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# Healthy mum, healthy baby

Experts say a woman's health, nutrition and mental well-being will affect her child's disposition to mental, developmental and chronic disorders



Shabana Begum

For the last five months of her pregnancy, Mrs Veronica Teo had to prick her fingers at least 11 times a day.

She had to monitor her blood sugar levels every few hours, including before and after meals.

The business development manager – who gave birth to her first child in 2018 – was diagnosed with gestational diabetes, or diabetes during pregnancy, when she was four months pregnant.

Women who are overweight, above the age of 35, or have the disease running in their family face a high risk of getting gestational diabetes.

The petite 27-year-old fell under none of those categories. She eats healthy, avoids snacks and dislikes sugary foods, so she was shocked when she was diagnosed with the condition.

"Despite poking my fingers multiple times a day, I never got used to it. It was painful, and sometimes I had to prick my finger a few times to make blood appear," said Mrs Teo, now 30.

Gestational diabetes can sow the seeds of obesity, Type 2 diabetes, heart disease and even neurodevelopmental disorders in a child.

Mrs Teo's diagnosis does not surprise Professor Chong Yap Seng, dean of the National University of

Singapore's Yong Loo Lin School of Medicine.

Singapore's largest birth cohort study, led by Prof Chong, found a few years ago that gestational diabetes affects one in five pregnant women in Singapore – one of the highest rates worldwide and double the estimated global figure of 7 to 10 per cent.

This finding from the study, Growing Up In Singapore Towards Healthy Outcomes (Gusto), which has been tracking about 1,000 mother-and-child pairs since 2009 from birth, debunks claims that gestational diabetes affects only high-risk women.

"We were routinely missing half the women with gestational diabetes because we were not testing those who were not high-risk," said Prof Chong.

By 2018, the Ministry of Health released guidelines recommending that all pregnant women be screened for gestational diabetes in their second trimester.

The first guidelines on exercise for pregnant women, released early this month, say that healthy women with uncomplicated pregnancies should do moderate intensity aerobic and resistance training workouts for at least 2½ hours a week. Such exercises include jogging, swimming and stationary cycling.

"Singapore women do enter pregnancy with a suddenly higher body mass index than average. And there is a tendency for them to put on more weight in pregnancy than they should," said Prof Chong.

Professor Tan Kok Hian, the head and senior consultant of the perinatal audit and epidemiology unit at KK Women's and Children's Hospital, said that in the hospital, more than 30 per cent of pregnant women are overweight and more than 25 per cent put on excessive weight.

Gestational diabetes goes away after birth, but that does not mean the struggle is over.

## Gestational diabetes & obesity in kids

### 20%

Of pregnant women in Singapore have gestational diabetes. This can sow the seeds of obesity, Type 2 diabetes, heart disease and even neurodevelopmental disorders in a child

The Gusto study found that four in 10 of the mothers who had gestational diabetes became pre-diabetic or diabetic within five years. Many of them were in their 30s.

"Pregnancy is a bit of a stress test for these mothers' endocrine system. If the excess hormones and weight gain in pregnancy cause your blood sugar levels to go up, it means that your blood sugar control is already not fantastic," said Prof Chong.

But gestational diabetes is easy to manage and avoid as long as lifestyle changes are made, he added. The advice is almost clichéd, but eating clean and exercising are the best ways to reverse gestational diabetes and its ill effects.

"Many pregnant women are too worried to exercise. It is okay to exercise during pregnancy," Prof Tan stressed.

Mr Randall Su, 32, who welcomed his first child this month, said his wife did 15 minutes of yoga at least thrice a week.

"The routine also surprisingly helped her to maintain good posture throughout her pregnancy, with no back pain," added the product specialist.

Prof Tan added that there is no need to eat for two as pregnant women need to take in only 15 per cent more calories.

Another tip from Prof Chong is to make breakfast the biggest meal of the day and to start with foods that do not increase blood sugar levels much, such as fruit and whole grains. "Such foods programme your metabolism to make you feel less hungry for the rest of the day, and also release sugars slowly."

Most mothers would start thinking about motherhood only when their pregnancy tests come back positive, but science shows that even before conception, a woman's health, nutrition and mental well-being will shape her child's quality of life.

The first 1,000 days – from con-

ception to age two – will set the stage for the child's long-term health.

Said Prof Tan: "The foetus and infant at these stages of development are most adaptable. If the foetus is exposed to an adverse womb environment, caused by damage to the tissue; poor or excessive nutrition; or infections, the baby would be more susceptible to chronic diseases."

But it is not just the mum's physical health that can impact the child.

The Gusto study found that about 40 per cent of pregnant women had clinical depression or high levels of depressive symptoms.

Prenatal depression was shown to affect their newborns' right amygdala – the part of the brain that processes negative emotions – thus predisposing the children to mood anxiety disorders.

When the Gusto children turned four, they underwent a school readiness assessment to test their competence in areas such as numeracy and phonics. Children of mums with high depressive symptoms did not perform as well as their peers, said Prof Chong.

Similar to tackling gestational diabetes, the Gusto researchers believe all pregnant women should undergo screening for anxiety and depression.

But addressing mothers' mental health requires a whole-of-society approach, noted Prof Chong.

"I can tell a mother: 'Make sure you're healthy. Have good emotional health and be in a good place mentally.'"

"But you can't say just that to a mother from a low-income family whose partner is incarcerated, for example. Other environmental factors should be taken care of also."

nshab@sph.com.sg

MORE STORIES on C2

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FROM C1



Manager H'ng Shiau Chen, 40, who had gestational diabetes while pregnant with her daughter Kylie, 10 (both above), switched to a low-sugar diet and started eating more protein after the diagnosis. ST PHOTO: DESMOND FOO

## Changing lifestyles for children

### Shabana Begum

Since her run-in with gestational diabetes 11 years ago, Madam H'ng Shiau Chen has made a habit of checking the labels and sugar content of every food item she buys.

But initially, she had to win a hard-fought battle with temptation, to curb her sweet tooth. As gestational diabetes increases the risk of obesity and metabolic diseases in their children, aside from monitoring their own diet, mothers like her are also training their kids to eat healthier.

Switching to a low-sugar diet was a bigger challenge than pricking her fingers five times a day to record her blood glucose levels, the 40-year-old manager admitted.

"The first two weeks after the diagnosis, I was quite depressed and stressed because I had to stay away from my favourite foods," she said.

"Chocolate is my comfort food, and I liked to have white rice in big portions. Previously, I would just eat without thinking, and could finish half a block of chocolate in one sitting. I also liked my Milo very sweet."

But her fear of developing Type 2 diabetes and putting her child at risk made her switch overnight to healthier options of wholemeal bread, half a bowl of brown rice and Milo without added sugar. She also started eating more protein.

To manage her pregnancy cravings, Madam H'ng sought out sugar-free chocolates on occasion.

Mrs Veronica Teo, 30, who had gestational diabetes during both her pregnancies in 2017 and 2018, would fight cravings by taking a

nap or watching television.

Choosing foods that do not cause blood sugar levels to spike is a daily exercise of trial and error for women with gestational diabetes.

Some items may seem healthy, like freshly squeezed orange juice. But it ended up raising my sugar levels," said Mrs Teo, a business development manager.

Post-delivery, both mothers have gone for regular follow-ups, and their blood sugar levels are under control.

Both Madam H'ng and Mrs Teo are also inculcating healthy eating habits in their children.

Candies and junk food have no place in Madam H'ng's home.

"If my girls receive candies from school friends, they are allowed to have only one piece a day, and they have to ask for permission," she said. Her daughters are 10 and seven. She had gestational diabetes only for her first pregnancy.

Mrs Teo, who has a two-year-old daughter and a one-year-old son, gives them plain biscuits and fruit as snacks.

Professor Chong Yap Seng, dean of the National University of Singapore's Yong Loo Lin School of Medicine, said physical activity and limiting children's screen time will reduce their risk of childhood obesity.

Earlier this month, a 24-hour activity guideline for children and teenagers was launched to get kids to move more, sleep more and reduce screen time.

One of the recommendations is for children to do about an hour of moderate-to-vigorous exercise each day.

"Screen time below the age of one is a big no no," Prof Chong added.



Business development manager Veronica Teo, 30, seen here with husband Desmond, 39, had gestational diabetes while pregnant with daughter Angela, two, and son Zedd, one. PHOTO: COURTESY OF VERONICA TEO

### Get into shape for pregnancy

#### BEFORE PREGNANCY

- Be in the best possible health before conception.
- Quit smoking and drinking.
- Be mentally prepared and read up on pregnancy and parenthood.
- Go for prenatal testing to assess uterine conditions and hereditary issues.

#### EXERCISE

- Women with uncomplicated pregnancies should do at least 2 1/2 hours of moderate-intensity workouts every week, with a mix of aerobic and resistance training exercises. These activities include brisk walking, swimming, stationary cycling, jogging, squats, and exercises with light dumbbells and resistance bands.

#### EAT WISELY

- Pregnant women need only 15 per cent more calories.
- Women at a healthy weight before pregnancy need up to 2,500 calories a day while expecting. The first trimester does not require extra calories. During the second trimester, 340 more calories are needed, and in the third trimester, 450 more calories compared with pre-pregnancy levels.
- Make breakfast the biggest meal of the day, with foods that lead to a smaller rise in blood sugar levels. These include whole-grain bread, bran flakes, steel-cut oats and fruit.

• Sources: Professor Chong Yap Seng, dean of the National University of Singapore's Yong Loo Lin School of Medicine; Professor Tan Kok Hian, head and senior consultant of the perinatal audit and epidemiology unit at KK Women's and Children's Hospital; Dr Christopher Chong, an obstetrician and gynaecologist at Gleneagles Hospital; and Guidelines on Physical Activity & Exercise in Pregnancy