

Diabetes

Study on progression of disease in Asian populations

Dr Sue-Anne Toh, an adjunct associate professor of medicine at the National University of Singapore, and her team conducted one of the world's largest comprehensive scientific studies on the progression to diabetes in Asian populations. The three-year study ended at the start of this year.



Dr Sue-Anne Toh says people may be very lean and even underweight and, yet, have diabetes.

Type 2 diabetes is an increasing epidemic in the region, and it is projected that its prevalence in Singapore will double from 7.3 per cent in 1990 to 15 per cent in 2050. The total economic cost of the disease alone is expected to increase by 2.4 fold.

In the West, where there is a higher prevalence of obesity, there is a stronger correlation between weight loss and a reduced risk of developing diabetes. However, this is not necessarily true in the Asian context, Dr Toh said.

"We may be very lean and even underweight and, yet, have diabetes. And there may be certain aspects of biology that are very different in us compared to Caucasians and telling these thin people to lose weight is not helpful, and in fact, can be very demoralising," she said.

"But with this study, we'll have our own local data that is relevant to the Asia-Pacific region, which will help contribute to our understanding of what other factors – be they biological, environmental or lifestyle – also contribute to the progression of diabetes in our population."

The study, called Assessing progression to type-2 diabetes (APT-2D): A prospective cohort study expanded from brite-spot (Bio-bank and registry for stratification and targeted interventions in the spectrum of type 2 diabetes), involved 1,679 Singaporeans with pre-diabetes or normal blood glucose levels.

It was found that having an im-

paired ability to secrete insulin was a landmark feature of those with pre-diabetes.

"We know that type 2 diabetes occurs when the body cannot respond well to the actions of insulin ("insulin resistance") and the pancreas cannot make enough insulin to keep glucose levels within normal range. However, the exact contribution of each defect and the timing at which it occurs in the progression of diabetes is incompletely understood, especially in Asians," Dr Toh said.

"Our study has shown that in the Singapore population, those with pre-diabetes have mild insulin resistance but a disproportionately greater inability to produce enough insulin. Our findings provide important insights into the main factors that drive the development of abnormal glucose levels in Asians."

"This suggests that interventions which focus on not overworking the pancreas could be particularly effective in lowering the risk of type 2 diabetes in Asians," Dr Toh added.

A study participant, who wanted to be known only as Ms Tang, was glad that she volunteered. It was through this study that Ms Tang, a manager in her 30s, found out she had pre-diabetes.

She knew of the study via an e-mail that was sent to all employees at her previous workplace.

"It was my first time participating in a clinical trial and the process was generally very



Ms Tang, a manager in her 30s, found out she had pre-diabetes when she took part in the APT-2D study. She now makes an effort to incorporate some physical activity in her daily routine. ST PHOTO: SYAMIL SAPARI

smooth," she said.

The study team closely monitored her blood sugar levels once every six months over three years – from 2018 to last year.

"As I am of a healthy weight and generally do not consume too unhealthy food, I did not think that

I'd have pre-diabetes," she added.

Ms Tang, who did not lead an active lifestyle in the past, now puts in effort to incorporate some physical activity, such as Zumba classes or brisk walking, into her daily routine in order to keep her glucose levels in check.