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Study: A Dose of Oxytocin Increases the Cuddles

By Jeffrey Kluger

Bridget Jones's Diary makes me snort. I mean that literally. I emit a scornful guttural sound whenever I see it, which, unfortunately, happens a lot in my house. It's one of my wife's go-to cable movies (as opposed to a more sensible choice like, say, *Patton*), and it definitely doesn't make her snort. It makes her laugh and smile and sometimes tear up, especially when Colin Firth is on the screen.

This problem has long been irreconcilable (the movie came out nine years ago), but thanks to a new study by a pair of German and British researchers, we may someday be able to hug it out. According to their findings, all it would take is a quick squirt of the hormone oxytocin up my nose, and I'd be swooning over *Bridget* too. What's more, past research has shown that the same chemical that could smooth over a couple's differences in cinematic taste might also be used in labs and hospitals to mitigate much more serious social-relation problems, like those associated with autism and schizophrenia. (See the top 10 medical breakthroughs of 2009.)

Pumped out by the hypothalamus, oxytocin is known more colloquially as the "cuddle chemical." As any pregnant woman knows and any spouse of a pregnant woman learns, it soars during labor and nursing, triggering contractions and aiding in the letdown of milk, and plays a major role in mother-baby bonding. New dads get a big slug of the stuff in their bloodstream too, but usually not until after the baby is born. Oxytocin is also partly responsible for even getting couples to the new-parent stage: it's released in both men and women during sex, giving post-romp bonding a chemical boost.

Psychiatrist Rene Hurlemann of Bonn University and neuroscientist Keith Kendrick of the Cambridge Babraham Institute were well acquainted with the power of oxytocin when it's released the way nature intended. What they wanted to determine is if it could be artificially administered to a person to manipulate feelings of empathy and perhaps even learning. "Both learning and empathy are part of what's known as social cognition," says Hurlemann. "That's our ability to feel what other people are feeling and take their point of view." (See the world's most influential people in the 2010 TIME 100.)

To test how oxytocin might affect those capabilities, Hurlemann and Kendrick ran a two-part experiment. In the first, 48 males were divided into two groups — half received an aerosol shot of oxytocin and half got a placebo — and then shown evocative pictures of things like a crying child, a grieving man and a girl hugging a cat. They were then asked to describe how deeply they were feeling the emotions associated with the

pictures. On the whole, the men in the oxytocin group exhibited "significantly higher emotional empathy levels" than those in the placebo group. This, despite the fact that all of the volunteers were able to describe and understand what was going on in the pictures and what the people in them were probably feeling.

In the second part of the experiment, the subjects were given a simple on-screen exercise that tested their ability to observe certain details in images or words. Sometimes correct answers were indicated by a green circle and incorrect ones by a red one; other times a happy face and a disapproving face were substituted. All of the men learned more quickly when the faces were used, but the difference was particularly marked among those in the oxytocin group. "You got a combined effect," Hurlemann says. "You enhance empathy and in the process, you enhance social learning." (See the top 10 scientific discoveries of 2009.)

In the home, the oxytocin implications could be enormous. Husbands could learn to melt at Olympic ice dancing; wives could swoon over a Drew Brees bomb. Is Glenn Beck crying? Now your blue-state mate can too!

But the hormone — in theory at least — could have more meaningful implications. If healthy social behavior turns in part on being able to feel the pain of others, antisocial behavior involves an ability to observe — or even cause — that kind of suffering and not experience any of it yourself. Could oxytocin change that? "It's an interesting possibility," says Hurlemann. "For instance, someone who didn't sympathize with handicapped people might learn to with oxytocin. You'd probably have to administer it just once, because you learn the feeling forever." (See TIME's special report "How to Live 100 Years.")

That's a little too *Clockwork Orange* for most people, but other potential therapeutic uses could be more benign — and perhaps even game-changing. Both schizophrenia and autism are defined by a lack of social feeling and an inability to read facial and other cues. In a study last February at the Centre de Neuroscience Cognitive in Lyon, France, investigators administered oxytocin spray to 13 children with mild autism. After treatment, the participants were better able to read body-language cues during a game of catch, and when looking at photographs of faces, they spent more time studying the images — especially the eyes — than they would have otherwise.

Still, Hurlemann warns, the hormone has its limits. An Israeli study has shown that when people are engaged in a contest, if one player's emotions are manipulated by the offer of a bigger prize to the other player, the first player's feelings of jealousy and ill will are actually exacerbated by a dose of oxytocin. "Oxytocin does not make you a better person," he says. "In some cases it may simply intensify whatever you're feeling."

That, alas, means I may never like *Bridget Jones*. On the upside, pending further studies, I do get to keep on snorting.

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