


DRUG & ALCOHOL FINDINGS *Research analysis*

This entry is our analysis of a study considered particularly relevant to improving outcomes from drug or alcohol interventions in the UK. The original study was not published by Findings; click [Title](#) to order a copy. Free reprints may be available from the authors – click [prepared e-mail](#). [Links](#) to other documents. [Hover over](#) for notes. [Click to](#) highlight passage referred to. Unfold extra text  The Summary conveys the findings and views expressed in the study. Below is a commentary from Drug and Alcohol Findings.

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▶ [Treatment of skid-row alcoholics with disulfiram.](#)

Bourne P.G., Alford J.A., Bowcock J.Z.

Quarterly Journal of Studies on Alcohol: 1966, 27(1), p. 42–48.

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In the early '60s in Atlanta in the USA, a pioneering trial tested whether faced with the alternative of another spell in jail, 'skid-row' repeat drunkenness offenders would take a drug which generates deterrent reactions to alcohol. Most did, belying their supposedly hopeless condition.

SUMMARY Conducted in 1962 and 1963 in Atlanta in the USA, the featured article seems the first to have tested whether problem-drinking offenders will take a drug which enforces abstinence by generating deterrent reactions to alcohol, if the alternative is a criminal justice sanction.

Disulfiram (often known as Antabuse) was the drug being trialled. By blocking the breakdown of alcohol in the body, it produces unpleasant reactions in response even to low levels of drinking, deterring consumption. It acts by inhibiting the liver enzyme aldehyde dehydrogenase, preventing acetaldehyde being converted to acetate. After drinking alcohol, acetaldehyde accumulates, causing flushing, throbbing headache, nausea, vomiting, and chest pain.

The trial was motivated by the city's unsatisfactory and expensive response to the 50,000 arrests made annually for public intoxication. Previously the researchers had offered the medication to arrestees appearing at court. It worked well among those who accepted the offer, but few did. In light of the this experience, it was decided to trial disulfiram for public-drunkenness offenders by offering it as an alternative to the usual spell in prison.

A purely voluntary offer of the drug with no sanction for refusal continued to be made. It was accepted by 64 patients between September 1962 and 1 June 1963. Their relatives were asked to ensure the patient consumed the tablets daily.

The second group recruited between 15 February 1963 and 1 June 1963 were 132 men given suspended sentences and disulfiram treatment in lieu of a jail term. They had been selected "arbitrarily" by the judge while being sentenced for public intoxication. Either at the judge's suggestion or on their own initiatives, they requested a suspended sentence on condition they took disulfiram. Only those who had been arrested repeatedly for drunkenness but who now were judged appropriately motivated were accepted for treatment.

Basically the same procedure was followed with these suspended-sentence patients as with the volunteers, except that their probation officers acted as the relatives. During their 30- or 60-day suspended sentence, they were expected to appear daily to take disulfiram in front of the probation officer, after which they were free to stop. Failure to appear led to the suspended sentence being implemented, meaning a spell in jail. Patients were encouraged to use the abstinent period imposed by disulfiram to avail themselves of further support and treatment, and were helped to find employment. Their initial anxiety led to the co-prescription of a tranquilliser.

Main findings

Of the 64 voluntary patients, 47 attended at least two medical appointments and were presumed to have engaged with the treatment. Of these, at the end of the trial on 1 June 1963, 28 were still taking disulfiram and four had stopped but remained abstinent. Abstinent periods ranged from three weeks to nine months.

Of the 132 suspended-sentence patients, at 1 June 1963, 61 were still taking disulfiram. Of the remaining 71, 17 had completed their sentences and then stopped taking disulfiram, and 54 failed to keep in contact

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Key points

From summary and commentary

Conducted in the USA, the first such trial tested whether problem-drinking offenders will take disulfiram, a drug which enforces abstinence by generating deterrent reactions to alcohol, if the alternative is a spell in jail.

About 60% were either still taking the medication at the end of the trial or had successfully completed their probation/disulfiram sentence.

The trial was both an early demonstration of the potential of disulfiram in the right circumstances and of sanctions contingent on (effectively) abstinence.

and were lost to follow-up. Many still taking the drug had started with considerable misgivings, but after experiencing the programme, wished without reservation to continue. Several had served as much as 10 years in jail for drunkenness in consecutive 30-day sentences, but with the aid of disulfiram had remained abstinent for several months and been able to hold down steady jobs.

Despite the very liberal screening method used in selecting subjects for treatment and their extremely poor general health, there were no serious adverse reactions either to the drug or to drinking while it was active.

The authors' conclusions

On the basis of these findings, it seems that allied with a degree of compulsion, disulfiram has very definite potential as a tool for treating 'skid-row' alcoholics, regardless of age or physical condition.

Key features of the trial included an unpromising caseload rejected by many agencies as having too low a yield of success to warrant treatment. Their poor health has deterred use of what is seen as a potentially dangerous medication, but no serious consequences resulted.

Disulfiram may not produce lasting abstinence in a very high percentage of these people, but it will prolong it and cut down the number of times a patient is arrested – of importance economically as well as socially; it is a good deal cheaper to keep someone sober with disulfiram than to arrest and jail them.

To overcome alcoholism, the patient must learn to adapt to his environment without alcohol. Many have little difficulty staying abstinent while in jail, but back in their normal environments are unable to stay abstinent long enough to attempt to make appropriate adaptations. Enforced abstinence during 30 or 60 days on a suspended sentence while taking disulfiram seemed to provide some with sufficient time to initiate a new way of life.

FINDINGS COMMENTARY The featured trial can be seen as an early example of programmes for offenders and other groups which [have shown](#) that with sufficient leverage, many dependent individuals stop using substances if non-use is enforced through intensive monitoring and swift, certain, but not necessarily severe sanctions. Rather than mandating treatment, these programmes directly mandate abstinence on penalty of sanctions. Biological tests for substance use are the usual criteria for establishing abstinence, but in the featured study it was failure to take disulfiram – presumably often indicative of an intention to resume drinking. Such programmes may offer no treatment at all, relying entirely on sanctions, but the featured study concerned problem drinkers for whom sanctions had repeatedly proved ineffective. Disulfiram seems to have provided about 6 in 10 of these patients with the prop they needed to avoid temptation at least for a time, while the prospect of yet another spell in jail provided the motivation to take the drug, evidenced by its being consumed in front of their probation officers.

It is unclear how many prospective suspended-sentence offenders refused the offer or were judged unsuitable by the judge or by the treatment/probation team, and therefore unclear to what degree patients selected for the trial were the most promising of a generally unpromising set of habitually drunk offenders. In theory, those who joined the trial near its end date could have notched up an apparent success (continuing to take disulfiram at the end of the trial) after just days on the medication. In practice, the lead author [says](#), they "put very few new patients into the project towards the end". With no randomly selected [control](#) group not offered disulfiram but only probation (with or without sanctions for drinking), it is not possible to securely attribute the outcomes to disulfiram or to the linked sanctions for failing to take the drug. However, the offenders had been selected for their history of non-response to the usual spell in jail, strongly suggesting that the disulfiram/probation package was an improvement.

Early British trial

Inspired partly by this example, 20 years later [a small pilot study](#) in London tested a similar programme in the British context. The [report on the study](#) is freely available, so the following account is brief.

It involved 18 habitual offenders typically with a [considerable history](#) of alcohol-related convictions who were offered disulfiram treatment between March 1982 and March 1983. Usually facing a prison sentence of several months for their current offence, they were told that taking supervised disulfiram might help them abstain and that if they did, medical and probation reports would instead probably recommend taking disulfiram under supervision for a year while on probation. It was made clear to the patients that failure to take disulfiram would be a breach of probation for which they could be brought before the court again. Nearly all were unemployed and 14 were living at best in hostels.

Of the 18, 16 engaged with the treatment, which [included counselling](#). Of these, 12 were either completely successful in abstaining or had only brief and comparatively harmless lapses. By the end of the study, abstinence periods for all 16 patients averaged 30 weeks and all but one had already exceeded their longest period of abstinence outside prison over the previous two years, when abstinence periods averaged just six weeks. Only two patients were charged with new offences while

receiving treatment.

As in the US trial, the authors said they had “observed ‘old lags’ remain sober for months and start to rebuild their lives, when usually their first act on leaving prison was to get drunk again”. Several patients asked for their disulfiram to be continued after the probation order expired. As well as the medication, the lead author **has highlighted** the “symbolic value – somebody cares enough about him to give him his medication” of such programmes and the practical value of their promoting daily contact with the service undertaking the supervision.

Works in the right circumstances

Disulfiram is one of the three main medications licensed in the UK for the treatment of alcohol dependence and endorsed in national guidance for [Scotland](#) and [England and Wales](#). The other medications are acamprosate and naltrexone, for which guidance envisages a more routine and/or first-line post-detoxification role than for disulfiram. The latter comes with the caution that total abstinence is required to avoid unpleasant and potentially dangerous reactions, and that the positive evidence derives only from situations where consumption has been supervised. Compared to the main alternative medications, the experts behind the English/Welsh guidance found the evidence for disulfiram “much weaker and the potential for harm was greater [so] did not consider disulfiram as a suitable first-line pharmacological treatment for relapse prevention in individuals with alcohol dependence”.

The Effectiveness Bank’s Alcohol Treatment Matrix **has queried** this caution, citing recent reviews which found the drug more effective than other medications, as long as consumption was supervised. One **particularly useful analysis** confirmed that disulfiram works best when patients know they risk a nasty reaction if they return to drinking and have someone to bolster their resolve by making sure they take the pills. Given these circumstances, disulfiram not only substantially bettered a placebo in reducing drinking by the end of the treatment period, but also substantially bettered naltrexone and acamprosate.

We are grateful to Colin Brewer, lead author of the early British trial described above, for bringing the featured article to our attention and for his comments, to research author Peter Bourne of (among other affiliations) Green Templeton College, University of Oxford, England for further information and comments, and to Jonathan Chick of Castle Craig Hospital in Scotland for comments. Commentators bear no responsibility for the text including the interpretations and any remaining errors.

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