Psychedelics are typically... 2018, an open label study with 15 subjects investigated psilocybin for nicotine cessation and found... dependence will also be important. Particularly, due to recent studies showing that psilocybin does not have a lasting effect on nicotinic receptors when given 24 hours prior to a single dose. In future directions, our study could be repeated with both a larger sample size and in female mice. It would also be important to investigate the time course of psilocybin on nicotine reward and intake in future studies. Further research on the brain mechanisms underlying psilocybin's effect on nicotine dependence will also be important.

Recent research has investigated psychedelics as potential treatments for smoking cessation.
- Physical dependence and withdrawal from psychedelics has not been documented (Johnson, M. W., Johnson, R. E., & Griffiths, et al., 2018).
- In 2018, an open label study with 15 subjects investigated psilocybin for nicotine cessation and found that 6 months after the target quit date, 80% of the subjects remained abstinent and 12 months later, 67% remained (Johnson, Garcia-Romeu, et al., 2018).
- More recently, it was also reported that lifetime psilocybin and mescaline usage is associated with decreased odds of current nicotine dependence (Jones, 2022).
- Recently, our lab also found that administering a single dose of psilocybin 24 hours before spontaneous nicotine cessation significantly decreased the amount of somatic signs of withdrawal in nicotine-dependent mice. Given these recent findings on psilocybin and its effects on nicotine cessation and withdrawal, we thought it would be important to test if psilocybin is reducing nicotine withdrawal by altering the effects of acute nicotine. For this reason, our study could be repeated with both a larger sample size and in female mice. It would also be important to investigate the time course of psilocybin on nicotine reward and intake in future studies. Further research on the brain mechanisms underlying psilocybin's effect on nicotine dependence will also be important.

In this study, 20 C57BL/6J adult male mice were used as test subjects. 5 mice were used for each test group: saline-saline, psilocybin-saline, and psilocybin-psilocybin. Saline-saline was the negative control and saline-psilocybin was the positive control.

The psilocybin (PSI) injection dose was 1 mg/kg, and injection was done intraperitoneally. This dose was used because our lab had previously seen almost complete reversal of nicotine withdrawal when this dose of psilocybin was injected 24 hours before spontaneous nicotine cessation. The nicotine (Nic) injection dose was 1.5 mg/kg, and injection was done subcutaneously. This high dose was chosen so that any effect of psilocybin on the acute effect of nicotine could be seen clearly in the results.

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