



SUMMARY FORM

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Presenter Title: Non-Invasive Glucose Measurement

SUMMARY: (up to 275 words)

Non-Invasive Glucose Measurement

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Glucose monitoring has been long recognized as a key component of treatment regimens and an essential requirement in diabetes management. Abundant evidence indeed point to clinical benefits following frequent self-monitoring of blood glucose in type 1, insulin-treated type 2 and even non-insulin treated type 2 diabetes. However, the pain, expenses and inconvenience associated with current self-monitoring technology can lead to patient noncompliance and insufficient number of daily measurements. Accordingly, it has been proposed that non-invasive glucose monitoring may encourage more frequent glucose estimations and thus contribute to diabetes care. Considerable efforts have been made over the last few decades to develop non-invasive devices that employ techniques such as infrared spectroscopy and Raman spectroscopy. However, increase of the signal-to-noise ratio of non-invasive glucose monitoring is still required to reach the same accuracy as standard invasive methods. It has been suggested that parallel monitoring of more than one parameter using multi-sensor systems may improve the accuracy of non-invasive monitors by combining different factors that enable to better separate between non-invasive glucose information and interfering factors. In accordance with this notion, GlucoTrack, a non-invasive device that indirectly measures glucose excursions in the earlobe tissue, utilizes three independent technologies to measure specific ultrasonic, electromagnetic and thermal parameters of the tissue. This talk will focus on this unique approach implemented to decrease errors derived from the indirect and non-specific nature of non-invasive monitoring. The first part of the talk will provide an overview on GlucoTrack's development of sensor technology, sensor materials and glucose prediction algorithm. The second part will be dedicated to clinical findings, demonstrating consistent improvement in GlucoTrack accuracy levels from preliminary clinical trials to current results.