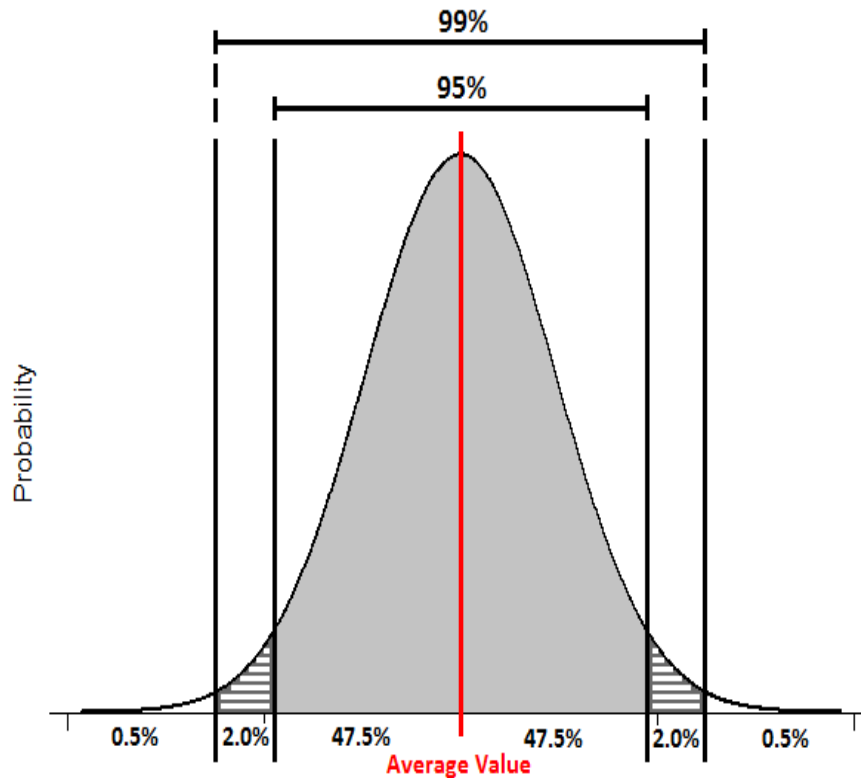


FAQ Regarding MN BCA DMT Breath Test Uncertainty of Measurement

What is Uncertainty of Measurement?

There is some variability in every measurement. Uncertainty of Measurement is a mathematical estimation of the variability. This concept allows the variability to be calculated. The calculation provides a range of numeric values around the average of the breath test results. There is a high level of confidence that the true alcohol concentration lies within the calculated range.



The range of values follows a normal distribution, or bell curve, meaning the most likely result is at the peak of the curve, or the average of the two subject sample results, and the farther you get from the peak, the less likely that result will be.

Does Uncertainty of Measurement affect the breath test result?

The breath test results do not change, nor does Uncertainty of Measurement justify adjusting the results. The DMT test record will continue to report the lower of the two breath samples with the third digit truncated.

How did the DMT test records change?

The test record now includes the statement, “For DMT test uncertainty of measurement information, email the BCA Calibration Laboratory at bca.breathtest@state.mn.us”. The reported value will continue to be the lower of the two breath samples with the third digit truncated.

How does this affect the DMT result accuracy?

“Uncertainty of measurement does not imply doubt about the validity of a measurement; on the contrary, knowledge of the uncertainty implies increased confidence in the validity of a measurement result.”¹

DMT test results have always been and continue to be accurate and reliable. The Uncertainty of Measurement provides additional information that demonstrates our confidence in the quality of the result. For example, review the Confidence Interval Chart to find the 99% confidence interval for the average breath result of 0.102. If this measurement were repeated 100 times, it is expected that 99 times the result would fall within the stated range.

How do I know DMT test results are accurate?

- ❖ DMT is listed on the NHTSA Conforming Products List (evaluated by a federal agency that determined it provides accurate results)
- ❖ BCA evaluated the DMT and determined it provides accurate results
- ❖ BCA validated software and determined it works properly
- ❖ BCA Breath Alcohol Calibration Laboratory is accredited by ANAB (an accrediting body assessed the policies, procedures and work product of the Laboratory and determined that the standards set forth in ISO/IEC 17025 are being met)
- ❖ DMTs are certified annually by the BCA
- ❖ DMT Operators are trained and certified by the BCA to administer DMT tests
- ❖ Test Procedure (sequence of testing) is approved by BCA Laboratory Director per MN Rule 7502.0410
- ❖ Diagnostic Test is run with every test, including an internal standard which checks the calibration of the DMT and verifies it is reading alcohol accurately

¹ S L R Ellison and A Williams (Eds). [Eurachem/CITAG Guide: Quantifying Uncertainty in Analytical Measurement](http://eurachem.org/index/php/publications/guides), Third Edition, (QUAM: 2012 P1) Available for download at <http://eurachem.org/index/php/publications/guides>

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- ❖ Air Blanks resulting in 0.000 show the sample chamber is clear between every alcohol measurement and verifies the room air is free of measurable alcohol
- ❖ Subject provides two breath samples a minimum of three minutes apart, the results must be in good agreement (0.02) with each other to be acceptable
- ❖ Accepted Controls show the instrument is measuring alcohol accurately
- ❖ Test record reported value is the lower of the two results with the third digit truncated, giving the subject the greatest benefit and accounting for variability in measurement