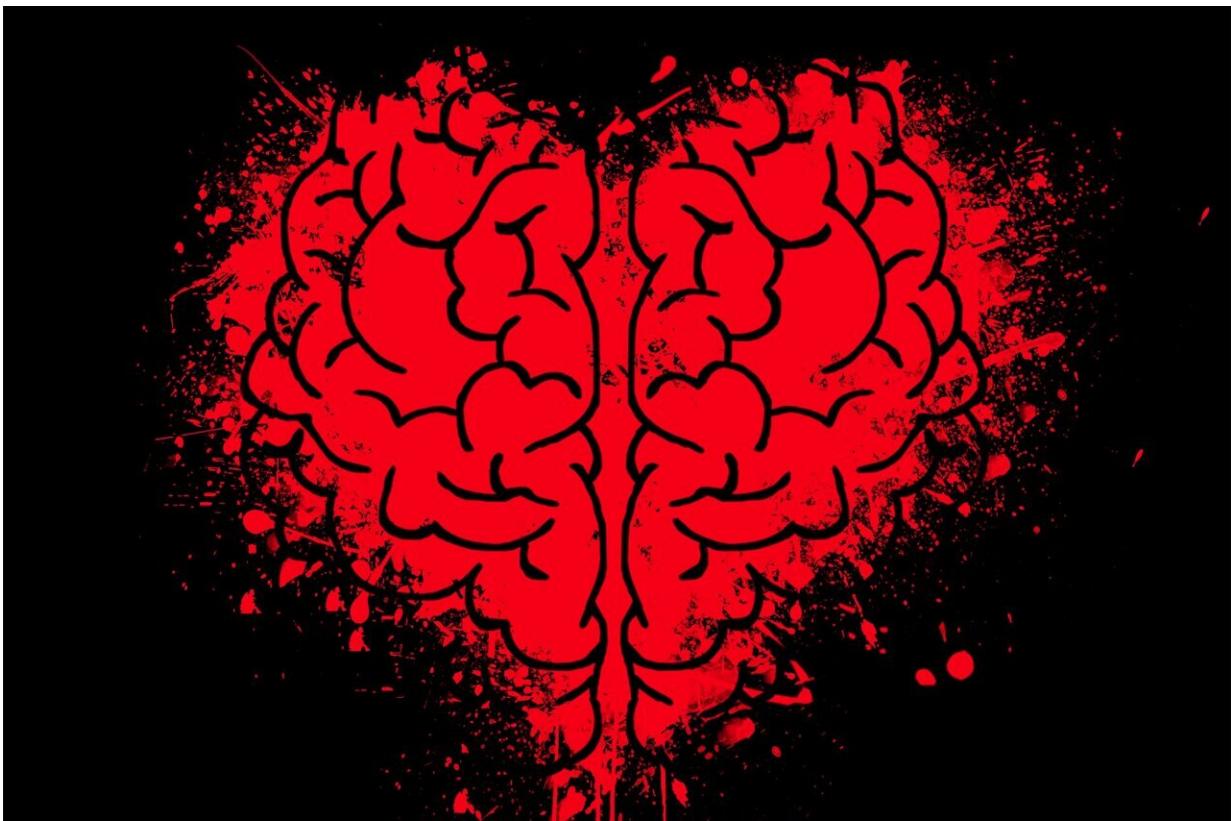


Exploring the chemistry behind love this Valentine's Day

February 13 2024, by Bron Mills



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Chemistry in a relationship refers to the intense feelings of connection, passion, and romance that people share. This Valentine's Day, Dr. Alex Baker, a chemistry professor at the University of Warwick, explores the

real chemistry behind chemistry. He explains how flowers and chocolates are as good as any love potion you could create to induce feelings of love.

According to Dr. Baker, four main chemicals are involved in love: [dopamine](#), serotonin, adrenaline, and oxytocin.

- Dopamine provides you with feelings of pleasure and reward when you interact with your partner.
- Adrenaline gets the heart racing when you interact with your partner.
- Serotonin controls your mood, well-being, and even [sexual desire](#) and is mimicked in drugs like psilocybin in magic mushrooms. Low levels produce feelings of heartache.
- Oxytocin is responsible for feelings of trust and attachment and is released during sex.

Dr. Baker explains, "Interestingly, the structures of dopamine and adrenaline are very similar, only a few atoms of difference but a big difference in effect. Their chemistry is mimicked in medicines like amphetamine and salbutamol. The same reward centers in your brain are activated when you drink alcohol, so these are just different ways to reach the reward response."

"These chemicals aren't static, though; as the rollercoaster of love moves through the first meeting, the heartache, and into a long-term relationship, the presence of these chemicals changes the brain.

"For example, your serotonin levels recover, so you lose the anxiety and butterflies of love. How these chemicals fluctuate really impacts the emotions you feel—so I suppose is it love or just chemistry?"

So, based on the chemistry of love—it could be possible to produce a

love potion. Dr. Baker explains, "One of the biggest issues from a biological perspective is how to get the chemicals, like dopamine, to the right place at the right time. This is a problem that stretches beyond hypothetical love potions to [drug delivery](#) to the brain.

"The other question to ask is, why not just buy chocolate and flowers instead of embarking on multimillion-pound [love](#) potion development? The phenethylamine in chocolate triggers dopamine release, while the flowers can trigger oxytocin release."

Provided by University of Warwick

Citation: Exploring the chemistry behind love this Valentine's Day (2024, February 13) retrieved 27 April 2024 from <https://phys.org/news/2024-02-exploring-chemistry-valentine-day.html>

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