

Demystifying urban legends of beating the breathalyser

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When it comes to breathalysers, there are many misconceptions that exist (and persist) about what these tests can and can't do that have led to the belief that it is possible to beat the breathalyser. This is something often attempted at roadblocks where there is police presence to monitor drunk drivers and it has even been attempted where substance or alcohol testing is implemented randomly in a manufacturing, mining or construction environments. Such tricks have evolved into an urban legend with most people able to pass on a story of how a friend or acquaintance fooled a breathalyser test, but these tricks are nothing but myths.

In short, there is no way to beat a breathalyser test, unless the test subject has not been drinking. Despite this, companies and law enforcement agencies are having to test more often, illustrating the fact that employees and citizens are unfamiliar and misinformed about the extent of alcohol testing whether for recreational or professional purposes, which means it's time to demystify these urban legends.

Breathalyser basics

Designed to test for blood alcohol content (or BAC), breathalysers are used in industries and scenarios where intoxication is hazardous to health and life. South African law has two levels for permissible BAC percentages – the professional driver limit is 0.10mg/litre while the private driver permissible content is 0.24mg/litre. For obvious reasons, alcohol consumption is banned by the OSH Act and is predominantly enforced in the mining, civil engineering, construction, manufacturing, transportation and other industries with a zero tolerance approach, given the serious ramifications of operating dangerous machinery under the influence. Testing for alcohol is mandatory in certain industries, and this is done using a breathalyser before entering the workplace.

While there are a number of different types of breathalysers, the good

ones generally work the same, and they are all designed to be used by an operator. Simply speaking, breathalysers have a pressure sensor inside to detect pressure coming in (from blowing) and once pressure has been detected the mouthpiece creates back pressure (the mouthpiece has a smaller hole to the back of the tube, than it does going in) and when back-pressure has been detected, the air is measured over a certain time. Only once the correct volume of air has been reached, will the pump inside the device activate and suck in a small sample. This means that it is not possible to alter the results of the breathalyser by not blowing enough, or blowing only a gentle stream of air out of the mouth. Furthermore, it is a misconception that when blowing into a breathalyser it's testing that whole long sample of air, which it isn't. The device is simply waiting for that air to pass through and only once enough air has passed through will it sample, which means it's only testing at the very end. This is because a good breathalyser will sample deep-lung air as that is where the reading is most accurate.

Clearing up common myths

It's important to know upfront that if the operator is using the test device correctly by not handing it to the person to test himself, and if the device used is a good-quality breathalyser, there is no way to cheat it. However, in order to ensure that the device delivers accurate readings it is important to calibrate the breathalyser. Good breathalysers use something called an electro-chemical fuel cell, which is the heart of the instrument detecting alcohol. This can go up in sensitivity or drift down in sensitivity. The calibration process involves using a gas standard, which is a laboratory-manufactured gas made to a standard and that contains, for example 0.35mg of alcohol per litre. When this gas is blown through a breathalyser instrument, it samples and gives a reading that can be compared to the gas standard for accuracy in order to determine whether the device needs to be calibrated or not. When a device comes in for calibration, the fuel cell is checked to examine whether it has drifted from its standard. If it has drifted, it will receive a second round of gas and electronic pots within the fuel cell will work to make it more or less sensitive, meaning that it self-adjusts and then the instrument undergoes a third calibration check to ensure accuracy.

From this it should be apparent that breathalysers that are correctly

calibrated can be relied upon for accurate readings, yet people still think it's possible to trick the test. How do they think it can be done? Some people think it's possible to cheat by hiding the scent of alcohol so they eat foods with a strong aroma, like garlic, onion or breath mints. What they don't understand is that the breathalyser is not smelling for alcohol; the fuel cell within the breathalyser has a chemical reaction to the presence of alcohol. Although the smell of alcohol might be masked by garlic or mints it's still present and the individual who has consumed it is still intoxicated.

Every time a person breathes out, the carbon dioxide that they exhale contains alcohol vapour from the arterial blood in the lungs. In the same vein, it is impossible to remove alcohol from the blood stream by drinking lots of water, nor is it effective to dry out the mouth before taking the breathalyser test by chewing paper. Alcohol content is tested from deep-lung breath samples and readings are not affected by a dry mouth or over hydration. Simply put, there's only one way to beat a breathalyser and that is to avoid consumption of alcohol altogether. Where alcohol is consumed, bear in mind that the liver is the only organ capable of removing alcohol from the bloodstream and that it can only filter out the alcohol from one drink in about an hour which makes abstention the safest way to beat the breathalyser.