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Headline: Is oat milk good for you? Here is what you are really getting out of it

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- Oat milk has become a trendy option among consumers
- Some choose it because they are vegans, lactose-intolerant, health conscious or environmentally conscious
- A doctor, food scientist and dietician weigh in on oat milk's nutritional value
- They also respond to concerns that oat milk can potentially cause blood sugar spikes

From hip coffee joints to supermarket shelves, oat milk has found its place in the plant-based milk trend over the last few years, as consumers get more choices and pay for more if they want to have their coffee without dairy milk, for instance.

As with any trend, just because it is popular does not always mean that it is altogether beneficial or the choicest pick for all and sundry.

Sure, there are the ethical and environmental concerns surrounding the production of dairy milk. Large amounts of water and land are needed to feed cows, manage manure and process products, with runoff from dairy farms as likely sources of water and air pollution. Cattle and their waste also contribute to greenhouse gas emissions.

Animal rights activists have also shone a light on the abuse of cows, such as excessive breeding and use of hormones to increase milk production.

As far as demand is concerned, oat milk has become a hot pick among consumers who are vegans or lactose-intolerant, driving its popularity.

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Recently, though, it has come under the spotlight when viral online claims surfaced that it causes bloating and blood glucose spikes, leading to debates over its health benefits and risks.

To get a more in-depth picture on oat milk's nutritional value, TODAY spoke to an endocrinologist, dietician and food scientist for their analyses.

#### WHY OAT MILK IS CALLED A 'MILK'

Oat milk is derived from oats, so why is it called "milk" when it is not from an animal source?

In advertising and marketing, using language to influence behaviour can give consumers the idea that they are looking at something touted to be good for them. It pitches the concept of milk being nutritious, but it is not milk.

Associate Professor Seshan Ramaswami, who teaches marketing at the Singapore Management University, told TODAY that the key consideration behind the naming of a product is to "help consumers spontaneously understand the main benefit of using it".

"When plant-based drinks are called 'milk' rather than 'juice' or 'drink', it is to convey the primary use of the product, which is a substitute of milk," he said. This applies also for almond milk or soy milk, for example.

The same goes for other examples of food items such as non-dairy, cream-free ice cream and coconut yogurt.

He did say that this naming convention by plant-based product manufacturers has gotten them into legal battles with producers of conventional dairy products.

However, he does not find it to be a deceptive practice, believing that most consumers would not perceive oat milk as being the same as dairy milk.

#### DOES OAT MILK HELP WITH WEIGHT LOSS?

So for the health-conscious who want to substitute cow's milk with oat milk to lose some weight, does it really work?

One of the standout components of oats is beta-glucan, a type of soluble fibre.

The fibre can increase the feeling of satiety, making one feel full for longer, which may aid in weight management.

However, for people who choose oat milk thinking that it is not as fatty as dairy milk, a doctor said that the effect on weight loss may be modest.

Dr Ester Yeoh, senior consultant endocrinologist at Aspen Diabetes and Endocrine Clinic, explained: "Weight management is more complex than a single food group or a single food item like oat milk.

"For weight loss to be effective and sustained, it is more important to focus on the total calories consumed, a balanced diet to meet one's nutritional needs, and increasing physical activity."

In some people, oat milk may not sit well with the gut.

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Professor William Chen cautioned that high levels of beta-glucan in oat milk could possibly lead to bloating. He is the director of the Future Ready Food Safety Hub at Nanyang Technological University (NTU).

#### WHAT ELSE IS IN OAT MILK?

Prof Chen said that oat milk contains:

- Proteins
- Lipids (fatty, oily or waxy substances)
- Vitamins
- Minerals
- Dietary fibre
- Polyphenols (compounds that are naturally found in plant foods such as fruits and vegetables)

Oat milk has significantly lower protein content than dairy milk.

Ms Ilyana Sarib, senior dietician at National University Polyclinics, broke it down as a comparison:

- Oat milk without added sugar has 0.6g of protein per 100ml
- Soy milk with reduced sugar has 4.2g
- Low-fat milk has 3.8g

Being derived from oat, which is a carbohydrate, oat milk is naturally higher in carbohydrates:

- Oat milk contains 8.1g of carbs per 100ml
- Soy milk has 6.8g
- Low-fat milk has 6.3g

“Consumers should bear in mind that oat milk will not taste the same as cow’s milk. The closer a brand of oat milk tastes to cow’s milk, the more likely it has more additives.

Professor William Chen, director of the Future Ready Food Safety Hub at the Nanyang Technological University”

#### OAT MILK’S IMPACT ON BLOOD SUGAR LEVELS

One of the primary concerns of oat milk consumption is its impact on blood sugar levels.

First, a look at the glycaemic index (GI). It is a value used to measure how much a specific food raises blood sugar levels.

The lower the GI, the lesser it will affect blood sugar levels.

GI ratings are divided into three categories:

- Low is 55 or less
- Medium is 56 to 69
- High is 70 or above

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Prof Chen said: "Oat milk has a glycaemic index of 60 to 70, which is higher than most other plant-based milk and cow's milk."

Cow's milk has a GI range of 30 to 40.

Other plant-based milk usually has a GI of 30 or lower.

- WHY THE HIGHER GI FOR OAT MILK

One of the reasons for oat milk's higher GI rating is its high starch content from the oats.

"It will be broken down into glucose by gut enzymes, potentially raising blood sugar levels," Prof Chen explained.

The process of making oat milk is also a factor.

Oat in its rolled form has a GI of about 60.

"To turn oats into oat milk, enzymes are added to break down the starch in oats, which increases its GI," Dr Yeoh explained.

- A QUICK DRINK, ADDED SUGARS

Consuming oats in liquid form makes it quicker to digest, leading to a faster spike in blood glucose levels.

Apart from its higher carbohydrate content, oat milk's GI is also raised by the type of sugar it contains, namely maltose.

The GI for oat milk may go even higher, depending on whether a brand or manufacturer has added sugars or flavourings.

- A WORD OF CAUTION

#### HOW MUCH OAT MILK SHOULD YOU DRINK?

Dr Yeoh said that when determining how much oat milk to drink, one needs to also look at the portion consumed and any other foods consumed along with it if blood sugar spike is a concern.

She reiterated that in one serving, oat milk has the highest amount of fibre (beta-glucan) compared to almond, soy and cow's milk.

This means that drinking oat milk — other variables not considered — generally leads to a slower blood sugar spike.

Managed properly, oat milk can still be part of a healthy diet, including for people with diabetes or on a diet of reduced carbohydrates.

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Ms Ilyana said: "They would (simply) have to consider the cup of milk as a carbohydrate source in their diet.

"Other milk derivatives such as cow's milk and soy milk are also carbohydrate sources.

"People should still consider including cow's milk or soy milk in their diet to meet their daily recommended calcium intake."

The dietician also advised that it is more important to check if a brand of oat milk contains added syrups or flavourings that include refined sugars, since these would contribute to a blood sugar spike.

Take a closer look at the ingredients list and nutrition information on the product, as buyers should when shopping for any processed food.

"Choose unflavoured options and brands that have a short and simple ingredient list," Ms Ilyana advised.

Dr Yeoh agreed, saying: "Packaged oat milk is likely to contain additives, emulsifiers and preservatives.

"Read the nutritional information panel on the packaging so that an informed choice can be made with regards to the carbohydrate content, added sugars, total calorie content and other additives in one serving of the beverage."



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Another way to determine the amount of additives that a brand of oat milk contains is through taste alone.

Prof Chen said: "Consumers should bear in mind that oat milk will not taste the same as cow's milk.

"The closer a brand of oat milk tastes to cow's milk, the more likely it has more additives."

To make up for some of the nutrients that oat milk lacks naturally, look for brands offering oat milk that has been fortified with calcium and vitamins.

## HOW TO LOWER BLOOD SUGAR LEVELS AND SPIKES

Dr Yeoh offered tips on how to lower one's blood sugar levels and minimise spikes:

1. Eat your food groups in the following order during a meal — fibre (vegetables), followed by protein, then fats and finally, carbohydrates.

Studies have shown that eating vegetables and protein in a meal first leads to lower postprandial (post-meal) glucose and insulin levels. In addition to that, consuming food in this order promotes the release of GLP-1 (glucagon-like peptide 1) gut hormones, which slow down digestion and increase the feeling of fullness

2. Take a walk after meals. This helps muscle cells absorb glucose from the bloodstream
3. Take foods that are high in fibre such as oatmeal, nuts, vegetables, legumes (chickpeas, beans) and fruits
4. Limit refined carbohydrates such as table sugar, white rice, white bread, sodas, breakfast cereals and desserts

## WAYS TO BOOST CALCIUM INTAKE

As a benchmark, adults aged 19 to 50 require 500mg of calcium a day.

For adults aged 51 and above or breastfeeding women, the number goes up to 1,000mg.

To meet one's daily calcium requirement, Ms Ilyana recommended taking one cup of milk a day. As a comparison:

- 250ml of high calcium low-fat UHT (ultra-high temperature processing) or pasteurised cow's milk contains 500mg of calcium, enabling adults aged 50 and below to fulfil their daily intake easily
- 250ml of high-calcium soy milk also contains 500mg of calcium, making it the best alternative for people with lactose intolerance
- 250ml of oat milk contains less calcium— 240mg to 300mg

To further supplement calcium in your diet, Dr Yeoh advised consuming dairy products such as cheese and yogurt.

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For those who are lactose-intolerant or cannot take dairy, they may still get calcium from anchovies, sardines, okra (lady's fingers), green leafy vegetables such as kailan and kale, almonds, seeds and calcium-fortified bean curd.

There are also oral calcium supplements that can bridge the gap if your diet is insufficient.

Looking ahead with regards to the oat milk trend, Prof Chen foresees that fermentation-derived variants will be introduced in future. Such products are produced by fermenting plant proteins.

"This next generation of oat milk will be healthier with a lower GI, because the microbes used in fermentation will consume the carbohydrates," he said.

"They will also have enhanced flavours as the microbes can produce new flavours.

"Lastly, they will be more nutritious because these microbes can produce various micronutrients including short-chain fatty acids (a source of nutrition for colon cells), vitamins and antioxidants."