

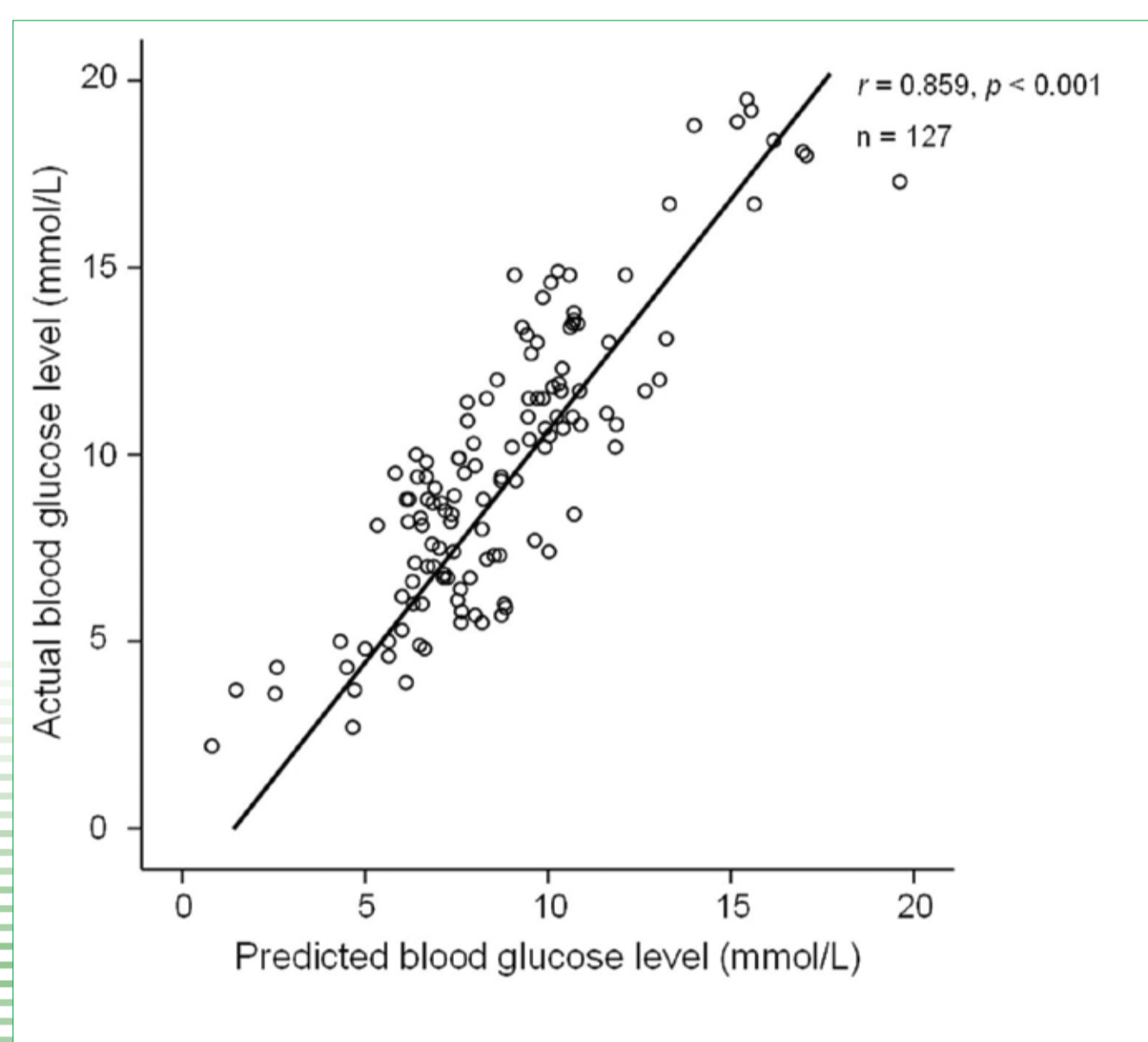
無創性血糖測量儀 NON-INVASIVE BLOOD GLUCOSE METER



利用近紅外線技術，以非創傷性方法測量糖尿病患者之血糖水平，從而鼓勵患者密切監察自己的血糖水平。
By using NIR to measure blood glucose non-invasively that encourages diabetic patients closely monitor their blood glucose levels.

專利申請編號及國家:PCT/IB2006/001142(PCT) 11/122,325(美國)

糖尿病患者必須密切地監察自己的血糖水平，傳統的血糖水平測試均需要抽取血液樣本，此舉增加了測試之難度及令患者飽受痛楚。非創傷性血糖測試儀則利用近紅外線技術去分辨血糖量，有助免除測試者痛楚，削減有關硬體的體積及成本，並為未來發展可攜式持續血糖水平監察儀器提供了基礎。而所得之數據能數位化並儲存於健康紀錄中，使有關人士易於檢索持續更新之健康紀錄。



最近在臨床實驗中使用六個月特定的波長及交互確效校正效果
Calibrated results using an "ideal" pre-classifier.
The Pearson correlation coefficient is 0.86 (with $p < 0.01$).

Patients with Diabetes Mellitus are recommended to monitor their blood glucose levels frequently and regularly. Conventional blood glucose level tests involve taking blood samples which are difficult and painful to perform. Non-invasive Blood Glucose Meter applied the NIR technology, which measures blood glucose level. It helps reducing sufferings, the size and cost of the corresponding hardware devices to be developed, and facilitates portable and continuous monitoring of blood glucose level. The measurements could be digitized and stored as health records, and such continuous monitoring health records could then be retrieved easily for health advices.

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特色與優點

此發明能於非創傷性下無痛測量血糖水平。由於不需要用完即棄的工具去進行測試，因此減少了長期消耗品的成本。而且，此非創傷性血糖計能分辨及減少基本波長的數量，有關硬體的體積得以減少。

應用

此方法不單可應用於血糖水平測試，並且能伸延至量度血液中其他物質的水平，例如膽固醇及乳酸。

獎項

- 第三十五屆瑞士日內瓦國際發明及創新技術與產品展評審特別嘉許金獎 (2007年4月)
- 獲二零零五年布魯塞爾第五十四屆創新、研究和新技术國際展覽會銅獎 (2005年11月)



非創傷性血糖測試儀 (第二代)
Noninvasive Glucose Metre (Second Prototype)

Patent Application No: PCT/IB2006/001142(PCT) 11/122,325(USA)

Special Features and Advantages

The new method is needleless and painless, neither implanting a sensor subcutaneously nor pricking fingers for a blood sample. Thus, there is zero risk of infection. It is cost saving because no laboratory tests or consumables, e.g. testing reagent are needed. The measuring method is extremely user-friendly, which is to put the thumb over the NIR sensor for 5 to 6 seconds.

By identifying and reducing the number of wavelengths required, this method can reduce the size of a thimble.

Application

The method not only facilitates blood glucose measurements, it may also be extended to the monitoring of other blood substrates such as cholesterol and lactic acid.

Awards

- Gold Medal with the Congratulations of the Jury, 35th International Exhibition of Inventions New Techniques & Products, Geneva (April 2007)
- Bronze Award, Brussels Eureka 2005 -the 54th World Exhibition of Innovation, Research and New Technology (November 2005)