Excerpt taken from:

Oxytocin Hormone Benefits and Side Effects

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Oxytocin is a hormone that helps relax and reduce blood pressure and cortisol levels. Oxytocin increases pain thresholds, has anti-anxiety effects, and stimulates various types of positive social interaction. In addition, it promotes growth and healing.

The nonapeptide oxytocin, originally known to stimulate labor and milk ejection, appears to play an important role stress and pain. It can induce anti-stress-like effects such as reduction of blood pressure and cortisol levels. It increases pain thresholds, exerts an anxiolytic-like effect and stimulates various types of positive social interaction. In addition, it promotes growth and healing. Repeated exposure to oxytocin causes long-lasting effects by influencing the activity of other transmitter systems, a pattern which makes oxytocin potentially clinically relevant. Oxytocin can be released by various types of non-noxious sensory stimulation, for example by touch and warmth. Ingestion of food triggers oxytocin release by activation of vagal afferents. Most likely, oxytocin can also be released by stimulation of other senses such as olfaction, as well as by certain types of sound and light. In addition, purely psychological mechanisms may trigger the release of oxytocin. This means that positive interaction involving touch and psychological support may be health-promoting. The social interaction of daily life, as well as a positive environment, continuously activate this system. In addition, various types of psychotherapy involving transfer of support, warmth and empathy are likely to induce similar effects, which thus contribute to the positive effects of these kinds of therapies.

Oxytocin receptors in the body and brain

Oxytocin is a very abundant neuropeptide exerting a wide spectrum of central and peripheral effects as neurohormone, neurotransmitter, or neuromodulator. In the central nervous system, the oxytocin gene is predominantly expressed in magnocellular neurons in the hypothalamic paraventricular (PVN) and supraoptic (SON) nuclei. The magnocellular oxytocin neurons release their products into the general circulation in the neurohypophysis while the mediocellular oxytocin neurons secrete elsewhere in the CNS. Oxytocin is also produced in peripheral tissues, e.g., uterus, placenta, amnion, corpus luteum, testis, and heart. Oxytocin is a potent stimulator of spontaneous erections in rats and is involved in ejaculation. The typical actions of peripheral oxytocin are stimulation of uterine smooth muscle contraction during labor and milk ejection during lactation. Oxytocin receptors have also been identified in other tissues, including the kidney, heart, thymus, pancreas, and adipocytes.

How to increase Oxytocin levels

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Oxytocin and sex

Also known as the "cuddle" hormone, oxytocin is released by both men and women at sexual orgasm.

Massage

Oxytocin can be released by various types of sensory stimulation, for example by touch and warmth. Bloodstream levels of oxytocin have been shown to rise during massage.

How it works

Oxytocin suppresses the activity of the brain region known as the amygdala, the area that processes fear and communicates it to the rest of the brain. A small sample group of 15 men inhaled either oxytocin or a placebo before performing a task in which they sorted pictures of angry or fearful faces and threatening scenes. During the test, the researchers monitored the subjects' brain activity with functional magnetic resonance imaging and found that the oxytocin group indeed had reduced activity in the amygdala.

Oxytocin reduces fear

Animal and human studies indicate the major role of the amygdala in controlling fear and anxiety. The amygdala is involved in detecting threat stimuli and linking them to defensive behaviors. This is accomplished by projections connecting the central nucleus of the amygdala to the brain stem and to hypothalamic structures, which organize fear responses. Oxytocin tempers the excitatory inputs into the amygdala.

Orgasm effect

Plasma oxytocin levels increase during sexual arousal in both women and men and are significantly higher during orgasm / ejaculation than during baseline testing.

Smiles

Oxytocin may increase one's ability to remember happy smiling faces but I have not seen studies yet that smiling itself increases one's oxytocin levels.

Availability of oxytocin drug

Oxytocin is sold as nasal spray (Syntocinon). A nasal spray containing the hormone oxytocin, which is essential to the production and flow of breast milk, does not improve milk output in mothers expressing milk for preterm infants. Intranasal administration of oxytocin causes a substantial increase in trusting behavior.

Oxytocin and bonding

The levels of oxytocin hormone in a pregnant woman's body play a role in how closely she will bond with her newborn. In animals, oxytocin, dubbed "the hormone of love and bonding," is involved in good parenting and maintaining close relationships. Dr. Ruth Feldman and colleagues at Bar-Ilan University, Ramat-Gan, Israel, studied the role of this hormone in humans and found oxytocin is important in the bonding that occurs between mothers and their infants. Dr. Ruth Feldman and colleagues measured oxytocin levels in 60 pregnant women during the first and third trimester and the first month after delivery. They found that initial levels of oxytocin (first trimester) predicted bonding-related thoughts...as well as maternal bonding to the newborn. Mothers with higher levels of oxytocin at the start of pregnancy showed more bonding behaviors after birth. Psychological Science, November 2007.