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MOTIVATIONAL SELF MONITORING AND DIGITAL HEALTHCARE TECHNOLOGY

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Background: Diabetes and consequent complications are creating a global epidemic costing billions of dollars in healthcare expenses. Our biofeedback concept can improve patient healthcare and avoid such complications. This talk introduces simple diagnostic images of the daily impact of diabetes on blood sugar that will encourage and motivate patients toward more effective self monitoring and improved blood glucose control. Recent publications reported these patterns hidden within the multiday profiles of blood glucose fluctuations. The studies support clinical benefits such as an accurate 24hour advanced alert for incident extreme glycemia, such as hypoglycemia. The patterns measure healthcare effectiveness and indicate actions necessary to control expected glycemic conditions. This talk reports the benefit of these diagnostic images in a clinical case spanning multiple months.

Methods: For seven months daily finger-stick samples of a patient were used to create the glycemic patterns. The patient used the patterns as biofeedback to guide changes in diet and life style habits toward improving glycemic

Results: The patient achieved significant reduction in the average and volatility of blood glucose levels. A1c was lowered from diabetic status to normal subject levels.

Conclusions: The images provide robust accurate biofeedback and visualization of one's impact on glycemia that motivates and encourages vigilant blood sugar monitoring and consequent lifestyle actions to improve glycemic control and avoid expensive healthcare complications.

BIOGRAPHY

James Minor earned PhD's in both physics and data sciences before age 32. He has multiple publications and patents in physics, drug discovery, and genomics. His cognitive computer programs have been useful in healthcare applications to identify important gene sets establishing useful expression databases, e.g., toxicology. He was a managing consultant for Dupont, Chiron, Novartis, Bayer, Incyte, Iconix, and Agilent to successfully advance their research programs.

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