

Pharmacologic Treatment for Pathological Gambling

Founded in 1983, the Massachusetts Council on Compulsive Gambling is a private, non-profit public health agency dedicated to providing leadership to reduce the social, financial, and emotional costs of problem gambling and to promote a continuum of prevention and intervention strategies including: information and public awareness, community education and professional training, advocacy, and helpline / referral services for problem gamblers, their loved ones and the greater community.

Pathological gambling (PG) is a clinical disorder characterized by destructive gambling behavior. Although there is not yet an FDA-approved treatment for PG, some medications appear to be effective at reducing symptoms of the disorder. This fact sheet provides an overview of the medications that have been studied in the treatment of PG.

TERMS: The following terms provide definitions of gambling disorders and neuroscience concepts.

- **Pathological gambling:** *The American Psychiatric Association* classifies pathological gambling as an impulse control disorder and defines it as the “persistent and recurrent maladaptive gambling behavior that disrupts personal, family or vocational pursuits” (p. 615).¹ **Compulsive gambling** is the original lay term for pathological gambling.²
- **Neurotransmitter:** A chemical found in the brain that neurons (the nerve cells that carry messages) use to communicate with one another. Drugs used to treat pathological gambling may target one or more neurotransmitters, such as serotonin, norepinephrine, dopamine, or glutamate.
- **Synapse:** A connection between neurons for communication. Messages from the first cell are relayed across the synapse by the release of neurotransmitters into the gap, which then bind to the second cell, triggering an internal signal.

DRUGS USED TO TREAT PG: The drug types listed below have been studied for their effectiveness in treating PG. However, research in this area is still preliminary, and no consensus exists regarding the best treatment for individuals with gambling problems:

- **Opioid Antagonists:** A class of medications that are usually used to treat patients with substance use disorders.
 - Opioid antagonists bind to opioid receptors in the brain, blocking the euphoric effect (i.e., the high) of natural opioids such as endorphins, prescription painkillers like vicodin, and drugs of abuse such as heroin.
 - Opioid antagonists have been used successfully to treat disorders characterized by uncontrolled urges, such as substance use disorders; their success in treating PG may similarly result from patients’ experiencing a lessening of the urge to gamble.
 - Opioid antagonists that show some evidence of effectiveness in treating PG include:
 - Naltrexone³
 - Nalmefene (Revex)⁴
- **Serotonin-Specific Reuptake Inhibitors (SSRIs):** A class of medications that are usually used to treat patients with depression.
 - SSRIs block the reuptake of serotonin after its release into the synapse. They are widely prescribed for patients with depression, as well as for other disorders such as fibromyalgia.
 - There is some evidence that PG is related to altered serotonin function and that this explains why SSRIs are effective in treating PG.
 - SSRIs that show some evidence of effectiveness in treating PG include:
 - Paroxetine (Paxil)⁵
 - Fluvoxamine (Luvox)⁶
 - Citalopram (Celexa)⁵
 - Escitalopram (Lexapro)⁵
- **Nefazodone:** An antidepressant medication with a complex mechanism of action.

- Similar to the SSRIs, it blocks reuptake of serotonin from the synapse, but also partially blocks the action of serotonin, resulting in fewer side effects.
- One study showed that nefazodone showed some evidence of effectiveness in treating PG.⁵
- **Bupropion** (Wellbutrin): An antidepressant medication that works differently than SSRIs.
 - Bupropion does not affect serotonin levels; instead, it blocks the synaptic reuptake of two other neurotransmitters, norepinephrine and dopamine.
 - Bupropion is used clinically for patients with depression, ADHD, and for smoking cessation.
 - Bupropion may be effective in treating PG due to its ability to discourage impulsive behavior or lessen urges; however, studies of PG patients treated with bupropion have yielded mixed results regarding its effectiveness.^{5,7}
- **Mood Stabilizers:** A class of medications that are usually used to stabilize or prevent irrational behavior due to certain psychiatric disorders.
 - Mood stabilizers are used to treat bipolar patients experiencing mania (an unnaturally elevated mood), and are also used for maintenance treatment in bipolar disorder.
 - There is some evidence that PG and other impulse-control disorders may be related to bipolar disorder, suggesting that mood stabilizers may be an effective treatment option for PG patients.
 - Mood stabilizers that show some evidence of effectiveness in treating PG include:
 - Lithium⁵
 - Carbamazepine⁸
 - Valproate⁵
 - Topiramate⁵
- **Anti-Psychotics:** A class of medications that are usually used to treat patients with schizophrenia, and are also used to treat other psychiatric illnesses such as bipolar disorder.
 - Olanzapine is an antipsychotic drug that affects serotonin and dopamine levels in the brain, both of which may be altered in PG; however, controlled studies of olanzapine in PG did not show a significant improvement with treatment.⁹ Anti-psychotics are therefore not currently recommended treatment for PG.
- **N-Acetyl Cysteine (NAC):** An amino acid that affects glutamate levels in the brain.
 - NAC has been shown to improve symptoms in bipolar disorder and schizophrenia.
 - NAC also reduces cravings in cocaine users. This ability to reduce cravings suggests it may also be an effective treatment for PG; however, evidence for its effectiveness is still preliminary.¹⁰

CHOOSING A TREATMENT FOR PATHOLOGICAL GAMBLING: No medication is currently FDA-approved to treat PG, and much of the evidence for pharmacological interventions for PG is preliminary. In addition, more studies are needed to determine whether pharmacotherapy is more or less effective than nonpharmacological treatment approaches such as Gamblers Anonymous or Cognitive Behavioral Therapy. We encourage caution when considering incorporating a pharmacological agent for the treatment of PG.

HELP FOR THOSE WITH GAMBLING PROBLEMS:

Help for people experiencing problems with gambling, their family members, and the greater community is available:

- The Massachusetts Council on Compulsive Gambling operates a free, confidential Helpline (800-426-1234) and website: www.masscompulsivegambling.org. In addition, the Mass. Council trains clinicians and maintains a list of professionals who have earned their Massachusetts Problem Gambling Specialist Certificate (MAPGS).
- The Massachusetts Department of Public Health funds treatment centers throughout the state. Many clinicians have earned the Massachusetts Problem Gambling Specialist Certificate and understand both the differences and similarities among problem gambling and alcohol and other substance use disorders (<http://www.mass.gov/dph/bsas>).
- Many people experiencing problems with gambling can attend meetings through Gamblers Anonymous (GA; <http://www.gamblersanonymous.org>) or Bettors Anonymous (BA; <http://www.bettorsanonymous.org/>).
- Spouses, significant others, and family members of people experiencing problems with gambling can attend Gam-Anon (<http://www.gam-anon.org/>), a fellowship that meets to share experiences about living with a disordered gambler.

For more information or to have a packet of materials sent to you, please visit www.masscompulsivegambling.org, call the Mass. Council Helpline (800-426-1234), e-mail the Council at gambling@aol.com, or visit 190 High Street, Suite 5, Boston, MA 02110-3031.

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