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Updates from the Psychiatric Genomics Consortium's Substance Use Disorders Working Group

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The Psychiatric Genomics Consortium's Substance Use Disorders Working Group (PGC-SUD) published their flagship alcohol dependence GWAS of 14,904 cases and 37,944 controls, the largest to date of diagnostic alcohol dependence (featured on Dec cover of Nature Neuroscience). There were two GWS signals in *ADH1B*, one driven by individuals of European descent and the other by individuals of African descent. There was significant genetic correlation with several psychiatric and behavioral traits. Correlation with alcohol consumption was modest. Ongoing analyses focus on the largest GWAS of cannabis use disorders, including PGC-SUD data on >8000 cases with cannabis abuse/dependence and >22,000 controls of European descent with follow-up analyses contrasting cases with exposed controls as well as comparisons between exposed controls and a more strict definition of cannabis dependence alone, as well as a GWAS of individuals of African descent. Another GWAS focused on opioid dependence (3,402 OD cases and 2,846 exposed controls) will also be presented. Future analyses of alcohol and drugs will use a variety of phenotypes and sources (AUDIT, CAGE, ICD) including quantitative phenotypes (e.g., symptom counts). Collaborations (e.g., depression, posttraumatic stress disorder, eating pathology) have also resulted in insights into comorbidity. However, power computations reveal a need for marked increases in sample size, especially in non-European populations, with an emphasis on phenotyping that captures problematic aspects of addiction, over and above measures of excess use, which may be particularly lacking for illicit drugs, even in large biobanks. Thus, given the importance of illegal drug use and dependence, we need to focus on more data collection with robust phenotyping.