

DRUG ALCOHOL FINDINGS **Your selected document**

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► [A review of opioid dependence treatment: pharmacological and psychosocial interventions to treat opioid addiction.](#)



Veilleux J.C., Colvin P.J., Anderson J. et al.

Clinical Psychology Review: 2010, 30, p. 155–166.

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Summary This wide-ranging review uniquely draws together findings from authoritative reviews of rigorous research conducted for the Cochrane collaboration and later studies concerned with the treatment of dependence on [opioids](#) – opiate-type drugs like heroin. The review covers pharmacological treatments aimed at withdrawing patients from these drugs altogether, substituting less damaging opiate-type drugs, and maintaining abstinence, plus psychosocial approaches like counselling and therapy. Studies on minors or pregnant women were excluded, as pharmacological treatments for these populations often follow different trajectories

Main findings

Detoxification

Detoxification aims at stopping opioid use altogether and withdrawing opioids from the body in a controlled and humane fashion, maximising retention and detoxification success rates while minimising discomfort. The two broad approaches are:

- abrupt termination of opioid use, after which withdrawal is sometimes precipitated by an 'antagonist' drug which blocks the action of opiate-type drugs and/or sometimes ameliorated by administration of the alpha2 adrenergics lofexidine and clonidine, which

help reduce withdrawal symptoms;

- gradually reducing doses ('tapering') of opiate-type drugs such as buprenorphine or methadone.

After dealing with the options in detail, the review concludes that any pharmacological treatment confers benefits. If using an antagonist to precipitate withdrawal, clonidine and lofexidine may reduce the intensity of the withdrawal syndrome. However, tapering doses of methadone and buprenorphine seem to be associated with longer retention and fewer side effects. Psychological and social therapy or support may promote adherence to the treatment regimen and bolster social support variables known to promote positive outcomes. For example, compared to pharmacological treatments alone, supplementing this with **contingency management**, positive engagement of the patient's social network, psychotherapeutic counselling, or family therapy, results in higher rates of treatment compliance and completion, more patients abstinent at follow-up, and less opioid use.

Abstinence-focused long term interventions

Following detoxification many opioid addicts want to sustain a complete divorce from an opioid-dependent lifestyle. This relapse prevention phase is aimed at the long-term maintenance of an opioid-free life, typically (in pharmacological treatment programmes) by administering the opioid antagonist naltrexone which blocks the action of opiate-type drugs. Some of the advantages of naltrexone are that it decreases opioid craving and can be administered in a non-specialist medical outpatient setting.

However, naltrexone has been used only minimally in the past 20 years, primarily because patients refuse (or refuse to comply with) the treatment. Related to poor retention (most studies end with less than half the original sample), data on effectiveness is not encouraging. A recent systematic review found no statistically significant differences between naltrexone and placebo in treatment retention or relapse rates, even when naltrexone was supplemented by psychosocial support. It is important to note that rates of relapse in such studies are already skewed, because naltrexone cannot be used long-term without initial detoxification, and many patients are unable to endure withdrawal.

Despite poor treatment completion rates, naltrexone can confer benefits, such as leading to lower heroin use during treatment and decreased criminal activity compared to placebo. For patients strongly motivated to remain opioid-free, such as health professionals, business executives, and legally mandated addicts, naltrexone may be an effective option. However, several benefits are only apparent in programmes which achieve high long-term retention rates. Moreover, there is evidence that low compliance with naltrexone can actually have deleterious long-term effects. One study found that patients who use naltrexone effectively for a short period and subsequently return to opioid use are more likely to drop out of treatment completely and return to a fully dependent lifestyle.

Sustained-release depot naltrexone injections and implants require less frequent administration because their effects last much longer. In 2008 a systematic review of trials of these forms of the drug found only one methodologically rigorous study, which concluded that higher doses of sustained-release naltrexone were associated with lengthened treatment and less self-reported need for heroin. The review also assessed less rigorous studies which suggested that adverse effects from sustained-release

naltrexone were similar to those from oral naltrexone, though both result in more adverse effects than a placebo.

Adding supplementary treatment components may reduce drop-out rates and increase naltrexone's effectiveness. Examples include combination buprenorphine/naltrexone treatment, inclusion of psychosocial therapies and supports, and incorporating families into the treatment process.

Maintenance/harm-reduction strategies

Long-term maintenance prescribing of opiate-type drugs is aimed at reducing the intensity, frequency, and length of relapse to use of non-prescribed opioids, promoting psychosocial adjustment, and limiting overdose risk, criminal activity, and HIV infection. The principal mechanisms are reducing craving for opioids, preventing negative withdrawal symptoms, and blocking euphoric effects if opioids are used. Though patients are still physically dependent on the substitution medication, maintenance treatments result in less time spent on drug-related activities and may allow dependent individuals to transition to abstinence-based programmes.

The four most frequently studied medications are methadone, LAAM, buprenorphine, and heroin itself (diacetylmorphine). After assessing each, the review concludes that though questions remain regarding their comparative efficacy, all are preferable to no treatment. Treatment retention and suppression of opioid use are the usual outcomes measured, but a recent systematic review revealed that entrance into any maintenance programme also curbs HIV risk behaviours including injection drug use, needle sharing, and number of sexual partners, and prevents HIV infection.

In particular, the most widely studied medication, methadone, has been found superior to treatments which do not involve substitute prescribing (detoxification, wait-list controls, abstinence-focused rehabilitation, and placebo controls) in terms of treatment retention and opioid use as assessed by self-report and urinalysis. Effects are dose-dependent; higher dosages are more effective than lower doses in retaining patients, reducing heroin and cocaine use, and preventing withdrawal symptoms.

Comparisons between the medications suggest that methadone should remain the first line of treatment, although buprenorphine may be a viable alternative when high doses of methadone are unavailable or medically contraindicated. One shortcoming of buprenorphine is that it may not be as cost-effective as methadone, though the cost difference may be offset by the fact that buprenorphine requires less monitoring and appears to have a better safety profile than either methadone or LAAM.

Psychosocial treatments

Psychosocial treatments may also be important ways to improve retention and prevent relapse. Two systematic reviews have investigated their role in the long-term treatment of opioid dependence. The first compared stand-alone psychosocial treatments with pharmacological maintenance treatments, concluding that there was insufficient evidence to support psychosocial treatments without medication. Two of the psychosocial treatments (reinforcement based intensive outpatient treatment and enhanced outreach counselling) seemed to be beneficial compared to pharmacological treatment alone, but the small sample sizes did not support a robust conclusion.

The second systematic review [Editor's note: since [materially updated](#)] compared agonist treatment alone to agonist treatment with an adjunct psychosocial component. It found that the only benefit of adding psychosocial treatment was to increase the number of people who remained abstinent at follow-up. Since the typical standard of care in pharmacological maintenance treatments already includes counselling, this analysis was looking specifically at additional structured psychosocial treatments, not the role of any psychosocial component compared to medication only.

Crisis management

Fatal overdoses are one of the most common causes of death for heroin addicts. The first line of treatment for overdose is the short-acting opioid antagonist naloxone; it has no effect on non-opioid dependent individuals and has no abuse potential, is ideally suited to reverse the respiratory depression that typically accompanies opioid overdose, and may prevent hypoxic brain injury in non-fatal overdoses.

Few studies have systematically investigated training programmes on managing overdose, though some recent studies have found that training increased opioid addicts' knowledge of overdose and the correct administration of naloxone, and produced preliminary evidence that prescription of take-home naloxone can reduce overdose fatalities.

The authors' conclusions

The systematic reviews synthesised by the featured review focused on several key outcome variables: treatment retention, duration of treatment, opioid use, adverse effects, and in studies of detoxification, severity of withdrawal. Of these, treatment retention is significant regardless of treatment strategy. Drop-out is associated with negative outcomes, such as greater risk of overdose, return to opioid dependence, increased HIV rates, criminal behaviour, and general strain on medical and social service systems. Whether the goal is detoxification, abstinence, or long-term maintenance on a substitute medication, keeping patients in treatment longer is often appropriately considered a primary goal.

All the psychopharmacological medications discussed in this review appear to have a place in the treatment of opioid dependence. Alpha2-adrenergic agents are helpful for completion of opioid detoxification, particularly when precipitated by the opioid antagonist naltrexone. Burgeoning evidence however suggests that buprenorphine may be more effective as a detoxification agent. As a partial agonist, buprenorphine maintains heightened levels of opioids in the brain, but a ceiling on its opiate-type effects also helps prevent overdose and abuse.

At first blush, methadone appears to be more effective than LAAM, heroin, or buprenorphine for long-term maintenance treatments, but it should be remembered that methadone enjoys greater longevity than the other treatments, both in terms of research and patient acceptance. As patients become more accustomed to a variety of options, and as subgroups of patients are identified (eg, heroin maintenance for people with an unsuccessful history of methadone treatment), the predominance of methadone may weaken. In particular, the fact that buprenorphine can be administered in routine outpatient settings will probably become paramount as the case-mix shifts from patients dependent on illegal heroin to those using medical opioids [Editor's note: see [this](#)

[example](#)].

A pessimistic reading of the research reviewed is that psychosocial therapies administered with or without pharmacological treatment confer few benefits, particularly when supplementing long-term maintenance. However, in detoxification programmes, psychosocial components clearly help improve adherence to treatment and reduce opioid use, and the implications of other findings may not be as bleak as they initially appear. Some psychosocial therapies (outreach counselling and brief outpatient therapy plus contingency management) have resulted in lower relapse rates and higher treatment retention, although the benefits were not sustained. Because most maintenance programmes include some psychosocial services already, it is unclear exactly which psychosocial components augment pharmacological treatment. Also, the reviews on which the featured review was largely based excluded a variety of studies that lacked rigorous controls but which may provide useful data. For instance, a [meta-analysis](#) of contingency management programmes added to methadone maintenance found these reduced opioid-positive urine rates during treatment. In the future more detailed research may find certain psychosocial approaches work with certain pharmacotherapies or help in respect of certain clients or outcomes. For example, the possibility remains that psychosocial treatments improve quality of life and physical health, or decrease risk behaviours related to HIV, all clinically and socially significant outcomes.

FINDINGS

See these Effectiveness Bank entries for more on the reviews included in the featured review:

[Methadone maintenance therapy versus no opioid replacement therapy for opioid dependence](#)

[International review and UK guidance weigh merits of buprenorphine versus methadone maintenance](#)

[Heroin maintenance for chronic heroin-dependent individuals](#)

[Substitution treatment of injecting opioid users for prevention of HIV infection](#)

[Psychosocial combined with agonist maintenance treatments versus agonist maintenance treatments alone for treatment of opioid dependence](#)

[Psychosocial and pharmacological treatments versus pharmacological treatments for opioid detoxification](#)

[Lofexidine safe and effective in opiate detoxification](#)

[Oral naltrexone maintenance treatment for opioid dependence](#)

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[Guidelines for the psychosocially assisted pharmacological treatment of opioid dependence](#) DOCUMENT 2009

[Pharmacotherapies for the treatment of opioid dependence: efficacy, cost-effectiveness and implementation](#)

[guidelines](#) REVIEW 2009

[Opiate antagonist treatment risks overdose](#) STUDY 2004

[Risk of death during and after opiate substitution treatment in primary care: prospective observational study in UK](#) STUDY 2010

[Efficacy of opiate maintenance therapy and adjunctive interventions for opioid dependence with comorbid cocaine use disorders: a systematic review and meta-analysis of controlled clinical trials](#) REVIEW 2009

[Psychosocial combined with agonist maintenance treatments versus agonist maintenance treatments alone for treatment of opioid dependence](#) REVIEW 2011

[1 in a 100 chance of dying after treatment with heroin-blocking drug](#) STUDY 2006

[High risk of overdose death for opiate detoxification completers](#) STUDY 2008

[Naltrexone implants compared to methadone: outcomes six months after prison release](#) STUDY 2010

[Treating pregnant women dependent on opioids is not the same as treating pregnancy and opioid dependence: a knowledge synthesis for better treatment for women and neonates](#) REVIEW 2008