

How the brain responds to injustice

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Trial outline of a second-party punishment game in the Justice Game. In this second-party punishment sample trial a Taker takes 100 chips from the participant and the participant can decide how much, if any, chips he wants to spend on punishment. Credit: Stallen et al., *JNeurosci* (2018)

Punishing a wrongdoer may be more rewarding to the brain than supporting a victim. That is one suggestion of new research published in *JNeurosci*, which measured the brain activity of young men while they played a "justice game."

Study [participants](#) played a game in which two players—a "Taker" and a "Partner"—each start out with 200 chips. The Taker can steal up to 100 of the Partner's chips, and then the Partner can retaliate by spending up to 100 chips to reduce the Taker's stash by up to 300 chips. Participants played as either a Partner or an Observer, who could either punish the Taker or help the Partner by spending chips to increase the Partner's stash.

Mirre Stallen and colleagues found that participants were more willing to punish the Taker when they experienced injustice directly as a Partner as opposed to a third-party Observer. The decision to punish was associated with activity in the [ventral striatum](#), a brain region involved in reward processing, and distinguishable from the severity of the punishment. Before beginning the experiment, all participants were given a nasal spray, with some randomly assigned to receive the hormone oxytocin, which has been suggested to have a role in punishing.

Participants in the oxytocin group chose to give more frequent, but less intense, punishments. This finding implicates oxytocin in corrective punishments akin to a "slap on the wrist" to maintain fairness.

More information: Neurobiological Mechanisms of Responding to Injustice, *JNeurosci* (2018). [DOI: 10.1523/JNEUROSCI.1242-17.2018](https://doi.org/10.1523/JNEUROSCI.1242-17.2018)

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