

15

Cocaethylene

Cocaethylene

WHAT IS IT?

Unlike alcohol or cocaine, the cocaethylene molecule is not found in nature, it is created by the body. When you drink alcohol and take either form of cocaine simultaneously your liver, in the process of metabolizing, or breaking down, cocaine and alcohol, manufactures a third drug called cocaethylene. However, the mass production of this new substance comes at a price: cocaethylene is reported to be more liver toxic and to exert more strain on the cardiovascular system than either cocaine or alcohol in isolation.

While the name cocaethylene was coined relatively recently in 1979, the combination of cocaine in an alkaloid state and alcohol is nothing new. In the 19th century – 25 years before Coca-cola – a fluid extract of the coca leaf was mixed with red wine to create Vin Mariani, a ‘tonic’ popular all over Europe and America.

Not a natural alkaloid of the coca leaf, cocaethylene can be identified in the urine, blood, hair, brain and liver. Although effects differ from individual to individual, cocaethylene is also reported to have a ‘high’ all of its own, making the effects of cocaine last longer. Studies have demonstrated that cocaethylene has a longer half-life within the body; however, unlike cocaine, neurological studies have shown that cocaethylene inhibits dopamine re-uptake but has little effect on serotonin. Also, effects on the brain vary depending on the route of administration and in one study different strains of mice produced different neurological responses.

THE HIGH

There are a few studies relating to the psychological effects produced when combining cocaine and alcohol. Users describe the drug combination as a pleasant experience because simultaneous use prolongs the euphoric ‘high’ of a cocaine binge and appears to diminish some of the side effects of cocaine. Other research has shown that low levels of cocaine and alcohol have a stimulating effect that exceeds the pleasant state felt using either drug alone. This conflicts with other studies that state that cocaethylene has little effect on adrenaline.

Some users take cocaine alongside alcohol to enable them to drink for longer hours and this may also increase the amount of cocaine consumed. Scientific investigations have focused on the effects of dopamine in the brain and these studies have stated that cocaethylene is more rewarding, therefore more addictive. However, cocaethylene affects dopamine in less pronounced ways, so technically speaking it should be less rewarding. Users do not generally tend

to describe the feeling of cocaethylene as most consumers do not even know that this chemical reaction is taking place.

RESEARCH

In 1989 in South Florida, Dr Lee Hearn, Laboratory Director of Metro-Dade Medical Examiner’s Department, could not understand why so many people were dying of cocaine overdoses when levels of the drug in their blood were much lower than what was usually considered a lethal dose. Hearn asked scientists at Yale University about cocaethylene, and they explained that this third drug did not make its way into the blood stream. However, they were wrong.

Dr Hearn, convinced that cocaethylene was not an innocuous and inert substance, but implicated in cocaine fatalities, contacted neuroscientist Dr Deborah Mash at the University of Miami (Dr Mash now researches the effects of the African root plant ibogaine on dependent drug users). The two joined forces to investigate cocaethylene further. In 1991, they proved that cocaethylene was an active drug, longer acting and more potent than cocaine – and potentially more lethal. Later studies were to confirm these findings. In California 2003, a team of researchers (Harris, Everhart and Mendelson) discovered that 17 per cent of an intravenous dose of cocaine was converted into cocaethylene when alcohol was consumed, while three Toronto researchers found cocaethylene can cross the placenta to reach unborn babies.

BAR CULTURE

The mix of alcohol and cocaine is possibly one of the most favoured combinations of drugs in modern culture, yet it receives very little attention. With the introduction of 24-hour drinking it will be interesting to see what effect this has on levels of cocaine and alcohol consumption. More discussion and research needs to take place looking into links between binge drinking and binge cocaine use or the effects, if any, such a combination could have on cognition, behaviour and general health.

● *Written by Tony D’Agostino, Training Manager at crack cocaine information charity Coca & contributed to by Hazel Stewart, Care Pathways Trainer at the Community Action Around Alcohol and Drugs project in Bristol. CAAAD have produced a simple credit-card sized cocaethylene information leaflet – contact caaad@btconnect.com*

NEXT ISSUE Subutex

