# research snapshot

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# A clinical trial evaluating the use of as needed intranasal naloxone for the treatment of gambling disorder

## What this research is about

Gambling disorder (GD) can lead to serious harm for people who gamble and their families. GD is often treated with psychosocial interventions. No drug treatments have been approved for GD. However, clinical trials with opioid antagonists have shown promise. Opioid antagonists, such as naloxone, are drugs that block brain receptors involved in producing the rewarding effects of gambling. There are side effects and time delay in the onset of drug effects when taken orally. Research has looked into delivering opioid antagonists through intranasal administration (i.e., through the nose). A recent imaging study has found that intranasal naloxone can be readily absorbed and tolerated. This clinical trial compared the effects of taking intranasal naloxone as needed to placebo. A placebo is a fake drug with no active ingredients and is commonly used in drug studies as a comparison. The researchers expected that intranasal naloxone would reduce gambling urge and have other positive effects better than placebo.

## What the researchers did

This clinical trial took place in Finland. The researchers recruited participants through advertising online and in newspapers. The advertising directed potential participants to a study website, where they completed the South Oaks Gambling Screen-Revised (SOGS-R). People who scored 5 or higher were asked to contact the study staff for a screening visit.

Participants completed a clinical interview during the screening visit. To be eligible for the study, they must meet the criteria for moderate to severe GD according to the DSM-5. They must not have a serious mental or physical illness, be at risk of suicide, or have a condition that would prevent the use of a nasal spray. They must have completed any treatment for GD at least four weeks prior to the study and any treatment with naltrexone or nalmefene at least eight weeks before. Participants were assessed for gambling urge using the Gambling Symptom Assessment Scale (G-SAS). They completed the Problem Gambling Severity Index (PGSI) and the National Opinion Research Centre DSM Screen for Gambling Problems (NODS). Participants were also assessed for quality of life, internet use, smoking, alcohol use, and depression.

At the baseline visit, participants were randomly assigned to receive a spray with intranasal naloxone or placebo. They were instructed to use the spray up to four times per day as needed when they had a gambling urge. Participants were given an electronic diary (eDiary) to record the number of doses they used, side effects, gambling frequency, and spending.

### What you need to know

This clinical trial compared intranasal naloxone taken as needed and placebo for the treatment of gambling disorder. The researchers randomly assigned participants to the two groups. The treatment period lasted 12 weeks, with a 2-week follow-up. All participants received psychosocial support. Gambling urge decreased in both groups over the 12-week treatment period. In addition, participants in both groups improved on gambling severity, quality of life, alcohol use, depressive symptoms, and internet use. No differences were observed between the groups for these treatment effects. Intranasal naloxone was safe and well-tolerated. No serious side effects were reported.

The treatment period lasted 12 weeks (including the baseline visit). There were two clinical visits during weeks 6 and 12, and two phone calls during weeks 3 and 9. Participants were offered psychosocial support at baseline and other sessions. A follow-up call occurred two weeks after the treatment (week 14).

At each session, participants completed various measures about gambling urge, gambling severity, and other clinical issues. The clinician reviewed their eDiary on changes in health status and side effects. Safety assessments were performed at the baseline, week 6 and 12 visits (e.g., vital signs).

## What the researchers found

Sixty-two participants received intranasal naloxone and 64 participants received placebo. 84% of participants completed the study. Most participants were men (70%) and Caucasian (99%). The average age was 45 years old. Most participants reported current alcohol use (91%). Less than half currently smoked (44%). Overall, use of naloxone/placebo was 70.66% of intended times. There was no difference between the two groups on drug compliance rate.

*Treatment effects*

The primary treatment outcome was gambling urge as measured by the G-SAS. Gambling urge decreased in both groups from baseline to week 12, with no difference between the two groups. For secondary outcomes, both groups reported less severe gambling and spent less money gambling from baseline to week 12. Both groups reported greater quality of life, fewer depressive symptoms, lower level of alcohol use, and decreased internet use over time. Intranasal naloxone did not result in better improvements than placebo.

*Side effects*

More participants in the intranasal naloxone group reported side effects than participants in the placebo group (82% versus 64%). Most side effects were mild, with nasal symptoms and headache being the most common. Only three participants in the placebo group reported side effects of moderate intensity. Overall, intranasal naloxone was safe and well-tolerated.

## How you can use this research

This study can inform researchers and treatment providers. Intranasal naloxone was safe and well tolerated in this study but did not reduce gambling urge compared to placebo. Psychosocial support may have masked outcome differences. Further analysis of subgroups who might have benefitted from treatment are planned.

## About the researchers

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## Citation

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## About Gambling Research Exchange (GREO)

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