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&
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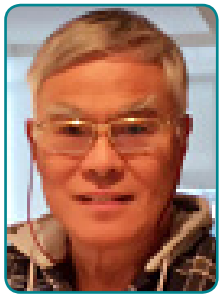

Gerald C Hsu
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Methodology of math-physical medicine

Math-physical Medicine approach (MPM) utilizes mathematics, physics, engineering models, and computer science in medical research. During 2014, he defined metabolism as a nonlinear, dynamic and organic mathematical system having 10 categories with ~500 elements. The topology concept with partial differential equation and nonlinear algebra to construct a metabolism equation. It was further defined and calculated two variables, metabolism index and general health status unit. Developed models, i.e. equations, for both Postprandial Plasma Glucose (PPG) and Fasting Plasma Glucose (FPG). 19 influential factors for PPG and five factors for FPG were identified. The PPG model was developed using optical physics and signal processing. Furthermore, by using both wave and energy theories, the research into the risk probability of heart attack or stroke was completed. In this risk assessment, the structural mechanics concepts were applied, including elasticity, dynamic plastic, and fracture mechanics, to simulate artery rupture and applied fluid dynamics concepts to simulate artery blockage. It was further decomposed 12,000 glucose waveforms with 21,000 data and then re-integrated them into three distinctive PPG waveform types which revealed different personality traits and psychological behaviors of type-2 diabetes patients. Furthermore, Fourier transform was applied to conduct frequency domain analyses to discover some hidden characteristics of glucose waves. AI Glucometer tool was developed for patients to predict their weight, FPG, PPG and A1C. It uses various computer science tools, including big data analytics, machine learning and artificial intelligence to achieve very high accuracy (95% to 99%).

Biography

Gerald C Hsu has completed his PhD in Mathematics and majored in Engineering at MIT. His approach is “Math-Physics and Quantitative Medicine” based on mathematics, physics, engineering modeling, signal processing, computer science, big data analytics, statistics, machine learning, and AI. His main focus is on preventive medicine using prediction tools.

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