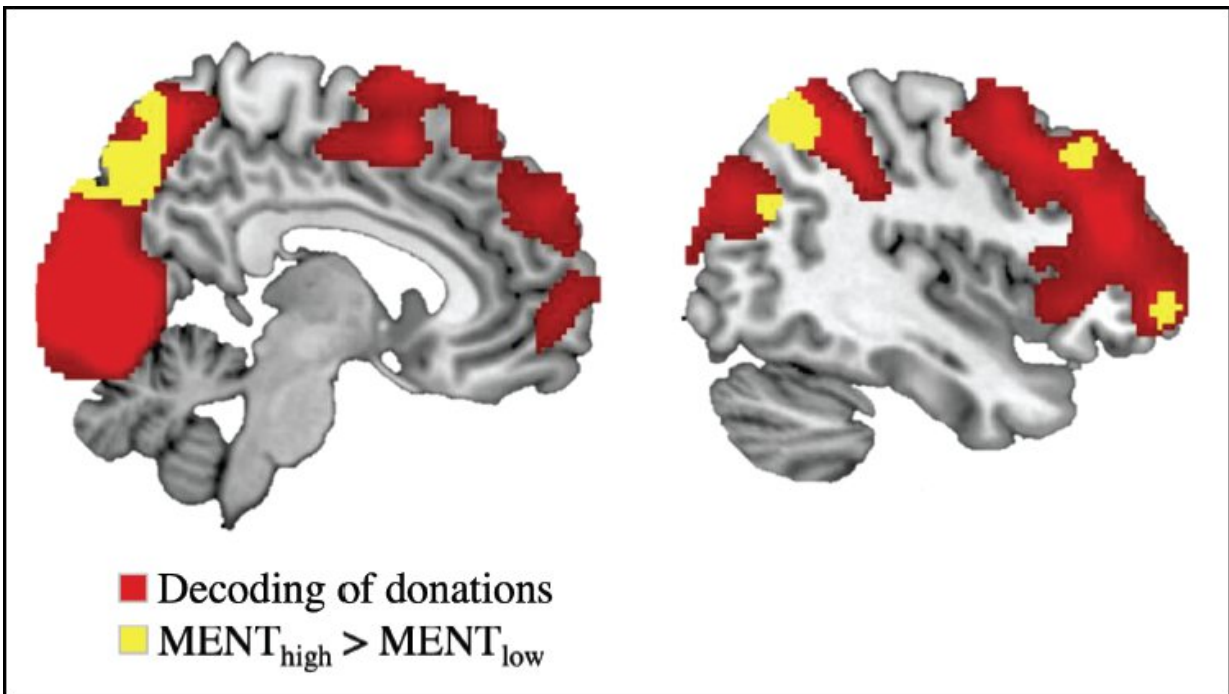


Stress hormone reduces altruistic behavior in empathetic people

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Decoding accuracies in a subset of these brain areas (yellow) were increased with higher mentalizing capacity. Credit: Schulreich et al., *JNeurosci* 2022.

The stress hormone cortisol reduces altruistic behavior and alters activity in brain regions linked to social decision making—but only in people who are better at imagining others' mental states, according to new research published in *The Journal of Neuroscience*.

In a study from Universität Hamburg, participants decided how much money to donate to a selection of charities before and after completing a stressful public-speaking task while researchers monitored their brain activity with fMRI. To simulate the personal cost of making an altruistic decision, the participants received a portion of the money they did not donate. Before the stressful task, people with higher mentalizing ability, or the ability to imagine others' mental states, donated more money than people with low mentalizing ability.

In people with high mentalizing ability, increased levels of the [stress hormone cortisol](#) decreased donations; cortisol had no effect on people with low mentalizing ability. The researchers could predict how high mentalizers would choose to donate based on activity in the [dorsolateral prefrontal cortex](#) (DLPFC), a brain region involved in social decision making. Yet higher levels of cortisol infringed on this pattern, indicating stress reduced the neural representation of donations in the DLPFC. These results reveal cortisol might alter the activity of the DLPFC, which has a more pronounced effect on people who rely on mentalizing to make social decisions.

More information: Stefan Schulreich et al, Altruism under stress: cortisol negatively predicts charitable giving and neural value representations depending on mentalizing capacity, *The Journal of Neuroscience* (2022). [DOI: 10.1523/JNEUROSCI.1870-21.2022](https://doi.org/10.1523/JNEUROSCI.1870-21.2022)

Provided by Society for Neuroscience

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