

# Here's what happens in your brain when you fall in love

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Falling in love is known to feel like a whirlwind of emotions—but if someone asked you how to describe it, you'd probably say you "just knew." Why is that?

To learn more about love and its impact on our brains, we spoke with Cynthia Kubu, a professor of neurology at Cleveland Clinic Lerner College of Medicine of CWRU and a neuropsychologist at Cleveland Clinic. In addition to her clinical work and research, Kubu serves as the vice dean for faculty at Case Western Reserve University School of Medicine.

While she wouldn't describe herself as an expert in the "neuroscience of love," Kubu has a longstanding interest in the functional neuroanatomical correlates of human social behavior, and she's studying the impact of deep [brain](#) stimulation on personality with a grant from the National Institutes of Health.

This Valentine's Day, read on to learn Kubu's thoughts on what happens in your brain when you fall in love.

## **1. A concoction of hormones begins brewing and activates your reward system—or your brain's reward system lights up.**

We often describe the early stages of a romance as intoxicating, characterized by feelings of euphoria and desire. This is because the early stages of romantic love activate our reward system, much like cocaine can. In the early stages of a romance, critical hormones like

oxytocin and vasopressin interact with the brain's reward system, especially dopamine, so that we are "addicted" to our new lover.

## **2. Your serotonin levels decrease.**

Early romantic love is associated with reduced serotonin levels, like levels seen in [obsessive compulsive disorder](#). That may be why we tend to obsess about our new lover and may experience stress and anxiety.

## **3. You feel like you're losing your mind.**

The early stages of [romantic love](#) result in reduced activity in [brain regions](#) associated with fear as well as cortical regions related to critical judgment. These changes open us up to the possibility of being vulnerable to someone new and can result in a suspension of critical judgment in which our new lover's flaws or potential challenges to the relationship are not critically assessed (i.e., the phenomenon of "rose-colored glasses").

## **4. You feel like you've merged with that person.**

Romantic love is associated with reduced activity in brain regions related to Theory of Mind—our ability to mentally take into account another person's perspective, including their emotions and thoughts—while simultaneously maintaining our own feelings and thoughts and recognizing the distinction between ourselves and the other person. This might correspond to the literary references in which two souls in love become one and there is a merging of two independent selves.

## **5. You may experience tangible health benefits.**

After the heady first six months or so of intoxicating, stressful, all-

encompassing romantic [love](#), our serotonin levels normalize and we are able to clearly see our lover's strengths and weaknesses. We settle into a long-term relationship which is associated with reduced stress, increased bonding, and feelings of security largely mediated by the effects of oxytocin. This may be related to the known health benefits of long-term relationships.

Provided by Case Western Reserve University

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