Dear Alice,

I am an ecstasy user, and my friends and I, while on this drug, like to pass each other out. We do this by inhaling and exhaling at a quick pace, then take a deep breath and hold it while crossing your arms on your chest. When you do this, someone wraps their arms around you, lifts you off the ground, squeezing until you exhale. It feels like you have been out for an hour when in actuality, it was only a few seconds. It creates an incredible rebirth-like experience when you finally come to that is the draw to doing this. Anyway, my question is this: What permanent damage does this cause, particularly to the brain? I know this is a dangerous practice, as is taking ecstasy. I just want to know what is happening to my body.

Inquiring minds want to know

Answer

Dear Inquiring minds want to know,

As you point out, you and your friends are involved in two potentially dangerous activities: taking the illicit drug ecstasy that is, of course, a choice, and combining it with interfering with your natural breathing. This duo places you and your friends at serious risk.

During its normal operation, your body maintains a precise acid-base balance in the blood. This balance is maintained by having the proper levels of oxygen and carbon dioxide in your blood at all times. Normal breathing including sped-up breathing during exercise, for instance plays a major role in keeping your blood at an acceptable acidity level.

Hyperventilation, or abnormally deep or rapid breathing, does not allow an adequate amount of carbon dioxide to remain in the blood, throwing off this delicate balance. By intentionally inhaling and exhaling rapidly, you are putting your body into a forced state of hyperventilation. Symptoms of hyperventilation include numbness of the extremities, fainting, and painful muscle spasms. Generally, hyperventilation is treated by breathing into a paper bag to allow your body to reabsorb the carbon dioxide it’s lost. However, if you hold your breath at this point, you now add a new wrinkle in the acid-base situation by decreasing the available amount of oxygen to your body.

Your body also maintains a delicate pressure balance inside the chest cavity (and other
cavities of the body). This pressure balance allows blood to flow freely and easily through the veins that run through the chest cavity, returning blood to the lungs to be oxygenated. When this pressure rises, it affects the flow of blood through these veins and makes it more difficult to return blood to the lungs and to the rest of the body.

The action you describe, holding your breath while being squeezed from behind, mimics a medical technique called a Valsalva maneuver. This is performed by attempting to forcibly exhale while keeping the mouth and nose closed, and this forced exhalation increases chest and abdominal pressure. The physiological consequences of this increased pressure include a great drop in the blood flow in the veins in the chest cavity. When this happens, blood cannot be adequately oxygenated, and therefore the blood that flows through the body is not carrying enough oxygen to the body's tissues and organs, including the brain. Hypoxia, the technical term for a lack of oxygen to the organs in the body, is what actually causes you to faint.

The effects of hypoxia depend on how long the brain and other organs are deprived of oxygen. In mild cases of hypoxia, or oxygen deprivation to the brain, where a person does not lose consciousness or is out for only a few seconds, the side effects are usually minor, and include memory loss, confusion, poor judgment, and decreased motor skills. In more serious cases, when loss of consciousness lasts for longer periods of time, hypoxia can have serious, damaging consequences, such as seizures, personality changes, or amnesia. Severe cases of hypoxia can put someone in a prolonged vegetative state (a.k.a. coma), and can even cause brain death.

What causes concern is that it is nearly impossible to guess, once someone loses consciousness, how long s/he will remain "knocked out." Brain damage and injury (which is what hypoxia really is) are notoriously unpredictable. No one knows, for sure, how long a brain can go without oxygen before irreversible damage occurs, and each person's brain may have a different timetable. Also, underlying physical health and pre-existing mental conditions factor into how quickly or whether or not someone wakes up after a fainting episode.

It is also not clear whether or not your friends are doing drugs as well and in what condition they'll be to help you, or vice-versa, if you or they are in need of medical assistance, in an emergency, or when or if you or they don't/can't come to in a few seconds.

Inquiring minds like yours are key when one considers taking risks, whether it's doing drugs, skydiving, sun tanning, or something else. You may learn something that makes you decide to pass on the risky business, or to reduce the chance that you'll harm yourself if you do "take the plunge." Since you're responsible enough to know to ask questions, perhaps you could also ask yourself and your friends what lower- and no-risk things might make you feel "high": a massage, a sunrise, a round of masturbation, whatever. Since self-induced hypoxia and hypoxia at the hands of others are pretty high risk, maybe doing something that maintains breathing would be better than losing your inquiring mind altogether.

Alice!

Category:
Cocaine, Speed, & Other Stimulants [2]

Related questions

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Coming and fainting: Is it possible to pass out from an orgasm? [6]
Inhaling helium? Just hilarious or a health threat? [7]
When drinking the same amount of alcohol, are you more intoxicated in the air than on the ground? [8]

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