

Abstracts of Current Grants of John Hughes

john.hughes@uvm.edu

Targeting Tobacco Cessation During Treatment for Cannabis use Disorders (Budney PI, NIDA): Approximately 50% of persons seeking treatment for cannabis-use disorders (CUDs) regularly smoke tobacco. Combining tobacco with cannabis has become a common method of smoking cannabis either via use of blunts (rolling cannabis into hollowed out cigars), adding tobacco to joints, or smoking tobacco immediately after cannabis (chasing). Tobacco smoking is a negative predictor of cannabis outcomes for those trying to quit using cannabis, and vice versa. The similar route of administration and repeated pairing of tobacco and cannabis use likely results in learned associations that strengthen the behavior for using both substances, and make quitting more difficult. Perhaps even more than with use of alcohol or other drugs, stopping tobacco at the same time as cannabis may be beneficial. Little scientific information currently addresses how to best target tobacco smoking during treatment for CUDs. The long-term goal of this project is to develop an effective protocol for intervening in tobacco smoking in this population without adversely affecting cannabis outcomes, and perhaps enhancing them. A two-phase project will accomplish the following three Specific Aims. First, a treatment protocol will be developed that integrates a tailored intervention for tobacco smoking (nicotine replacement therapy and behavioral counseling) with an optimal intervention for CUD (Aim 1). Utilization of web-based counseling programs will standardize delivery of the intervention and foster eventual dissemination. A pilot study will provide an initial test of acceptability, feasibility, and inform modifications to the intervention. Second, a Stage 1 proof of concept, randomized trial will compare this combined intervention to one that targets CUD only (Aim 2). The primary hypotheses assert that the intervention (1) will be accepted by the majority of CUD outpatients who smoke tobacco;; (2) will result in more tobacco quit attempts and higher tobacco cessation rates than the CUD-only treatment;; and (3) will not adversely affect cannabis outcomes, and possibly enhance them. Estimates of outcomes and group differences will inform the design of a subsequent Stage 2 efficacy trial. Last, the project will evaluate the potential of specific moderators of outcomes, such as impulsivity (delay discounting rate), to predict outcomes and inform subsequent treatment development efforts (Aim 3). If the hypotheses are confirmed, dissemination of this protocol would reduce adverse psychosocial and health consequences associated with tobacco and cannabis dependence. Moreover, findings will inform future development of prevention and intervention strategies by advancing knowledge related to the interplay of cannabis and tobacco smoking and the biologic and behavioral factors that contribute to initiation of use, misuse, and attempts to quit using them.

Does cessation of E-cigarettes produce withdrawal symptoms (Hughes PI, NCI):

Electronic cigarettes (e-cigarettes) are the fastest growing harm reduction product. Many e-cigarette users obtain nicotine blood levels from e-cigarettes that are much higher than those from nicotine replacement products and, in some studies, similar to that for tobacco cigarette users. Given this, one would expect abrupt cessation of e-cigarettes to produce withdrawal symptoms but this has not been tested. We propose to recruit 120 long-term e-cigarette-only users. Participants will enter a within-participants study with random, balanced order of assignment to four conditions: a) their own e-cigarettes, b) a new nicotine e-cigarette, c) the non-nicotine (i.e. placebo) version of the new e-cigarette, and d) no use of any e-cigarettes. The use of nicotine or non-nicotine new e-cigarettes will be double-blind. Participants will be instructed to abstain from tobacco and nicotine products during the study. Each condition will last 5 days with a 2 day washout between conditions. To encourage compliance we will use an

escalating payment system with bonuses that has resulted in high compliance rates in our prior studies. Participants will monitor symptoms of nicotine withdrawal daily via an Interactive Voice

Response system. They will also attend 3 lab visits/week to provide carbon monoxide and cotinine samples to determine compliance payments, and to complete longer surveys, a cognitive task and a task to measure increased motivation to use e-cigarettes. We will test the effect of abstinence (own e-cigarette vs no e-cigarette) and its pharmacological specificity (new nicotine e-cigarette vs new non-nicotine e-cigarette). Our results will help determine a) the addiction potential of e-cigarettes, b) whether labeling should warn purchasers of e-cigarettes that abrupt cessation can induce withdrawal, and c) whether withdrawal problems should be included in risk/benefit assessments of e-cigarettes.