Innovative study aims to quench alcohol cravings

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A McMaster addictions researcher has developed a novel treatment with the potential to stop cravings in people with alcohol dependency.

Most medications target alcohol addiction by reducing the positive feeling associated with drinking or by triggering unpleasant symptoms like nausea to deter drinking.

But the new approach aims to quench the desire for alcohol by accelerating the effects of a behavioural treatment.

The study explored whether D-Cycloserine, a drug typically used to treat tuberculosis, could get rid of alcohol craving in response to environmental triggers.

The research, published this month in *Translational Psychiatry*, was led by James MacKillop, a professor of psychiatry and behavioural neurosciences of the Michael G. DeGroote School of Medicine.

"These findings provide important initial evidence that D-Cycloserine accelerates reductions in cravings and has promise for improving the treatment of alcoholism," said MacKillop. "The study also provides support for more generally investigating learning-enhancing medications for improving behavioral therapies for addiction."

He conducted the study while at the University of Georgia before coming to McMaster last year to become the Peter Boris Chair in

Addictions Research and director of the Peter Boris Centre for Addictions Research at the West 5th campus of St. Joseph's Healthcare Hamilton.

Half of the study's 37 participants were given a placebo and half given the drug, which binds to receptors in the brain that control learning and memory.

The drug is thought to enhance learning processes and when patients were being taught that the triggers in their environment do not have to be acted upon, their learning can be improved with the medication and cravings reduced as a result.

Participants were seated in a bar-like environment replicated in a lab. Their drink of choice was poured for them and they were asked to smell it repeatedly, but not drink it. After repeated sessions, participants' cravings for alcohol were significantly reduced, especially for the individuals who received the medication.

The effect was present after the first time patients took the medication and persisted to the conclusion of the study.By the end, patients in the active medication condition reported extremely low levels of craving in the bar.

"Combining a bar laboratory procedure within treatment is unusual, but it was critical to examine this medication's effects in real patients who were receiving treatment, as a foundation for larger studies," said MacKillop.

Those on the medication also drank significantly less than those taking the placebo. The medication was associated with minimal side effects. All of the patients also received evidence-based counselling.