

Using Software to Assist the Jury in Understanding Alcohol Metabolism Calculations

Fully comprehending and understanding the metabolism of alcohol is one of the most challenging tasks facing DUI practitioners. After all, it is often said that we become lawyers to avoid math. Nevertheless, alcohol metabolism calculations form a critical area of investigation and knowledge, and one over which the effective practitioner must have a fluid command. This is because the litigation of drunk driving cases nearly always involves some aspect of alcohol metabolism. DUI lawyers are constantly dealing with such questions as: how much did the driver actually drink and over what period of time? How many drinks are represented by the driver's chemical test results? Are the State's chemical test results technically correct? And most importantly perhaps, what was the driver's bodily alcohol content at the time of the driving?

In order to determine the bodily alcohol content at the time of the driving a relatively complicated scientific formula known as the "Widmark formula" must be used. The science itself is called "retrograde extrapolation," with "retro" meaning prior, "grade" referring to the number, and "extrapolation" meaning to guess.

The science of retrograde extrapolation is based on many of the unique characteristics of ethanol (beverage alcohol) and how these characteristics impact the ethanol molecules after they enter the body, usually through the mouth. Upon consumption the alcohol follows the specific pathways of absorption, distribution and elimination. In the human system each of these pathways falls within specific parameters or ranges but are also subject to individual variations within the human population. Stated differently, there is significant person-specific variation in the way alcohol is absorbed by a given individual, the way it is distributed throughout his or her body, and most notably for this discussion, the manner and speed within which it is eliminated.

Because of the relatively arcane nature of the retrograde extrapolation formula, and the difficulty of its use in practice, attorneys handling DUI/DWI and other alcohol-related cases may want to consider purchasing BAC Tracker®, a new computer alcohol extrapolation program. This program is noteworthy because it incorporates seventy-five years of published refinements to the original Widmark formula, and provides accurate, comprehensive multi-model results of six different published formulae. It also graphically demonstrates the existence of variation in the

estimation of blood alcohol concentration (BAC) among these six formulae.

Further data manipulation arms the user with the ability to clearly communicate the results of conclusive relevance in a comprehensible format to juries, judges, attorneys, and forensic experts in the courtroom. The BAC Tracker software is based on a host of peer-reviewed publications of the various formulae, and these are all incorporated into the software. Consequently, the user can have a high degree of confidence in the results.

A bibliography is also provided in the user manual and published on the BAC Tracker website. This allows the user to cross-reference the published works, and lends credibility to the results when they are submitted for admission at trial. The use of this software by defense counsel might provide juries with a better understanding of the variations present in the estimation of blood alcohol concentration.

What makes the software particularly powerful is that it is designed for the multi-model extrapolation of a blood alcohol concentration. Consequently, and assuming an appropriate factual scenario, the user can demonstrate for the finder-of-fact that the defense's theory of the case is supported by the many different formulae. Alternatively, this functionality will serve to arm the user with the knowledge necessary to effectively cross-examine the state expert who chooses an alternate theory to derive an inflated extrapolated result. More information about the software is available at: <http://www.bac-tracker.com>.

by Patrick T. Barone

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