Health and Marriage: The Cortisol Connection

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Bad marriages can be sickening. Most people don't have to be convinced of this, but for those who do, several decades of studies offer plenty of proof. Even so, very little is known about exactly how marriage quality affects health. Do strife and rudeness and neglect—and all the other signs of marital unhappiness—somehow get under the skin and trigger physical ailments? Or do warmth and trust and understanding and appreciation follow some biological pathway to wellness? Or both?

Relationship experts have been focusing recently on marital partners' beliefs about their marriage—specifically a partner's belief that the other partner understands and cares for him or her. Whether true or not, this belief—this perception that a partner is responsive, and reciprocates one's love and appreciation—is associated with satisfaction and intimacy in marriages. Could it also be related to physical health?

That's the question that Wayne State University psychological scientist Richard Slatcher has been exploring in his work. Since perceived responsiveness is so important to marital satisfaction, Slatcher and his colleagues wondered if such beliefs might also have a positive impact on health and longevity through some biological pathway. The biological pathway they targeted for study is the hypothalamus-pituitary-adrenal, or HPA, axis, and the hormone cortisol.

Cortisol is ubiquitous. It's present in nearly every cell of the human body, and plays a role in learning, memory and emotion. It also helps regulate the immune system. In a healthy person, cortisol spikes soon after waking, then diminishes all day, bottoming out at bedtime. This is called a steep cortisol slope. A flatter slope—often with a much smaller morning spike—is associated with poorer physical health, including diabetes risk, atherosclerosis and mortality. Aversive childhood experiences and social conflict have been linked to flat cortisol slopes, but the hormone has never been studied in connection with adult romantic relationships.

That's what Slatcher decided to do. He wanted to see if perceived partner responsiveness is linked to steeper—that is healthier—cortisol slopes many years later. He used data from an ongoing longitudinal study called the Midlife in the United States Project, focusing on a group of about 1000 adults, married or cohabiting men and women, who were studied both in 1995-1996 and in 2004-2006. Most stayed with their original partner over the time of the study, though a small group were divorced, separated or widowed, and sometimes remarried.

The scientists assessed the subjects, at both points in time, focusing on their perceptions of theior partners' responsiveness—how much their partners cared about them, understood the way they felt about things, and appreciated them. They also computed a marital risk score for each subject. Was the marriage troubled, at risk of ending? They did this so they could see if partner responsiveness predicted cortisol patterns above and beyond negative aspects of the relationship. They also assessed controlled for other things that might affect the results—how agreeable the subjects were, how depressed, how negative

or positive their emotions in general.

Then finally, in 2004-2006, they took saliva samples from subjects, throughout the day over several days, which they tested for cortisol concentration. Would believing in one's partner, early on, affect cortisol, an important health indicator, fully a decade later?

It did, as the scientists report in a forthcoming issue of the journal *Psychological Science*. Perceived responsiveness was associated with both steeper cortisol slope and higher wakeup cortisol level. Importantly, this link between responsiveness and healthy cortisol was driven, at least in part, by diminishing negative emotions over the decade. In other words, believing that one's partner cares—this perception leads to a decline in negative emotions, which in turn affects cortisol—and ultimately health.

Slatcher wondered if adults who stayed with their original partners fared better or worse than those who moved on. The data say no. There was no evidence that being in a new relationship weakened the association between responsiveness and cortisol. That is, the link between responsiveness and healthy cortisol a decade later was just as strong for those separated and remarried as for those still with their original partner. This suggests a lasting effect of early marital experience, one that carries over even into new relationships. The scientists believe that cortisol could turn out to be the long-sought link between quality marriages and longevity.

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