The GH-Method

Using GH-Method: Math-Physical Medicine to Analyze Metabolism and Improve Health Conditions (No. 005)

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Abbreviations: MI: metabolism index; GHSU: general health status unit; FPG: fasting plasma glucose; PPG: postprandial plasma glucose

1. INTRODUCTION

The author spent 8.5 years and 23,000 hours to research his own chronic disease conditions. Using GH-Method: math-physical medicine approach, he developed a metabolism model to evaluate and improve his overall health conditions.

2. METHODS

The author utilized mathematics, physics, engineering modeling, and computer science tools, including big data analytics and artificial intelligence, to conduct his research. He developed a mathematical metabolism model and 4 prediction tools for weight, FPG, PPG and A1C. This metabolism model includes 10 categories: weight, glucose, blood pressure, lipids, food, water, exercise, sleep, stress, and routine life pattern, with ~500 elements. Furthermore, he collected and processed ~1.5 million data of his health and lifestyle.

3. RESULTS

Here is his health condition data comparison between 2010 and 2017 / 2018:

Weight: 210 / 172 / 171 lbs.
Waistline: 44 / 34 / 33 inches
PPG: 350 / 116 /117 mg/dL
FPG: 185 / 119 / 114 mg/dL
Daily glucose: 280 / 117 / 116 mg/dL
Lab A1C: 10.0 / 6.5 / 6.7%
Daily Math A1C: 10.0 / 6.84 / 6.78%
ACR: 116 / 12 /12 mg/mmol
Triglycerides: 1161 / 69 / 113 mg/dL.

He defined two new terms known as the Metabolism Index (MI) and General Health Status Unit (GHSU). The "health state" is expressed as the "break-even" line which is 73.5%; above this percentage is regarded "unhealthy" and below the break-even line is "healthy". The attached Figure 1 shows that he was very unhealthy (80%-110%) before 2013. The curve went through a sharp decline in 2014 due to his research and understanding of "metabolism". After 2015, he was "healthy" (60%-70%). As of 12/31/2017 and 12/31/2018, his daily MI was 57.4% & 53.6% respectively and GHSU was 55.7%. & 58.6% respectively (Figure 2).

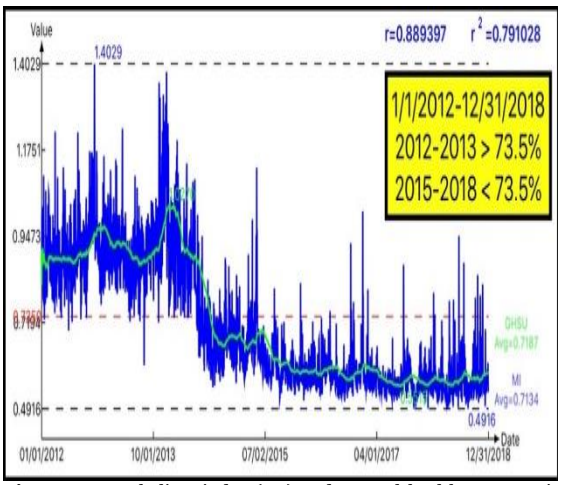

Figure 1: Metabolism index (MI) and general health status unit (GHSU) 2012-2018.

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Health Examination Record	2010	2017	2018	Note
FPG (<120 mg/dL)	185	119	114	Diabetes
PPG (<120 mg/dL)	350	116	117	Diabetes
Lab-testedA1C (<6.4%)	10	6.5	6.7	Diabetes
eclaireMD predicted A1C (<6.4%)	10.0	6.84	6.78	Diabetes
90-days Average Glucose (<120 mg/dL)	279	117	116	Diabetes
Triglyceride (<150)	1161	69	113	Hyperlipidemia
HDL (>40)	24	48	47	Hyperlipidemia
LDL (<130)	174	74	103	Hyperlipidemia
Total Cholesterol (<200)	253	118	166	Hyperlipidemia
Blood Pressure: SBP/DBP (< 120 / 80)	140 / 100	100 / 60	105 / 65	Hypertension
ACR (<30)	116.4	12.3	8.4	Kidney Problem
BMI (<25.0)	31.0	24.9	24.7	Obesity
Weight (lbs)	210	172	171	Obesity
Waistline (inch)	44	34	33	Obesity
Matabolism Index (MI / GHSU: <73.5%)	140% / 103%	49% / 55%	57% / 57%	Lifestyle Problems
Heart episodes (1994 - 2006)				5 times
Kidney Complications				Yes
Blader Infection				Yes
Thyroid Problems				Yes
Foot Ulcer				Yes

Figure 2: Health examination records comparison (2010 / 2017 / 2018).

4. CONCLUSION

All of his previous lab test results confirmed with this diagram showing his chronic disease conditions are well under control.