

NUH's healthy keto diet leads to weight loss without increasing bad cholesterol levels

Joyce Teo
Senior Health Correspondent
and Alexandria Ee

Weighing 115kg and standing at 174cm, Mr Tan Ban Thong had trouble buying clothes. Walking a short distance left him breathless and flying was tough as airplane seats were often not wide enough.

The 60-year-old deputy director of human resources is in a much better place today after he shed 25kg last year.

The breathlessness has gone away, and he has better control of his health issues, including diabetes, hypertension and non-alcoholic fatty liver disease.

The secret to his success is the Healthy Ketogenic diet developed by Dr Lim Su Lin, the chief dietician at the National University Hospital (NUH).

The key feature of the diet is keeping to a net carbohydrate level (carbohydrates minus fibre) of 50g or less a day to induce ketosis, where stored fat (instead of glucose) is broken down to provide energy.

That works out to three or 3½ slices of white bread, or ¼ cup of rice a day.

"In many weight loss diets, people usually (give up) because of hunger pangs," said Dr Lim, at an event to share the findings of a study on the diet at NUH on Wednesday.

With a healthy keto diet, however, once a person reaches ketosis in typically two to three days, the gut will naturally produce higher levels of glucagon-like peptide-1 (GLP-1), a hormone that helps to increase satiety and reduce cravings, she added.

It is unlike traditional keto diets, where one may eat a high amount of saturated fats and red meats in place of carbohydrates. Such diets have been linked to increased levels of low-density lipoproteins (LDL), or bad cholesterol.

This keto diet emphasises

healthy fats, such as those found in nuts, seeds, fatty fish and unsaturated oils, as well as lean protein, high fibre from non-starchy vegetables and low-carb fruit. Fat consumption is kept at less than 50 per cent of total daily energy.

Dr Lim said that participants on the diet in an ongoing clinical trial showed no increased level of LDL at the six-month, as well as the one-year mark.

The trial involves 80 participants who are National University Health System staff, like Mr Tan. They all have a body mass index – a measure that uses height and weight to work out if one is at a healthy weight – of more than 27.5. The group assigned the healthy keto diet lost an average of 7.4 kg over six months, while another group assigned a standard low-fat, calorie-restricted weight-loss diet lost an average of 4.2kg.

At six months, all the participants with diabetes or pre-diabetes managed to reduce their blood glucose levels, while 70 per cent of those with high blood pressure saw it improve. Those who followed the healthy keto diet closely also found a reduced dependence on their prescribed medications and overall, a better quality of life.

Participants said they had to make changes to their lifestyle. Madam Aisha Aziz, 48, who had a BMI of 32.9 at 80kg and lost 8.5kg, said she had to stop going out to eat with friends for a while. Now she opts for a starter at restaurants instead of a main course.

Data showed that 80 per cent of the participants were able to maintain their weight for up to a year after they switched to the healthy keto diet, said Dr Lim.

The trial ends in June, after which the healthy keto diet will be made available to NUH patients who have a BMI of 25 and above, Dr Lim said.

She has worked with a local food manufacturer to develop a range of healthy ketogenic ready-to-eat frozen HealthFull meals for those who may not be able to cook a



Dr Lim Su Lin (centre), chief dietician at National University Hospital, with dishes prepared according to the Healthy Ketogenic diet. With her are trial participants (from left) Shawn Tan, Tan Ban Thong, Aisha Aziz and Lilis Suryani. The diet keeps to a net carbohydrate level of 50g or less a day to induce ketosis. ST PHOTO: NG SOR LIUAN

NUH's healthy keto diet emphasises healthy fats, such as those found in nuts, seeds, fatty fish and unsaturated oils, lean protein, high-fibre from non-starchy vegetables and low-carb fruits. Fat consumption is kept at less than 50 per cent of total daily energy.



Mr Tan Ban Thong, a deputy director of human resources, before he started on the Healthy Ketogenic diet. PHOTO: COURTESY OF TAN BAN THONG

healthy keto meal from scratch.

Dr Lim, who has no stake in the business, said she wanted the meals to be tasty so that those on the diet will be motivated to stay on it. Each of the meals contains not more than 17g of carbs and uses lower-sodium salt, she said. A one-week trial package contains 14 meals at \$12.50 each.

"Restricting carbs will create a ketotic state, and this will produce keto acids, which are associated with alterations in perceived appetite and modification of appetite-regulating hormones. This will lead to weight loss," said Dr Kalpana Bhaskaran, the president of the Singapore Nutrition and Dietetics Association.

"The healthy keto diet focuses on low-saturated fats and trans fats, and this will help to reduce the LDL cholesterol levels. This meal plan also focuses on total calorie restriction, ensuring that 50 per cent of calories is from fats, which

is the reason for the weight loss."

A key challenge in the healthy keto diet is how long people can stay on it, particularly as refined carbohydrates form the bulk of the calories in an Asian diet, said Dr Kalpana, who is also the head of the Glycemic Index Research Unit at Temasek Polytechnic.

Protein calories also tend to be more expensive than carb calories, and this diet may not resonate with lower socio-economic groups, she said.

Vegetarians will have limited protein options because legumes and pulses such as soya bean milk, tofu, taukwa, plant-based milk, tempeh and chickpeas all contain substantial amounts of carbs, she said.

The implications of consuming such high fats in the long run are also unclear, said Dr Kalpana.

joyceteo@sph.com.sg
eealex@sph.com.sg