

A Hormone to Remember

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Given only a small dose of oxytocin, individuals in a recent study found that their memory significantly improved. Not for historical dates, strings of digits, or bars of music, but for something much more significant: each other.

“We consider faces the most basic class of social stimulus,” says Ulrike Rimmele, who led the study at the University of Zurich. Oxytocin’s ability to exclusively enhance the recollection of faces points to an important distinction between different types of memory. Social memory - which we use to remember people - is distinct from other types of memory required to store dates, numbers, and objects.

The researchers tested the ways in which the hormone oxytocin affects memory in humans. Participants in the study were given six puffs of a nasal spray containing the hormone and then shown images of faces, landscapes, and various inanimate objects. The next day, they were asked to identify which pictures they had seen 24 hours prior. “Neither oxytocin nor the placebo increased the recognition of inanimate objects. But oxytocin did increase the recognition of faces,” says Rimmele.

“Social recognition is an essential prerequisite for more complex social behavior,” she says. For instance, around those we know to be trustworthy, we instinctively feel safe in acting more relaxed; with those who are unfamiliar, we know to be cautious.

Understanding the ways in which these distinct forms of memory function in the brain is crucial for the development of treatments

for cognitive disorders. Even with this understanding, however, the brain's complexity makes it difficult for doctors to target specific types of memory. And useful treatments are often imprecise, carrying risks of unwanted side effects.

But more precise treatments may someday become available. According to Rimmele, what's especially remarkable about the research is that it shows how "one hormone can specifically influence one type of memory." Using hormones like oxytocin, doctors may be able to more easily and effectively penetrate the complexity of the brain to address once inaccessible problems.

"I see it as a drug that might help patient populations that have social deficits," Rimmele says. She believes that further research into oxytocin may lead to the development of a treatment for autistic patients. "They have a deficit in recognizing emotions and faces, so administering this hormone might help them."