

Nutrition  
Centre

By TATE & LYLE

# Nutrition trends in ice cream and frozen desserts

A case for permissible indulgence





**Ice cream and frozen desserts with better-for-you nutrition propositions provide an opportunity to offer great taste while maintaining the indulgent attributes that consumers expect.**

**They can help brands meet the growing consumer demand for more nutritious, lower calorie product alternatives.**



Consumer are increasingly looking for better, healthier diets as well-being and importance of maintaining good health is at the forefront of their minds.<sup>1</sup> Ice cream and frozen desserts can be good healthy treat options and part of healthy, balanced diets.

Recent research shows that consumers appreciate when specific nutrients or ingredients, such as dietary fibre, are added to different product categories, including the most indulgent ones such as cakes and ice cream.<sup>2</sup> Consumers have an opportunity to experience a product with enjoyable taste and texture access to valuable nutritional attributes, by making a healthier choice.





Better-for-you frozen desserts allow consumers to enjoy sweet treats without guilt. With ever increasing options of reduced sugar, fewer calories, added fibre and added protein, consumers don't have to choose between a healthy and a tasty treat!"

**Kavita Karnik**

Global Head Nutrition and Regulatory Affairs at Tate & Lyle.

# What do consumers want?

Consumers worldwide enjoy and value indulgent eating occasions and are open to healthier choices:

**4%**

of US adults agree indulgent foods can benefit their overall health<sup>3</sup>

**84%**

of Chinese adult consumers think plant-based ice cream is healthier than dairy ice cream<sup>4</sup>

**50%**

of Thai consumers assume that dairy-free ice cream is healthy<sup>5</sup>

**38%**

of UK ice cream eaters would eat ice cream more frequently if it was lower in sugar<sup>6</sup>

**56%**

of Mexican consumers are most likely to buy ice creams with low and no calorie sweeteners such as stevia, monk fruit, and allulose<sup>7</sup>



# Permissible indulgence is the solution to a consumer's desire for healthier options that are also tasty.

Permissible treats allow consumers to enjoy the pleasure of indulgent food or drink in addition to caring about health and wellness. They can offer consumers choices that are:



Reduced in calories,  
fats, and sugars



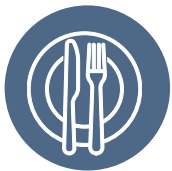
Able to support  
weight management



Suitable for  
lower carb diets



Sources of positive ingredients  
such as dietary fibre



Appropriate  
portion sizes



Smart choices for  
a healthier snack



Mindful of  
environmental impact

# Nutrition and health-related trends in the ice cream and frozen desserts category

Consumers have become more aware of the importance of healthy eating. They are looking for balanced options for different eating occasions. Within the ice cream and frozen desserts category, there are three main nutrition-related trends that will help consumers to introduce permissible indulgence in their diets.





## Better for you: “desirable” nutrients *in* and “less desirable” nutrients *out*

The better-for-you category encompasses food and beverage products in which beneficial ingredients are added while less favourable ones are reduced or eliminated.



Products reduced in sugar, fat, and calories can help consumers meet their needs for a healthier diet



Improved nutrition composition, including reduced sugar and better-for-you nutrients such as fibres and proteins, is important for consumers trying to consume a healthier diet



Formulations with improved nutrition are a key to guilt-free indulgence





Whether a food, drink or meal is better-for-you has a lot to do with the ingredients and nutrition they bring to the diet - or the lack of it. Replacing sugars with fibres, for example, impacts the nutritional dimension and helps consumers to make better choices to suit their health objectives.”

**Renata Cassar**

Latin America Head of Nutrition at Tate & Lyle.

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## Health and functional benefits: positive effects on various aspects of health through fibre fortification.

Among consumers' main areas of interest are digestive, immune, and bone health benefits. They also want greater emotional and physical well-being.<sup>8</sup>

### Benefits valued by consumers include



Digestive health benefits and superior gastrointestinal tolerance



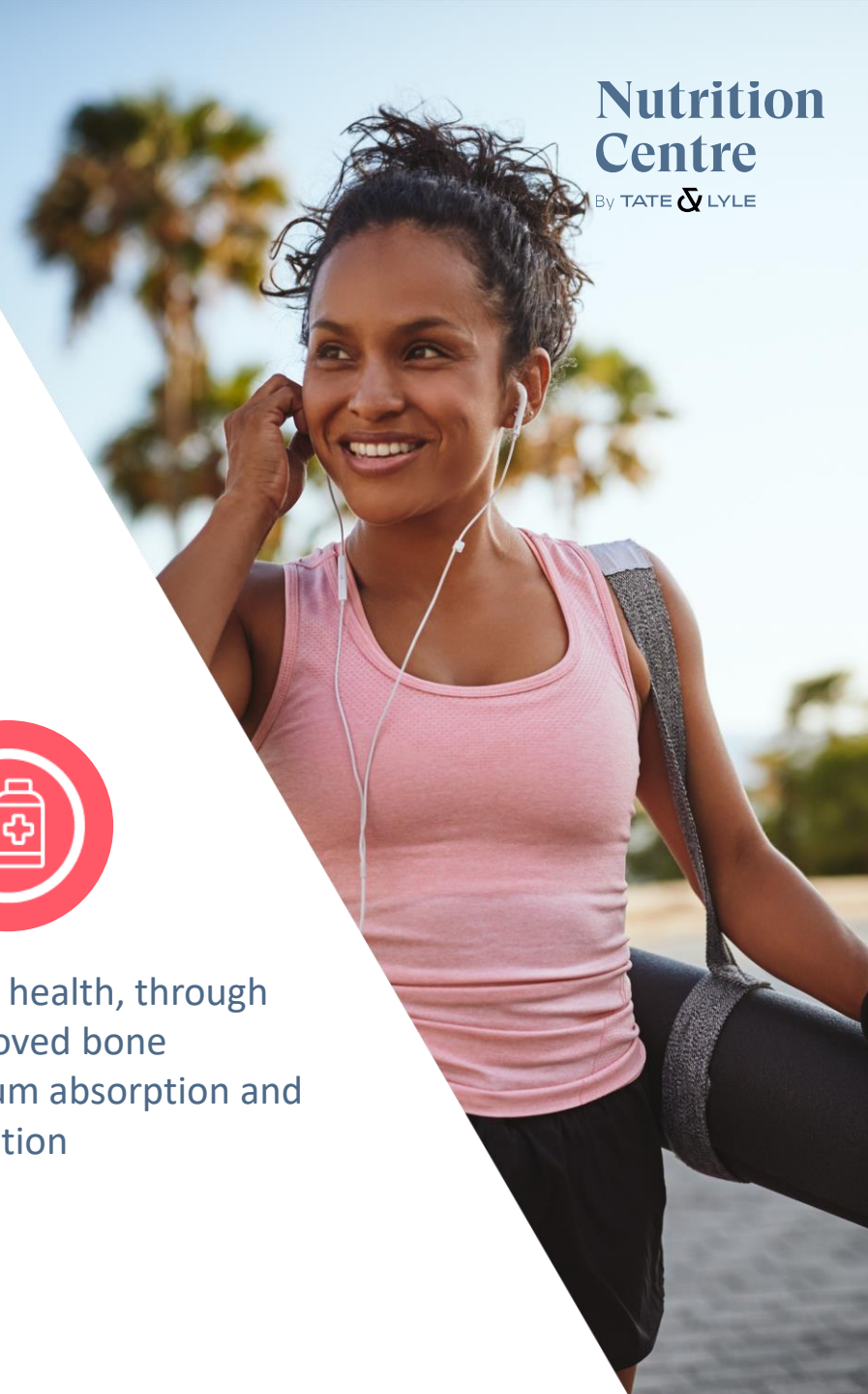
Prebiotic effect with further potential impact on immune health



Healthy body weight with lower calorie and keto-friendly options



Bone health, through improved bone calcium absorption and retention





The benefits of fibre go beyond gut function. They can be used, for example, as prebiotics to support bone and immune health. These benefits are relevant worldwide for consumers and food producers, including ice cream and frozen dessert manufacturers, who can add health benefits to their products and meet modern consumer demand.”

**Thomas Teh**

Nutrition Scientist, Asia and Pacific Region at Tate & Lyle.





**Plant-based benefits: vegan, vegetarian, and other products that are reduced in animal-derived ingredients are considered to be more sustainable options.**

The fact that ice cream is often made with ingredients of animal origin can be conflicting for consumers who would like to enjoy the treat but are more aware of environmental issues.<sup>3-5</sup>

Plant-based products can appeal to health and environmentally aware consumers. Reducing animal-derived ingredients, while increasing others such as fibres and plant proteins, can result in more responsibly produced food that is more attractive to these consumers.<sup>3-5</sup>



## Manufactures can:



Use fibre or plant protein to reduce animal-derived ingredients



Eliminate or reduce animal-derived ingredients to gain a vegan or vegetarian accreditation



Blend plant-based ingredients (fibre and plant protein) with dairy ingredients for flexitarian consumers



Contribute to a sustainable diet and provide a vegan-friendly alternative





Flexitarian products, known as semi-vegetarian or plant-forward products in some markets, are growing in popularity. They fit into a flexible eating style that emphasises the addition of plant or plant-based foods and beverages, while animal-derived products are consumed less frequently and/or in smaller amounts.”

**Ieva Laurie**

Senior Principal Nutrition Scientist, Europe, Middle East, and Africa at Tate & Lyle.



# How can ice cream and frozen desserts be aligned to health and nutrition trends and consumer desires?

There is a range of opportunities for companies to deliver solutions aligned with nutrition and health trends in the ice cream and frozen dessert category.





Fibre and plant protein have been among the top five ingredients perceived as most healthful and that consumers have been trying to consume more of in the last few years, according to IFIC research.”<sup>9</sup>

**Melissa Kaczmarczyk**

Dr. Principal Nutrition Scientist, North America at Tate & Lyle.

# Why consider adding fibres and plant proteins to ice cream or frozen desserts:



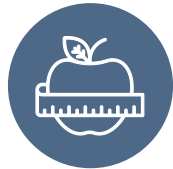
They are ingredients positively perceived by consumers



They can be added to plant-based, vegan, and environmentally friendly products



They can help reduce sugars, fat and calories, supporting favourable glycaemic response



Fibres and plant protein can be used in lower calorie or ketogenic diets and contribute to a healthy body weight



Specific fibres can be used as prebiotics to support gut, bone and immune health



# Sweeteners and fibre for low/no sugar ice cream and frozen desserts

## Challenge:



Recommendation is to significantly reduce sugar intake, with added sugars contributing to not more than 10% of total daily energy intake.<sup>10</sup>

## Nutrition and product development-related considerations:



Low and no calorie sweeteners (LNCS) such as sucralose and stevia are used in very small amounts. These ingredients provide sweetness, while adding negligible calories.<sup>11</sup> However, they cannot provide other properties conferred by sugars, essential to obtain a creamy, smooth texture in ice cream and frozen desserts.



Soluble fibres have typically been used to provide bulking and mouthfeel, perfectly combined with LNCS that round up sweetness levels.<sup>11</sup>

# Sweeteners and fibre for low/no sugar ice cream and frozen desserts

## Nutrition and product development- related considerations:



In addition to contributing to sugar and calorie reduction, fibre and LNCS add texture and sweetness, respectively, without affecting glycaemic response, offering a good alternative to those who want to maintain healthy blood glucose levels.<sup>11</sup>



A number of stevia sweeteners can replace sucrose without adding aftertaste, even in high-sugar applications such as ice cream - a great strategy to combine good taste and healthiness.<sup>12</sup>



Food choices that include the LNCS can help control caloric and carbohydrate intake and support body weight maintenance, even more when associated with a balanced fibre-rich diet. Reducing body weight can positively contribute to metabolic health and reduce the risk of cardiovascular diseases.<sup>13</sup>



A new generation of sweeteners known as rare sugars, such as allulose, offer similar glycaemic management benefits. These ingredients also provide other functionalities similar to sugar.<sup>14,15</sup>

# Tate & Lyle's solutions

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**PROMITOR® Soluble Fibre and STA-LITE® Polydextrose** are excellent options to replace sugar in ice cream and frozen desserts while maintaining the required bulk, viscosity, and mouthfeel to ensure consumer enjoyment. Both ingredients support healthy blood glucose levels, producing a lower blood glucose rise after consumption compared to sugar-containing foods and beverages.<sup>16</sup>

**SPLENDA® Sucralose, TASTEVA® Stevia Sweetener and TASTEVA® M Stevia Sweeteners** along with other options from our range of stevia portfolio, **PUREFRUIT™ Monk Fruit Extract**, and **DOLCIA PRIMA® Allulose** provide sweetness with negligible to zero calories while supporting a healthy glycaemic response.



## **SPLENDA® Sucralose**

A LNCS that starts life as sucrose and is then processed to create sucralose – 600 times sweeter, but without the calories. Its ability to maintain sweetness, through a wide variety of food processing conditions, pH, and over long shelf life, makes SPLENDA® Sucralose a reliable tool in a huge range of products. The sugar-like taste makes it ideal for manufacturers looking to create low-calorie products that appeal to consumers.



**Frozen treats that  
bring nutrition  
attributes that can  
support health  
and wellness**

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# Frozen treats that bring nutrition attributes that can support health and wellness

## Challenge:



As consumers are more interested in nutrition facts as well as in healthy indulgence, the challenge is to add ingredients that enhance nutrition profile while maintaining the taste that consumers like.

## Nutrition-related considerations:



There is a large gap in fibre intake worldwide, as average individual intakes are well below the recommended amounts.<sup>16</sup>



Fibres have a variety of functional properties with potential health benefits, making them a great addition to many food and beverage products.<sup>17-20</sup>



Fibre fortification of ice cream is an effective way to enhance nutritional aspects.<sup>11</sup>



Prebiotic fibres have the potential to positively impact gut health, stimulating good bacteria growth and activity in the gut environment in ice cream recipes.<sup>11</sup>

# Tate & Lyle's solutions

**PROMITOR® Soluble Fibre** and **STA-LITE® Polydextrose** are the perfect choices for fibre fortification helping to bridge the fibre gap in the diet. They demonstrate various physiological health benefits, promoting regularity whilst being well tolerated.<sup>21</sup>



PROMITOR® Soluble Fibre promotes healthy laxation and is well-tolerated even at high intake levels. It has excellent digestive tolerance, also showing prebiotic properties, which may support other health benefits, such as increasing calcium absorption and bone calcium retention.<sup>18-20</sup>



**Lower  
carbohydrate,  
higher protein,  
keto-friendly  
alternatives**



# Lower carbohydrate, higher protein, keto-friendly alternatives

## Challenge:



Followers of the keto diet are seeking offerings that provide a very low percentage of calories from carbohydrate. Part of the challenge with keto diets is also that they are low in fiber. Ice cream and frozen desserts can be part of a keto-friendly, when formulated with the right ingredients in the right proportions, still enabling these products to be delicious and enjoyable.<sup>22</sup>

## Nutrition-related considerations:



Reducing the caloric value of desserts such as ice cream may benefit individuals who follow the keto diet.<sup>22</sup>

# Lower carbohydrate, higher protein, keto-friendly alternatives

## Nutrition-related considerations:



Consuming specific dietary fibres can help decrease the glycaemic response when used to replace available carbohydrates, while LNCS help reduce carbohydrate and calorie intakes.<sup>23</sup>



Soluble fibre can also be used to reduce constipation, commonly associated with adherence to a keto diet.<sup>24</sup>



The formulation of ice cream and frozen desserts with low and no-calorie sweeteners is interesting both for people with type 2 diabetes and for those seeking a healthy lifestyle and looking for an ice cream option with no added sugar.<sup>12</sup>

# Tate & Lyle's solutions

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**PROMITOR® Soluble Fibre** and **STA-LITE® Polydextrose** show low glycaemic responses, contribute to low net carbs and calories, and can fit into keto diets.

Ingredients from the **PROMITOR® Soluble Fibre range** and **STA-LITE® Polydextrose** can also be used to reduce constipation, which is commonly associated with adherence to keto diets.

**DOLCIA PRIMA® Allulose** provides the added benefit of zero net carbohydrates and is ideal for replacing sugars.

Sweeteners such as **TASTEVA® Stevia Sweeteners** and **TASTEVA® M Stevia Sweeteners**, **SPLENDA® Sucralose**, **PUREFRUIT™ Monk Fruit Extract**, and **DOLCIA PRIMA® Allulose** can also be helpful in moderating fully caloric carbohydrate intake, which would align with a keto or low-carbohydrate diet plan.



## **DOLCIA PRIMA® Allulose**

As allulose is minimally metabolised by the human body, it does not increase blood glucose or insulin responses. By not providing calories or carbohydrates, it helps to generate a calorie deficit, which can contribute to maintaining and achieving a healthy body weight. Therefore, it is also useful for inclusion in low-carbohydrate diets including 'low carb' and 'keto'.

# Plant-based and non-dairy frozen desserts



# Plant-based and non-dairy frozen desserts

## Challenge:



There is increasing consumer desire for reduced animal-derived ingredients, including reduction or elimination of milk fat and milk proteins from their diets. At the same time, consumers still want to enjoy pleasurable desserts. The challenge with plant-based frozen desserts and ice cream alternatives is producing a satisfying final product with a smooth texture and silky mouthfeel.

## Nutrition-related considerations:



Dairy-based products have been long seen as 'good for you', contributing many nutrients to the diet.<sup>25</sup>



Increased prevalence of lactose malabsorption and other health impacts, environmental and animal welfare concerns, among other reasons, are driving consumers away from animal-origin foods.<sup>26</sup>



Plant-based, non-dairy ice cream alternatives may contribute not only to environmental aspects but also to overall health and wellness. A meta-analysis of studies looking at the potential benefits of this eating style has reported a beneficial effect of plant-based diets on various aspects of health, including cardiometabolic and gut health.<sup>27</sup>



Plant proteins can provide health-promoting effects, including favourable glycaemic response, appetite, cardiovascular and muscle health.<sup>28</sup>

# Tate & Lyle's solutions

**Artesa® Chickpea Protein** and combinations of plant protein blends offer functional solutions for plant-based ice cream alternatives and other frozen desserts, providing a good balance of amino acids with protein quality in mind.

Tate & Lyle's wide range of stevia sweeteners offer natural sweetening options that can be incorporated into plant-based and non-dairy frozen desserts, bringing sweetness and reducing calories. Steviol glycosides, the sweet components of stevia ingredients, do not contribute any calories or impact blood glucose levels. The new generation of stevia sweeteners can be used as plant-based, no-calorie sweetener options to replace sucrose without adding a bitter aftertaste, even in high-sugar applications such as plant-based ice cream and other frozen desserts.

**PUREFRUIT™ Monk Fruit Extract** is a plant-based, no-calorie sweetener obtained from monk fruit grown in the sub-tropical climate of Asian hillsides that can be easily used to reduce calories in plant-based products. It does not increase total daily energy intake, blood glucose or insulin response. In addition, it does not impart any aftertaste and can easily replace sugar.



Tate & Lyle's broad range of stevia sweetening options, including **TASTEVA®**, **INTESSE®**, **OMEGA®** and **OPTIMIZER STEVIA® Sweeteners** deliver on the clean-label trend while making great-tasting, 'better for you' food and beverages. As a plant-based sugar alternative, stevia sweeteners are among the most popular and fastest-growing low-calorie sweeteners globally.

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