AI may help spot relapse risk in alcoholics

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Artificial intelligence (AI) may be able to identify alcoholics at risk of relapsing after treatment, researchers say.

Patients often return to heavy drinking during and after treatment, and may require multiple tries before they can achieve long-term abstinence from [unhealthy alcohol use](#).

[AI](#) may allow care providers and [patients](#) to predict drinking relapses and adjust treatment before they occur, Yale University researchers found.

In a new study, the investigators used [clinical data](#) and a form of AI called machine learning to develop models to predict relapses among patients in an outpatient treatment program.

Data from more than 1,300 U.S. adults in a 16-week clinical trial of treatments in 11 centers were used to develop and test the [predictive models](#).

Patients were randomly assigned to one of nine medication or behavioral therapy combinations, and data on how they fared were used to "train" the machine learning algorithms.

The objective was to create a set of models that could predict relapses of heavy drinking (four or more drinks a day for women and five or more for men) at three different time points: during the first month of treatment, during the final month of treatment, and between weekly or bi-weekly treatment sessions.

Led by Walter Roberts, an assistant professor of psychiatry at the Yale School of Medicine, the researchers found the resulting models performed well in predicting [relapses](#), and are likely to be more accurate than clinicians in identifying patients who are at risk of returning to [heavy drinking](#) and could benefit from additional interventions during treatment.

The study results were published April 14 in the journal *Alcoholism:*

Clinical and Experimental Research.

In the models, the most important information for predicting relapse included factors such as liver enzyme levels and the age when alcohol dependence began, and patient scores on self-report surveys, such as those relating to drinking behaviors and psychological symptoms.

All of these factors can be obtained relatively easily and inexpensively during treatment for alcoholism, the study authors noted.

They also said the models showed differences in the importance of specific predictive factors among men and women, consistent with previous research showing sex differences in links to harmful drinking.

More information: For more on treatment for drinking problems, see the U.S. National Institute on Alcohol Abuse and Alcoholism.

Walter Roberts et al, Using machine learning to predict heavy drinking during outpatient alcohol treatment, *Alcoholism: Clinical and Experimental Research* (2022). DOI: 10.1111/acer.14802