

## Breath Analyzer Accuracy

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About half of all alcohol-related traffic accident fatalities involve drivers with a Blood Alcohol Concentration (BAC) of about .16 or higher. A significant proportion of such high-BAC drivers are hard core drunk drivers; they repeatedly abuse alcohol and drive while intoxicated. Hard core drunk drivers are a major threat to the safety of themselves and others. Breath analyzers are a major tool in convicting such dangerous offenders.

Breath analyzers (Breathalyzer, Intoxilyzer, Alcosensor, Alcoscan and BAC Datamaster are common brand names) don't actually test blood alcohol concentration (BAC), which requires the analysis of a blood sample. Instead, they estimate BAC indirectly. Different types of machine use different techniques and larger machines generally yield better estimates than do hand-held models. Therefore, some states don't permit data or "readings" from hand-held machines to be presented as evidence in court. South Dakota does not even permit evidence from any type or size breath tester but relies entirely on blood tests to ensure accuracy and protect the innocent.

A major problem with some machines is that they not only identify the ethyl alcohol (or ethanol) found in alcohol beverages, but also other substances similar in molecular structure. Those machines identify any compound containing the methyl group structure. Over one hundred compounds can be found in the human breath at any one time and 70 to 80 percent of them contain methyl group structure and will be incorrectly detected as ethyl alcohol. Important is the fact that the more different ethyl group substances the machine detects, the higher will be the false BAC estimate.

The National Highway Traffic Safety Administration (NHTSA) has found that dieters and diabetics can have acetone levels hundreds and even thousand of times higher than that in others. Acetone is one of the many substances that can be falsely identified as ethyl alcohol by some breath machines.

One investigator has reported that alcohol-free subjects can generate BAC readings of about .05 after eating various types of bread products.

Substances in the environment can also lead to false BAC readings. For example, an alcohol-free subject was asked to apply a pint of contact cement to a piece of plywood and then to apply a gallon of oil-base paint to a wall. The total activity lasted about an hour. Twenty minutes later the subject was tested on an Intoxilyzer, which registered a BAC of .12 percent. This level is 50% higher than a BAC of .08, which constitutes legal intoxication in many states.