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No Fair! My Serotonin Level Is Low

The chemical messenger serotonin, thought to be implicated in depression and anxiety, may change the way we see fairness in social situations. Christie Nicholson reports.

[Below is the original script. Some textual variations may have been made during the recording of this podcast.]

Serotonin is a chemical messenger thought to modulate depression, anger, sleep, sexuality...even vomiting. (Eighty percent of the body's serotonin is found in the gut.) But a recent paper in Science suggests a causal link between serotonin levels and how one perceives fairness.

Researchers depleted serotonin in subjects—via fasting and amino acid loading—then asked them to participate in an ultimatum game.

In it, a proposal is made to the subject to unevenly split a sum of money. If the subject accepts, both parties get paid; if the proposition is rejected, both walk away with nothing.

Typically, people reject lowball offers of 20 to 30 percent of the total sum—but those with depleted serotonin turned down amounts as high as 80 percent of the total. Researchers note that their moods did not change—only their behavior—meaning their perception of "fairness" became severely skewed.

Serotonin is implicated in so many emotions that it's difficult to pin down its global role in the brain, says Molly Crockett the lead author, "So it's exciting when we can see a specific behavior affected by serotonin."

This research might shed light on the possible role of serotonin in the perceived "unfairness" and anger we often see accompanying depression.

-- Christie Nicholson

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