Medical Xpress

Highlight: The mama bear effect: oxytocin promotes 'tend and defend' response

June 10 2010

A soldier and a mother may share some interesting brain chemistry, researchers report in the June 11 issue of *Science*.

The hormone and neurotransmitter oxytocin, perhaps best known for its roles in maternal behavior and social bonding, also appears to foster "parochial altruism," researchers say.

This behavior combines altruism, whereby individuals act to benefit group members at a personal cost, with hostile behavior toward other groups (parochialism.) For example, a soldier who fights against the enemy, at risk to themselves, to protect their country, is a parochial altruist.

Parochial altruism has figured prominently in evolutionary explanations of human social behavior, including those of Darwin himself.

Carsten De Dreu and colleagues in the Netherlands examined whether parochial altruism has its biological basis in brain oxytocin. In three experiments, all on male volunteers, they compared the choices of individuals who received a dose of oxytocin via nasal spray with those who received a placebo.

The volunteers were assigned to three-person groups and introduced to a game in which they made confidential decisions that had financial consequences for themselves, their fellow group members and the competing groups.

The results indicated that oxytocin drives a “tend and defend” response, promoting in-group trust and cooperation and defensive, but not offensive, aggression toward competing out-groups. The hormone appears to have this effect regardless of how naturally cooperative people are.

More information: Research article: "The Neuropeptide Oxytocin Regulates Parochial Altruism in Intergroup Conflict Among Humans," by C.K.W. De Dreu; L.L. Greer; M.J.J. Handgraaf; S. Shalvi; G.A. Van Kleef; M. Baas; F.S. Ten Velden at University of Amsterdam in Amsterdam, Netherlands; E. Van Dijk at Leiden University in Leiden, Netherlands; S.W.W. Feith at Stichting AllesKits in Rotterdam, Netherlands.

Provided by AAAS