# Commonality of Ethanol and Nicotine Reinforcement and Relapse in Wistar-Derived UChB Rats: Inhibition by N-Acetylcysteine

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 Background: Life expectancy is greatly reduced in individuals presenting alcohol use disorders and chronic smoking. Literature studies suggest that common mechanisms may apply to the chronic use and relapse of both alcohol and nicotine. It is hypothesized that an increased brain oxidative stress and neuroinflammation are involved in perpetuating these conditions and that a common treatment may be considered for both. Methods: Rats bred as high ethanol (EtOH) drinkers (UChB) were allowed chronic access to EtOH solutions and water and were thereafter deprived of EtOH for a prolonged period, subsequently allowing reaccess to EtOH, which leads to marked relapse binge-like drinking. Separately, EtOH-naïve animals were chronically administered nicotine intraperitoneally and tested under either a conditioned place preference (CPP) reinstatement condition or allowed a free-choice drinking of nicotine solutions and water. Oral N-acetylcysteine (NAC)