A radar plot is a unique way to show the differences between blood glucose meter readings and the laboratory reference values in meter performance evaluations. The radar grid uses polar coordinates to position data points, rather than placement along the x- and y-axes of a more traditional graph. Radar plots are a different way to graphically show data, similar to Modified-Bland-Altman plots. Accuracy on the graph is represented by how close the data point is to the center: the closer the point to the center, the more accurate. Precision, on the other hand, is measured by how the data point is spread out, the less precise.

Furthermore, the data points in the top half of the circle above the horizontal line represent BGM system readings that underestimated the ‘true’ laboratory value at the centre. The data points in the bottom half of the circle represent readings that underestimated the ‘true’ laboratory value at the centre. Each data point represents the difference or error from the true laboratory value at the centre; the outer bands show the Yellow Springs Instrument (YSI) laboratory values increasing from 15 mg/dL to 600 mg/dL. The data points demonstrate the difference from YSI values: ±15 mg/dL from the BGM system reading is outside the magenta lines and is percentage. The distance from the centre, or ‘radius’ according to the YSI laboratory value, represents the magnitude of the BGM error; if a data point is at the centre then there is zero error on the BGM reading is identical to the laboratory value. The error of the BGM result compared to the laboratory reference at the centre is greater the further out from the centre the data point resides. The points within the bold green outer circle represent readings within ±15 mg/dL or ±15% error versus laboratory comparisons at <100 mg/dL.

The study from which the data for these radar plots was taken evaluated the performance of the CONTOUR®NEXT blood glucose monitoring (BGM) system compared with 5 BGM systems from other companies (Accu-Chek® Aviva Nano, TrueTrack®, OneTouch® Ultra® 2, OneTouch® Verio® Pro, TRUEtrack®). A total of 146 subjects were included. Subjects were managed by the site staff to either safely lower or raise their blood glucose levels. Each subject had 1 capillary blood sample drawn at 3 different times for immediate testing on the 6 BGM systems and the YSI, for a total of 438 natural capillary blood samples. Extreme glucose levels not safely obtained directly from subjects were achieved by blood sample manipulation (i.e. glycolysis or addition of glucose solution in vitro). Blood samples obtained in this manner were referred to as ‘modified’. Systems accuracy was assessed by mean absolute difference (MAD) and mean absolute relative difference (MARD) across several glucose ranges, with <70 mg/dL evaluated by MAD as the primary end point.

References:

**Accuracy you can trust**

Speak to your Ascensia representative or call 1.800.432.9131 to request CONTOUR®NEXT Meter samples today.