

The Jubilees of the Discovery of Insulin & Glycemic Index: Where Conventional meets Complementary Medicine in the Management of Diabetes Mellitus

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ABSTRACT

This year we marked two important jubilees in the management of diabetes mellitus: one is the discovery of insulin 90 years ago and the other one is the introduction of the Glycemic Index, 60 years later, both originated at the University of Toronto, Canada. Both discoveries can help to improve diabetes tremendously and thus have contributed to the advancement of management of this troubling disease the incidence of which continues to climb at a staggering rate.

Key words: *glycemic index, insulin, diabetes mellitus*

The Jubilees of the Discovery of Insulin & Glycemic Index

This year we marked two important jubilees in the management of diabetes mellitus: one is the discovery of insulin 90 years ago and the other one is the introduction of the Glycemic Index, 60 years later. Interestingly, both originated at the University of Toronto, Canada. In 1921, Frederick Banting and Charles Best¹ isolated the pancreatic hormone insulin that saved countless lives and even today forms the core treatment of type 1 diabetes and in many cases, type 2 diabetes.

But insulin is not the whole or only answer, especially for people that suffer from type 2 diabetes, where a greater focus is placed on diet and lifestyle interventions. Sixty years after the discovery of insulin, coincidentally in the same building that once produced insulin, a group of scientists led by Dr. David Jenkins developed the Glycemic Index (GI). The GI of foods is a scientific model that classifies carbohydrate foods according to their effect on post prandial blood glucose levels². The concept is now broadly accepted and when used in the context of a healthy diet, recommended to be used to choose healthier foods, particularly for people who want to decrease their risk of type 2 diabetes³.

These two important discoveries are, in many ways, complementary to each other since, when used together, they allow patients to address two major abnormalities of diabetes: absolute insulin deficit and insulin resistance which results in high insulin levels to normalize blood glucose levels. Although insulin formulations and delivery have improved over time, its discovery remains at the core of medical diabetes treatment to approximate the secretion of insulin by the pancreas. While insulin injections can replace endogenously produced insulin, use of low GI food has been shown to reduce postprandial glycemia and insulinemia and increase insulin sensitivity.

Effective long term treatment of diabetes mellitus remains a huge challenge for health professionals and those with the disease in particular. For example, in the United States about 66 percent of patients with type 2 diabetes do not meet their glycemic goal⁴. Nonetheless, both discoveries can help to improve diabetes tremendously and thus have contributed to the advancement of management of this troubling disease the incidence of which continues to climb at a staggering rate.

Hence, in this short communication, we wanted to highlight that two important jubilees in the history of diabetes mellitus are marked this year, insulin disco-

very and introduction of the Glycemic Index. Both had a remarkable impact on the treatment of diabetes mellitus.

REFERENCES

1. BANTING FG, BEST CH, COLLIP JK, Can The Assoc J, 12 (1922) 141. — 2. JENKINS DJA, WOLEVER TMS, TAYLOR RH, BARKER H, FIELDEN H, BALDWIN JM, Am J Clin Nutr, 34 (1981) 362. — 3. CHIU CJ, LIU S, WILLETT W, WOLEVER TM, BRAND-MILLER JC,

BARCLAY AW, TAYLOR A, Nutr Rev, 69 (2011) 231. — 4. NATIONAL CENTER FOR CHRONIC DISEASE PREVENTION AND HEALTH PROMOTION, National Diabetes Fact Sheet, accessed 10.09.2007. Available from: URL: <http://www.cdc.gov/diabetes/pubs/factsheet.htm>.

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JUBILEJ OTKRIĆA INZULINA I GLIKEMIČKOG INDEKSA: GDJE KONVENCIONALNA MEDICINA SUSREĆE KOMPLEMENTARNU MEDICINU U LIJEČENJU ŠEĆERNE BOLESTI

SAŽETAK

Ove godine obilježavamo dvije važne obljetnice u liječenju šećerne bolesti: jedna je 90. godišnjica otkrića inzulina, a druga je 30. godišnjica predstavljanja glikemičkog indeksa. Oba otkrića nastala na Sveučilištu u Torontu, mogu značajno pridonijeti u liječenju šećerne bolesti čija incidencija u svijetu dramatično raste.