F20 Breath—A Bodily Fluid: Semantics, Syntax, Syllogisms, Euphemisms, and Science

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Learning Overview: After attending this presentation, attendees will understand how a novel definition of breath as a bodily fluid affects the applicability of breath alcohol testing in the workplace.

Impact on the Forensic Science Community: The presentation will impact the forensic science community by discussing practical aspects of breath sample testing in non-regulated workplace testing as a gas versus a bodily fluid.

Employers have developed drug-free workplace policies. Nationally, 46 states have laws imposing drug-testing restrictions specifying testing methodologies, use of test results, and privacy issues.[1]

Statutory workplace testing of controlled substances permit urine, blood, tissues, or other bodily fluids and may include alcohol. Analysis is by a federally certified laboratory (common body fluids are: saliva [oral fluid], vitreous humor, cerebral spinal fluid, synovial fluid, urine, blood, bile, semen, etc.). Frequently, blood is initially analyzed using the Enzyme-Multiplied Immunoassay Technique (EMIT) and Ultraviolet (UV) analysis. Positive test results require confirmation testing employing Gas Chromatography/Mass Spectrometry (GC/MS) or technology recognized as being at least as scientifically accurate.(e.g., Liquid Chromatography/Mass Spectrometry [LC/MS] or UV/Infrared [UV/IR] spectroscopy). Labor statutes usually entail "controlled substances" and may include alcohol.[2]

Driving Under the Influence (DUI) statutes mandate blood, urine, or breath for drug and alcohol (ethanol and low molecular-weight alcohols) testing. Breath alcohol testing is conducted with a preliminary or evidential testing device using expired alveolar air.[3] Breath alcohol testing devices do not directly test for alcohol in blood. If blood or any liquid is placed into the unit, it will malfunction.

Breath alcohol testing devices are not considered laboratory clinical-grade instrumentation and are not commensurate with GC/MS's accuracy and reliability for determination of blood alcohol concentration. If a blood test for alcohol determination is required, then blood is drawn (serum, plasma, whole) and analyzed with GC/MS head space analysis procedures.

Statutes are constructed for clarity. Testing for drugs and alcohol is inconsistent. In many states, breath alcohol testing in non-regulated workplaces statutes is not mentioned. Urine testing for alcohol is allowed for easy sample collection without any question of accuracy. States need to change arcane statutory language with an understanding of scientific nuances necessary to clearly define appropriate terminology with its intended implementation. Otherwise confusion and imaginative nonsense exists.

A creative interpretation for workplace alcohol intoxication testing, absent designated statutory or contractual language, seeks to define breath as a "bodily fluid" for statutory testing compliance.

Matter exists as a solid, liquid, or gas. A liquid describes a state of matter, whereas a fluid is any substance that flows. Liquid is a substance that flows in a natural state, flowing neither solid nor gaseous. A fluid is a liquid or gas, composed of elements or particles that freely change their relative positions without separating.[4]

Blood, with oxygen, carbon dioxide, nitrogen, and alcohol, is a liquid fluid. However, components in the blood are actively exchanged between the blood and the air in the lungs and they become a "gas" component within the breath.

Breath is a derivative factor of blood. The air people breathe is a gas. It is compartmentalized in the lungs for an exchange of oxygen and carbon dioxide, which is essential for life. The breath/gas expired from the respiratory system should be considered a bodily fluid—a technical distinction due to practical methods of measurement. However, common sense is paramount. Bodily liquids cannot replace breath and breath cannot replace bodily liquids in living organisms. Creatively contrived attempts to circumvent and redefine basic fundamental science are specious and problematic. If legislators or employers want to employ breath alcohol intoxication for termination under a drug-free workplace policy, then labor statutes or contracts should be amended specifying the use of breath as a testing specimen (consult the statute's history and committee comments for legislative intent).

Semantics, syntax, syllogism, and euphemisms are irrelevant to breath alcohol as a bodily fluid. Common sense should prevail—statutory construction and the novel interpretation of breath alcohol analysis for workplace termination is at issue, not the science.

Reference(s):

1. *United States Department of Labor's Drug-Free Workplace Act of 1988, 41 U.S.C. 81.*
2. *Schedule of Controlled Drugs, 21 U.S. Code Sect.802*, et seq (2002); See, each state's controlled substance act. A
3. *Conforming Products List of Evidential Breath Alcohol Measurement Devices*, 82 FR no. 211, p.50940, Nov. 2, 2017.
4. *Dorland's Medical Dictionary*, 25th Edition, pp. 599, 882, W.B. Saunders, Philadelphia, c.1974.

Breath Alcohol, Bodily Fluid, Workplace

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