

# TREATMENTS FOR MULTI-DRUG OR BROAD ADDICTION LIABILITY

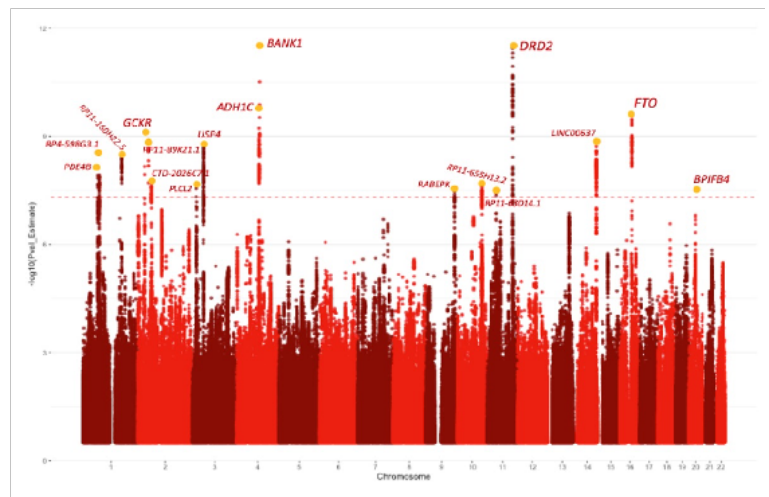
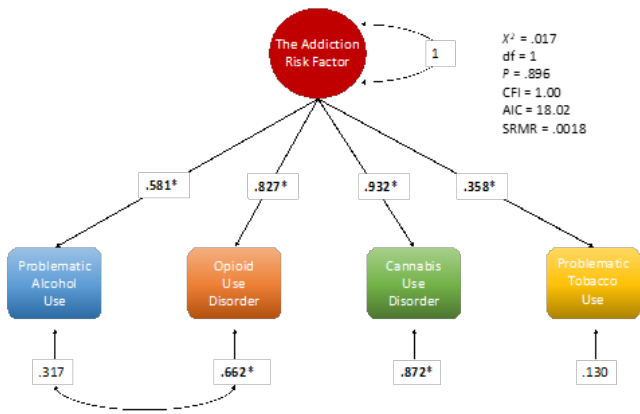
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T-020521

## Technology Description

Researchers at Washington University in St. Louis, led by Dr. Alexander Hatoum, have developed a computational model for improving the diagnosis and treatment of drug addiction. Using genome-wide association study (GWAS) of over 1 million subjects, Dr. Hatoum's group discovered that addiction to different drugs of abuse, such as alcohol, opioid, cannabis, and tobacco, have similar genetic and transcriptomic underpinnings. Using a model called Addiction Risk Factor (addiction-rf), individuals with broad addiction liability can be identified. In addition, novel therapeutics with potential to counteract the neuropathological effects of multi-drug addiction can be predicted using a suite of statistical algorithms.



*Left: Individuals with liability to addiction to a single substance are often at increased risk for another substance and polysubstance use. Broad substance susceptibility falls under the umbrella of addiction-rf. Right: Addition-rf identified genes inherited regardless of the substance being used, downstream analytical algorithms are used to assign treatments based on genetic liability.*

## Stage of Research

Proof of concept research. Looking for licensing and collaboration partners.

## Applications

- Risk stratification of patients suffering from broad substance abuse based on their

addiction-rf profile.

- Platform software to identify novel therapeutics for addiction, including methods to repurpose FDA-approved and clinical stage drugs for use in addiction treatment/prevention.

### **Key Advantages**

- There's currently no effective treatment for broad addiction liability. Existing therapy, such as MAT, has high overall relapse rates. Even when patients are successfully treated for one addiction, they often become addicted to another substance.

**Patents:** Pending

**Related Web Links:** Dr. Alexander Hatoum [profile](#), [technology news](#), and [publication](#).