



E13 The Breath Alcohol Test: A Continued Call for the Pretest Observation Period

Jay Zager, HS*, Jay Zager Forensic Consultant, 10638 NW 69th Street, Parkland, FL 33076

After attending this presentation, attendees will understand the importance of pretest observation and deprivation period in forensic breath alcohol testing in driving under the influence (DUI) cases.

This presentation will impact the forensic science community by reinforcing the necessity of conducting a proper pretest observation period in breath alcohol DUI cases.

A pretest observation period is defined as a continual, uninterrupted period of 15 or 20 minutes during which a person suspected of DUI is observed by law enforcement personnel.¹ It is designed and intended to eliminate the possibility of introducing a contaminant into the breath sample before analysis.

Breath alcohol concentration (BrAC) testing is an indirect form of measuring the soluble gas exchange of alcohol between the blood and lungs relying on established partition ratios.² Alcohol is absorbed into smooth tissue between 10 to 12 minutes.³ Therefore, a 15 to 20 minute uninterrupted deprivation and observation period is required to decrease possible contamination of the evidentiary BrAC test result.⁴ Common sources of contamination include: chewing tobacco; smoking; vomit; mouth and breath fresheners; dentures; gum; wet belches; gastric reflux; regurgitation and residual alcohol in the throat; nasal cavity; and, mouth. If the pretest observation period is compromised, then the BrAC result is unreliable. "Although all aspects of the testing process are important in a Q.A. sense, the scientific safeguards are the most critical."⁵ If the observation period is removed, then the test result's evidential or confirmatory attributes are compromised and reduced to those of a presumptive indication.

Contamination of the oral cavity prior to collection of breath alcohol specimens may cause false high or boosting BrAC results. Therefore, simple analytical safeguards are used to minimize sample collection contamination during the statutorily mandated pretest observation period. Law enforcement uses a portable breath alcohol test device (PBT) as a screening tool for roadside testing in DUI cases. It is commonly used as a screening device to inform law enforcement that alcohol like substances may, or may not, be in the test sample. A PBT test result is not a substitute for the pretest observation period or an evidentiary BrAC result. When the observation period is compromised, for any reason, reasonable doubt is created regarding the BrAC test result.

Law enforcement agencies frequently begin the observation period when the officer first comes into contact with the suspect and lasts until driving to a breath alcohol testing facility. Even though this may be a deprivation period, it is not a proper observation period. It is impossible for the officer to focus his attention during the entire time period on the DUI suspect. Any number of events, or acts, during this period may compromise the observation period and BrAC test result.

An improper pretest observation period creates a conflict between science, law and public policy. When the observation period has been compromised the government often endeavors to still justify the BrAC test result. Too often law enforcement, or the prosecution, attempts to minimize or abridge the pretest observation period by extolling the virtues of approved, technologically sophisticated, evidential breath testing equipment to minimize violations of the required observation period.^{6,7}

There is a paradox between case law and forensic science. Legislators have changed *per se* legal intoxication levels downward from .15 to .10 to .08 g/210L, in an attempt to remove DUI violators. However, the basic laws of BrAC science testing, (e.g.) Henry's Law, Charles Law and Lambert-Beer's Law) are inviolate. Ergo, the paradox – public policy versus good science and equal justice.

Although modern evidential breath alcohol testing machines employ detectors to screen for potential interfering substances and mouth alcohol, they are not perfect. Violations of pretest observation period may cause false positive or boosting of BrAC results. The observation period was instituted to ensure these factors do not occur. Law enforcement must comply with all DUI procedures. Without the appropriate pre-test observation period and mouth alcohol detectors being effectively utilized, the reliability of BrAC results are suspect.

References:

1. Dubowski K.M., Necessary Scientific Safeguards in Breath Alcohol Analysis, Journal of Forensic Sciences, Vol.5, 1960 pp. 422-433.
2. Jones A.W., Physiological Aspects of Breath-Alcohol Measurement, Alcohol, Drugs and Driving, Vol.6, No.2, 1990, pp.1-20.
3. Spector N.H., Alcohol Breath Tests: Gross Errors in Current Methods of Measuring Alveolar Gas Concentration, Science, Vol.172, No.57, April 1971, pp.57-59.
4. Gullberg R.G., The Elimination Rate of Mouth Alcohol: Mathematical Modeling and Implications in Breath Alcohol Analysis, Journal of Forensic Sciences, Vol.37, No.5, September 1992, pp.1363-1372.
5. Dubowski K.M., Quality Assurance in Breath-Alcohol Analysis, Journal of Forensic Sciences, Vol.18, October 1994, pp.306-311.
6. Highway Safety Programs: Model Specifications for Devices to Measure Breath Alcohol, Federal Register, June 29, 2006, Vol.71, No.125, pp.37159-37162.



Jurisprudence Section - 2012

- ⁷. Harding, et. al., The Effect of Dentures and Denture Adhesives on Mouth Alcohol Retention, Journal of Forensic Science, Vol.37, No.4, July 1992, pp.999-1006.

Alcohol, Observation Period, DUI/DWI