

Using a person's DNA to customise his diet and exercise plan is a growing field of science. **Poon Chian Hui** reports

**E**ver wondered if you were born with that sweet tooth? Or if you are likely to gain weight back after dropping the kilos? A new test that is now available in Singapore promises to answer these questions – and more.

Called the Pathway Fit test, it analyses a person's genes to provide information about his metabolism, as well as the type of diet and exercise that would suit him best.

For instance, it reveals whether a person will reap more health benefits from endurance exercise, such as long-distance running – or if he would be better off doing strength training, which includes lifting weights.

It is offered by Parkway Shenton at its six Executive Health Screeners clinics at \$1,498 (with GST). The price includes an initial consultation with a doctor and a review of the results at a later date.

The test is developed by Pathway Genomics, a United States firm that specialises in genetic tests.

All it takes is a saliva sample. This would be sealed in a test tube with a preservative gel, then air-flown to a laboratory in the US for analysis. One can expect to receive personalised results in three or four weeks' time.

#### NUTRIGENOMICS TEST

Mind Your Body understands that this is the only nutrigenomics test of its kind available at medical clinics here.

In fact, the field of nutrigenomics, which examines the link between food components and gene expression, is relatively new here and around the world.

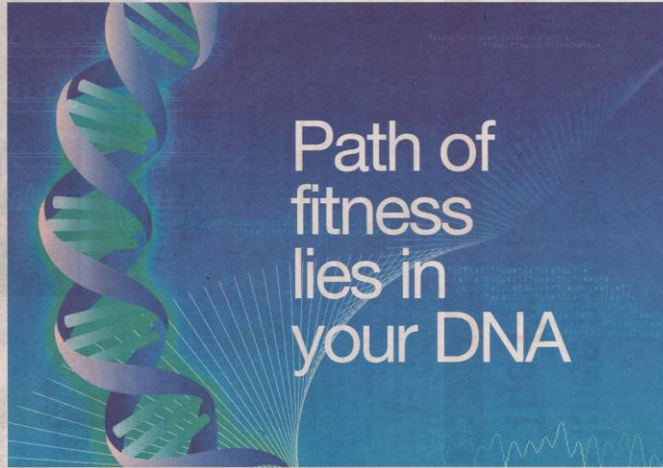


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## Path of fitness lies in your DNA

But it is gradually becoming mainstream. Already, large insurance companies in the US are supporting clinical trials in this field, said Mr Michael Nova, chief medical officer of Pathway Genomics.

More than 75 genetic markers are analysed in the Pathway Fit test, he said. Conclusions are based on more than 35,000 studies previously done on these markers, he added.

The Pathway Fit test is the only test of its kind to be approved by the US Food and Drug Administration. It comes with a detailed diet plan and a breakdown of the person's behavioural and metabolic traits.

The test is ideal for those who are seeking to manage their weight, said Mr Nova.

Since the firm started offering the test three years ago, more than 100,000 people from 44 countries have tried it. This includes people in Asian countries, such as Thailand, South Korea and Japan.

#### NOT EASY TO LOSE WEIGHT

Mr Rohan Perera, 38, is one of about 20 people in Singapore who have gone for the test since its introduction here in April.

Earlier in July, the project manager was diagnosed with severe obstructive sleep apnoea, where a person stops breathing many times during sleep due to an obstructed airway. As a result, he has to wear a breathing device to sleep every night. "But I don't want to wear it for

life," said the father of two, adding that he is aware that the sleep disorder is weight-related. "If I lose weight, I can lose the machine."

But it was easier said than done. He had been trying to shed weight in recent years, as he also had high blood pressure. Despite playing sports, such as tennis and football, and eating moderately, he was still stuck at square one.

"Something is not quite right. I am not obese and I don't eat sweet stuff," said Mr Perera, who is 1.74m tall and weighs 80kg. "Maybe I just need a bit of guidance."

That was why he opted for the Pathway Fit test, after his cardiologist suggested it to him. One useful finding was that his

body responds better to endurance exercise. "I love playing sports, but I realised I should also consider jogging," said Mr Perera, who started going for weekly 30-minute runs.

Insights into his dietary traits also helped. For instance, he was advised to eat more polyunsaturated fat, as people of his genotype tend to have a lower body weight if they include more of this "good fat" in their diets.

His wife now makes sure to include more nuts and fish in his meals, he said.

#### THE INFLUENCE OF GENES

Dr Crystal Ng, medical director of Executive Health Screeners, said that genetics account for 40 to 70 per cent of a person's predisposition to obesity, with environmental factors making up the rest.

"The test is not 100 per cent; it is not the gospel truth. But at least we know a bit more about ourselves," she said, adding that the knowledge may be enough to spur some people to make positive lifestyle changes. Unlike other health screening tests, Pathway Fit does not tell a person whether he has a disease.

Still, a consultation with a doctor is important and essential to ensure each result is correctly interpreted, said Dr Ng. The appropriate medical recommendations, investigations and tests can then be discussed with the patient, based on existing medical conditions and health concerns.

Consultant cardiologist Rohit Khurana, director of The Harley Street Clinic Heart Specialists, said the use of gene testing to personalise a person's nutrition is "an innovative concept".

The clinic, which has branches in Mount Elizabeth Novena Hospital and Geneagles Hospital, also recently started to offer the Pathway Fit test.

#### ROLE OF A GENETIC TEST

But Dr Khurana noted that it has yet to be proven in long-term trials that adopting a diet dictated by one's genes yields sustained weight loss and cardiovascular health benefits.

"I see the role of genetic testing



ST PHOTO: POON CHIAN HUI

**But I don't want to wear it for life. If I lose weight, I can lose the machine... Something is not quite right. I am not obese and I don't eat sweet stuff. Maybe I just need a bit of guidance.**

Mr Rohan Perera (pictured here with his wife and two children), who has to wear a breathing device to sleep because he has severe obstructive sleep apnoea. He opted for the Pathway Fit test in July. He has managed to lose 3kg in the past three months and his blood pressure has fallen into the normal range for the first time in about two years.

as supplementing conventional advice, not replacing it," said Dr Khurana, who has recommended the new test only to a few high-risk patients, including Mr Perera.

For instance, it can help pre-diabetic overweight patients reduce their long-term cardiac risk, as the task is "more complex than calorie intake alone", he said.

So far, Mr Perera has managed to lose 3kg in the past three months.

A recent check-up also showed that his blood pressure has fallen into the normal range for the first time in about two years.

With that, he no longer has to take medication. "It's a simple test, painless and effortless," he said.

But the price tag, he admitted, is on the high side. "Perhaps it could be included as part of a health screening package," he suggested.

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## Getting to know me better

On a recent supermarket run, I hesitated when reaching out for a bag of potato chips.

I was reminded of a section of my Pathway Fit report which said in plain, cutting words: "You are likely to be an extreme snacker."

The report also mentioned that I have a tendency to overeat, or what it called an "eating disinhibition".

While I am unclear what constitutes extreme snacking – is it one bag of chips, or just half? – the

report does serve as a reminder to keep my temptations in check.

However, I did not find all the sections useful, such as those on individual vitamins. I find it near-impossible to gauge whether my daily vitamin intake is sufficient.

That said, the segment on exercise was pretty motivating.

I was, first of all, encouraged to know that I am already on the right track with my regular runs and swims, which are considered

endurance exercise, the type of exercise that is supposedly more beneficial for my genotype.

More good news: It takes less effort for me to lose body fat through exercise, compared with others. And exercise is "strongly recommended" because I possess a genetic variant associated with being overweight.

All these points made me want to step up my fitness routine.

The testing process started with

a half-hour consultation with the doctor at the Executive Health Screeners clinic at Mount Elizabeth Novena Hospital. Dr Crystal Ng, its medical director, took my height and weight, and asked me about my family history of chronic ailments, such as hypertension and diabetes.

After that, I had to spit into a test tube, until it reached a certain level. It was then collected by the clinic staff.

It took a little over a month for

my test results to be ready. During the review, Dr Ng went through my report thoroughly, answering my questions and giving me advice.

For instance, she suggested a simple "talk test" to ensure that my exercise intensity is at a moderate level. This means that I should be able to talk, but not sing, when exercising, she said.

Ultimately, I feel that the test is useful for those who are truly set on losing weight or who want to rectify their chronic health problems after

conventional methods have failed to work.

Otherwise, for people like me, it reads more like a "do you know?" booklet rather than an action plan. But it may yet prove useful one day. In Dr Ng's words: "This is a one-time test. You can use it as you age – your genes don't change."

Poon Chian Hui

MYB did not pay for the test. It was complimentary.