

## White Lies - Cocaine

### Understanding the truth behind Cocaine

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## Introduction

Cocaine is a very potent stimulant, a class A drug in the UK and one of the most popular illicit substances worldwide. By stimulant, we mean cocaine stimulates the central nervous system and the messaging in the brain, therefore we feel more energized, more alert, and more awake, temporarily. Cocaine is a class A drug, this means, under the misuse of drugs act, (1971), it is classed as one of the more dangerous and severe substances, meaning it carries the highest penalty; *see below*:

Class	Drug	Possession	Supply and production
A	Crack cocaine, cocaine, ecstasy (MDMA), heroin, LSD, magic mushrooms, methadone, methamphetamine (crystal meth)	Up to 7 years in prison, an unlimited fine or both	Up to life in prison, an unlimited fine or both

## What is Cocaine?

Cocaine is one of the most common illicit substances on the streets of the UK, it is estimated 2.6% of 16 – 59-year old’s have taken powdered cocaine (in 2017/18). It is estimated London alone consumes almost 23,000 grams of cocaine daily, and 8 tons per annum, with a market in the UK estimated to be worth figures as £4 billion.

Powdered cocaine as well as the free base, smokable version, crack cocaine, is considered a highly addictive substance due to its reinforcing effects. Depending on the way cocaine enters the body, or it’s route of administration will determine how quickly it reaches its site of action in the brain, therefore determining how intense the high is, how quickly it lasts and what risks are at play.

Common routes of administration for cocaine include, snorted (intranasal), smoked (inhalation), dissolved and injected, either into the muscle, (intramuscular) or into the veins (intravenous).

Cocaine is known also by many other ‘street names’, it is important to be aware of these as you may not realize exactly what someone is trying to offer you or potentially what you may have taken in the past. Some common, and some less common street names for powdered cocaine include but are not limited to:

Chop          Charlie          Prop          Snow          Coke          Devil’s Dandruff

Beak          Flake          Sniff          Lemo          Blow          Bump

Can you think of any others, note them below:

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As we touched on earlier, cocaine does not only come in powdered form, free base cocaine or ‘crack cocaine’ emerged as a smokable crystalized alternative in the late 1970’s that saw powdered cocaine flood the market, causing prices to drop by an estimated 80%. Dealers now had to seek to come up with some newer and more inventive ways of selling their product. Thus, crack cocaine was born. Common street names include:

Crack          Rock          Wash          White          Base          Candy

## Financial implications

Here in the UK it's estimated there is a three tier market for cocaine use and the term, '£10 a point' is often used, what this essentially means is that price often equates to purity, for example, a gram of 40% purity cocaine, on average would cost approximately £40. The three-tier market explained:

**Student/budget class** – viewed as the budget option, usually about 50% purity and £30 - £50 a gram.

**Street** – Typically 50 – 70% purity with prices ranging between £50 -£70 a gram, arguably the most popular option in the UK.

**Business Class** – Often referred to as Peruvian, usually 70%+ in purity with prices typically between £70 - £90.

Consider for a moment the financial implications of your cocaine use in the past, how much you were using and spending weekly and how much you are saving now. Apps such as 'I am Sober' can help you keep track of this.

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## Adulterants

Often cocaine contains adulterants. Adulterants are essentially other compounds, substances or chemicals used to bulk the product, enhance its effects, mimic its chemical effects and in some cases make it go further. This can be both problematic and dangerous as the cocaine user believes they are taking cocaine when it could contain a variety of different substances. It is extremely rare to find a 100% chemically pure batch of cocaine. Can you think of any adulterants you know cocaine has been cut with? Or any other adulterants you are aware of? *List them below:*

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Some common adulterants for cocaine include:

<b>Benzocaine</b>	<b>Lidocaine</b>	<b>Lactose</b>	<b>Phenacetin</b>	<b>Levamisole Powder</b>	<b>Caffeine Powder</b>
A local anesthetic, often used in sore throat lozenges	Sometimes referred to as lignocaine, a local anesthetic used by dentists.	A cheap white sugar often found in milk	A painkiller, now banned in the UK for its potentially carcinogenic effects.	A de-wormer for cattle, used to make cocaine appear more potent.	Caffeine again being a stimulant, used to try to replicate some effects.

Levamisole powder as noted above can be particularly lethal. Levamisole powder which is often used as a cattle de-wormer has been shown to severely deplete white blood cells in humans. In 2005 only 2% of cocaine seized by the DEA contained levamisole however in 2011 this number had rose to 73%.

The addition of levamisole into cocaine would make cocaine appear whiter and have a more flakey like texture as oppose to a grainy texture, thus make cocaine appear purer, hence why it may be used as an adulterant.

## Fentanyl

Fentanyl is a very potent and potentially dangerous opioid used in the treatment of severe pain. Possibly due to its potency it is becoming ever more common to find samples of heroin and cocaine containing it, possibly as an adulterant.

However due to the high potential for overdose from very minimal doses of fentanyl, (as little as 2mg) it is possible that fentanyl is a less purposeful adulterant and a more accidental contaminate.

Fentanyl is far more appealing as an adulterant for heroin and opioids therefore it is possible that cocaine-fentanyl combinations are a result from inadvertent contamination using the same equipment processing cocaine and heroin by dealers.

The DEA point out that given the lack of similarity on a pharmacological level and general preferences by drug users, it is unlikely most mid-level or street drug dealers are making a conscious effort to sell cocaine with fentanyl as a purposeful adulterant.

A more logical explanation, as noted above is that given the polydrug nature of most drug trafficking operations and organizations, I.E producing and distributing various drugs there is ample opportunity for cross contamination to occur.

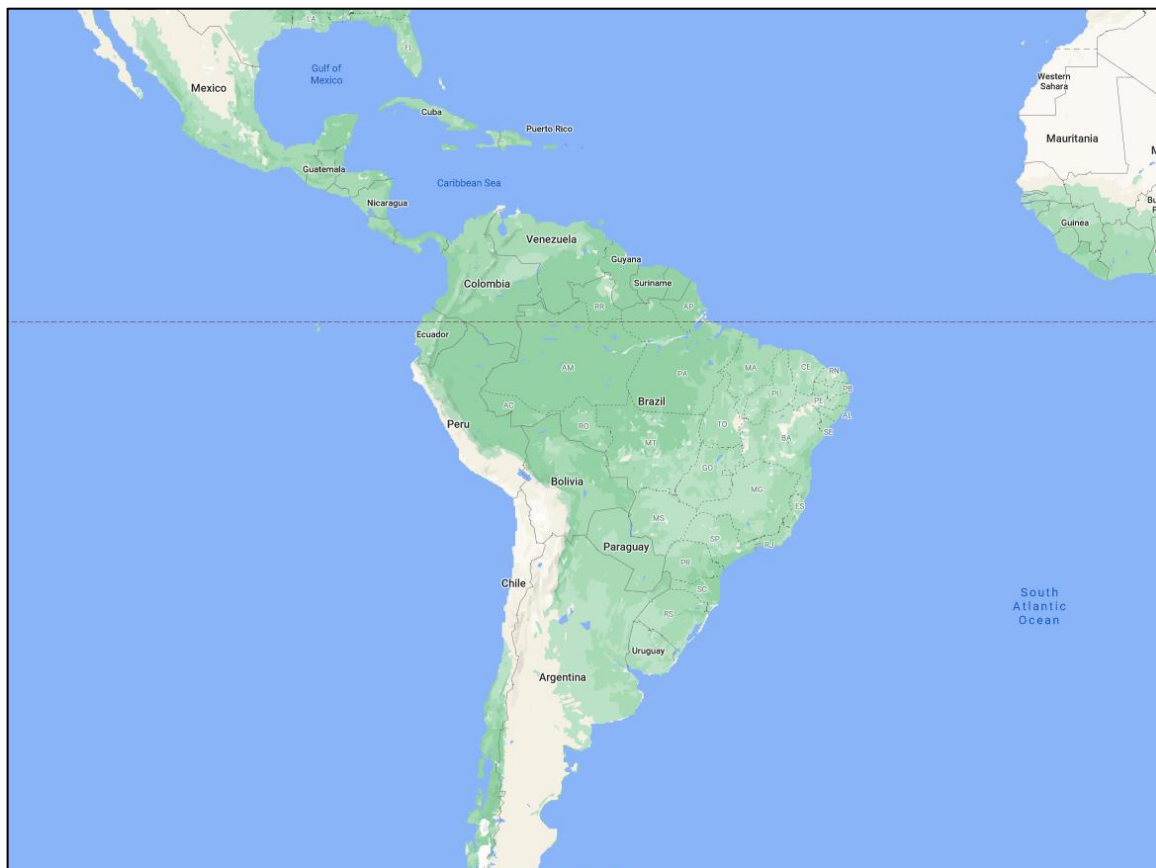
*See the image (right), comparing what is considered a lethal dose of Fentanyl in comparison to a US 1 cent coin, about the same size as a UK one pence piece:*



## Where does Cocaine come from?

As stereotypical as it may seem, Colombia appears to still be the primary source for most of the cocaine seized in the United States and United Kingdom. Estimates vary, however, the Drug Enforcement Administration (DEA) estimate that in 2018, approximately 90% of cocaine samples seized originated from Colombia, 6% of Peruvian origin and the remaining 4% unknown.

The coca leaf, a key ingredient in the production of cocaine grows native to South America, specifically in regions nearer the West and the Andes Mountains range, spilling into Northern regions of Argentina, Bolivia, Ecuador, Peru and more well known, Colombia. Some reports even estimate the leaf is now being cultivated in Southern Mexico, a geographically key area in the distribution of cocaine. See map (below):



## History of Cocaine

As mentioned earlier, the coca leaf grows native to Western regions of South America. For thousands of years natives in the Andes Mountain ranges have chewed the leaf believing it would help increase heart rate and speed up breathing as they live at such high altitude (average elevation of about 13,000ft).

However it wasn't until 1859 when German chemist, Albert Niemann, first synthesised and extrated cocaine from the coca leaf, arguable making the birth of what we now know as powder cocaine.

While this occurred in 1859, it wasn't later until the 1880's that cocaine first began to become popularised in the medical community. A famous example of this being Austrian pychoanalyst Sigmund Freud advocating for the use of cocaine to treat depression in his 1884 paper, 'Uber Coca' where he described cocaine as a 'magical substance'. Freud's discoveries with cocaine were mostly biased as he himself was an avid user of the substance and failed to recognise the serious risk associated with using it, both on our physical and mental wellebing.

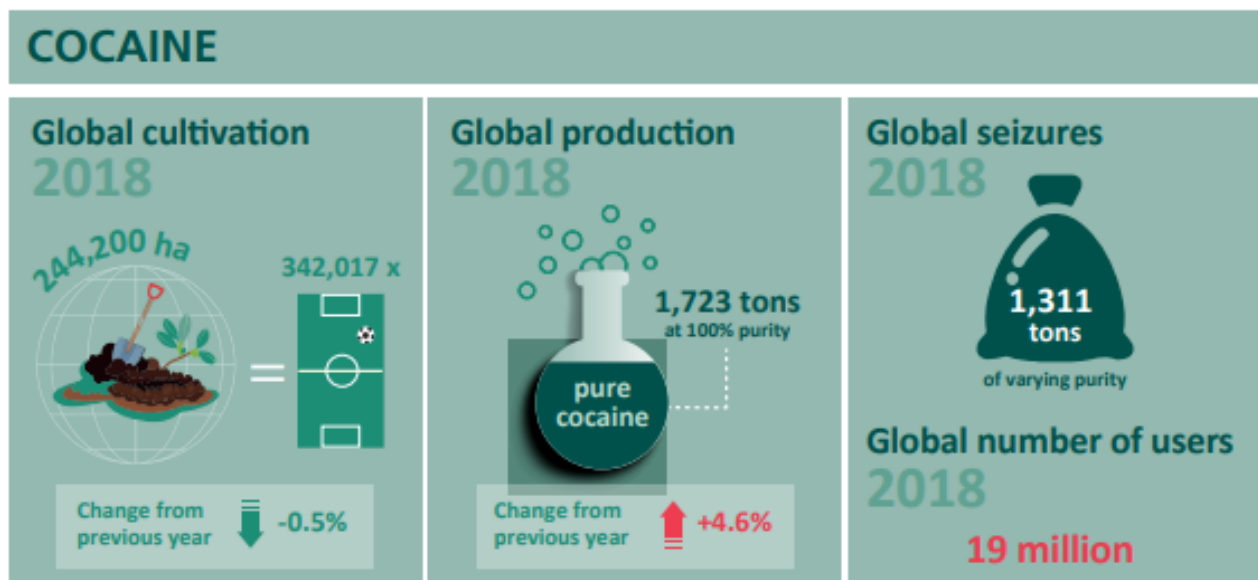
Cocaine was popularised further and normalised almost within society as the 1800's progressed, in 1886 John Pemberton, founder and inventor of Coca – Cola began using coca leaf extract as part of his recepie for cocaine. However as popularity of cocaine grew, particulary in the states and the addictive potential and subsequent dangers were being recognised, cocaine extract was removed from the drink in 1903.

In the early 1900's intranasal administration of cocaine began to grow in popularity, as a result medical literature from the time notes nasal damage increases. Cocaine was beginning to gain recognition as an illicit, addicitive and dangerous substance, in 1912, 5000 cocaine related deaths were reported in the United States and the decision to make cocaine illegal was reached in 1922 in the USA and 1920 in the UK as a result of the Dangerous Drugs Act (1920).



The global cocaine market began to boom again in the 1970's and 80's, recognised as the drug of choice for many who immersed themselves in the party culture of the time, no longer just a drug of the wealthy, many were beginning to recognise the demand for cocaine and realise the market for it, thus, the birth of the first major drug cartel – Pablo Escobar's Medellin cartel.

Since the 1970's the global cocaine market has only grown, coca leaf cultivation does not show any signs of slowing, coca cultivation appears to be present in almost 70% of Colombian departments while Peru appears to account for about 1 fifth of global coca leaf cultivation, production rates have peaked in the last decade and global seizures only begin to scratch the surface. See the infographic (below) from the United Nations (UN) World Drug Report, 2020:



## Neurobiology – How Cocaine affects the brain

The history and origins of cocaine have been discussed but how does cocaine effect our bodies? More specifcally, how does cocaine affect our brain?

Research has long established that certain mechanisms within the brain mediate and underlie the high experienced by taking cocaine and the subsequent depressive ‘comedown’. Persistent and complusive use of cocaine alter functioning in the brain, however some effects can revert back reasonably quickly whereas others can persist for months after cessation. What effects have you noticed cocaine have on your brain? This can include things like paranoia, anxiety, etc, note them down here.

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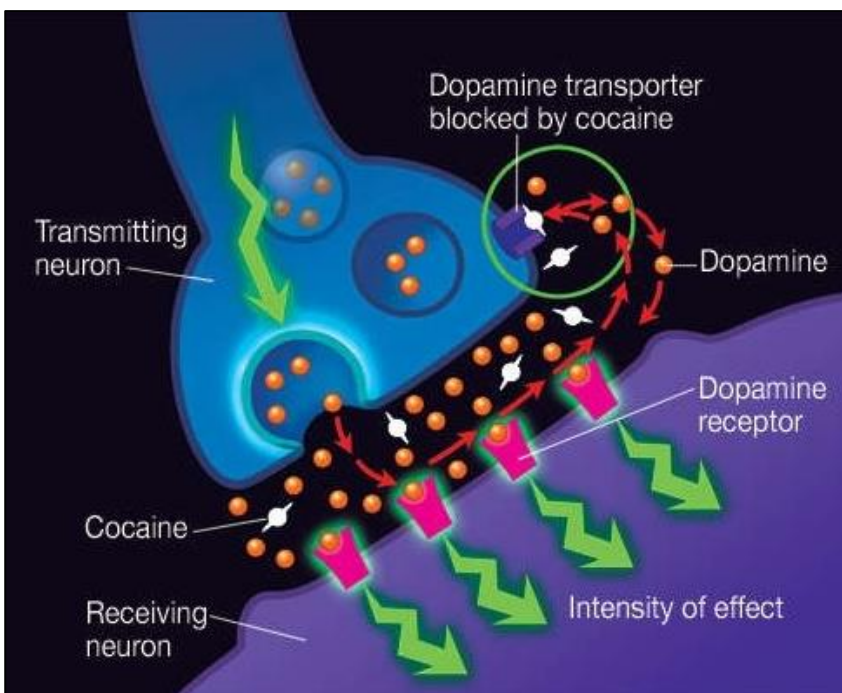
Cocaine has quite a profound and intense effect on our brains, this is obvious but one key brain chemical, or neurotransmitter cocaine effects the most is something called dopamine. Dopamine is responsible for a variety of functioning, with regards to cocaine it is useful to know dopamine is a big regulator in our motivation, pleasure and reward system. Taking cocaine out of the equation for a moment, our brains release dopamine when we experience rewarding and pleasureable situations, for example, having sex, eating food and socialising. When we factor in cocaine, it is estimated cocaine increases dopamine output by 450%, you can see why cocaine is so reinforcing and produces such feelings of euphoria.

However, dopamine is released not just when we experience something pleasureable but also in anticipation of something pleasureable hence why sometimes the process of seeking and buying the drug is more rewarding than taking it itself.

The issue however comes in the way cocaine stimulates the release of dopamine. When we engage in something rewarding we get a hit of dopamine, for example my football team score a goal, however naturally, that euphoria doesn't last forever and as such my dopamine is reabsorbed back into the brain cell, (neuron) and is on standby ready to go next time something rewarding or pleasureable occurs.

## The 'Comedown'

Cocaine not only causes an overstimulation of dopamine here but blocks it from reuptaking or reabsorbing, as a result we have more dopamine for longer and feel euphoric. The problem is that if the dopamine cannot reabsorb (because the cocaine is blocking this) then it will essentially dissipate. This is why the 'comedown' from cocaine in the days that follow can be so depressing, because our main brain chemical associated with happiness and pleasure has essentially been depleted. This will gradually return and rebalance however with compulsive and consistent cocaine use, if this is being constantly depleted we have feel a sense of anhedonia with life. Anhedonia categorised by persistent feelings of low mood, lack of



motivation and struggles to gain any joy or pleasure from things we used to find pleasureable.

*See the diagram (left) to help visualise how cocaine overstimulates dopamine release but also prevents its reuptake:*

What is your experience with the ‘comedown’ from cocaine, did you experience any bouts of low mood, anhedonia or anything else? Note them down here.

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Cocaine has a similar effect on two other key neurotransmitters, serotonin and norepinephrine. Serotonin plays a major part in regulating our mood, appetite and sleep to an extent. Norepinephrine plays a bigger role on a physical level, increasing heart rate, temperature and breathing to name a few. Looking at these three key aspects we see how and why we feel what we feel when we have used cocaine:

**Dopamine** – Flood of dopamine leads to the sense of euphoria and the ‘high’.

**Serotonin** – Increased amounts lead to surge in confidence.

**Norepinephrine** – Increased energy, constricted blood vessels, increased heart rate, higher temperature, etc, - The physical ‘high’.

Can you think of any other physical effects you have felt from cocaine use? Note them here and we will explore them further shortly.

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Due to the overstimulation of our brains hallucinations are also a possible consequence of excessive cocaine use. An extreme example of a tactile (feeling) hallucination known as delusional parasitosis or more commonly ‘cocaine bug’ or ‘crack bug’ has been reported by some users as persistent and intrusive beliefs that insects and parasites are crawling under the skin and physical sensations such is occurring, to the point where biting and scratching (drawing blood) can take place. This is thought to be a result of an excess amount of dopamine in the brain.

Considering the severity of delusional parasitosis, have you experienced any hallucinations as a result of past cocaine use? These could be visual (seeing), auditory (hearing), olfactory (smelling) or tactile (feeling), note them down below:

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### **Other Mental Health effects**

So far we have outlined how cocaine can make us miserable and depressed (the comedown), the surge in confidence and the possibility of hallucinations. However there is a variety of other ways cocaine can effect our mental health:

**Paranoia & Psychosis** - Paranoia occurs in an estimated 68 – 84% of individuals who have used cocaine. This can last from a few hours, to as long as days and weeks. The intensity and frequency of the paranoia and its onset appear to increase over time with continued use of the drug. With regards to psychosis, (hallucinations and delusions), this has been reported in an estimated 29 – 53% of cocaine users and as mentioned above tend to be related to an imbalance of dopamine. Psychosis appears to be more common in users who smoke and inject cocaine.

Have you experienced any paranoia or delusions from cocaine use, describe the experiences below:

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**Delirium** – Delirium is considered severe and fluctuating confusion and instability of the autonomic nervous system resulting in sweats, pulse changes and blood pressure changes. Psychotic symptoms have also been reported to accompany delirium, (agitation, paranoia, hallucinations).

**Violence** – A link has been established between increased violent behaviour and cocaine. It is believed the imbalance of our neurotransmitters cause dramatic changes in our behaviours, I.E provoke aggression, hyperactivity, impaired judgement and paranoia, when paired with the disinhibiting effect of alcohol this can have potentially catastrophic results. Have you had any experience with violence while under the influence of cocaine? Document them below:

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**Cocaine withdrawal** – Cocaine withdrawal is often categorised more by emotional & psychological symptoms as oppose to the physical symptoms typically associated with alcohol and heroin withdrawal (shakes, sweats etc). During withdrawal common symptoms include a ‘crash’, categorised by issues such as anxiety, low mood & depression and a lack of motivation.

It’s thought this occurs due to the levels of norepinephrine and serotonin being significantly depleted from the chronic cocaine user’s brain. This rapid reduction combined with the intensity of these withdrawals constitute one major reason why relapse may occur.

Have you experienced any withdrawal symptoms, (emotional or physical) from ceasing cocaine use? Write them down here:

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## Cocaine & the cardiovascular system

If it were possible to design a drug to induce a heart attack, you might design cocaine. Here we will outline the risk associated with using cocaine on our hearts and cardiovascular system. Have you experienced any complications in this area in the past as a result of cocaine use? Note them here:

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As we have discussed cocaine is a drug that blocks the reuptake of dopamine, serotonin, but importantly here, our norepinephrine too. This therefore means as there is more, and more available for longer, activity of our sympathetic nervous system (the part of us that raises our body to that heightened state of physical arousal) is greatly prolonged and exaggerated. This means our temperature will raise, our need for sleep will diminish and heart will be asked to work harder.

As a result, the heart will increase in beats per minute, our blood vessels will constrict in a process known as vasoconstriction, allowing less room for blood to flow through, our blood pressure will increase and there will be significant force every time the heart constricts.

While cocaine creates a greatly increased cardiac need for oxygen (because the heart must work harder), cocaine simultaneously restricts blood flow to the heart muscle (vasoconstriction), restricting the amount of oxygen that can be delivered. The cardiovascular system thus becomes extremely stressed.

Cocaine is essentially asking the heart to work a lot harder but putting obstacles in its way to make this more difficult.

This image shows in a basic format what we mean by vasoconstriction to try to help you visualise this:



So it is probably clear to you by now that several serious and potentially life threatening cardiac conditions can occur as a result of cocaine use, can you think of any? Write them in here:

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**Myocardial infarction (heart attack)** - Heart attacks are probably the most well-known complication of cocaine use, occurring with any dose of cocaine, and possibly in first-time users. Most cocaine-induced heart attacks occur within one hour of using the drug and appear to be more prevalent in younger people. Cocaine use has been implicated in nearly 25% of heart attacks that occur in people under 45.

**Aortic dissection** - Acute aortic dissection — this is a sudden tearing of the wall of the aorta of the heart. This is an extremely painful occurrence and potentially life-threatening condition. There are many causes of aortic dissection, however cocaine and methamphetamine use are a major risk factor.

**Coronary artery aneurysm** - Coronary artery aneurysms are balloon-like dilations of coronary arteries. They are common in cocaine users and are estimated to occur



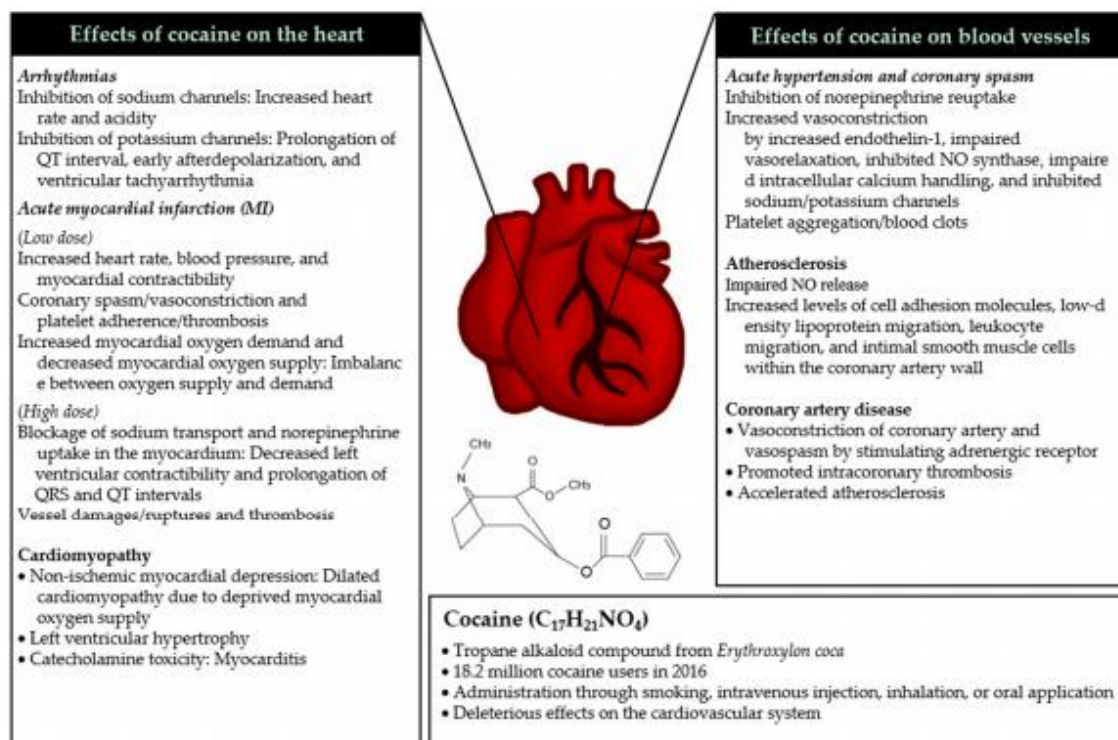
in about 30% of chronic, compulsive users. Coronary artery aneurysms are a cause of heart attack.

**Myocarditis and cardiomyopathy** - Cocaine causes myocarditis or inflammation of the heart muscle. Myocarditis can lead to damage of the heart muscle or cardiomyopathy. As a result, the heart's functioning can become impaired and heart failure may occur.

**Cardiac arrhythmias** – An arrhythmia is essentially an irregular heartbeat. Cocaine can induce a variety of difficult-to-treat cardiac arrhythmias, including the potentially fatal arrhythmias called ventricular tachycardia and ventricular fibrillation.

**Strokes** – Again while there can be many causes for a stroke, cocaine's effect on blood vessels, blood pressure, and blood clotting make a stroke an estimated seven times more likely to occur in a cocaine user than a non-user.

See the diagram (*below*) from Kim & Park, (2019) outlining some of the cardiac health risks in more detail:



## Cocaethylene

In this section we will discuss cocaethylene, emphasising the risk associated with drinking alcohol and using cocaine at the same time, something it is estimated 61% of cocaine users report doing together frequently.

Have you used cocaine and drank alcohol together in the past? Did you notice any different or more adverse effects? Write any down here:

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When both alcohol and cocaine are metabolised in the liver they form a third new compound – cocaethylene, done consistently this will build up in the liver, enhancing the adverse effects of both drugs. Some evidence suggests alcohol ingestion must take place before cocaine to allow cocaethylene to form.

Similar to cocaine, cocaethylene will block the reuptake of dopamine, producing the euphoric ‘high’, cocaethylene however will prolong these effects as oppose to cocaine as it has a longer half life (essentially the time it takes for the concentration of the drug to reach half of the dose in the body) than cocaine.

Cocaine’s effects on the cardiovascular system are well documented, (*see page 15*) however it is thought these effects are further increased by cocaethylene. Farre et al, (1997) note how in their study cocaine use appeared to increase heart rate by 12 beats per minute (BPM) whereas cocaethylene increase heart rate by 33BPM. For reference while you are reading this your resting heart rate should be somewhere between 60 – 100BPM.

By placing your hand on your chest for one minute try to count how many beats you feel. Once you’ve done this imagine trying to factor in a further 33 on what would be a heart already under strain and pressure if you had taken cocaine.

## **The risks associated with Alcohol for Cocaine lapse and relapse**

Taking cocethylene out of the equation for a moment and considering alcohol alone for a moment, it can be both a daunting and overwhelming prospect to tell a problematic cocaine user they cannot take cocaine ever again, however perhaps even more overwhelming to tell them they cannot drink alcohol again either. Many wouldn't consider alcohol to be their problem substance or the substance they came into treatment to try to solve.

Complete abstinence from both substances is an option some choose to take, particularly in the short term, there is perhaps added pressure to abstain from all substances then however there are a number of things to consider:

During the last few times you have had a drink did this bring on cravings?

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Are your drinking buddies drug users too? Would they try to encourage you to have more than just a pint?

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Has being intoxicated from alcohol reduced your ability to resist cocaine cravings?

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Has drinking alcohol led to you behaving inappropriately or irresponsibly in the past?

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Have you used alcohol in the past to manage uncomfortable emotions and feelings?  
Do you think there is a risk of almost transferring addictions?

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In what context did you drink, was it a glass of wine with your partner over dinner?,  
or in a pub watching sports with your friends? – context is important for helping you  
realise if and when drinking alcohol could be high risk.

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Considering the possible risks of cocaine lapse or relapse as a result of drinking, is  
your aim to achieve sobriety from cocaine and alcohol or just cocaine? Will this be  
in the short term or long term? and why?, note it below:

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At the end of the day it will be your choice whether you wish to abstain from cocaine  
alone or cocaine and alcohol and if so whether this will be a permanent decision.

Either way the importance of adopting a day by day mentality is important as  
thinking ‘I can never drink again’ some can find too much.

When we think ‘I cant drink today’ and repeating that message to yourself every day,  
we can find this difficult because quite often when we are told we cannot do  
something our instinctive thought process is to want to do it, something called  
‘counterwill’.

Instead a healthier alternative might be telling yourself ‘I don’t want to drink today’.

## **Addiction & Preventing Relapse**

It is estimated that 1 in 5 cocaine users develop and addiction to the substance at some point in their lives. Addiction is a destructive and vicious cycle we can find ourselves stuck in.

Therefore, it is vital we do all we can to prevent relapse from occurring so we are able to live fulfilling and content lives again.

### **Selective Memory about cocaine use**

It is true. Cocaine produces feelings of euphoria, far more intense than what we feel on a day to day basis, this is a big maintaining factor of why people return to the drug. You too would have experienced cocaine induced feelings of euphoria throughout your time using it.

However these positive experiences with cocaine would have always come with negative experiences, I.E the consequences.

It is likely you would have experienced bouts of low mood, paranoia, distress and anxiety following cocaine use. It is also possible your job of work, your relationships, your finances and your health were effected.

It is natural to downplay these negative consequences and focus on the euphoric recall however in recovery from addiction it is critical we remember the negative consequences that followed our drug use.

Consider the following:

Do you catch yourself fantasising about the ‘good times’? ask yourself how did you feel afterwards? In the months and years that led to you seeking help for your addiction were you experiencing any pleasure or enjoyment from taking cocaine?

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People tell ‘war stories’ of their addictions at times, recalling tales of the wild experiences they have had and often told with fond memories. Have you heard anyone tell a ‘war story’ from their cocaine addiction? How did it make you feel? Did you find it triggering, experience any cravings & urges as a result?

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Often a helpful way to remind ourselves of the negative experiences and consequences cocaine has given us is to write these down everytime we randomly think about them, perhaps at the back of your journal. That way if we are struggling we can quickly look at our journal to remind ourselves.

Consider the consequences of remaining sober from cocaine and continuing to use cocaine below:

<b>If I remain sober...</b>	<b>If I continued using cocaine...</b>

## **Fantatising about ‘controlled use’**

Several weeks or months into our recovery we generally start to feel better about ourselves and our lives. In reality we are still very early into our recovery however we can sometimes believe we are ‘fixed’ or ‘cured’.

This presents an issue as we can begin to forget the negative consequences of our cocaine use or downplay them as less severe than they were. We can now begin to believe:

- That perhaps if we made some changes to our lives we can use it again.
- If we’re ‘careful’ we can use cocaine again without losing control.
- That we can use it just ‘one last time’ to test how much control we have or try to prove we can control it.
- Thoughts about how nice it would be to be able to use cocaine without the adverse consequences
- Romantacised thoughts of using cocaine and being able to ‘control’ it.

It is vital we catch ourselves when we do this as it is a big indicator a lapse is imminent if it is not addressed. What do you think you could do if you noticed yourself experiencing these thoughts? Note your answers here:

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Some other steps we could take:

- Remind ourselves of the risks and consequences of using cocaine
- Recognise we are experiencing a mental relapse and dispute our thoughts
- Seek out support, whether that be family, friends or Parkland Place
- Attend a recovery group meeting as soon as possible
- Talk about these thoughts to others who are years into their recovery, how they dealt with it if they experienced similar thoughts.

## Practical steps

Ceasing the use of cocaine is a difficult process for many, a process that requires actions and behavioural changes not just determination and desire. We must put in place specific plans to try to ensure our encounters with cocaine are minimised if not prevented altogether and that we decrease the likelihood of encountering reminders of your old cocaine using behaviour.

Firstly, being prepared that at some point somebody is likely to offer you cocaine, if you refuse confrontation may ensue. Do not attempt to script the conversation but having a planned response would be beneficial. How would you respond if somebody offered you cocaine? Note your answer below:

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Secondly, avoid high risk situations where possible. Consider what, places, streets, houses and other locations are high risk. Perhaps places where you would use or obtain the substance, can you avoid these areas or are they essential for your travel? If so what is your plan to manage this? Note your answers below:

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Thirdly, removing drugs and any paraphernalia. Do you have any cocaine left in your possession? Have you hid it anywhere? Did you use any paraphernalia when using cocaine?(I.E snorting equipment, pipes etc) Did you engage with any other objects or things while using or preparing cocaine? (I.E pornographic magazines, certain bank cards etc) and finally do you have someone who can help you remove this? Note your answers below:

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Lastly, breaking contact. Consider who you used cocaine with, who you bought it from, do you have their numbers stored or saved anywhere? What can you do to break contact with these people? Note your answers below:

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Do you have family who use cocaine,? What boundaries will have to be put in place here and how will you go about doing this, note your answers below:

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## Summary

Understanding the origins and trigger points of cocaine addiction are two very important factors to consider in the treatment and continued recovery of a problematic cocaine user.

In this workbook we have discussed:

- What Cocaine is
- The financial Implications of using it
- Adulterants, what they are and the risk
- Where cocaine comes from
- The History of Cocaine
- How cocaine works in the brain and some of the neurobiology behind this
- The 'Comedown' and our Mental Health
- Cocaine and how it effects the cardiovascular system
- Cocaethylene & Alcohol and the considerations here
- And lastly Cocaine Addiction & Preventing a Relapse