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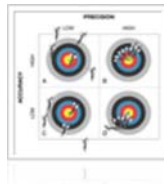
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Accuracy versus Precision in Breath Alcohol Testing

Posted on Jan 22, 2013 2:05pm EST



It is important to understand that with alcohol breath testing, a machine can be very accurate, yet have very extremely poor precision.

Precision and Accuracy are not the same thing.

Accuracy means: Can the instrument give a correct reading or measurement? (How close to the bulls-eye is the dart?) Using a 0.08 ethanol dry gas standard with every breath test, the instrument's accuracy can be verified.

Precision on the other hand refers to repeatability, reliability, obtaining the same measurement each time.

During the machine's inspection, multiple checks should always be conducted at the same alcohol concentration. Followed by calculating the machine's precision. Meaning: (how close to each other are the 10 darts?)

The machine MUST always be checked for precision, during the inspection process to help ensure reliable breath test results. This means control testing of at least 3 tests at the same concentration be conducted.

Florida for example, tests each instrument ten times, at 0.00g/.210L, 0.05g/.210L, 0.08g/.210L and at a 0.20g/.210L. Based on the results of these 10 analyses, the standard deviation is then calculated and checked against the standard for precision.

The goal MUST be to achieve precision AND accuracy, not simply one or the other.

Many agencies do NOT check and calculate precision, but rely on accuracy alone. Thus, they are NOT checking for reliability of the breath test results that are conducted on these machines.

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