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DUI FIELD TESTS AND BREATH TESTS

When police stop a motorist and have reasonable suspicion that the driver is under the influence of alcohol, they will often administer a battery of field sobriety tests. Most law enforcement agencies utilize three standardized field sobriety tests. In 1977, the National Highway Transportation Safety Administration (NHTSA) began to study various roadside sobriety tests. The purpose of this research was to develop the most reliable and accurate of these tests and to then standardize the tests (Burns and Moskowitz 1977). After evaluating a number of field tests, the study concluded that a group of three tests including Horizontal Gaze Nystagmus (HGN), one-leg stand, and walk and turn would be the most reliable to determine if a driver was impaired.

The process of standardization involved a set procedure for administering each of the tests and evaluating those tests by set criteria or clues. The researchers then set forth test conditions such as a designated straight line and a reasonably dry, hard, level, nonslippery surface for the walk-and-turn test. One of the most important points the researchers made was that validation of these tests applies only when the tests are administered in the prescribed standardized manner, the standard clues are used to assess the suspect's performance, and the standard criteria are employed to interpret that performance. If any one of the standard field sobriety test elements is changed, the validity is compromised (NHTSA 2004).

In *State v. Homan* (2000), the Ohio Supreme Court held that any variation in the use of NHTSA standardized field sobriety tests makes the result completely unreliable as it relates to probable cause, a much lower standard than proof beyond the reasonable doubt needed for conviction. The *Homan* court stated: "It is well established that in field sobriety testing even minor deviations from the standardized procedures can severely bias the results." This is due, the court reasoned, to "the small margins of error that characterize field sobriety tests, making strict compliance critical." The court found that "when field sobriety testing is conducted in a manner that departs from established methods and procedures, the results are inherently unreliable." It concluded that "for the results of a field sobriety test to serve as evidence of probable cause to arrest, the police must have administered the test in strict compliance with standard testing procedures."

On the other hand, courts in Florida (*State v. Meador*, 1996), Wisconsin (*City of West Bend v. Wilkens*, 2005), and a federal district court in Maryland (*United States v. Horn*, 2002), have approached the admissibility of field sobriety tests on a different basis. In *City of West Bend v. Wilkens*, the Wisconsin Court of Appeals stated:

Other than the bare assertion that the recommended standardized tests are both scientifically reliable and valid, the record contains no indication that they are based on science. Any scientific explanation for why the standardized procedures yield any particular result is completely absent. Standardization may lead to reliability in the sense that where examiners look for the same "clues" to shape their observations of the subject, their observations are likely to be more similar. Similarity does not equate to more correct observations, however. "The mere fact that the NHTSA studies attempted to quantify the reliability of the field sobriety tests in predicting unlawful [blood alcohol content] does not convert all of the observations of a person's performance into scientific evidence."

If the police believe the motorist has failed the field sobriety tests, this generally leads to the driver's arrest, especially when there are other signs of impairment such as the odor of alcohol, unsteadiness, slurred speech, and bloodshot or watery eyes. The driver is generally taken to jail, where he or she is requested to submit to a chemical test of his breath, blood, or urine. In most cases, the test will be a breath test. Refusal to take the requested chemical test generally results in suspension of driving privileges. There are a number of breath tests used throughout the United States, including the Intoxilyzer, models 5000 and 8000; the Drager Alcotest; and BAC Data Master.

Currently there is heated debate and controversy over the science underlying chemical breath testing. There are three basic assumptions utilized in chemical breath testing. The first is that the driver is in the post-absorptive phase when tested. This assumption can be easily disputed by defense attorneys and expert witnesses. Most breath tests occur within an hour and a half after driving. The absorption phase can last as long as two hours or more, depending on what the driver has eaten and the time and amount of alcohol consumption. Numerous studies have shown that breath tests are least accurate during the absorptive phase. The disparity between breath alcohol concentrations and blood alcohol concentrations during the absorption phase are of great concern to the defense bar, since many state statutes do not distinguish between an unlawful breath alcohol concentration or an unlawful blood alcohol concentration.

The second assumption used in breath testing since its inception in the 1950s is that the exchange of alcohol from blood to breath occurs in the deep lung alveoli. More recent studies show that the exchange of ethanol occurs across the conducting airways of the lungs, not the alveoli. Hlastala (2002) has concluded that breath test machines currently favor people with large lung capacity since they may stop breathing into the machine sooner, thus causing the machine to sample non-alviolar air that is lower in alcohol concentration. He states:

> A consequence of continuing to use the old model is that subjects with larger lung volume may have a lower BrAC than a subject with a small lung volume because these subjects do not need to exhale as great a fraction of their vital capacity as subjects with smaller lung volume to fulfill the minimum volume exhalation required before stopping exhalation.... A person with smaller lung volume must breathe farther into the exhaled breath, resulting in a greater BrAC-to-BAC ratio. (Hlastala 2002, 406)

The third assumption used in current breath test machines is that the true blood-to-breath partition ratio for alcohol is 2100/1. It is agreed that a single partition ratio will not apply to all people. NHTSA has adopted the 2100/1 partition ratio as a population mean. All breath test instruments are calibrated at the 2100/1 partition ratio. However, studies on large study groups have shown that the mean alcohol partition ratio between blood and breath is closer to 2300/1 (Dubowski 1985).

The Gaussian distribution for these newer partition ratios in the post-absorptive phase is 1797/1 to 2763/1 for 95 percent of the population and 1555/1 to 3005/1 for 99.7 percent of the population. An examination of these new findings shows that the current partition ratio of 2100/1 accounts for less than 80 percent of the population. This means that approximately 20 percent of persons tested in this study at 2100/1 would have a false high reading. The 1555/1 partition ratio would have to be used to achieve 99.7-percent confidence.

It is important to understand, however, that a conviction for driving while intoxicated (DWI) or driving while under the influence (DUI) does not require chemical testing; and it is not uncommon

for defendants to be convicted of these offenses solely on the basis of driving patterns, field observations, and field sobriety tests.

See also Automobile Stops and Searches; Implied Consent Statutes; Probable Cause

Bibliography

Burns, Marcelline. and Herbert Moskowitz. 1977. *Psycho Physical Tests PT 4 DWI.* Washington, DC: U.S. Department of Transportation, National Highway Transportation Safety Administration.

Dubowski, Kurt M. 1985. "Absorption, Distribution and Elimination of Alcohol: Highway Safety Aspects." *Journal of Studies on Alcohol.* Suppl. 10:98–108.

Hlastala, Michael P. 2002. "Invited Editorial on 'The Alcohol Breath Test.'" *Journal of Applied Physiology* 93 (2): 405–6.

National Highway Traffic Safety Administration. 2004. *DWI Detection and Standardized Field Sobriety Testing, Student Manual, VIII-19.* Washington, DC: U.S. Department of Transportation, National Highway Transportation Safety Administration.

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