

LOVE AND CUPID'S CHEMICALS

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and is released by mothers after giving birth. This causes them to strongly bond with their baby. Oxytocin is also released by both men and women after orgasm (sexual release) during sex. It causes them to feel closer to one another and more connected. Vasopressin is another hormone that began to draw attention as an attachment hormone due to the research conducted on prairie voles (which are rodents that look a lot like mice). Like us, prairie voles have sex beyond what is needed for reproduction and they form strong monogamous (having only a single sexual partner) bonds with their partners. Many will not seek out new mates once their mate dies. When researchers took a group of male voles

and injected them with a drug that inhibited their vasopressin production, the strong bonds they had developed with their partners were erased and they were no longer devoted to their partners.

(6) Some evolutionary biologists say that attachment hormones have been vital for causing couples to stay with one another (even through difficult times) so that they can successfully raise children. Another theory says that attachment decreases promiscuity (having multiple sexual partners) and this is important to prevent the spread of sexually transmitted diseases that could harm reproductive ability and cause illness or death.

Article Questions

- List the three components of love.
1. sex drive (libido) 2. attraction 3. attachment (1)
- How does testosterone affect sex drive?
Both men and women need adequate amounts of it to have a healthy sex drive. When testosterone is too low, sex drive decreases. (2)
- In the experiment with the 400 men and testosterone and estrogen, why were half of the men given a drug to inhibit their estrogen production and half of the men not given this drug?
This was done to see if a lack of estrogen prevented the ability for men to regain their sex drive and the extent of this effect if it existed. In the end, those who could make estrogen were better at regaining their sex drive than those who could not make estrogen. (3)
- Why do some people say that love is like a drug?
Both love and drugs trigger similar pathways and chemicals in the brain that are connected to pleasure, reward and motivation. (4)
- In the chart below, describe the effect of each chemical during attraction.

Adrenalin	Dopamine	Serotonin
Makes your heart beat faster, palms sweaty, mouth dry and dilates pupils. Makes you nervous and excited.	Triggers the pleasure, reward and motivation pathways of your brain that keep you going back for more.	Makes you feel obsessed over someone. Causes your thoughts to focus on them constantly. (5)
- If a person cannot make oxytocin, what problems might they experience?
They might not be able to form strong bonds of attachment with their partners and for women, they might not be able to bond strongly with their baby after birth. (5)
- Describe two reasons why it might have been useful for humans to develop strong bonds of attachment.
 - Strong bonds make both partners committed enough to work together to raise children.
 - Strong bonds decrease promiscuity which in turn decreases the chances of spreading sexually transmitted diseases that harm fertility and health. (6)