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Interim Clinical Presentation of Comparative Home-use Study

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# **A Prospective Single Centre Evaluation of the Accuracy and safety of the sugarBEAT® Non-invasive Continuous Glucose Monitor (CGM) System: An interim Evaluation**

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## sugarBEAT® Study Objective

A EU based study to determine the safety and accuracy of the sugarBEAT® CGM, to support FDA submission.





# Study Design

- ❖ Prospective single arm, single centre study
- ❖ Accuracy and safety to be assessed on 75 patients over 525 wear days
- ❖ Venous blood samples used as reference for in-clinic portion of study
- ❖ Abbott Freestyle Optimum Neo BGM used as reference for Home Study Portion

## Study Methods

- ❖ >25 subjects enrolled for screening
- ❖ 25 subjects selected after screening in stage 1, of which 12 were Type 1 and 13 Type 2 diabetic
- ❖ No subjects lost due to drop out in stage 1
- ❖ All 25 subjects completed 2 days home study and 3 days in-clinic study, in stage 1
- ❖ 12 subjects wore devices bilaterally during in-clinic phase
- ❖ 13 subjects had single device during in-clinic phase
- ❖ 25 subjects wore single device during home stage

All subjects blinded to real-time glucose display

All devices used single BGM calibrations per day



# Baseline Characteristics

<b>Variable</b>	
Age (range and mean)	20 years to 70 years, Mean age 45.2
Gender	12 Male, 13 Female
Type 1/Type 2	12 Type 1, 13 Type2

# Accuracy vs Glucose Range

Range of Glucose Levels (mMol/L)	Number of paired (BGM-CGM) points	Paired points within $\pm 15\%$ /15	Paired points within $\pm 20\%$ /20	Paired points within $\pm 25\%$ /25	Paired points within $\pm 30\%$ /30	Paired points within $\pm 40\%$ /40
Overall	121	52.89	59.50	80.17	92.56	99.17
<6	4	25.00	25.00	25.00	50.00	75.00
6-10	25	52.00	52.00	72.00	88.00	100.00
10-14	27	51.85	55.56	74.07	96.30	100.00
14-18	41	58.54	68.29	92.68	97.56	100.00
18-25	18	50.00	61.11	88.89	88.89	100.00
25-35	6	50.00	66.67	66.67	100.00	100.00

The performance evaluation included the proportion of the CGM system values that are within  $\pm 15$  to 40% of relative difference of reference value at glucose levels  $>80$  mg/dL and  $\pm 20$  mg/dL of absolute difference at glucose level  $\leq 80$  mg/dl, ref: <http://journals.sagepub.com/doi/pdf/10.1177/1932296814559746>

# Interim Comparative MARD for home-study phase as Primary Accuracy Metric

<b>Device</b>	<b>Number of subjects</b>	<b>Paired Data Points with BGM</b>	<b>Nominal MARD</b>	<b>Reference BGM</b>	<b>Daily Finger Stick Calibrations</b>
<u>Senseonics Eversense*</u>	23	829	14.80%	Nova Biomedical <u>StatStrip Xpress</u>	2
<u>Dexcom G5*</u>	23	829	16.30%	Nova Biomedical <u>StatStrip Xpress</u>	2
<u>Abbott Libre Pro*</u>	23	829	18.00%	Nova Biomedical <u>StatStrip Xpress</u>	Factory calibrated
<u>sugarBEAT</u>	25	126	16.30%	Abbott Freestyle Optimum neo	1

\* <http://www.diabetesincontrol.com/accuracy-comparison-of-the-dexcom-g5-abbott-freestyle-libre-pro-and-senseonics-eversense/>





**Previous studies:**

>100 Patient days wear time – No major adverse events or skin irritation reported.

525 Patient days wear time – No major adverse events or skin irritation reported.

**Current study:**

125 Patient days to date with no major adverse events or skin irritation reported.



## sugarBEAT® Conclusion

**The interim analysis indicates the home portion of the study shows accuracy levels, measured using overall nominal MARD, as being comparable to independently published data on the three market leading CGM's.**