

People with low oxytocin levels suffer reduced empathy

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People suffering medical conditions causing low levels of oxytocin perform worse on empathy tasks, according to new research presented today at the Society for Endocrinology annual conference in Brighton. The research is the first to study humans with reduced oxytocin and suggests that hormone replacement could improve the psychological well-being of those living with low levels.

Oxytocin is often referred to as the 'love hormone' due to its role in human behaviours including sexual arousal, recognition, trust, anxiety and mother-infant bonding. It is produced by the hypothalamus - an area of the brain that controls mood and appetite - and stored in the pituitary gland, a pea-sized organ that sits in the base of the skull.

Researchers from the University of Cardiff investigated empathic behaviour in people who they suspected of having reduced [oxytocin levels](#) due to one of two [medical conditions](#) caused in response to pituitary surgery.

The study assessed 20 people with cranial diabetes insipidus (CDI). In CDI, the body has reduced levels of ADH - a chemical also produced in the hypothalamus and structurally very similar to oxytocin. They also assessed 15 people with hypopituitarism (HP), a condition in which the [pituitary gland](#) does not release enough hormones. These two patient groups were compared to a group of 20 healthy controls.

The researchers gave all participants two tasks designed to test empathy,

both relating to the recognition of emotional expression. They also measured each group's oxytocin levels and found that the 35 CDI and HP participants had slightly lower oxytocin compared to the healthy controls, though a larger sample is required to establish statistical significance. They also saw that the CDI and HP groups performed significantly worse on empathy tasks, compared to controls. In particular, CDI participants' ability to identify expressions was predicted by their oxytocin levels - those with the lowest levels of oxytocin produced the worst performances.

"This is the first study which looks at low oxytocin as a result of medical, as opposed to psychological, disorders," said Katie Daughters, lead researcher. "If replicated, the results from our patient groups suggest it is also important to consider medical conditions carrying a risk of low oxytocin levels."

"Patients who have undergone pituitary surgery, and in particular those who have acquired CDI as a consequence, may present with lower oxytocin levels. This could impact on their emotional behaviour, and in turn affect their psychological well-being. Perhaps we should be considering the introduction of oxytocin level checks in these cases."

The researchers hope to expand their study in order to further replicate and confirm their findings. This study presents only preliminary results, and it has not been peer reviewed.

Provided by Society for Endocrinology

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