

# Performance differences seen in continuous glucose monitors

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Continuous glucose monitoring devices vary in performance characteristics, according to a comparative effectiveness study published online Dec. 28 in *Diabetes Care*.

(HealthDay)—Continuous glucose monitoring (CGM) devices vary in performance characteristics, according to a comparative effectiveness study published online Dec. 28 in *Diabetes Care*.

Edward R. Damiano, Ph.D., from Boston University, and colleagues recruited six patients with [type 1 diabetes](#) (age  $52 \pm 14$  years) to participate in two 51-hour closed-loop blood glucose control experiments. Subjects simultaneously wore three CGM devices—the Navigator (Abbott [Diabetes Care](#)), the Seven Plus (DexCom), and the Guardian ([Medtronic](#))—to obtain CGM glucose (CGMG) measurements. Measurements were paired with corresponding venous

[plasma glucose](#) (PG) measurements (GlucoScout, International Biomedical) obtained every 15 min (2,360 values).

The researchers found that the Navigator had the best overall accuracy, with an aggregate mean absolute relative difference (MARD) of all paired points (PG-CGMG measurements) of  $11.8 \pm 11.1$  percent and an average MARD across all 12 experiments of  $11.8 \pm 3.8$  percent. The Seven Plus had an aggregate MARD of all paired points of  $16.5 \pm 17.8$  percent and an average MARD across all 12 experiments of  $16.5 \pm 6.7$  percent. For the Guardian, the corresponding figures were  $20.3 \pm 18.0$  percent and  $20.2 \pm 6.8$  percent. Reliability, as measured by data reporting percentages, was 76 percent for the Seven Plus and close to 100 percent for the Navigator and Guardian.

"The results of this head-to-head-to-head [comparative effectiveness](#) study reveal the Navigator was the most accurate and precise of the current generation of CGM devices, followed by the Seven Plus and the Guardian," the authors write.

International Biomedical provided GlucoScout monitors and technical assistance regarding their use.

**More information:** [Abstract](#)  
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