A Summary of the Research Surrounding OXYTOCIN
Summary

Oxytocin is a powerful neurochemical that has been called the “love hormone” or “cuddle drug” and has been credited as the glue that holds a marriage together – and blamed as the reason casual sex is so dangerous. But the science is still evolving on this popular hormone and professionals must be careful before giving too much power to a hormone we are still discovering. We should avoid making simplistic statements that even the primary researchers of the chemical refuse to make. The purpose of this short document is to provide information on what we know about oxytocin – and what we don’t. Each statement is complete with a citation of the research. We encourage care in interpreting the research and urge cautious consideration of the many varied influences that oxytocin may have on the human body.

Oxytocin appears to play a role in:

▶ Maternal bonding:
  ▶ It gives rat mothers the urge to nurse their young.\(^1\)
  ▶ It is released during human labor, delivery and breastfeeding and plays a role in maternal bonding.\(^2\)
  ▶ When fathers are given oxytocin, bonding to their infants increased.\(^3\)
  ▶ But if oxytocin is all that is necessary for bonding, how does a mother who doesn’t breastfeed, who delivers by C-section, or who adopts bond with the child?

▶ Sexual Response:
  ▶ Sexual arousal in rats.\(^4\)
  ▶ Role in human sexual response and orgasm.\(^5\)

▶ Positive & Negative Social Behavior:
  ▶ Linked to pro-social behaviors like trust,\(^6\) generosity\(^7\) and social attachments between people, animals,\(^8\) and friends.
  ▶ However, it is also released in stressful situations,\(^9\) and in some people, it may decrease trust.\(^10\)
  ▶ It also appears to have a role in decreasing fear,\(^11\) but can also strengthen bad memories and increase fear and anxiety in future stressful situations.\(^12\)
  ▶ It is also linked to negative social behaviors like envy and gloating.\(^13\)

▶ Pair bonding:
  ▶ More often linked to better communication, lower stress, and bonding.\(^14\)
  ▶ Linked to distressed pair-bond relationships in women.\(^15\)
  ▶ It is correlated to male prairie voles being mostly monogamous, but they are often unfaithful, even with high levels of oxytocin.\(^16\)

▶ Response to food:
  ▶ It is released when rats are given red pepper.\(^17\)
  ▶ It may contribute to weight loss.\(^18\)
  ▶ It may contribute to weight gain.\(^19\)

(Note that some research findings are inconsistent with others)

Oxytocin is:

▶ Important to maternal bonding in animals and humans, pair bonding in animals and likely in humans, sexual behavior and social interactions, but scientists are still learning more about how oxytocin interacts in the human body.\(^20\)

▶ Continually produced in the human body. A person can never “use up” all his/her oxytocin.

▶ Present in both the female and male body.
  ▶ Testosterone tends to suppress oxytocin
  ▶ Estrogen may increase the effects of oxytocin
But we must avoid giving oxytocin too much credit because the research also reveals:

- We still know very little about oxytocin (and other neurochemicals for that matter.)
- Neurochemicals are thought to work in tandem with one another and it is inaccurate to give any one chemical all the credit for a particular human emotion or behavior.
- Many of the studies of oxytocin have been conducted on animals, so caution must be exercised before assuming the same results will be true for humans.
- There is no research that suggests that oxytocin can be “used up” nor that each time oxytocin is released, it is less effective in the next relationship.
- Oxytocin is not like tape applied to the skin. The ability to bond does not diminish each time we “use” oxytocin. Were this the case, a mother would bond less and less with each subsequent child she births. Such, of course, is not the case.

Conclusion

A review of the research on oxytocin in humans since 1959 shows that it is implicated in maternal bonding, sexual behavior and social interactions. Oxytocin is a fascinating chemical that impacts human behavior, but there is wide variance in its influence, with research results often inconsistent. And its interrelationship with other neurochemicals is still being discovered. Scientists still don’t know exactly how oxytocin works and under what circumstances. The most recent research suggests that social context is essential in predicting the effects of oxytocin, perhaps helping to explain why seemingly opposite results are documented. Scientists agree that we don’t know enough about oxytocin to make many broad generalizations or absolute statements about the neurochemical. There is special danger in making assertions that even the researchers who conducted the studies are unwilling to make. It is becoming increasingly clear that oxytocin is more complex and complicated than originally thought.

To the Educator:

So while the educator can say that there are correlations between oxytocin and certain psychosocial behaviors (such as bonding and trust), it is not accurate to make definitive causal statements. The educator cannot ignore the interrelationship between oxytocin and other neurochemicals. And since some research reveals inconsistent results, there are likely other factors that inform emotions, attachment, and related behaviors.
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Citations


16. Vacek M, High on Fidelity. What can voles teach us about monogamy?


22. Sue Carter, the researcher who pioneered the research with prairie voles said: “The nervous system is not just oxytocin. There are many other hormones that might be just as important as oxytocin that haven't been identified yet” Read more: Can Oxytocin Ease Shyness? - TIME http://content.time.com/time/health/article/0,8599,1820828,00.html#ixzz2tRL1chiy


24. More will be learned as a result of a 5 year, $9.5 million grant to study oxytocin at Emory University. (Aug. 2013) http://news.emory.edu/stories/2013/08/conte_grant_larry_young/campus.html