

# Treating cocaine/ crack dependence

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## Definitions

'Cocaine' is used throughout this briefing to refer to any form of the drug, including cocaine powder (usually injected or 'snorted'), and crack. 'Crack' refers specifically to the smokable form sold as small lumps or 'rocks'.

**Increasing numbers of cocaine and cocaine/heroin misusers, especially crack misusers, are entering treatment, a trend likely to continue due to new criminal justice entry routes and as treatment services recognise the need to target these groups. They join an opiate treatment population where crack misuse is also on the rise. New research has confirmed that dependence on cocaine is treatable, but also that some approaches net far greater gains than others.**

**This briefing summarises the existing evidence of effective treatment for cocaine misuse and highlights the implications for the provision of services.**

## Introduction

Although cocaine misuse has featured among UK treatment populations for decades, it has rarely been the prime focus. Overall, Britain's experience with crack dependence is relatively new, although anecdotal reports suggest that the impact of crack was experienced by black and minority ethnic (BME) communities in the UK as early as the mid- 1980s. A snapshot of addiction treatment in England in the mid-1990s<sup>1</sup> showed that most services were not attracting cocaine misusers and that some popular treatments among the remainder were not supported by the evidence. More recently, the Audit Commission found that UK services are still not meeting the expressed needs of crack misusers. A mixed picture of some treatment gains among crack misusers, but also of non-users taking up the drug during treatment, is evident from the National Treatment Outcome Research Study (NTORS), the national evaluation of drug treatment in England. In NTORS, a third of methadone patients were using crack at treatment entry, a problem which can be missed by an opiate-focused

service and worsen even while heroin problems are successfully addressed.

Despite this patchy performance, treating crack dependence is neither extraordinarily difficult nor does it necessarily demand totally new skills. Substantial and lasting benefits have been gained using approaches familiar to drug services in Britain. The techniques used once someone is in treatment are important, but so are the factors which motivate people experiencing cocaine problems to seek help and to stay long enough to receive it. Here much more work is needed but we do know that the worker's personal style is highly influential. There may also be important race equality reasons to make cocaine treatment more accessible and effective and to overcome the barriers to treatment service utilisation experienced by people from black and minority ethnic communities. When the mid-1990s snapshot was taken, about half the cocaine clients being seen were described as black British, black Caribbean or black mixed, an unusually high proportion among addiction treatment caseloads in Britain.

# Research findings

## Summary

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- Although there is no 'magic bullet', cocaine misuse *is* treatable. Rather than nothing working, it is more that many approaches already familiar to drug services in Britain work well but none are specific to the treatment of crack dependence.
- There is little understanding of how to prompt initial contact with treatment services, but once contact is made, rapid intake, proactive reminders, and practical help with attendance have improved treatment uptake rates.
- Once they start treatment, clients tend to stay longer and respond better if they feel that their concerns are being positively addressed and that their key worker is empathic and understanding, underlining the crucial role workers play in motivating and retaining clients.
- Drug-free psychosocial interventions such as counselling, provided on a non-residential basis, are the most cost-effective options for clients with few complicating problems.
- Recognised psychotherapies delivered by professional psychologists perform no better than well-structured drug counselling.
- In the USA, cognitive-behavioural approaches have a relatively large and positive evidence base. Group therapy using these approaches has been found to be as effective as individual therapy.
- Clients with multiple needs tend to benefit from intensive residential rehabilitation and (if they stay long enough) do better there than in community-based drug counselling. However, for many clients intensive rehabilitation programmes can be provided just as effectively on a day-care basis.
- There is no recognised pharmacotherapy for cocaine dependence. Disulfiram (Antabuse) shows promise when alcohol dependence is integral to the patient's cocaine misuse and is particularly suitable for use in methadone programmes.

## Research background

Most of the research reported in this briefing derives from the USA where a predominantly heroin-using treatment population had, by the 1990s, become dominated by dependence on crack. Though the treatment populations and traditions differ from the UK, the US experience provides a rich source of evaluated approaches to draw on in developing responses in Britain. Typically, US research has involved highly-deprived urban populations from areas where crack misuse is endemic, but who often make dramatic gains after treatment.

How this evidence relates to the UK where crack misuse and urban deprivation are less entangled, less extreme and less entrenched is an open question. Arguably, crack misusers in Britain have the health and welfare support needed to make even greater treatment gains. Compared to the USA, 12-step approaches in which total abstinence is the goal are less integral to drug treatment in Britain and harm reduction (of which relapse prevention training can be seen as one variant) has a higher profile.

## Effectiveness of treatment

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Here and in the USA, large-scale, nationwide studies of typical treatments delivered in 'real world' settings has found them highly effective in the treatment of cocaine (mainly in the form of crack) dependence. NTORS observed typical services in England and found that four to five years after entering treatment, less than half those using crack at intake were still doing so.<sup>2</sup> Return to crack misuse over the five years was minimal, an important indication that the benefits of treatment are usually *not* reversed once treatment ends. (However, over a fifth of clients who were not using crack at treatment entry had taken up the drug, usually for the first time. The upshot was no net decrease in the proportion that had used the drug over the past 90 days.)

Whilst NTORS' findings reflected a treatment population with few BME patients, similar findings emerged from the US Drug Abuse Treatment Outcome Studies (DATOS) which observed typical US treatment services with its predominantly African-American population. DATOS found that the proportion of clients using crack over the past year fell from 67 per cent before treatment, to 29 per cent in the year after treatment ended, and that the proportion involved in drug-related crime fell from 43 per cent to 16 per cent.<sup>3</sup> Soon to be published results will show that gains persisted to at least five years after treatment ended. From this work we know that typical treatments do have a substantial positive impact on crack dependence. The issues then become how to encourage treatment entry and retention and how to maximise the gains.

## Engagement and retention

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With no inducement such as methadone to offer and a client group characterised by fluctuating problems and motivations, engaging and retaining crack misusing clients in treatment is a major concern. What makes crack misusers enter treatment and how to increase this number has been largely unexplored by research - entirely so in Britain. However, there are clear indications that once someone makes contact, services can dramatically improve their engagement and retention rates. For example, one US study found that clients offered next-day intake appointments after initial telephone contact, are more likely to turn up than those offered same-day appointments, and over four times more likely than those scheduled for intake several days later. In another US study, black and minority ethnic populations, unemployed referrals and more frequent cocaine misusers were less likely to attend an intake appointment even if it was scheduled within 24 hours of telephone screening, offering clues to referrals for whom special efforts may be required. In other client groups, directly arranging transportation and telephone reminders have boosted attendance. Services should be staffed by workers who are knowledgeable about crack misuse and the needs of misusers.

## Client-counsellor relationship

With few effective pharmacological tools, the quality of the client-counsellor and key worker relationship is highly influential in cocaine addiction treatment. US research has shown that counsellors who quickly establish a relationship within which the client feels they are being listened to, understood and being given helpful, positive responses have clients who stay longer and attend more often, improving outcomes. In some studies these experiences (captured by the terms 'rapport' or 'empathy') were a more important influence on engagement with treatment and abstinence outcomes, than the client's motivation at treatment entry or whether their key worker was of the same race or gender.

In the cocaine-dependent DATOS caseload, very early engagement with and confidence in treatment, and feelings that one's counsellor is understanding and helpful, promoted later engagement with the programme. In turn, these positive treatment processes encouraged retention and improved outcomes. It was through these processes that the client's initial motivation to enter treatment affected how well they did. This is important because it suggests that even with the less motivated client, services can retrieve the situation if, at intake and in the first few weeks, they are able to: bolster the client's

confidence in and commitment to treatment; forge good client-counsellor relationships; and address a range of client concerns and problems. However, what it is about the counsellor's qualities which promotes a good therapeutic relationship and how this can be fostered is yet to be established.

Anecdotally, offering acupuncture helps attract and retain clients. There is some US evidence for improved retention but acupuncture's potential to attract new clients is untested. With so little research, we can neither confirm nor dismiss the possibility that clients who value acupuncture or other complementary therapies may be attracted into treatment and retained longer at services which make these available.

## Treatment settings

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NTORS did not test the performance of drug-free, non-residential services but these were included in DATOS. Here and in the USA, these agencies typically provide an eclectic mix of counselling and more or less structured therapies. For cocaine dependent clients without extensive complicating factors such as criminality, multiple dependency and low social support, DATOS' non-residential services were as effective (and more cost-effective) than residential therapeutic communities. In contrast, these communities took in more clients with multiple and severe problems and achieved greater improvements in drug misuse and crime. Improvements were concentrated among those who stayed for at least three months. In DATOS, short 'Minnesota model' inpatient programmes performed relatively poorly with these highly-problematic clients, but this is not a consistent finding. Probably much depends on how well these programmes link their patients to compatible aftercare.

Neither DATOS nor NTORS tested therapeutic communities against services offering similarly intensive, highly-structured programmes, but on a day care basis. However, there is consistent evidence that randomly allocated substance dependent clients do as well in day care programmes as in the residential versions. In one American study where the clients were primarily dependent on crack, in both settings about half remained abstinent 12-18 months after entering treatment. Within the limits of this study, even the more severely dependent clients and those with emotional or psychological problems did as well in the non-residential option.

However, this and similar studies could only include people who can safely and practically be allocated to either option and who are prepared to go to either. For many, their housing conditions dictate a residential component to their care, others' employment and family commitments preclude a move into a residential home, and others are too ill, suicidal, vulnerable or criminal to remain at home. When the full range of clients are included in a study, those with high levels of psychiatric and emotional problems or low levels of social support, tend to benefit more from residential care. The research provides little guidance on which settings, if any, are particularly suitable for men or women, or for people with different cultural backgrounds.

Whatever the initial treatment, continuing support is an important relapse prevention aid, and especially effective if it reinforces the earlier treatment. For example, US studies find 12-step mutual aid groups most useful when they follow 12-step treatment.

# Psychosocial therapies

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Evidence of effectiveness for social and psychological therapies is far more substantial than for pharmaceutical therapies. Within the spectrum of psychosocial therapies, activity-based approaches which focus on altering drug misuse behaviour have greater backing than those which confine themselves to analysing and discussing the client's emotions. Promising approaches incorporate teaching and practising relapse prevention strategies (cognitive-behavioural therapy), rewarding recovery-promoting activities (contingency management), engineering the client's social environment to make it more supportive of abstinence (community reinforcement), and 12-step based therapies intended to promote attendance at 12-step mutual aid groups.

## Counselling

In one major US study of cocaine addiction treatment, all the clients received weekly 12-step based group counselling.<sup>4</sup> For some this was the sole treatment, for others it was supplemented by one-to-one 12-step drug counselling or by one of two psychotherapies focusing on thoughts ('cognitive') and emotions ('supportive-expressive'). Over the following year these psychotherapies added nothing to the outcomes achieved by group counselling alone, even among clients with severe personality or psychiatric problems. Partly because it reinforced attendance at aftercare support groups, individual 12-step counselling did improve cocaine misuse outcomes, though not dramatically and with diminishing strength over the one-year follow-up. This study demonstrates the potential of well-structured, manual-driven drug counselling and in particular of group counselling.

## Cognitive-behavioural therapies

A therapy similar to the above study's cognitive option, but more skills-based ('cognitive-behavioural' rather than just 'cognitive'), has been found superior to 12-step based treatment among US crack misusers in a study where *all* the clients were encouraged to attend compatible mutual aid groups. Other studies have found that well-structured 12-step therapy and similarly well-structured cognitive-behavioural therapy, produce equivalent outcomes and both are preferable to routine clinical care.

A series of studies on cognitive-behavioural therapy at Yale University (summarised in their treatment manual<sup>5</sup>) has found that less severely dependent cocaine misusing clients benefit equally from a variety of good quality treatments, including supportive clinical care from a doctor. However, compared to psychotherapy or clinical care, cognitive-behavioural therapy consistently emerged as the treatment of choice for the heaviest misusers of cocaine. Perhaps because they had internalised relapse prevention skills, cognitive-behavioural patients also showed evidence of increasing rather than diminishing benefit after treatment. Such skills also seem to have helped prevent serious relapses among patients leaving a short-term intensive US outpatient programme. Relapse prevention training was substituted for one of the two weekly 12-step group therapy aftercare sessions. The consequence was that twice as many patients tried cocaine, but fewer went on to seriously relapse.

## Group therapy

A few studies have demonstrated that group therapy including cognitive-behavioural elements provides the same benefits as individual therapy, at lower cost. The key variable appears to be the degree of interactive acquisition and practice of strategies and skills tailored to the individual. Interactivity is perhaps easier to achieve in a group setting and the group also provides social support, with the potential to act as an important aftercare resource.

## Rewards/punishment based therapies

Cognitive-behavioural and abstinence-based therapies have been focused on here because they are common in British treatment services. In contrast, contingency management with its systematic schedule of rewards and punishments for using or not using cocaine (or for engaging in other recovery-relevant activities) is more alien to British services. A variant of these approaches recruits important figures in the client's social and family life to also reward recovery-promoting activities, and seeks to reorganise the client's life so that they engage in activities incompatible with drug misuse. US studies have found that these approaches contribute to treatment retention and are effective in achieving initial abstinence from cocaine. They have particular applicability to methadone maintained patients who misuse cocaine because the clinic's ability to grant and withdraw take-home doses is a powerful motivator. Best results are achieved when rewards and punishments are immediate, frequent and can be earned or avoided by incremental improvements within the patient's grasp. Severe sanctions which the client can do little or nothing to reverse, such as long-term dose reductions or termination of take-home doses, do less to improve outcomes and risk drop-out.

## Medicinal therapies

A wide range of medications has been tested in the treatment of crack/cocaine dependence, including antidepressants such as desipramine and fluoxetine (Prozac); dopaminergic agonists including bromocriptine and amantadine; anticonvulsants including carbamazepine and phenytoin; the opiate antagonist naltrexone; and the beta blocker propranolol. There is currently no strong evidence to support the general use of these pharmacotherapies as a way to ease withdrawal, reduce cocaine craving or promote abstinence. For many regular cocaine misusers, including those in methadone treatment, alcohol is a way of coping with cocaine's downside or enhancing its effects. Enhancement may be partly via cocaethylene, a metabolite produced when both drugs are consumed. Recent studies of patients in US opiate treatment have demonstrated that disulfiram (Antabuse) reduces cocaine misuse especially among patients who drink heavily. This pattern of polydrug misuse is the norm in the USA and may be becoming the norm in Britain.

Neither is there strong evidence to support any medication for cocaine dependent patients with psychiatric conditions, although some medications show promise in the treatment of certain subgroups. Antidepressants such as fluoxetine have shown promise in the management of depressive episodes associated with crack misuse. There is also emerging evidence that methylphenidate and bupropion, combined with relapse prevention therapy, improve attention deficit disorder symptoms and reduce cocaine misuse.

## Complementary therapies

Though popular in British drug services, when steps are taken to eliminate other possible influences on outcomes (e.g. by comparing outcomes when needles are inserted at active versus inactive sites), acupuncture is usually found to add little or nothing to cocaine misuse outcomes. It may, however, help to retain clients in treatment.

Other complementary therapies have not been researched sufficiently to reach any clear conclusions, and so are not included here.

## Matching clients and therapies

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Several studies have given us hints about who does best in which therapy. Severely dependent clients, and especially those unable to maintain their abstinence goal, do best when cognitive-behavioural training has equipped them to prevent lapses becoming full-blown relapses. But these approaches require clients to identify and articulate their urges to misuse cocaine and the triggers to those urges. This requires a degree of abstract thinking and the willingness and ability to explore one's inner life. Patients for whom this is difficult and who think in more concrete terms, have been found to do better in less cognitively demanding approaches such as 12-step therapy or supportive clinical care from a doctor. Treatment responses and staff need to be competent in working with a range of population groups and gender sensitivities. This should reflect local needs.

## Implications for drug services

**This briefing is intended to outline and encourage performance-enhancing practice changes, but not to provide detailed or comprehensive guidance. Some of the implications for drug services are outlined below.**

- Given a range of well-structured services from counselling to long-term residential treatment, the prognosis for most problem cocaine misusers (including those dependent on crack) is good. Realising this potential requires concerted strategies to engage and retain cocaine misusers in treatment.
- Recruitment and training of counsellors and key workers should aim for an empathic and understanding style and competencies including cognitive-behavioural and group therapy.
- Rapid intake into treatment capitalises on high motivation and improves treatment uptake. After this, the first priorities are to quickly address the individual's needs and concerns and to establish a strong and empathic client-counsellor relationship.
- Non-residential options will address the needs of most cocaine and crack dependent clients without severe and multiple problems. Structured drug counselling is effective for many, but the more severely dependent will especially benefit from cognitive-behavioural therapy.
- Clients with severe and multiple problems should be referred to services offering care throughout the day, incorporating productive activities, individual therapeutic support and support from the client group.
- Where feasible, services can be provided on a day-care basis with no loss of benefits, but the most vulnerable and needy clients (especially those with no stable housing) will require residential care. Services should aim for stays of at least three months.
- US research has shown that group therapy is as beneficial as individual therapy at lower cost, though this finding remains to be tested in the UK context.
- Aftercare should be integral to treatment provision and compatible with the initial treatment.
- Pharmacotherapies and psychotherapies in the psychodynamic tradition are best implemented on a case-by-case basis rather than as routine treatments, though disulfiram should be considered for dually-dependent cocaine and alcohol misusers.

## Additional information

All briefings and updates on the NTA's related work programmes are available online at [www.nta.nhs.uk](http://www.nta.nhs.uk) or from [nta.enquiries@nta.gsi.gov.uk](mailto:nta.enquiries@nta.gsi.gov.uk), tel 020 7972 2214.

*Models of care*, a framework for substance misuse treatment, and the *Commissioning Standards in Drug and Alcohol Treatment and Care*, are both available from the NTA, email: [nta.enquiries@nta.gsi.gov.uk](mailto:nta.enquiries@nta.gsi.gov.uk), tel 020 7972 2214.

*Drug and Alcohol Findings* magazine provides updates on relevant research and is available from: [findings@drugscope.org.uk](mailto:findings@drugscope.org.uk), tel 020 7928 1211.

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### Future briefings

Future *Research into practice* briefings will include:

- Heroin prescribing
- Client receptive services
- Methadone dosage
- Ancillary services to methadone
- Complementary therapies
- Buprenorphine

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*Research into practice* is a series of briefings linking the international research evidence with issues facing drug treatment in England. Two briefings will be produced for each key topic – one aimed at commissioners of drug treatment services, and one aimed at providers of services. Each briefing is the result of a comprehensive search of national and international databases and commentaries from a range of experts in the UK.

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