



**GE HEALTHCARE
SPECIAL SUPPLEMENT**

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Advancing the Understanding and Treatment of Type 2 Diabetes



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Prof. Daniel Drucker is a clinician-scientist who develops treatments for diabetes, obesity, and intestinal disorders. A pioneer in diabetes treatment, Prof. Drucker's work has provided important insights leading to the development of new drugs for the treatment of Type 2 diabetes. Currently, his laboratory at Lunenfeld-Tanenbaum focuses on understanding the molecular biology and physiology of glucagon-like peptides.

Prof. Drucker has received several awards in recognition for his research including the 2009 Clinical Investigator Award from The Endocrine Society, the 2011 Oon International Award for Preventive Medicine - Cambridge University School of Medicine, the 2014 Banting Medal for Scientific Achievement from the American Diabetes Association, and the 2014 Manpei Suzuki International Prize for Diabetes Research. This year, he has been honoured by the Endocrine Society with the 2020 Baxter Prize. HealthManagement.org spoke to Prof. Drucker about his efforts to understand and treat diabetes and his future research goals.

You have played an active role in discovering and developing new drugs for patients with Type 2 diabetes. Can you tell us a bit about these drugs and the research behind it?

We have studied gut hormones, including GLP-1, for over 35 years. It turns out that GLP-1, or agents that stabilise GLP-1 such as DPP-4 inhibitors, control blood glucose without weight gain, and with a reduced risk of hypoglycaemia. The newer GLP-1R agonists also produce weight loss and reduce the risk of cardiovascular complications. These are very desirable properties for a class of diabetes medications.

Your primary research area is metabolism and nutrition. Specifically, you have had a significant interest in diabetes. What was the reason for your interest in this particular area - why diabetes?

I love all of endocrinology. Diabetes became a focus after I started studying gut hormones, principally GLP-1, and recognised its actions were relevant to diabetes.

Obesity is a major healthcare epidemic. What are your thoughts about this, and how do you think this health issue can be addressed/treated?

We don't fully understand the pathophysiology of human obesity. We need public

health programmes directed towards education, including nutrition, exercise, mental health, coupled to elimination of poverty, food insecurity, and related social issues. Obesity is a complex problem not well suited to one-size-fits-all solutions

There are often people who are not overweight but still have type 2 diabetes. What do you think? Is there a relationship between weight/obesity and type 2 diabetes?

Type 2 diabetes clearly has strong underlying genetic components, modified by our environment, activity, diet, and body weight. Some individuals are more susceptible to developing diabetes with weight gain, relative to others.

You are currently involved in the development of new drug classes for obesity. How close are you to achieving this goal?

A GLP-1 Receptor agonist, Liraglutide, has been approved in many countries for the treatment of obesity. Many investigators and companies are studying ways to develop newer more powerful GLP-1-based drugs for the therapy of obesity.

Cardiovascular disease continues to be a leading cause of death worldwide. What strategies does the healthcare community need to implement to address this?

We have made tremendous progress

with the reduction of smoking and better control of blood pressure and levels of cholesterol. We need ongoing strategies to tackle the known risk factors to sustain improvements in cardiovascular health. The pharmaceutical industry continues to develop new medications that are also useful for reducing cardiovascular risk in selected appropriate populations.

What are your future goals in diabetes, obesity, and intestinal failure research?

I am fascinated by the underlying mechanisms of action of gut hormone therapies, which remain incompletely understood. Advancing this basic science knowledge may lead to more effective next-generation therapies, based on peptide hormone action, for these and related disorders.

Our cover story for this issue is "The Future is Digital." Do you think digitalisation in healthcare can help improve the prevention, diagnosis, and treatment of cardiovascular disease?

There is great potential in "Digital." Implementation of effective new technologies and therapies, and subsequent demonstration of benefit, is sometimes more challenging than we first realised. ■

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