

Combining Exclusive Technologies – A Different Approach for Truly

Noninvasive Glucose Measurement

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In general, non-invasive methods measure physiological phenomena that are correlated with glucose level, rather than measuring directly glucose level. The actual glucose value derived from such correlations differs from the absolute glucose level, since factors other than glucose influence the parameters of the measured tissue as well and cause inaccuracies in the measurement process. The main concern, consequently, is to achieve high accuracy results despite the fact that there is no direct blood or interstitial fluid involvement.

In order to achieve reliable readings, random errors that contribute to the variability of the data, as well as systematic errors that introduce bias to the measurement need to be minimized.

An exclusive combination approach is proposed, where three independent, non-invasive technologies are integrated: Ultrasonic, Electromagnetic and Thermal. Each method per se is indicative of glucose, but is confined by the impact of the interfering factors, due to lack of specificity. It is suggested, therefore, that simultaneous evaluation of the physiological changes through measurement of different sets of tissue perturbations, induced by changes in glucose concentration, is expected to increase the validity of the end result (glucose reading).

The presentation will introduce the measurement concept with focus on the integration algorithm, supported by preliminary clinical data; discuss the potential pitfalls and elaborate on the ongoing technical development.