Distinguished Guests,

Friends and Colleagues,

Ladies and Gentlemen,

A very good morning to all of you.

Welcome to the 2015 Singapore Symposium on Metabolic Diseases.

**Introduction**

This Symposium was inaugurated in 2007 and was jointly organised by the Singapore Bioimaging Consortium (SBIC) and the Singapore Institute of Clinical Sciences (SICS). SBIC remained the key organizer for the subsequent symposia.

Today’s Symposium marks an important milestone in its short history, as it welcomes onboard, Duke-NUS Graduate Medical School, Institute of Molecular and Cell Biology (IMCB), Bioprocessing Technology Institute (BTI) and Genome Institute of Singapore (GIS) as co-organisers of the event.

The Symposium is significant in providing a common platform for some of the world’s leading experts in the field of metabolic diseases to share their latest research findings and insights.
Here, I would like to welcome our international speakers for taking the time to join us at this event.

Through the sharing and interactions during the Symposium, we hope that we can also catalyse some meaningful collaborations to advance our understanding of this topic.

**Impact of Metabolic Diseases**

Metabolic diseases are complex and are associated with major medical conditions such as obesity, diabetes, cardiovascular and kidney diseases. With an aging population, such diseases would impose an increasing burden not only on the family and friends of the patients but also on society in terms of the demand on healthcare resources.

Obesity, for example, remains a very pressing problem\(^1\) in the developed world today, and is the fifth leading risk for global deaths. According to the most recent health survey in Singapore, four in 10 adults aged 18 to below 70 were overweight – with a majority of these at risk of severe chronic diseases because of their weight.\(^2\)

At the same time, diabetes was estimated to have cost taxpayers worldwide at least over US$600 billion dollars in healthcare expenditure.\(^3\)

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In the latest edition of the Diabetes Atlas published in 2014 by the International Diabetes Federation, around 390 million people have diabetes and this number will increase by over 50% to 590 million by 2035.

In South-East Asia, almost half of the people with diabetes are undiagnosed, and 25% of adults in Singapore are projected to have Type 2 diabetes by 2020.

**How Science Is Responding**

One of Singapore’s Translational and Clinical Research (TCR) flagship programmes, was launched in 2009 to study the developmental pathways to metabolic diseases from pregnancy to infancy, and also in adulthood.

A specific research thrusts under this programme, GUSTO, short for *Growing Up in Singapore Towards Healthy Outcomes*, is Singapore’s largest and most comprehensive birth cohort study. GUSTO aims to gather data from the mother and baby, from pregnancy until the baby finishes adolescence. (I believe they have already exceeded 3 years). This will give us deeper insights and understanding in the prevention and management of diseases such as diabetes in Singapore.

The *Singapore Centre for Nutritional Sciences, Metabolic Diseases, and Human Development* (or SiNMeD), and the *Clinical Nutrition Research Centre* (or NMRC, MOH)

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4 NMRC, MOH
http://www.nmrc.gov.sg/content/nmrc_internet/home/our_research/tcr_flagship_programme.html

5 The TCR Flagship Programme on Developmental Pathways to Metabolic Disease, or DevOS for short, consists of two main sub-studies. GUSTO assesses pregnancy and infancy and the second one focusses on adult metabolism. http://www.devos.sg/about/aboutdevos.html
CNRC) were launched in October 2013 and January 2014 respectively to study the impact of human nutrition on metabolic diseases.

SiNMeD is a joint initiative between the National University of Singapore (NUS) and SICS. Besides expanding on the success of the GUSTO cohort study and EpiGen consortium, which is an international alliance of leading epigenetics experts, SiNMeD will also look into talent development and contribute to the knowledge of nutritional sciences, metabolic diseases and human development.

CNRC, on the other hand, is a partnership between SICS and the National University Health System (NUHS). CNRC aims to study how nutrition can impact the well-being of an individual. Investigations of the nutrient intake on the human physiology, glycaemic index would allow us to better understand certain diseases such as diabetes.

**Britton Chance Memorial Award and Young Investigator Award**

At this year's Symposium, we will also recognise the contributions of two scientists in the field of metabolic diseases with the inaugural Britton Chance Memorial Award and the Young Investigator Award.

The inaugural Britton Chance Memorial Award will be conferred on Professor Philipp Scherer from the University of Texas Southwestern Medical Centre. This is for his active participation to advance research in the field of metabolic diseases and you will hear more about his work when Weiping introduced him later on.
The second award, the Singapore Symposium on Metabolic Diseases (SSMD) Young Investigator Award, is to recognise the exceptional achievements of an investigator in the early part of his or her independent career in this field of research. The Young Investigator Award will be presented to Associate Professor Xiaoyong Yang from Yale University.

**Closing Remarks**

In closing, I would like to commend the organisers for bringing together more than 25 eminent speakers to share their insights on metabolic diseases such as diabetes, obesity, heart failure, nutrition and general metabolism.

This symposium will further our understanding of the pathophysiology of metabolic diseases – from the way our genes work to regulate the composition and formation of brown adipose tissues implicated in increased metabolic rates, to the viability of nutritional interventions undertaken in early life that may reduce the burden and onset of metabolic diseases in the future.

Hopefully, this Symposium will also point us to possible therapeutic strategies and the development of novel solutions to overcome the heavy costs of metabolic diseases.

On this note, let me wish all of you a successful Symposium.

Thank you.