

## Study shows women experience less pain when holding loved one's hand

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A small team of researchers from the University of Colorado, the University of Haifa and University Paris Diderot has found that women sense less pain when holding the hand of a person they love. In their

paper published in the *Proceedings of the National Academy of Sciences*, the group describes the experiments they conducted in which women were exposed to some degree of pain and were then asked to report how painful it felt under different conditions.

In modern times, it has become common in some countries for husbands (or other loved ones) to be invited into the [delivery room](#) to offer comfort as a woman experiences the pain of childbirth. But does such hand-holding actually offer any benefits to the woman in pain? To test for that possibility, the researchers enlisted the assistance of 20 couples willing to undergo several experiments.

The experiments consisted of having the women hold onto a tube through which [hot water](#) could be pumped to induce pain. Then the women and their significant others were placed in different sorts of situations. In some, the man held the woman's hand as the hot water was applied; in others, the man sat nearby but did not offer a hand. In others, the man sat in a nearby room. In all of the cases, both volunteers were asked to rate the degree of pain the woman was experiencing.

In looking at the results of their experiments, the researchers found that the women reported on average experiencing less than half as much pain when they were holding their loved one's hand. And it went both ways—the men in the group were most accurate in matching the [pain level](#) reported by the women when they were holding her hand during her painful experience. The team also found that couples whose EEG printout was most similar coincided with the lowest reports of pain by the women.

The researchers suggest that hand holding can offer two types of benefits to a person in pain. The first is that touching or being touched releases chemicals in the brain that make pain easier to bear. The second is that there appeared to be some sort of synchronizing going on in the brains of

the couples that offered an analgesic-like effect, some of which, they note, might have an empathetic component.

**More information:** Pavel Goldstein et al. Brain-to-brain coupling during handholding is associated with pain reduction, *Proceedings of the National Academy of Sciences* (2018). [DOI: 10.1073/pnas.1703643115](https://doi.org/10.1073/pnas.1703643115)

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