# Effectiveness on diabetes control via medication and lifestyle management using GH-Method: math-physical medicine

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*Abstract*:

The author describes his 24-year history of type 2 diabetes (T2D) and effectiveness on diabetes control via medications and lifestyle management. In 1995, the author began having T2D conditions and started taking metformin three years later. His physician continued to increase his dosage and added three new drugs to control his elevated glucose level. From the period of 1991 to 2010, he suffered five cardiac episodes. In July of 2010, his average glucose value had risen to 280 mg/dL, HbA1C was 10%, ACR reached to 116.4, and triglycerides increased to 1,161. He also suffered kidney complications, bladder infection, foot ulcer, thyroid and retinal problems. Although he had been taking the maximum dosages for four different diabetes medications, his glucose and A1C levels were continuously fluctuating with an upward moving trend. In early 2017, he developed a PPG decomposition model using signal processing technique of wave theory from electronics communication engineering and geophysics to identify 19 components of PPG and their respective contribution margins. Major components of PPG waveform are medication, diet, exercise, and weather temperature, and others. His attached data analysis and computer graphics covered the period starting from 6/1/2015. Nevertheless, the two important periods of metformin reduction (6/1/2015 - 12/8/2015) and post-medication year (2016) are extremely important to investigate the medication effects. From 2016 to 2019, a four-year period, the importance and effects of the lifestyle management can then be clearly observed and studied in detail.

*Biography*:

The author received an honorary PhD in mathematics and majored in engineering at MIT. He attended completely different universities over seventeen years and studied seven tutorial disciplines. Furthermore, he self-studied and research three disciplines, internal medicine, food nutrition, and psychology.

He has spent ~30,000 hours in endocrinology research, especially diabetes. First, he studied six metabolic diseases and food nutrition throughout 2010 to 2013, then conducted his own polygenic disorder analysis throughout 2014 to 2018. His approach is "quantitative and precision medicine" based on mathematics, physics, optical and electronics physics, engineering modeling, wave theory, energy theory, signal processing, computer science, big data analytics, statistics, machine learning, and artificial intelligence. His main focus is on medicine victimization prediction tools. He believes that the higher the prediction, a lot of management you've got. Thus far, he has written, published, and presented more than 250 medical papers, including some psychology research papers.

*Speaker Publications*:

**1.** " Using Signal Processing Techniques to Predict PPG", June 2018, DOI: 10.33425/2639-9326.1030

2." Using Math-Physical Medicine and Artificial Intelligence Technology to Manage Lifestyle and Control Metabolic Conditions of T2D", September 2018, DOI: 10.33425/2639-9326.1031

**3."** Using GH-Method: Math-Physical Medicine to Investigate a Role of HbA1C in the Triangular
Relationship with Weight and the Blood Pressure", July 2020, DOI: 10.22259/ijrsmhs.0507002

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