

Basic Instinct by John Hoffman

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A dad can do so much more than defend the cave. New research shows that he too has the biological goods to nurture baby

Gord Fansher got a crash course in baby care after his first child was born. Matthew made his entrance after a rather dramatic last-minute Caesarean section, which left Gord's wife, Jan, sore, weak and barely able to move. In the early days when Matthew cried, it was Gord who rose and got him from the little bassinet they'd set up in the master bedroom. When the nursing session was over, Gord burped and changed Matthew and put him back to sleep. "I had to do everything with the baby that involved lifting or carrying," says the London, Ontario, father of two. "He weighed ten pounds and she wasn't supposed to lift anything that heavy."

Necessity is often a good teacher. Gord became so indispensable that, when he tried to sneak off for a respite coffee at Tim Hortons, Jan made him take his pager so she could summon him at a moment's notice.

What this new dad didn't know was that, behind the scenes, his body was altering itself to help him meet the challenge.

We have no trouble thinking of motherhood in biological terms. That's because the physiology of child bearing — pregnancy, birth and breastfeeding — unfolds before our eyes. A father's biological role seems to end when that little sperm penetrates his partner's ovum. However, recent research, most of it Canadian, suggests that there is actually a larger biological story to fatherhood that extends well beyond the Tommy Testosterone world of gonads, erections and ejaculations.

This research shows that not only do fathers go through hormonal changes as they move into parenthood, but some of these changes may persist well beyond the early days of sympathetic pregnancy symptoms, infant cries and diaper changes.

Two of the pioneers in this area, Anne Storey, a psychobiologist at Memorial University in St. John's, and Katherine Wynne-Edwards, a professor of biology at Queen's University, know more about seabirds and rodents than humans when it comes to the relationship between hormones and parenting. However, their observations of animals led them to wonder if they could find similar connections in humans.

Storey tested blood samples from 34 expectant couples at different points during pregnancy or after the birth. She found that both men and women had elevated levels of the hormones prolactin and cortisol just before the birth. Cortisol is best known as a stress hormone, but it helps to trigger the onset of labour and is thought to be a significant part of the hormonal package that helps new moms be alert and attentive to their babies. Prolactin, as its name suggests, plays a role in milk production. It has been known for some time that these changes take place in women, but this was the first published research measuring them in men.

Storey also found that dads who were most responsive in an experiment that involved holding a doll, listening to a baby cry and watching a videotape of a newborn, had higher levels of prolactin than those who were less responsive. This is interesting because, not only does prolactin help kick-start lactation, it's also linked to nurturing behaviour. Storey's research also showed that the men who were tested after their babies were born had lower levels of the male sex hormone testosterone than those who were tested during the pregnancy.

In a subsequent study, Wynne-Edwards confirmed the findings about testosterone and cortisol and went one step further, comparing fathers to non-fathers. She found that dads had higher levels of the female sex hormone estrogen and lower levels of testosterone than childless men. (Don't worry, lads. This doesn't mean you're about to sprout breasts.)

These studies have caused considerable media excitement, including an article in the March/April 2002 issue of *Psychology Today* that described some of the findings as "startling." However, anthropologist James McKenna, who has documented physiological changes that take place in mothers and infants who sleep together, doesn't think the findings are surprising at all given what we already know about hormonal activity in humans.

"It's hardly a shocking premise that the transition to parenting would lead to biological change," says McKenna, a professor at the University of Notre Dame in Indiana. "Every stage of life has biology accommodating it." That, he assumes, would include becoming a father.

It's important to clarify the relationship between hormones and conscious behaviour. We often think or, at least, speak as if hormones make people do things — burst into tears before a menstrual period, for instance.

But while hormones can affect the way we act, on their own they don't cause behaviour. "It appears that the behaviour takes place, the brain senses what the person is doing and the hormones accommodate," says McKenna.

So if you're racing another guy for a hockey puck, the brain sends out signals that, among other things, increase your heart and breathing rate, tell your legs to move faster and perhaps kick in some extra adrenalin and testosterone. The hormonal activity alone doesn't make you skate faster — let's not forget your intense desire to outskate that other SOB. It's more like a biological coach skating behind you, whacking you on the butt with a hockey stick.

That means hormones didn't make Gord Fansher take on an enhanced role in baby care. He did that because he's a responsible guy who cares about his partner and baby. However, hormonal changes may have made him more receptive to cues from his baby and his wife so he was better able to respond appropriately.

Before we go off half-cocked thinking we know now what makes dads tick, we should remember that this is preliminary research that leaves many unanswered questions. For example, while Wynne-Edwards found a trend to lower levels of testosterone in the fathers, she also found considerable variation in both baseline levels of testosterone, and fluctuations within the group of fathers. Higher levels of testosterone have been shown to inhibit parenting behaviour in male birds. Could it be that the men with naturally lower levels of testosterone would prove to be better parents? Or is it that some have more inherent interest in fatherhood and their bodies respond by making less of the guy hormone? Both Storey and Wynne-Edwards hasten to say that we don't know, and point out that both of these studies were rather small and did not involve a diverse cross-section of fathers (all participants were enrolled in prenatal classes, most were middle class and white). The most solid conclusion is that this is an area worthy of further study. But the findings have credibility and relevance to the average dad. That's because they make sense in the context of existing knowledge, and because they are supported by more recent, related studies.

Researchers at Harvard University, for example, measured testosterone in single men, childless married men and fathers. All had an early morning surge in testosterone, which subsided as the day progressed. But the decline was substantially greater in fathers (it was slowest in the single men).

Perhaps the most interesting research of all was a study by psychologist Alison Fleming at the University of Toronto, concluded in 2001. Fleming played tape recordings of crying babies to non-fathers and also first-time and experienced dads whose partners had recently given birth. She recorded their before-and-after hormone levels along with their emotional responses to the crying. Like the others, she found differences between parents and non-parents, but the most intriguing differences were between experienced and inexperienced fathers.

In response to hearing the cry, dads with more experience in changing diapers and holding babies expressed a greater need to go and comfort the baby. What's interesting is that they had lower levels of testosterone to begin with and, after hearing the cries, showed noticeably bigger surges in prolactin than their less experienced counterparts.

So it seems that, not only do bodily processes assist the transition to fatherhood, fathering behaviour may have long-term effects on male biology. Researchers have speculated that some of the hormonal changes found might be related to the close contact between the expectant parents — physiological signals going back and forth between partners through pheromones, chemicals that all animals give off through their skin and sweat. Fleming's research suggests that contact with the baby may prompt hormonal changes that affect a father's behaviour.

This suggests a sort of self-fulfilling prophecy of involved fatherhood. The more a man is involved, the more his hormones will change to support that involvement, which in turn increases the likelihood of more involvement, and so on. Still, Fleming concluded that experience, not hormones, was the most important factor affecting fatherly

responsiveness in her study. “Through the very experience of interacting with the infant, fathers become more attuned to infant cues, and probably more engaged and less anxious,” she says. “So, the more experience fathers have had, the more rewarding the experience can be.”

But, along with experience, it’s pretty clear that something biological is going on. Hormonal preparation for parenthood is not just a mom thing.

This also makes sense in the context of another important concept called reproductive success: the idea that species adapt their behaviour to ensure the survival of their offspring. In some animals that means helping to keep babies warm. In humans, if the route to reproductive success requires hunting for food and fighting off cave bears, male biology (with testosterone in a starring role) will kick in to sustain that. But, in our society, where hands-on nurturing and social support for one’s partner are more important, a man’s hormones will help him in that role. “Human biology is flexible, there to support a man in whatever he needs to do at a given point in his life,” says McKenna. “Men are designed to multi-task. They can be providers and protectors, but they can also be nurturers.”

There is also concrete evidence that close contact with dad can bring about physiological changes in a child. “In the so-called ‘kangaroo care’ studies [research that showed skin-to-skin contact improved the health of premature babies], it didn’t matter which parent the baby was in contact with,” says McKenna. “The babies gained just as much weight and improved just as much on every one of the other indicators from contact with fathers as with mothers.”

If the research boils down to anything, it’s this: Although men can’t conceive, bear and nurse babies, they have the biological tools to provide all the other necessities of life. “The problem is that too often men assume they can’t bond or meet baby’s needs,” says McKenna. “But they can.”