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SOME THINGS YOU SHOULD KNOW ABOUT COCAINE

Scientists test the benefits and/or destructive consequences of humans taking certain drugs by giving these drugs to animals with similar tissues, chemistry, etc. The results of many such experiments reveal that **cocaine is more addicting than heroin and more lethal**. The ultimate consequence of unlimited cocaine access in animals is always DEATH! In experimental animals allowed to self-administer the drug no more often than every 50 seconds, all died within 30 days. **Monkeys allowed to self-administer every 10 seconds die within 5 days.**

The popularity of cocaine abuse might seem surprising; however, public awareness of scientific studies is slow and the cocaine sale profits are so large that nearly any sales technique is tried. The cocaine dealer's promise that "It feels great, AND you can use it occasionally – it really isn't addictive unless you're one of those idiots who allow themselves to get hooked on it." With this statement he sets his trap. The first "hit" causes changes leading to physical addiction. He never mentions the problems that usually develop, often after minimal drug usage. Common among these are:

- Sleeplessness
- Poor Appetite
- Depression
- Fatigue
- Suicidal Thoughts
- Paranoia
- Brain Hemorrhages
- Lung Hemorrhages
- Seizures
- Reduces Sexual Performance
- Degenerated Value System
- Loss of Self Esteem
- Increased Number of Accidents
- Reduced Pleasure from Daily Experiences

Cocaine use is very dangerous. It can, and often does, cause heart attacks, seizures, and/or convulsions. Increasing the amount, using more frequently, and smoking and/or injecting instead of snorting all dramatically increase risk; these serious consequences can occur with even first time use. Cocaine is potentially lethal. The deadliness of cocaine has increased during the last decade, as more pure and therefore, stronger cocaine has become available. This has been coupled with the increased effect obtained by new methods of administration, such as shooting (intravenous injection), freebasing (smoking crack), etc. While some people can "snort a line" of cocaine occasionally in a "recreational" manner, many are unable to stop there. The occasional lines become the weekly lines, which become the daily lines. All too often this leads to smoking or shooting cocaine in an effort to achieve a faster, bigger "high". The highly predictable end result has been well demonstrated in a large series of studies. It is virtually impossible to stop – often after only one such "fast track" use. Inevitably the cocaine ends up in control of the person, instead of the person being in control of the use of the drug. Even worse, less than one third of those who are addicted can stop even with the aid of standard drug abuse treatment. New developments have given hope to most of the remaining two thirds. To understand how these work, we must first understand how cocaine acts on the brain.

THE CHEMISTRY OF COCAINE – Cocaine is a naturally occurring stimulant derived from the leaves of the coca plant. The leaves contain only about one-half of one percent pure cocaine. Unlike pure cocaine, coca leaves contain a variety of minerals and vitamins. These nutrients are believed to chemically reduce the toxic effects of the cocaine contained in the leaf. When a leaf is chewed, a relatively modest amount of cocaine is released. Only a small quantity of that released is absorbed by the digestive system, and the digestion of it is very slow. For these reasons, the South American habit of chewing coca leaves has never become the serious public health problem associated with more potent forms and more efficient routes of administration.

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In contrast, the situation is dramatically changed when pure cocaine is used. If the substance is injected or smoked, the stimulating effects and feelings of euphoria are greatly magnified. Using cocaine in this way delivers significant amounts of the substance to the brain in seconds!

Once in the brain, cocaine acts upon the “reward/punishment” (r/p) systems. The normal function of these systems is to encourage the individual to do, or not to do, specific things. For example, if the body requires a particular nutrient, a specific brain chemical will be put into “short supply”, causing the individual to feel ill at ease or have an urgent sense that something must be done. On the other hand, if the individual has just done something that was good for the body, release of certain brain chemicals will give the individual a sense of euphoria or elation. For example: the runner’s high becomes encouragement to do further exercise. It also eases the muscle pain of hard work. The mechanism by which this takes place involves brain chemicals, called neurotransmitters. Cocaine’s extraordinary release of one such chemical, dopamine, causes us to focus on this action.

The brain usually stores just enough dopamine to meet normal demands. For most people this supply needs only to be rebuilt slowly with small quantities of dopamine. Not much is needed, as release of even small amounts for short time periods causes a strong effect. For instance, during the sexual climax, a small dopamine release over a fraction of a second gives a very powerful reward feeling. Cocaine causes a much larger release, over a much longer period of time. This “feels so good” that one can become “hooked” after the first use. This is especially true of the first use of crack or shooting up. With repeated use of cocaine, the dopamine supply becomes depleted because it cannot be replenished quickly enough.

An analogy is helpful. The dopamine releases might be thought of as coming from a dam holding back a lake of dopamine. Normal use is rather like an occasional hole, the size of a toothpick, punched into the dam. The puncture releases a small amount of dopamine, then seals itself shut. The supply thus lost is replaced by a small trickle of dopamine coming from the cells, which produce it. These cells could produce much more except that the “raw materials” (precursors) they use are just sufficient for the need.

Snorting cocaine is analogous to firing a bullet through the dam with a pistol. It releases a much larger amount than the toothpick, and the feeling of euphoria is very desirable. However, the system is now depleted and rebuilding the supply to normal levels can take days from just one such use.

Smoking or shooting cocaine is analogous to firing a canon through the dam. A great hole is breached causing profound euphoria. This feeling is so “incredibly good” that almost no one can do it just once; in short, a person can become addicted after the first use. Needless to say, the dopamine supply after such use is greatly diminished, and after many such uses no amount of cocaine will produce the good feeling.

It should be noted that too much cocaine can be fatal. Thus, if the first time user takes the large dosage required by the longer term user, his first use can be his last!

The cocaine abuser experiences three stages of drug effects:

1. The first is acute intoxication (whether from snorting, injecting, or smoking). For a short time there is less anxiety, more self-confidence and alertness, a perception of clearer vision and understanding, and increased sexual appetite. However, the experience may be marred by sexual indiscretions, irresponsible spending, and accidents attributable to reckless behavior.
2. Next the “crash” replaces euphoria with longer-term feelings of anxiety, fatigue, agitation, irritability, and depression. Perhaps worse, suicidal thoughts often increase during this stage. The abuser now faces three choices: 1) suffer through this time, 2) take more cocaine to alleviate the “crash”, or 3) take another euphoriant drug which is less expensive, such as alcohol, marijuana, amphetamines, heroin, etc. This is how many cocaine abusers develop dependencies on other drugs. Most often alcohol is chosen, as it is inexpensive, legal, and often has been used before the cocaine addiction. Use of alcohol frequently leads to the cocaine abuser also becoming or intensifying his/her alcoholism.
3. Then the withdrawal stage follows—a lengthy period of limited ability to derive pleasure from normal activities. In long-term cases, the abuser may permanently lose this ability. At the same time a craving develops for the euphoric effects of cocaine. Using the drug again usually satisfies these cravings; and thus, the addiction develops.

THE DEVELOPMENT OF COCAINE ADDICTION

If cocaine use is repeated often, the resultant large and continuing dopamine releases cause a depletion of the dopamine supply. It also places a strain on the dopamine producing cells and abuses the dopamine release system. This is why many cocaine users report, "The first hit is by far the best." As further use is made of cocaine, the individual needs more and more just to get a desirable effect. Ultimately, the dopamine supply may become so small that cocaine, "just doesn't give an acceptable hit."

At this point, the cocaine abuser will often decide to seek treatment. If so, he has made a fortunate decision. If he does not seek treatment, he will then typically turn to other drugs to try to get the relief he needs. Often the new drug of choice is alcohol; as it produces artificial euphorians*, there is no dependence on naturally produced neurotransmitters. Consequently, the high can be easily obtained whenever it is desired and for as long as desired.

Unfortunately, the continual use of alcohol reduces the body's ability to produce the natural opioid. It is a process rather like muscle atrophy; any muscle which goes unused for long periods of time deteriorates and ultimately ceases to function. If the brain is no longer called upon to make the natural euphorians (enkephalins and endorphins [opioids]) because substitutes are being supplied in the form of drugs, its ability to make the opioids deteriorates. When the cocaine abuser switches to alcohol or some other drug, his dopamine supply is given a chance to rebuild. Once it is rebuilt, the addict sooner or later learns that cocaine will work again; perhaps not as well as before, but at least acceptably. The cycle is then repeated. Each time, new damage is done to the body, especially the brain, and the likelihood of return of full mental and physical capacity is reduced even further. Again, the frequent result is that the cocaine abuser also becomes an alcoholic or intensifies his/her alcoholism.

PRETREATMENT

At some point in time, before cocaine kills him, the abuser may decide that he wants to stop. Although he can sometimes be helped to that decision through intervention, ultimately *this is a decision only **he** can make. No one else can do it for him nor force him to it.*

The addict with a desire to stop using has several problems, which must be solved simultaneously:

1. The physical problems mentioned above require medical treatment. Until they are treated, the now malfunctioning reward/punishment systems cause such extensive misdirection that very few addicts are able to stop using the cocaine, alcohol, etc., that will relieve the craving, depression, and discomfort of withdrawal for at least a little while.
2. The long-term use of cocaine, alcohol, etc. causes a strong psychological dependence upon them. When the abuser is depressed, he takes the drug. When the abuser is under stress, he takes the drug. When the abuser wants company, he calls a friend to share the drug. When the abuser feels incompetent, he takes the drug to "make him feel more efficient." And in general, when anything in his life could be better, he turns to the drug instead of attempting to work out the problem.

Cocaine users have other behavioral patterns, which are very difficult to break. The sight of white powder, a place where cocaine is purchased, or even a handful of cash may trigger a strong craving. These triggers may take a lifetime to overcome. Breaking the psychological dependencies takes professional counseling and long-term help from support groups.

3. The abuser's social life revolved, perhaps for years, around people who abuse the same or similar substances. His entire social outlook and environment, and perhaps even his work environment, must now be changed. For every loss that is felt – friend, social activity, job, etc. – a replacement must be found.

In the long-term, this may be the most difficult of the three. Even though the physical problems have been successfully set aside and the craving brought under control, if one's friends and associates use these

substances, the recovering abuser will often be seduced into re-joining them. He will feel intimidated and coerced by his friends that are still using cocaine. Each of these friends **has** to convince himself, and everyone around him, that he is not addicted. He believes that he can use the drug on a recreational basis. He **must** believe this, even though he may be using the drug several times a day, every day! To not believe it is to accept that he is not in control, that the drug is controlling him and that he is powerless over the drug. Accepting this fact would mean that he would have to stop using the drug, a step he is as yet unwilling to consider. His scenario is the major symptom of this disease. It is called **DENIAL!**

TREATMENT

Traditional treatment of the physical problems has been to isolate the abuser in a hospital-like facility for three or four weeks. During this time the patient is treated psychologically for the cocaine addition and advised to join a twelve-step program, such as Cocaine Anonymous, Narcotics Anonymous, etc., for long-term support. This general approach has been widely used and is responsible for the vast majority of treatment successes to date.

The basic disadvantage of this approach is that the six weeks to two months period during which the dopamine supply is being rebuilt is very stressful emotionally. This period of stress is extremely distracting. It does not allow the patient to properly concentrate or to have an accurate perception of what the psychological counseling is supposed to help him learn. This in combination with the ever-present “triggers” (e.g. white powders) usually leads back to cocaine abuse and then total relapse.

RECOVERY

The recovery problem is made more difficult by the fact that extensive cocaine use puts the metabolic system into a serious state of inefficiency. This greatly impairs the body’s ability to use nutrients to make dopamine. Obviously, if the dopamine rebuilding time could be shortened, the patient would be able to take better advantage of the counseling he receives in treatment.

Fortunately, the dopamine production can be greatly augmented by considerably over-supplying the required nutrients. A closer look is needed to more fully understand this:

Amino acids are the building blocks (precursors) from which proteins and neurotransmitters, such as dopamine, are made. Amino acids are taken into the body in everyday foods. Usually there are just enough for the production of sufficient dopamine. However, for the cocaine addict, this supply is quite insufficient. Heavily supplementing the normal intake of amino acids ensures that they are never in short supply. Fortunately, overproduction of dopamine does not occur if more precursors are supplied than can be used, as the body’s “production capacity” itself sets the limit on dopamine produced.

A useful analogy likens the chemical producing cells in the body to small factories. Raw materials (precursors) are delivered to the back door and customers receive the finished product at the front door. Thus, if the raw material is in limited supply, the production levels are set at something below

100% efficiency. (In the case of dopamine the normal level is less than 30%). By supplying all of the materials the factory can use, 100% efficiency can be achieved. But oversupplying can never cause 100% output to be exceeded.

Other amino acids are also needed in larger than usual quantities. These help in dealing with insomnia, craving, and stress. As the cocaine addict’s metabolic system is in serious dysfunction, he needs more of certain, specific vitamins and minerals than he would otherwise. In clinical studies, cocaine addicts were found to be deficient in zinc, calcium, magnesium, and many of the B vitamins.

Therefore, many modern treatment centers include in their therapy a patented, specially formulated, nutritional supplement designed specifically for the cocaine addict.** This nutritional supplement helps to allow a patient

to be alert, free of the insatiable NEED for cocaine, and willing and able to receive the counsel and support which are critical to recovery.

CONCLUSION

For the addict to rid himself of his cocaine addiction, he must make the decision to take that very difficult first step toward recovery and then to continue on that path. The way is not easy, but it is CRITICALLY worthwhile.

It is important to remember the words of those who have been successful in the past, “First you must want to get clean” – others wanting it for you doesn’t help. Once you truly have the desire to get clean, you can, but you need help. And, you can get that help from your doctor, through his/her recommendations, your counselor, through his guidance, and from a support group which they recommend to you.”

Notes:

*See What You Should Know About Alcoholism, publisher Matrix Technologies, Inc., a division of NeuroGenesis, Inc., 1020 Bay Area Blvd., Houston, Texas 77058, (1-800-345-8912).

**TROPAMINE, manufactured by Matrix Technologies, Inc., is a patented, specially formulated, nutritional supplement designed for this purpose. It contains the specific amino acids, vitamins, and minerals required and are used for this purpose by hundreds of drug and alcohol treatment clinics and hospitals throughout the United States. A list of these facilities may be obtained from Matrix.

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