K **:** Cardiovascular Disease; Metabolism Index; Hypertension; Hyperlipidemia; Diabetes

I

e author uses his developed GH-Method: math-physical

percentages of having Cardiovascular Disease (CVD) or stroke for over a period of 10+ years.

M

To learn more about the MPM method, readers can review the

(ACR, TSH, and others.), and six input categories (food, water intake, exercise, sleep, stress, and routine life patterns), and ~500 detailed elements. He further de ned two new parameters, Metabolism Index (MI), as the combined score of the above 10 metabolism categories (dimensions) and 500 detailed elements, and general health status unit

In Figure 2, the top diagram illustrates three contribution percentage line charts of glucose, BP, and lipids, whereas the bottom diagram re ects three contributions percentage line charts of food, exercise, and other lifestyle details.

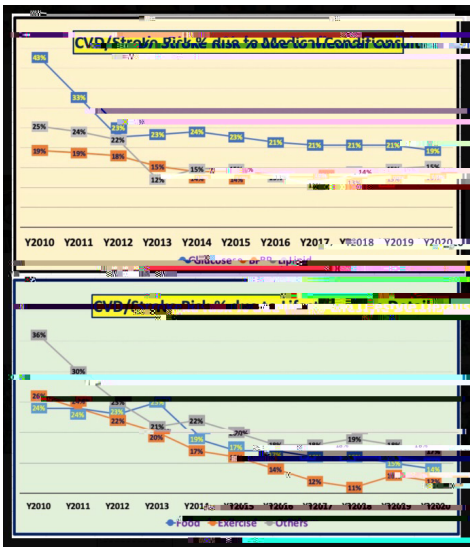

Figure 2: Contribution % of medical conditions and lifestyle on CVD/ stroke risk probability %.

In Figure 3, the top line chart diagram shows the contribution percentage of genetic and personal medical conditions, lifestyle details, and 80% of MI. e bottom bar chart diagram depicts the CVD/Stroke risk probability percentage comparison among medical conditions, lifestyle details, and MI.

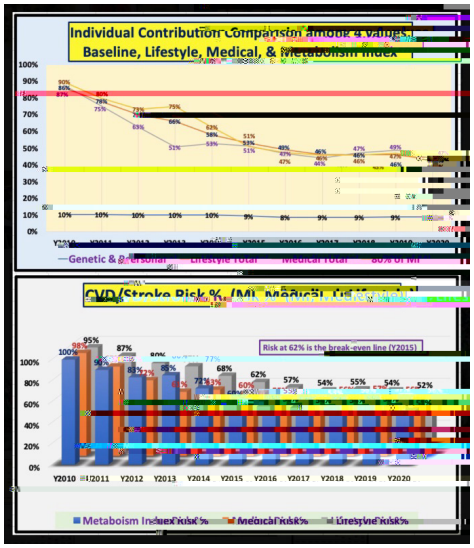

Figure 3: Comparison of various contribution % and CVD/stroke risk probability % based on MI, medical conditions and lifestyles.

It should be noted that weight and waistline (being overweight or obese) have been included in the baseline category for personal long-term factors because weight conditions similar to personal bad habits, such as smoking cigarettes, drinking alcohol, abusing substances, are di cult to change within a short period of time.

e established targets of his MI components are as follows:

Medical Conditions:

Glucose: <120 mg/dL

SBP: <120 mm Hg

DBP: <80 mm Hg

Heart rate: >60 and <100 bpm

Triglycerides: <150 mg/dL

HDL-cholesterol: >40 mg/dL

LDL-cholesterol: <130 mg/dL

Total cholesterol: <200 mg/dL

Lifestyle Details:

Food quantity: 73.5%

Food quality: 73.5%

Carbs/sugar: 20 grams

Daily walk: 15,000 steps

Post-meal walk: 4,000 steps

Water intake: 2,500 cc

Sleep quality: 73.5%

Stress: 73.5%

Daily life routine: 73.5%

If the patients meet all of the above targets, they will get a “break-even” score of ~53%. Since no person would get a “perfect” score on his or her genetic factors and personal long-term factors, the author could provide an average score of ~10% for the worst-case scenario of 20%. As a result, the combined “break-even” risk probability percentage of having CVD or stroke resulting from medical conditions is 62%. However, the break-even MI level is 64%. If the risk percentage is higher than 62-64%, this indicates a higher risk. However, if the risk percentage is lower than 62-64%, this implies a lower risk.

In Figure 2, the top diagram displays all of his three curves of contribution percentages from medical conditions (glucose, BP, and lipids) are decreasing year a er year due to his continuous improvements on the control of metabolic disorders via his stringent lifestyle management program, where he completely stopped taking medication since late 2015. e three medical contribution percentage curves stabilized a er 2013. His annual average glucose showed the most noticeable reduction from 43% of contribution (280 mg/dL) in 2010 down to 23% of contribution (133 mg/dL). From 2010 to 2013, he took high dosages of three di erent diabetes medications which was similar to the period prior to 2010; however, the major di erential factors to reduce hyperglycemia was due to his awareness on the importance of his daily lifestyle by implementing a stringent lifestyle management program based on scienti c evidence [4].

In Figure 2, the bottom diagram presents all of his three percentages of lifestyle details (food, exercise and others) are being reduced year a er year due to his stringent lifestyle management program. From judging his three curves over the period of 2017-2020 and his knowledge of this mathematical model, he has possibly reached a “near-optimal” state (i.e. high cost/return ratio) in terms of further potential improvements on

References

1. Hsu Gerald C (2020) Biomedical research methodology based on GH-Method: math-physical medicine (No. 310). J App Mat Sci & Engg Res 4: 116-124.
2. Hsu Gerald C (2020) Glucose trend pattern analysis and progressive behaviour modification of a T2D patient using GH-Method: math-physical medicine (No. 305). J Nutr Diet Pract 4: 1-6.
3. Hsu Gerald C (2020) Using mathematical model of metabolism to estimate the risk probability of having a cardiovascular diseases or stroke during 2010-2019 via GH-Method: math-physical medicine (No. 255). Archives of Infect Diseases & Therapy 4: 28-30.
4. Hsu Gerald C (2020) Detailed lifestyle contribution Analysis is of various lifestyle management on risk probability percentage of having a CVD or stroke using GH-Method: math-physical medicine (No. 314). J Diabet Res Rev Rep 2: 1-4.
5. Hsu Gerald C (2020) Detailed contribution analysis of various medical conditions on risk probability percentage of having a CVD or stroke using GH-Method: math-physical medicine (No. 315). J Diabet Res Rev Rep 2: 1-4.
6. Hsu Gerald C (2020) Using GH-Method: math-physical medicine to investigate the triangular dual-correlations among weight, glucose, blood pressure with a Comparison of 2 Clinic Cases (No. 43). Acta Scientific Pharmacology 1: 8-10.
7. Hsu Gerald C (2020) Using GH-Method: math-physical medicine and signal processing techniques to predict PPG (No. 13). J Nutr Diet Pract 4: 1-2.