



Cocaethylene:

Responding to combined alcohol and cocaine use



Summary

Cocaethylene is a unique compound formed when alcohol and cocaine are combined. Cocaethylene has been associated with increased health and social risks, although understanding and awareness of the risks appears low. Scope to improve knowledge and responses within drug and alcohol strategy approaches appear important given indications of increasing popularity of combined alcohol and powder cocaine use.

Key findings:

- Qualitative data based on survey findings, reports from professionals and users suggests combined alcohol and cocaine use is a significant and increasing trend, particularly amongst young recreational 'binge' drinkers
- There is a broad consensus that cocaethylene significantly increases risk of heart attack and other possible health effects. It is also linked to other social harms such as an increased propensity to violence amongst users
- Further understanding about the increased health and social risks resulting from combined alcohol and cocaine use is lacking; however some figures are commonly recited such as significantly increased risks of sudden death or heart attack
- There is limited quantitative data about the actual prevalence, use or understanding of cocaethylene specifically, although extensive separate data on alcohol and cocaine use can be corroborated to some extent
- Available statistical data indicates high combined levels of alcohol and cocaine use: the NTA report that around 75% of those in treatment for powder cocaine reported alcohol use at start of treatment. 61% of those reporting powder cocaine use in the Mixmag survey said they 'always drank alcohol when snorting cocaine'

Key recommendations:

- Brief interventions and psychosocial treatment can be effective for both alcohol and cocaine users - optimum approaches should be explored for combined users
- Practitioners should be offered training and guidance to better understand and respond to the needs of combined alcohol and cocaine users
- The impact of combined alcohol and drug use needs further research and increased recognition within drug and alcohol strategy approaches

1. Background

Cocaethylene is reported to produce heightened euphoria amongst users, with a more prolonged effect than taking cocaine on its own. However concerns over greater health risks have been increasingly discussed following further research into the subject. However there has been debate over the actual impact and risks of combined use, and the consensus appears to remain that further research is needed.

The most commonly recited effect of cocaethylene, as given in a 1990 *New Scientist* article¹, asserts that *“When cocaine and alcohol are taken together, the combination is 21 times more likely to kill people with severe heart problems than cocaine on its own.”* Whilst this statistic has been disputed, there is consensus that the effect of cocaethylene increases the risk of cardiac problems and other possible effects such as seizures and liver damage. It has also been linked to an increased risk of violent and impulsive behaviour.

Anecdotal reports from practitioners and those in the drug and alcohol field suggest that increasingly drinkers in the UK are intentionally poly-using cocaine. This is largely corroborated by significant increases in powder cocaine use as explored in recent cocaine reports by the House of Commons Home Affairs Committee and National Treatment Agency. Yet reports also suggest combined users are largely unaware of the increased health and social risks presented by their combined use.

Currently there appears to be limited recognition of the potential health or social impacts of combined alcohol and cocaine use amongst users or policy makers. Although the deliberate use of alcohol and cocaine is not a new phenomenon, current drug and alcohol policies are not geared to address the future impact of potentially significant increases in use.² This paper therefore aims to explore current understanding, gaps in learning and opportunities for local and national drug and alcohol leads to respond.

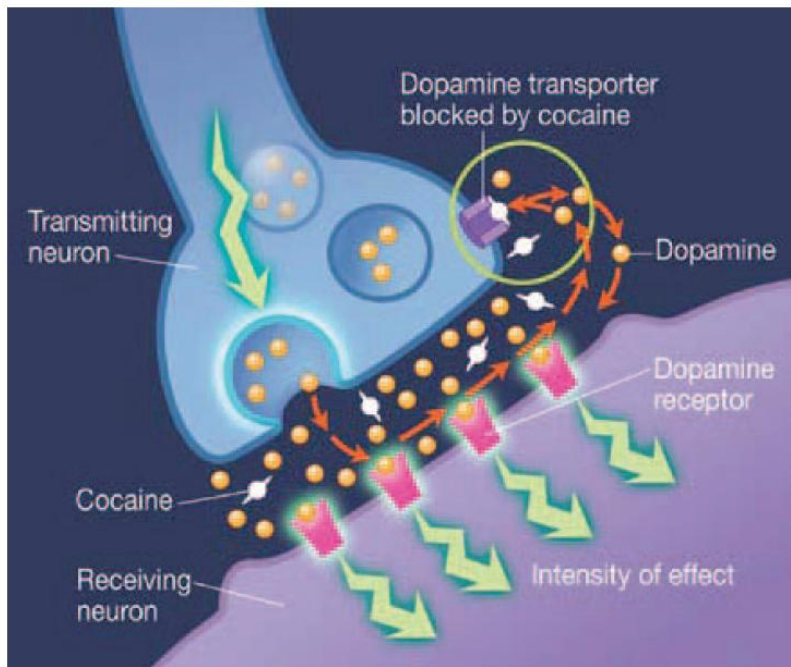


‘Vin Mariani’, a ‘tonic’ wine which contained cocaine was popular in the 19th century. It claimed to ‘fortify and refresh body and brain’, and was also promoted as a treatment for a range of conditions. Fans reportedly included Queen Victoria and Pope Leo XIII awarded the wine a Vatican gold medal, also endorsing it on a poster.

2. What is 'Cocaethylene'?

When alcohol and cocaine are exposed in the liver, they form a unique metabolite ethylbenzoylecgonine (cocaethylene). Whilst the effect is similar to the metabolite formed by cocaine (benzoylecgonine), several differences are observed affecting the psychoactive and biological impacts on the body.

Most significantly, cocaethylene (like cocaine) blocks the re-uptake of dopamine³ in the brain, producing euphoric but habit forming reward effects. Because cocaethylene has a longer half-life than cocaine on its own, the euphoric effects are prolonged. Cocaethylene increases the levels of cocaine in the blood, which is cleared more slowly (the half-life). Additionally, cocaethylene has a less significant effect in regulating serotonin than cocaine, also thought to increase euphoric effects.



The affect of cocaine on the brain

Cocaine interrupts the natural re-absorption of dopamine in the brain. Dopamine results in signals that create a feeling of euphoria. Cocaethylene further blocks the re-uptake causing a greater build up of dopamine and longer sense of euphoria.

Source: National Institute on Drug Abuse ([NIDA](http://www.nida.nih.gov))

Evidence suggests that the ingestion of alcohol before cocaine is required to create cocaethylene (McGowan 2008⁴).

3. Increased health and social risks?

The extent of the increased risk of cocaethylene appears hard to quantify in non-medical terms, although there has been a significant degree of academic research into its nature as a compound and various interactions⁵. There is therefore varied reporting about the actual risks in terms of death or serious health conditions as explored below.



3.1 Affect on the body

Cocaine use is linked to cardiovascular problems especially increased heart rate and blood pressure. These risks have been demonstrated to be further increased by cocaethylene. A study in 1997 (Farre et al) found that whilst cocaine increased heart rates by 12 beats per minute (BPM), cocaethylene increased heart rates by 33 BPM. Increased heart risks are thought to be concomitant with up to 30% increased blood cocaine levels when cocaethylene is formed⁶.

Cocaethylene's increased health risks, especially for those with heart conditions has been linked to cocaine's ability to block sodium channels of cardiac cells - this blocking effect is thought to be greater from cocaethylene than cocaine (Xu et al, 1994⁷). Additionally cocaethylene is a myocardial depressant, which means the drug impairs the strength and force of the heart's contractile function. This can lead to heart failure in some individuals, which may persist despite abstaining from the drug in the future. A recent paper 'Neurotoxic and Cardiotoxic Effects of Cocaine and Ethanol'⁸ concluded that:

"The combination of ethanol and cocaine has been associated with a significant increase in the incidence of neurological and cardiac emergencies including cerebral infarction, intracranial haemorrhage, myocardial infarction, cardiomyopathy, and cardiac arrhythmias."

The New Scientist article 'Science: Cocaine and alcohol make a heart-stopping cocktail'⁹ published in 1990 stated:

"In tests with mice, scientists have found that cocaethylene is between 50 and 100 per cent more lethal than cocaine. However, Mash says that the jury is still out on why it kills people. Cocaine and cocaethylene may disrupt the function of the limbic parts of the brain which control the heart, she says. They also bind to other molecules in the brain, known as muscarinic and sigma receptors. These have been linked with abnormal heart function, mental disorders, and also with delirium."

The US National Institute on Drug Abuse (NIDA) report in a Research Report Series paper¹⁰ on cocaine states:

"While more research needs to be done, it is noteworthy that the mixture of cocaine and alcohol is the most common two-drug combination that results in drug-related death."



However cocaine-related health risks have a better recognition as a lone drug, particularly in terms of the impact on the heart. Recent national 'Frank' campaigns have highlighted the risk to the heart in particular:

"Cocaine is highly risky for anybody with high blood pressure or a heart condition. Perfectly healthy, young people can have a fit or heart attack after taking too much coke and you may not know you've got a pre-existing heart condition." www.talktofrank.com

However the role of alcohol in the research behind cocaine harms is commonly overlooked. A 2008 article in *The Times* called 'The New Cocaine Crisis'¹¹ reported that A&E presentations of young revellers with heart problems had become so common they had been labelled 'coke strokes' by A&E staff. The article explores in particular the frequency of cocaine-related Saturday night emergency admissions:

"The problem, though, is that getting high at weekends can put huge strain on the heart: cocaine, in particular, constricts the blood vessels, raising blood pressure and making the heart work harder. Throw in alcohol and amphetamines, and you have what some doctors believe is a 'ticking time bomb of acute cardiac problems'."

3.2 Increased risk of violence?

The consequences of combined alcohol and cocaine use may not only be health related; professionals point out that cocaine's stimulant effect reduces a drinker's feeling of intoxication and allows greater quantities of alcohol to be consumed. Furthermore, with the disinhibiting effect of alcohol combined with a heightened sense of self confidence associated with cocaine, the links between increased violent or impulsive behaviour seem logical.

Both alcohol and cocaine elevate extraneuronal dopamine and serotonin levels which in turn may lead to deficits in impulse control and, thus, violent behaviour¹². It is therefore possible to hypothesise that the combination of alcohol and cocaine increases the risk of violence than either drug taken alone. There is some research from the US that suggests that combined alcohol and cocaine use increases the risk of violence (Chermack & Blow 2001¹³; McDonald et al, 2008¹⁴). In a separate review of the research evidence on cocaethylene and violence, Penning et al. (2002) noted that:

"Retrospective research on violence suggests a major role for alcohol alone and additive increases in violent behaviour or crime from the combination [with cocaine]. For ethical reasons, high repeated doses of cocaine have not been studied experimentally. The behavioural toxicity of highdose binge use of cocaine with alcohol may thus be



underestimated. One study shows a potentiation effect of the cocaine-alcohol combination on the number of thoughts and threats of violence”¹⁵

Volume 24 (March/April 2009) of Druglink magazine featured an article entitled ‘The hidden mixer’¹⁶ exploring the possible link between combined alcohol and cocaine use and violence. It reported that drug tests by Greater Manchester police had found that ‘between a quarter and a third of people arrested for violence snorted powder cocaine before fighting.’ However the article concluded that alcohol was still the most likely drug affecting the risk of violent behaviour, and that personality is still the key determining factor.

It has yet to be established exactly how and under what circumstances the combination of alcohol and cocaine may give rise to increased risk of aggression and violence. There is currently a shortage of in depth research which includes the role of important social and contextual factors such as the night-time economy or domestic settings¹⁷. Further exploration of combined use in violent offences could provide additional insight. Models of data collection such as the Cardiff A&E data sharing model and initiatives such as alcohol arrest referral schemes could be important opportunities to further explore risk factors and prevalence relating to combined alcohol and cocaine use.

3.3 Addiction risks?

There appears to be insufficient research to assess whether combined cocaine and alcohol use is likely to increase levels of addiction to either drug, or whether there is the possibility of a particular habit-forming reaction to cocaethylene. A medical review of the literature available on the psychological and somatic consequences of combined use found no evidence that cocaethylene produced an enhanced addictive effect (McGowan, 2008). However one early study¹⁸ on cocaethylene concluded that ‘The formation of cocaethylene may play an important role in the systemic toxicity and abuse liability associated with dual addiction to cocaine and alcohol.’

Nonetheless, the already strong tendency of each drug to form a variety of physical and psychological disorders without a combined synergy should not be overlooked. It has also been suggested that ‘some combined use can be explained by classical conditioning theory. A combined user has their alcohol and cocaine use conditioned together so that using one brings on the craving or desire to use the other.’ (McGowan, 2008). Anecdotal reports also suggest that the ‘crash’ or ‘comedown’ effects of cocaine are reduced if combined with alcohol, which may also be likely to lead to increased conditioning of poly-use.



4. Use and prevalence of cocaethylene

Whilst medium to longer term trends of both cocaine and alcohol consumption have been rising, there is little specific data available directly identifying cocaethylene prevalence. However anecdotal reports suggest that many drinkers in the UK now see cocaine as an integral part of their recreational alcohol use. A qualitative study¹⁹ of 34 young cocaine users in London found that:

‘Virtually everyone interviewed reported that they regularly drank alcohol when using cocaine. Reports of drinking more heavily than usual while under the influence of cocaine were widely described, with several reporting that they often drank at least twice their usual alcohol intake. For a significant number of respondents, cocaine use was always accompanied by alcohol. Some used cocaine to moderate the undesirable effects of alcohol (such as feeling less in control and unsteady on their feet), so that they could continue to drink. In contrast, others used alcohol in a functional way to moderate the effects of cocaine: to help them take the edge off feelings of anxiety or paranoia and to help them to sleep at the end of the evening. As Kate, an unemployed 22-year-old, explained:

‘I won’t have cocaine without alcohol. Because when you have cocaine on its own it’s a completely different buzz. You can get on a paranoid buzz if you have it on its own. The alcohol brings you on a level.’ (Kate, aged 22)

Overall, respondents reportedly recognised very few risks associated with using cocaine and alcohol together.’

Paul Hayes, head of the National Treatment Agency (NTA) recently stated to the Home Affairs Select Committee that:

"...for a significant minority of people in their 20s/early 30s [cocaine] has become an adjunct to a Friday or Saturday night out along with alcohol"²⁰.

Such drinkers are likely to fall within the largest proportion of alcohol misusers within the UK, making up a population of 7.7 million ‘binge’ drinkers (ONS²¹). Other professionals in the treatment field have also highlighted the increasingly apparent cultural link between recreational alcohol and cocaine use. Research by expert UK drug and alcohol trainer Danny McGowan concluded ‘that combined cocaine and Alcohol use has been normalised in modern pub and club culture.’²²



4.1 Home Affairs Select Committee (HASC) report: 'The cocaine trade'

The recent HASC report 'The cocaine trade' assessed a range of evidence on the use and profile of cocaine in England. In addition to Paul Hayes, others giving evidence also cited the significance of alcohol within the context of powder cocaine use; addictions expert Sarah Graham told the HASC "for many, many people alcohol addiction and cocaine addiction do go hand in hand". Professor Nutt suggested that it was not uncommon for "people to go into pubs and order a gin and tonic and a line of coke". On reviewing its evidence on combined use the HASC report concluded:

"There is a strong link between use of alcohol and use of illicit drugs, in particular cocaine ... The survey by dance music magazine MixMag found that 61% of respondents always drank alcohol when snorting cocaine."

"Cocaine powder is increasingly being taken simultaneously with alcohol. The two drugs combine to form a highly toxic third substance, cocaethylene, which a recent medical study reported to be associated with a 25-fold increase in sudden deaths"

Responding to the publication of the Committee's report, Martin Barnes, Chief Executive of DrugScope, said:

"There is concern that young people in particular underestimate the risks and harms associated with cocaine, not least when it is combined with alcohol..."

DrugScope have been highlighting concerns over increasing indications of combined alcohol and cocaine poly-use for several years, based on their annual Street Drugs Trends survey. In 2007 Martin Barnes highlighted:

"We do not wish to exaggerate the extent of cocaine use but our survey does reveal some worrying trends. The use among young people, the drug's affordability and the combination with alcohol and other drugs is clearly a concern."

4.2 NTA report on powder cocaine treatment

The National Treatment Agency (NTA) recently released 'Powder cocaine: how the treatment system is responding to a growing treatment problem' (March 2010), seemingly the first governmental drugs document to refer to cocaethylene and its implications:

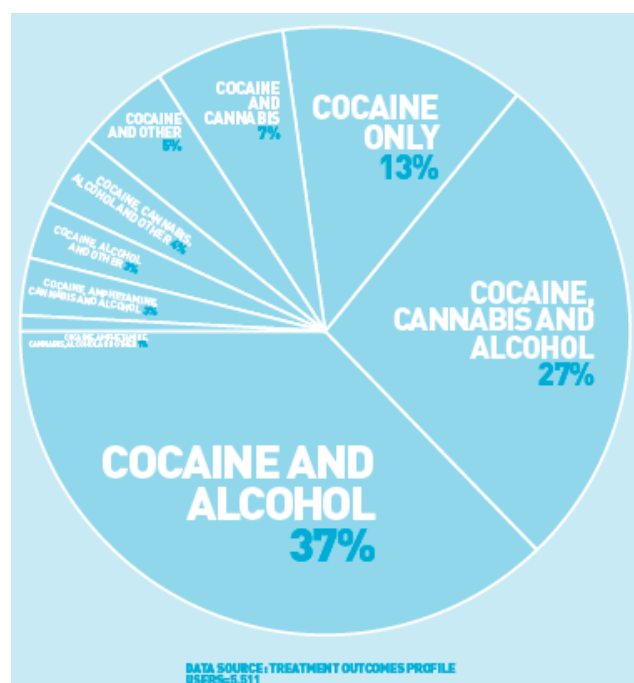
"Individuals often use powder cocaine in combination with alcohol. This produces a pharmacologically active metabolite of cocaine and alcohol called cocaethylene, which is



thought to enhance the effects of cocaine and lessen the impact of the ‘crash’ following a binge. This pattern of use may also increase the damage to the heart that either cocaine or alcohol alone can cause, and increase the likelihood of violent behaviour.

Once established, this combined use of the drugs can be difficult to give up. People who access treatment in England tend to have a problem with more than one drug, so this is an important area of focus in developing and evaluating effective treatment responses.”

Significantly, the report found that around 75% of all those receiving treatment for powder cocaine reported using alcohol at start of treatment:



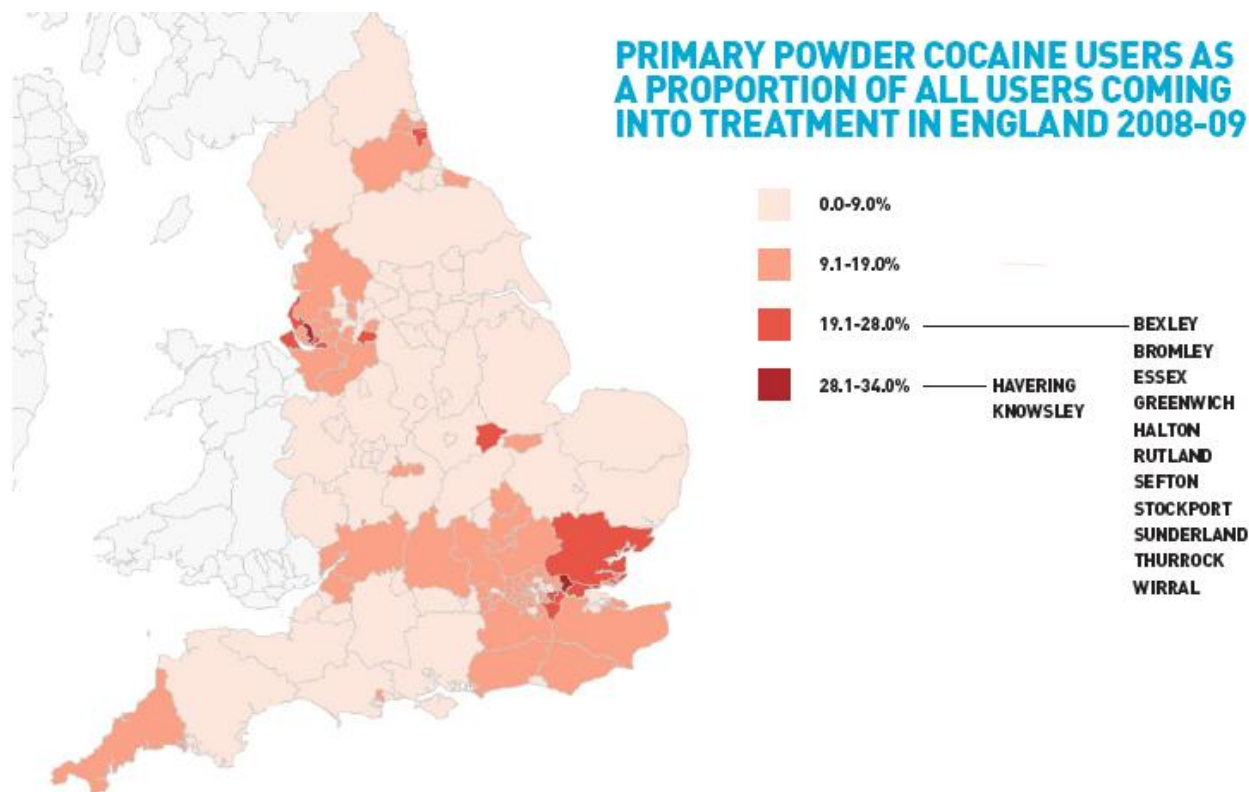
Tables: Reported drug use at start of treatment for powder cocaine users. Source NTA, Treatment Outcomes Profile data 08/09

4. REPORTED DRUG USE AT START OF STUDY		
	Frequency	Percentage
COCAINE AND ALCOHOL	2,036	36.9
COCAINE, CANNABIS AND ALCOHOL	1,493	27.10
COCAINE ALONE	719	13.00
COCAINE AND CANNABIS	392	7.10
COCAINE, CANNABIS, ALCOHOL AND OTHER	212	3.80
COCAINE, ALCOHOL AND OTHER	161	2.90
COCAINE, AMPHETAMINE, CANNABIS AND ALCOHOL	156	2.80
COCAINE, AMPHETAMINE, CANNABIS, ALCOHOL AND OTHER	82	1.50
ALL OTHER COMBINATIONS	260	5.00
TOTAL	5,511	100.00

The report indicates successful outcomes for those receiving treatment for powder cocaine use, with 61% abstinent and 11% reporting improved levels of use (reduction) after six months. In addition the data showed that although 57% of those receiving treatment for powder cocaine use did not change their alcohol consumption, 23% reported abstinence and 17% reported improvements at six months on.

6. RELIABLE CHANGE INDEX				
	Abstinent [n] [% of cohort]	Reliably improved	Unchanged	Reliably deteriorated
POWDER COCAINE	1,864 (60.6)	333 (10.8)	834 (27.1)	44 (1.4)
AMPHETAMINE	210 (80.8)	11 (4.2)	36 (13.8)	3 (1.2)
CANNABIS	494 (36.2)	204 (14.9)	624 (45.7)	44 (3.2)
ALCOHOL	549 (23.1)	406 (17.1)	1,363 (57.3)	62 (2.6)

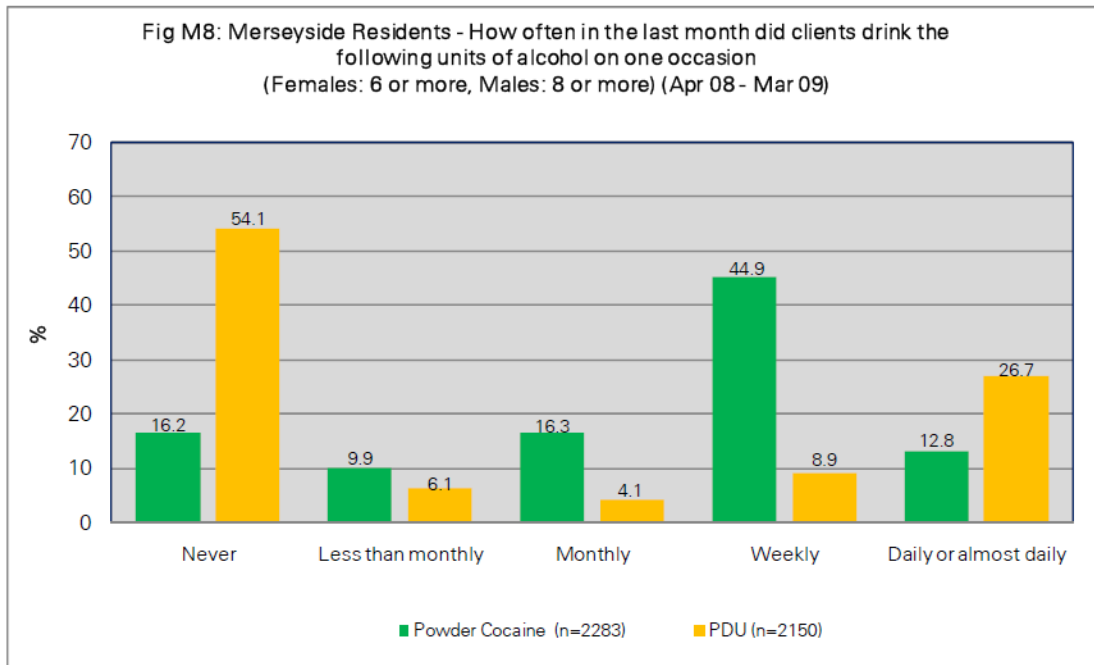
Table: 40% of those receiving primary treatment for powder cocaine use had reduced or abstained from alcohol use at 6 months



4.3 Powder cocaine and Problematic Drug Users (PDUs) in Merseyside

The Liverpool John Moore's University (JMU) recently produced the report '*Powder cocaine and Problematic Drug Users: A comparative study of the characteristics of DIP clients in Merseyside (April 08 – March 09)*'. The research provides a valuable insight into some of the characteristics and behaviour patterns of combined alcohol and cocaine users, and key differences compared with PDUs (i.e. crack cocaine and opiate users).

The report highlights that 'there seems to be a clear trend emerging with regard to the prevalence of young adults (15-34 year olds) using cocaine'. It further identifies links with cocaine use and lifestyle patterns; 'in particular with the night-time economy and alcohol consumption in pubs, clubs and wine bars'. Most significantly the report explores levels of alcohol use and further ethnographic data relating to powder cocaine users within Merseyside Drug Intervention Programmes (DIPs). Of the Merseyside clients who reported drinking in the past month, on average 44.9% of the powder cocaine group reported "binge drinking" on a weekly basis compared to 8.9% of the PDU group (see table below).



The report makes a number of recommendations based on the findings and differences between powder cocaine users and PDUs. These include:

Drug Groups

Traditionally powder cocaine has not been the focus of the DIP due to the lack of evidence connecting it to acquisitive crime. The emergence of a powder cocaine using group and the relatively even split in most areas between powder cocaine users and PDU suggests that if teams wish to attempt engagement with all of these cocaine using clients considerable thought is going to need to be given to the allocation of resources.

Drug Use

The frequency of powder cocaine use implies that for most clients in this group, use had not reached problematic levels. For a proportion of the clients it should also be considered whether daily cannabis use is as much of, if not a greater, issue for them and this should be addressed in treatment interventions

Drug Treatment

It is important for service providers to be aware that powder cocaine users are likely to not have experienced treatment before and may have pre conceived ideas about services that could act as a barrier to engagement... issues should be considered when deciding how to initially engage with these potential clients and when designing a service for them.



Alcohol Consumption

Service providers need to ensure that they have services in place to address “binge drinking” among the powder cocaine using group as well as potentially problematic drinking among some PDU. Problematic drinking could become a substantial barrier to delivering treatment for illicit drug use and workers must have necessary skills to address this or have access to appropriate resources outside the team.

Offences Committed

The powder cocaine group were most likely to have been arrested for MDA [Misuse of Drugs Act] offences but also for wounding or assault, theft – car and public order offences. The first two of these offences point to a link with the night time economy... The motivation behind offending among the powder cocaine group is not yet clear and further investigation of the role of cocaine in their offending is required.

Employment

Clients from the powder cocaine group were equally split between being employed or being unemployed. This is in contrast to the PDU group the majority of whom were unemployed.

Cocaine user profile

The report also identifies the ‘typical powder cocaine user’:

- *is a white male on most occasions*
- *is aged mainly between 18 and 24 years old mainly uses powder cocaine only [rather than other illicit drugs] and on a monthly or weekly basis*
- *is very likely to drink alcohol on a weekly or monthly basis which can be at weekly or daily “binge drinking” levels*
- *is likely to spend under £50 a week on drugs*
- *is unlikely to have had treatment for drug use within the last two years or be receiving treatment currently*
- *is most likely to be arrested for MDA offences but may be arrested for wounding or assault, theft – car and/or public order offences*
- *is in settled accommodation and as likely to be unemployed as employed*

The report supports the wider hypothesis of this briefing that many younger binge drinking groups are now frequently using powder cocaine, and are indeed a different ‘treatment group’ than primarily addressed within drug treatment settings.



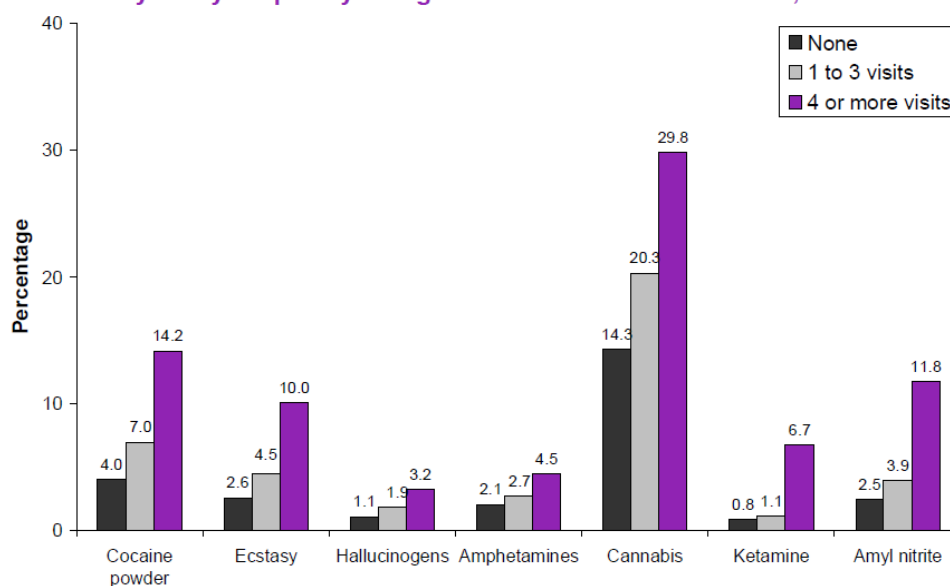
4.4 Drug Misuse Declared: Findings from the 2008/09 British Crime Survey

Findings from the ‘Drug Misuse Declared’ report highlights some significant data to associate lifestyle factors such as age, status and visits to pubs and clubs as significant determinants of levels of stimulant use, particularly cocaine. These findings demonstrate that cocaine is now the most popular stimulant drug and frequency of use is directly correlated to visits to licensed premises.

“For young people aged 16 to 24, levels of last year drug use (that is, use of any illicit, Class A or stimulant drugs) were found to be significantly higher for those who had drunk alcohol, than those who had not drunk alcohol, and as frequency of alcohol consumption increased, so did last year drug use prevalence rates.

This analysis shows that lifestyle and related personal characteristics (such as visits to nightclubs and pubs as well as marital status and age) remain the strongest characteristics associated with patterns of last year illicit polydrug use.”

Figure 4.8 Proportion of 16 to 24 year olds reporting use of individual drugs in year by frequency of nightclub visits in the last month, 2008/09 BCS



4.5 Cocaethylene detection amongst cocaine users

Research by substance misuse testing manufacturer Trimega Laboratories²³ found that out of those testing positive to cocaine, on average 45% also tested positive to cocaethylene.



Regional prevalence data was published as:

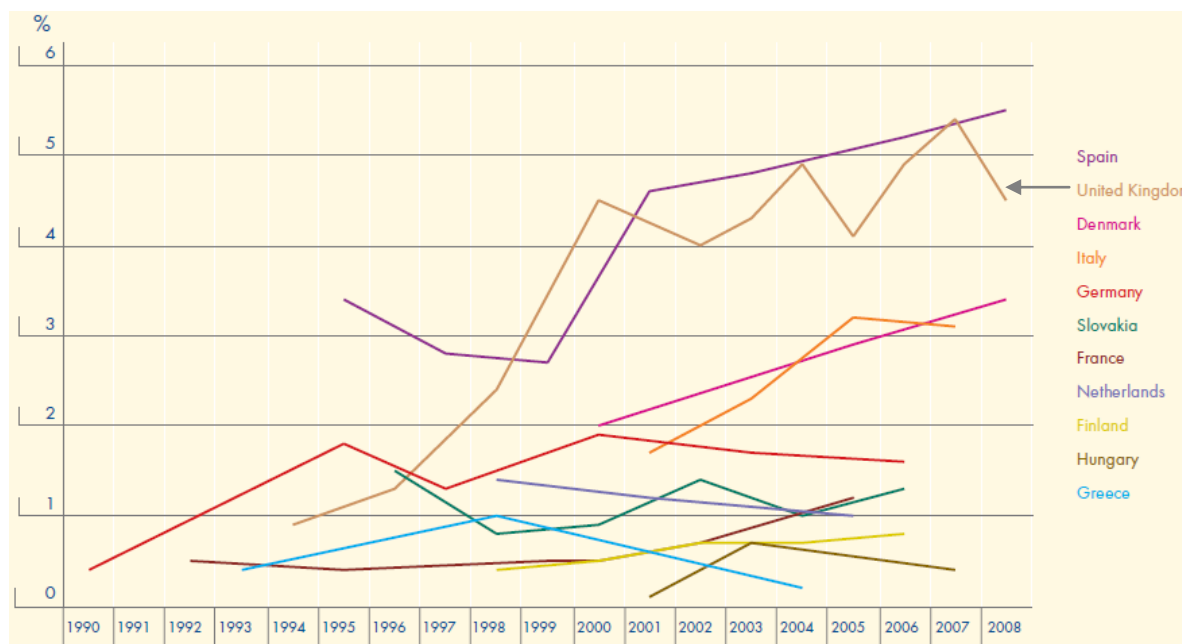
North West	60%
London	59%
North East	54%
Average	45%
East Mids	43%
South East	35%
South West	30%
West Mids	22%

Table: Presence of cocaethylene in cocaine users. Source: Trimega Laboratories

4.3 Further indications of combined alcohol and cocaine use

DrugScope’s recent Street Drugs Trends survey findings have continued to highlight that many local drug and alcohol services are reporting poly-use as a ‘significant problem’. Rising alcohol and cocaine-related presentations of often young and otherwise seemingly healthy drinkers has also been reported by A&E medical professionals. Cocaine induced A&E visits increased over four-fold to 894 in 2007/8 compared with 448 in 2003/4 as the availability of cocaine and poly-use has risen in the UK²⁴. European data also indicates rising poly-use; the ‘2009 annual report of the state of drugs problems in Europe’²⁵ highlights the UK as having the second highest estimated prevalence of cocaine use in Europe:

Trends in last year prevalence of cocaine use among young adults (aged 15–34)





5. Treatment and interventions

There is no significant evidence base or discussed method of specific treatment for combined alcohol and cocaine use. Therefore rationally applying treatment and intervention approaches for alcohol and stimulant use must be considered. Although there is some research²⁶ suggesting efficacy of disulfiram for treating combined alcohol and cocaine users, established psychosocial interventions will be the key primary treatment approach based on a number of key factors:

- Most combined alcohol and cocaine users appear to be recreational users who are unlikely to have severe physiological dependencies for either substance
- The main treatment approaches for powder cocaine use/addiction are psychosocial interventions based on Motivational Interviewing and Cognitive Behavioural Therapy (CBT) methods²⁷
- There is an extensive evidence base for the effectiveness of brief and psychosocial alcohol interventions²⁸

Indeed there may be a particular case for exploring particular 'brief intervention' (or IBA²⁹) approaches as an opportunity to address combined use. Alcohol is likely to be the primary drug for most combined users (based on prevalence data, anecdotal reports and order of consumption³⁰). Brief interventions are a key plank in alcohol harm reduction strategies effective in reducing risky (non-dependent) drinking, and have also been indicated as effective for powder cocaine users³¹. Most importantly, brief interventions are 'opportunistic' - combined users are not likely to be a treatment seeking population.

However practitioners are already likely to be accounting for combined use and adapting psychosocial approaches. There are also positive indications of primary powder cocaine treatment for poly-users (NTA figures show 40% of those receiving cocaine treatment reporting abstinence or reduction in alcohol use, see section 4.2). Caution must be taken though in assuming specialist stimulant services are well-suited to address cocaethylene issues; many are focussed on treatment for crack cocaine users.

5.1 Applying alcohol and cocaine interventions

Some of the key treatment and intervention approaches are considered below for their potential suitability/efficacy for combined alcohol and cocaine users.

Tier 1 & 2 approaches

Harm minimisation information: Services could easily provide service users with cocaethylene information raising awareness of risks and harms if made available.



Brief Interventions/FRAMES: FRAMES is a commonly applied approach for delivering brief intervention behaviour change which could be applied to combined users through appropriate feedback, advice, options and supporting self-efficacy.

Mutual aid/self-help: Alcoholics Anonymous (AA) is important for many people seeking to abstain from alcohol use and similar mutual aid groups have been established for a variety of addictions. Cocaine Anonymous (CA) has become increasingly popular; research suggests cocaine users seeking abstinence are up to four times more likely to reduce problematic cocaine use (McGowan, 2008). Promoting access to mutual aid and self-help groups such as AA and CA may be of significant value in supporting combined alcohol and cocaine users.

Tier 3 & 4 structured treatment approaches

There is similarly no structured or medical³² treatment evidence base for combined users but as applied to addictions treatment, lifestyle counselling approaches and structured psychosocial interventions are likely to be effective. However several points may need to be considered when looking at structured treatment responses:

- Combined alcohol and cocaine users may not fit well within drug or alcohol services, or be 'treatment seeking'
- Combined users may be likely to poly-use a range of other drugs (including cannabis in particular) which will need further consideration/assessment

Motivational Interviewing (MI): Well evidenced for both alcohol and cocaine use interventions and addictions treatment. Easily used in brief structured counselling, particularly applying OARS³³ (to emphasise rapport and empathy objectives). Basic tools such as the decisional balance (+ & - in using cocaethylene) are quick and effective. A recent study³⁴ found further evidence that MI approaches are effective for cocaine users.

Cognitive Behavioural Therapy (CBT): CBT plays an important part in many structured treatment approaches. A specific cocaine CBT manual is available on the NTA site; 'A Cognitive-Behavioural Approach: Treating Cocaine Addiction' (Carroll KM, 1998).

Relapse prevention: May be particularly effective when used for combined users particularly when exploring high risk situations and triggers. Practitioners can explore particular triggers and use i.e. does alcohol prompt the user to use cocaine or vice versa.

Mapping: (see NTA's *Routes to recovery*³⁵, ITEP, BTEI etc.). Maps are a good visual way to represent and work through issues with clients, set goals etc.



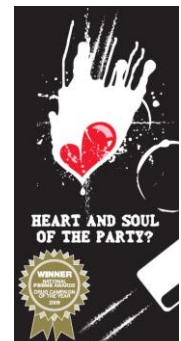
5. Academy cocaethylene training development

The AERC Alcohol Academy has been working with expert trainers and addictions leads to develop a specific training package based on the above implications for combined alcohol and cocaine users. The one day session covers key treatment and intervention approaches for combined alcohol and cocaine users. This is a specifically tailored package based on the available evidence base as well as treatment experience from working with combined users. [Contact us](#) for further information.

6. Case studies and targeted approaches in the UK

Nottingham's 'Heart and Soul of the party'

Nottingham's Crime and Drugs partnership worked with Nottingham Trent University students to produce an award winning awareness campaign. 'Heart and Soul of the party' delivered a range of materials to raise awareness of the impacts and risk factors of combining cocaine and alcohol use. Materials can be [downloaded here](#).



Police & licensing approaches

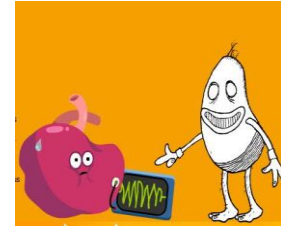
Durham constabulary's Substance Misuse Unit have developed a number of responses to account for identified issues of cocaine use amongst the night time economy. This includes awareness raising of enforcement officers, premises and the public around the impact and potential risks of combined use. Risk factors for police range from possible increased aggression to higher risk of heart attack during arrest. A cocaethylene and the Night Time Economy presentation by Sergeant Tim Robson can be found [here](#).

Kent Police have promoted '[Operation Drawbridge](#) - a general approach to tackling recreational drug misuse at community level' aimed at reducing drug and alcohol related violence. A one to one dialogue from police with customers entering premises forms an early-intervention and detection approach which also looks at:

- How drug patterns are profiled in licensed premises
- What licensees can do to police their own pubs and clubs
- The concept of 'condition of entry' requirements
- The combined use of trace detection and passive dogs as an enforcement tactic
- Making the links to treatment for the social drug scene
- How recreational misuse is supported by awareness training in schools and the workplace

Drinking with Charlie

Bolton Drug and Alcohol Action Team (DAAT) have produced a website www.drinkingwithcharlie.co.uk to raise awareness about the risks of cocaethylene.



Further approaches

A number of other campaigns have been produced by local DAATs such as Southwark's awareness [campaign](#) and Havering DAATs '[Project Weekend](#)'. However without robust evaluations it is difficult to certify the impact of such campaigns. Many areas are developing pro-active licensing approaches or Pubwatches and responsible retailing schemes which seek to prevent drug impacts on premises.

7. Cocaethylene – an issue for alcohol policy?

Whilst the national and local alcohol agenda has built up momentum, it may be viewed that still over-looked by separate national drug and alcohol strategies is the need to look at approaches to poly-use. Most useful data and information available on the likely use and impact of cocaethylene has been derived from cocaine related information, which largely appears to overlook the often significant role of alcohol. This has been identified as an issue across the continent; the '*2009 Annual report of the state of drugs problems in Europe*' asserts under the heading 'Polydrug use and concomitant alcohol problems are now the defining elements of the European drug problem.'³⁶

"...substance use problems are best addressed holistically and in the context of healthy lifestyles and informed choices. In contrast, the discourse on drug use is more often substance specific... In Europe today, polydrug patterns are the norm, and the combined use of different substances is responsible for, or complicates, most of the problems we face. This raises the need to develop a more comprehensive, integrated and multi-substance perspective, in order to better understand the situation and design and evaluate appropriate responses.

There is therefore a need to develop understanding of combined use³⁷ in order to better respond to its effects, including possible impacts on violence in the night-time economy and domestic settings. Exploring poly-use through further data collection through A&E departments, Alcohol Arrest Referral schemes or Drug Interventions Programmes are likely to offer key insights as demonstrated by the JMU research (see 4.3). By further exploring key issues and practice approaches, an improved policy and strategy dialogue should be developed to support progress within the delivery of prevention and treatment approaches for combined drug and alcohol use.



8. Areas for development

It is apparent there are a number of complex areas that need further development in order to better identify and respond to issues resulting from cocaethylene prevalence. These are likely to include:

- Research and knowledge:
 - Further knowledge on risks and harms (health and social)
 - Prevalence, location data and user profiles
 - Perceptions and attitudes data (e.g. exploring 'normalisation')
- Development of the most effective brief intervention and treatment approaches
- The value of awareness raising, health promotion and practitioner training
- Preventing alcohol-related violence— exploring targeted approaches for combined users in the night time economy and other settings

10. Conclusion

Based on available prevalence data, trends and anecdotal reporting, it appears many of the 7.7 million 'binge' drinkers in the UK are increasingly using cocaine, unaware of the increased health and social risks presented by their poly-use. However, few targeted approaches have been adopted to stem the rise of what may be a 'ticking time bomb' for public health. This lack of attention appears to be partly as a result of limited data and understanding, but also because the nature of drug and alcohol treatment and prevention does not yet encompass the complex and increasing popularity of recreational based poly-use. An apparent lack of recognition of the role of alcohol or other drugs in recent deaths linked to Mephadrone appears to further demonstrate this.

This report takes the position that recognising cocaethylene as poly-use is important; however it should be particularly recognised within the context of alcohol strategy. Alcohol is likely to be the primary drug for most combined users as the more widely used drug (and that preliminary alcohol consumption may be required for the formation of cocaethylene). As the alcohol agenda may increasingly converge with substance misuse and public health approaches, opportunities to develop treatment and brief intervention responses suitable for combined users must be further explored. Addressing the social consequences and risks of cocaethylene use must also be integrated within alcohol-related crime and disorder agendas.



Key documents & resources

- ‘The cocaine trade’ Home Affairs Select Committee (HASC) report; February 2010. Available: <http://www.publications.parliament.uk/pa/cm200910/cmselect/cmhaff/74/7402.htm>
- ‘Powder cocaine: how the treatment system is responding to a growing treatment problem’ National Treatment Agency; March 2010. Available: http://www.nta.nhs.uk/news_events/newsarticle.aspx?NewsarticleID=214
- ‘Cocaine Dossier’ DrugScope 2010: a selection of reports on cocaine from the last 15 years including the article ‘The hidden mixer’ exploring alcohol and cocaine’s link to violence. Available: <http://www.DrugScope.org.uk/resources/cocaine-dossier.htm>
- Cocaethylene awareness raising resources including www.drinkingwithcharlie.co.uk and ‘Heart and Soul of the party’ materials: <http://www.nottinghamcdp.com/index.asp?pageid=pageid279.xml>
- ‘Powder cocaine and Problematic Drug Users: A comparative study of the characteristics of DIP clients in Merseyside (April 08 – March 09)’ Petra Howorth & Paul Duffy, Liverpool JMU 2010 <http://www.cph.org.uk/showPublication.aspx?pubid=630>
- ‘A Cognitive-Behavioural Approach: Treating Cocaine Addiction’ (Carroll KM, 1998) http://www.nta.nhs.uk/areas/clinical_guidance/psychosocial_interventions_resource_library_%28PIRL%29/group_1/cognitive_behavioural_therapy_for_adult_cocaine_users.aspx
- Key alcohol health and treatment guidance including:
 - ‘Models of Care for Alcohol Misusers’ (DoH 2006)
 - ‘Review of the Effectiveness for the Treatment of Alcohol Problems’ (NTA 2005) and;
 - ‘Signs for improvement: commissioning interventions to reduce alcohol related harm’ (DoH 2009)All available at www.alcohollearningcentre.org.uk
- ‘The Practical guide for preventing and dealing with alcohol related problems’ (Home Office 2009) <http://www.crimereduction.homeoffice.gov.uk/drugsalcohol/drugsalcohol104.htm>

This briefing paper was produced by James Morris on behalf of the AERC Alcohol Academy, with special contributions from Dr Phil Hadfield, Centre for Criminal Justice Studies and Danny McGowan, specialist substance misuse trainer.

For further information, to enquire about Cocaethylene training courses or for further comments, please [get in touch](#).



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- ² 'Alcohol, cannabis, ecstasy and cocaine: Drugs of reasoned choice amongst young adults in England' Parker, H. And Williams, L. (2001), International Journal of Drugs Policy, 12 (516), pp. 397-413.
- ³ 'Cocaethylene: A Unique Cocaine Metabolite Displays High Affinity for the Dopamine Transporter' W. Lee Hear et al *Journal of Neurochemistry* 1991
- ⁴ 'A Gram and a Pint' Combined Cocaine and Alcohol use (handout), D McGowan Training & Consultancy LTD 2010
- ⁵ 'Effects of concurrent use of alcohol and cocaine' J. M. Pennings, Arthur P. Leccese, Frederik A. de Wolff (2002), *Addiction*, Volume 97, Issue 7, July : 773-783.
- ⁶ Pennings et al. op cit.
- ⁷ Xu, Y. et al. *Cocaethylene, a Metabolite of Cocaine and Ethanol, is a Potent Blocker of Cardiac Sodium Channels*. The Journal of Pharmacology and Experimental Therapeutics 27: 319-325 (1994).
- ⁸ 'Neurotoxic and Cardiotoxic Effects of Cocaine and Ethanol' Muhammad' U. Farooq, MDa, Archit Bhatt, MD, MPHa, Mehul B. Patel, MDb *Journal of Medical Toxicology* Volume 5, September 2009
- ⁹ Science: Cocaine and alcohol make a heart-stopping cocktail (ibid)
- ¹⁰ <http://www.drugabuse.gov/researchreports/researchindex.html>
- ¹¹ 'The new cocaine crisis' The Times online http://www.timesonline.co.uk/tol/life_and_style/health/article4390228.ece
- ¹² Pennings et al., op cit
- ¹³ *Violence among individuals in substance abuse treatment: the role of alcohol and cocaine consumption* Chermack, S. T & Blow. F,C (2001) *Drug and Alcohol Dependence* Volume 66, Issue 1, 1 March 2002, Pages 29-37
- ¹⁴ *Predicting violence among cocaine, cannabis, and alcohol treatment clients* McDonald, s. Et al (2008) *Addictive Behaviors* Volume 33, Issue 1, January 2008, Pages 201-205
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- ¹⁷ *Past-Year Violence Typologies Among Patients with Cocaine-Related Chest Pain* Rebecca Cunningham, Maureen A. Walton, Shanti P. Tripathi, Jim Edward Weber, Ronald F. Maio, Brenda M. Booth (2007) 'The American Journal of Drug and Alcohol Abuse, Jan, Vol. 33, No. 4, Pages 571-582.
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- ¹⁹ *'Rich Man's Speed': a qualitative study of young cocaine users*, Annabel Boys, Julie Dobson, John Marsden, John Strang (2002) *Drugs: Education, Prevention, and Policy*, Jan 2002, Vol. 9, No. 2, Pages 195-210.
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- ²² Ibid: McGowan 2010
- ²³ Trimega Laboratories <http://www.trimegalabs.co.uk/>
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- ²⁶ *'Treating stimulant misuse – what pharmacology has to offer'* Fabrizio Schifano, Scanbites Issue 22 2009. Available at <http://www.scan.uk.net/resources/scanbites>
- ²⁷ *'Drug Misuse and Dependence – UK Guidelines on Clinical Management'* Department of Health 2007; *'Drug Misuse: psychosocial interventions'* National Institute for Health and Clinical Excellence (NICE) clinical guideline (2007)
- ²⁸ *'Review of the effectiveness for the treatment of alcohol problems'* Department of Health 2006
- ²⁹ Identification and Brief Advice (IBA) is used by the Department of Health to describe brief interventions – see www.alcohollearningcentre.org.uk/Topics/Browse/BriefAdvice/
- ³⁰ I.e. Indications of prior alcohol consumption as necessary for the production of cocaethylene
- ³¹ Bernstein J. et al. *'Brief motivational intervention at a clinic visit reduces cocaine and heroin use.'* *Drug and Alcohol, Dependence*: 2005, 77(1), p. 49–59
- ³² *'Cocaethylene: a brief look'* Martyn Egerton, Consultant Biochemist; Scanbites Issue 22
- ³³ OARS is an acronym for: **O**pen-ended questions: allowing the patient to talk about issues from their own point of view; **A**ffirming: statements of appreciation and understanding; **R**eflective listening: allowing the practitioner to check his or her understanding of what the individual has said; **S**ummaries: bringing together the key points that the patient has mentioned.
- ³⁴ Ibid.
- ³⁵ Available from http://www.nta.nhs.uk/areas/workforce/routes_to_recovery.aspx
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