

Potential novel biomarker for alcohol dependence

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Specific molecules (small noncoding microRNAs or miRNAs) found in saliva may be able to predict alcohol dependence as biomarkers.

This is the first study to examine changes in the miRNA expression in the saliva of people with [alcohol dependence](#). Currently, no [genetic markers](#) exist to test for this condition.

Alcohol dependence is a common, complex and genetically influenced disorder. A current diagnosis depends primarily on self-reported symptoms, which is limited by inaccurate recall or reluctance of patients to give [accurate information](#) on their drinking behaviors or [alcohol-related problems](#).

Researchers from Boston University School of Medicine (BUSM) first used miRNA sequencing (miRNA-seq) technology to profile miRNA transcriptomes in the saliva of patients with alcohol dependence and healthy control subjects from both African-American (AA) and European-American (EA) populations. They then identified salivary miRNAs that expressed differently in people with alcohol dependence as compared to the control group. Using a machine learning approach, the researchers were then able to predict alcohol dependency in approximately 80 percent of AAs and 72 percent of EAs.

According to the researchers, there is considerable interest in the identification of biological measurements (or biomarkers) to assess a patient's current or past alcohol use.

"The identification of disease-specific biomarkers in easily accessible body fluids such as saliva can result in the [early diagnosis](#) and treatment of diseases. This study provides initial evidence that salivary miRNAs are potential biomarkers for this illness," explained corresponding author Huiping Zhang, Ph.D., associate professor of psychiatry at BUSM.

These findings appear online in the journal *Epigenomics*.

Provided by Boston University School of Medicine

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