A sweet challenge:

Insights Report

Throughout history, sugars have been used to provide sweetness, enhance product functionality and ensure food safety. More recently, however, they've come under fire as government agencies, lawmakers, health professionals and the media have all raised concerns about diet-related health issues.

In response, consumers are reevaluating their sugars consumption. One recent study found that 40% of European consumers said they had decreased sugars consumption over the past two years, noting that more than a third of shoppers considered sugars "bad".[1] Those attitudes are having ripple effects throughout the food and beverage industry, encouraging brands to rethink their sweetener choices.

Updated 02/21

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A changing regulatory landscape

While a myriad of factors has led to sugar's tainted image, the shifting regulatory environment certainly played a central role. In Europe, nearly every country has adopted some form of national dietary guidelines related to sugar. Most call out specific products like soft drinks, and many set recommended limits for added sugar intake – usually 10 percent of total energy. Just five countries – Luxembourg, Czech Republic, Slovakia, Lithuania and Russia – have no dietary guidelines.

Adding to the pressure, many European countries have launched or plan sugar reformulation initiatives. The United Kingdom, with its goal of 20% reductions by 2020 (compared to 2015), implemented one of the most ambitious sugar reduction strategies in Europe.[2] Taxes on sugary foods have also gained momentum, as a growing number of European countries have implemented or are considering the introduction of levies. In most countries, the focus is on soft drinks.[3]

Other efforts to temper consumers' appetite for sugar containing foods and beverages have included voluntary front-of-package labeling schemes, along with a range of restrictions on marketing to children, including vending machine limits – or outright bans – in schools.

GUIDELINES FOR DIETARY INTAKE OF SUGARS

FRANCE	**Sugar intake recommendation:** Proposed maximum limit of total sugars 100g/day; aimed at reducing consumption of added sugars
GERMANY, AUSTRIA, SWITZERLAND	**Sugar intake recommendation:** Sugar-sweetened beverage consumption should be reduced; only occasionally consume sugar and food or beverages containing sugars
IRELAND	**Sugar intake recommendation:** Excessive consumption of sugar should be avoided.
NETHERLANDS	**Sugar intake recommendation:** Minimize consumption of sugar containing beverages
NORDIC COUNTRIES	**Sugar intake recommendation:** Recommended intake of added sugar <10% energy
SPAIN	**Sugar intake recommendation:** Moderate, occasional consumption recommended; sweets <4 times / day
UK	**Sugar intake recommendation:** Average population intake of free sugars 5% energy; sugar-sweetened beverages should be minimized

Source: Buyken AE, Mela DJ, Dussort P, Johnson IT, Macdonald IA, Stowell JD, Brouns F: **Dietary carbohydrates: a review of international recommendations and the methods used to derive them.** *Eur J Clin Nutr* 2018, **72:**1625-1643.

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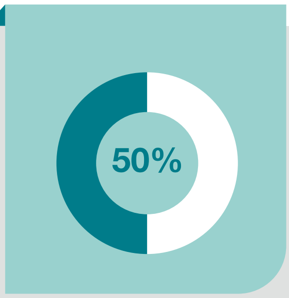
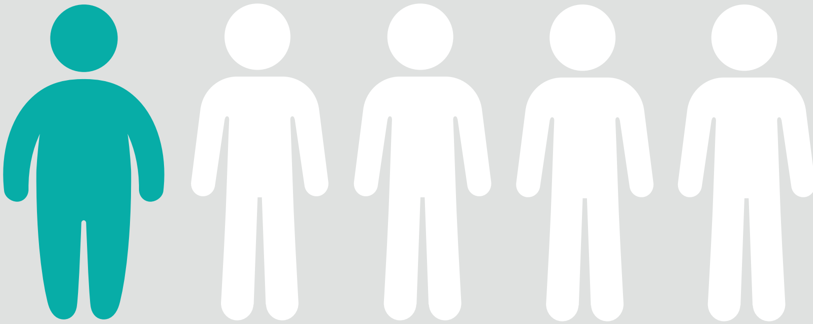
Sugars and health connection

The World Health Organization (WHO) estimates **more than half** of adult men and women are overweight, with **one in five** considered **obese**.





The numbers aren't much better for children – according to WHO statistics, one in three 11-year-olds is overweight or obese.[4] Given the long list of health effects associated with excessive weight – from high blood pressure and type 2 diabetes, to stroke, sleep apnea and coronary heart disease – there are plenty of reasons to encourage healthy weights.[5]

But are sugars really to blame? it's worth noting that the human body does not differentiate between sugars that occur intrinsically in fruit and vegetables, and those that are added to foods and beverages. Regardless of how they came to be in our food, all sugars provide 4 kilocalories of energy per gram. That said, caloric sweeteners are a source of calories and can contribute to weight gain when the overall calorie consumption is above the burned amount of calories over a sustained period of time. In addition to providing excess calories, overconsumption of sugars can also lead to poor quality diets, with low micronutrient intake levels.

So, while sugars can be part of a varied and healthy diet when eaten in moderation, and consumed in combination with active lifestyles, many regulatory bodies – including the WHO – are advocating for limits. In both adults and children, the WHO strongly advises reducing free sugar* intake to less than 10% of total energy consumption, with the additional conditional recommendation that free sugar intake remain below 5% of total energy intake.[6] Adding to the pressure on the food and beverage industry, the European Food Safety Authority is expected to announce its own sugar intake opinion in 2021.[7]

One thing is clear: dietary guidance consistently advises consumers to reduce or limit their consumption of caloric sweeteners. While it might be more relevant to evaluate the health effects of sugars by considering broader caloric intake and lifestyle factors, it's apparent that sweetener concerns will continue to spread.

* The WHO defines free sugars as monosaccharides and disaccharides added to foods and beverages, as well as sugars naturally present in honey, syrups, fruit juices and fruit juice concentrates.

Consumer attitudes sour on sugars

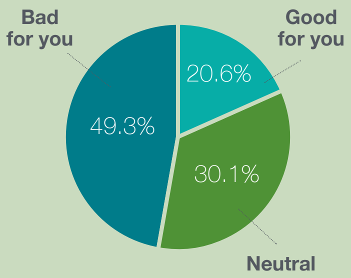
Regulators and policy makers are being heard by consumers, who are striving to make more healthful choices. It seems no category is immune. Eight in ten global shoppers believe food and beverage segments like soft drinks, snacks and candy should be made as good for you as possible.[8] For many, sugar levels are a key factor in that determination. Nearly 95% of global shoppers say reducing sugars makes food and beverages seem at least somewhat healthier, and over half of shoppers believe it makes them seem a lot healthier.[9]

Sugars are the first item consumers look for on nutrition labels – above calories[10], and according to proprietary research from Cargill, it's also the most commonly avoided ingredient.[11]

Sugars avoidance is on the rise

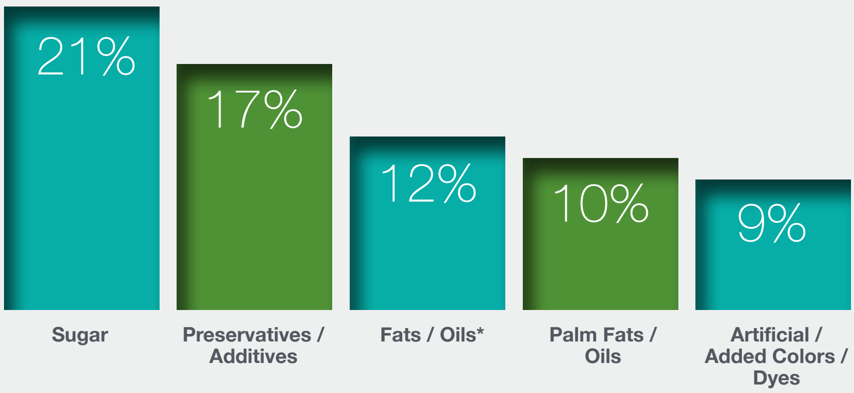
Reducing sugars is top of mind for European shoppers – 54% say reducing sugar has become more important in their diet over the last year. The growing interest in sugars reduction surpasses consuming more natural foods, adding fiber and avoiding processed foods.[13]

Europeans perceive sugar negatively



Source: Cargill IngredienTracker™ Proprietary European Consumer Research, 2020.

Most commonly avoided ingredients (top of mind)

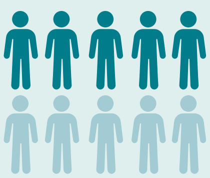


* Excludes palm & transfats
Source: Cargill IngredienTracker™ Proprietary European Consumer Research, 2020.

In its research, the market consulting firm HealthFocus International found consumers were most open to reducing their sugar consumption by choosing food and beverages that were less sweet.[12] While their study suggested lower interest in replacing sugar with alternative sweeteners, it's likely a reflection of consumers' lack of awareness and understanding of these options. As a result, it represents opportunity for brands who are transparent in their sugar reduction efforts and their alternative sweetener choices.

WHAT ARE YOU DOING TO REDUCE SUGARS IN YOUR DIET?

REDUCE



5 out of 10
choosing foods/ beverages that are **less sweet**

4 out of 10
choosing **unsweet** foods/ beverages

REPLACE

2 out of 10
choosing more foods/ beverages with **non-sugar sweeteners**

2 out of 10
choosing foods/beverages that **substitute other flavors** for sugar

* Base: Respondents who say reducing sugars has become more important in their diet over the last year
Source: HealthFocus International, 2018.

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Companies pledge for sugars reduction

As consumers look to reduce their sugars intake, food and beverage manufacturers are scrambling to respond. A number of FMCG companies have made sweeping commitments to cut back on sugars. Their progress is evident in the proliferation of sugar-related front-of-pack claims. According to Innova, over the past five years, European product launches with sugar claims* have seen a 14% combined annual growth rate, as brands race to position themselves for today's health-conscious shopper.[14]

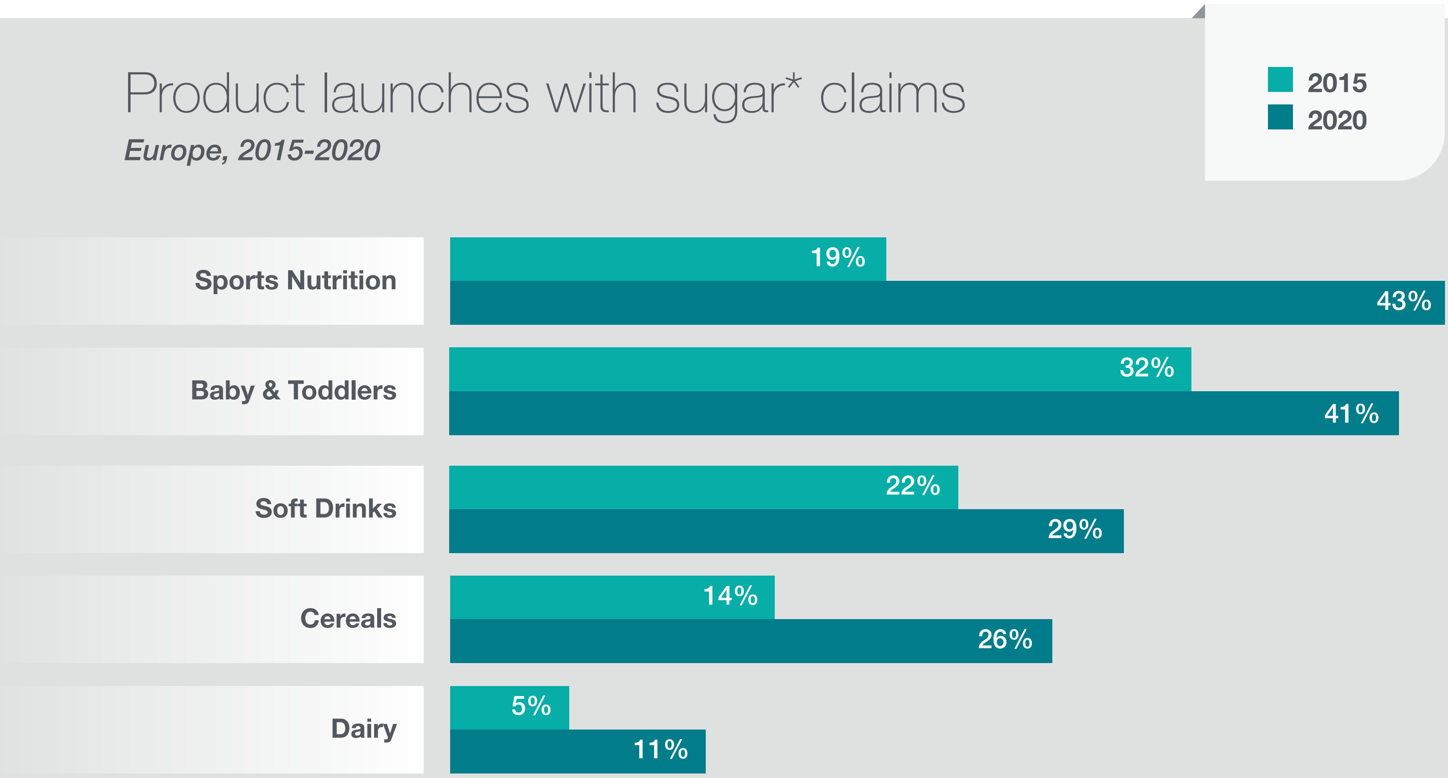
It's worth noting that the adoption of sugar claims varies by application. For some categories, marketers are taking a "stealth health" approach to sugar reduction, with smaller cuts and fewer label claims. In other segments, manufacturers are boldly using claims as a means to entice sugar-wary shoppers.

Sports nutrition and baby/toddlers foods are among the most active categories launching new products with sugar claims. Roughly 40% of all new product development in these segments comes with at least one on-pack sugar claim. Cereals, soft drinks and dairy are other categories showing strong growth in new products with sugar claims.[15]

Products marketed toward children represent another natural space for brands to explore sugar reduction. Research from Mintel found that parents in the United Kingdom cited no-sugar-added (57%) and low- or reduced-sugar (47%) as the top factors in their beverage purchases for children, well above other considerations like low price (35%).[16]

Product launches with sugar* claims

Europe, 2015-2020



Source: INNOVA, 2015-2020YTD nov, All categories excluding clinical nutrition, pet food, supplements, sugar and sweeteners.

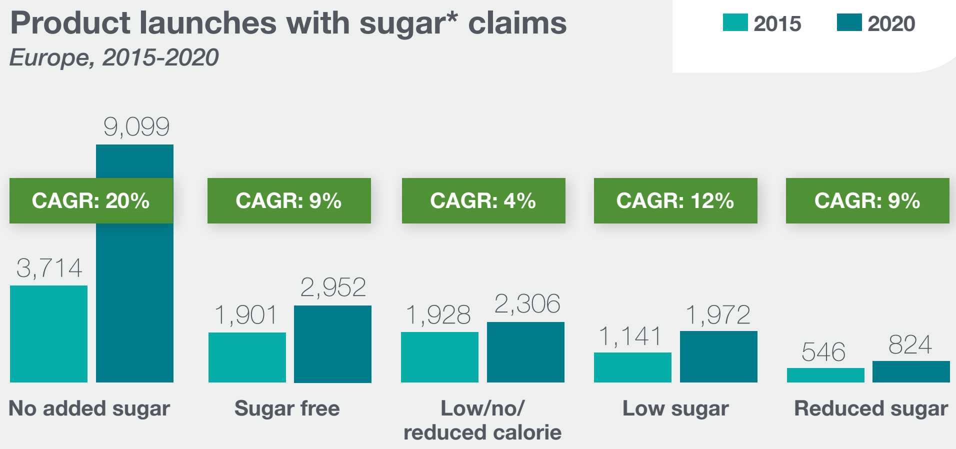
*Sugar claims = No added sugar, Low sugar, Sugar-free, Reduced sugar and/or No/Low/reduced calorie

Finding sweet solutions

For formulators considering sugar reduction, the first step is determining just how low to go. No-added-sugar claims are still the most popular, and also show the fastest growth. Launches with low-sugar claims show the second highest growth.[17]

Product launches with sugar* claims

Europe, 2015-2020



Source: INNOVA, 2015-2020YTD nov, All categories excluding clinical nutrition, pet food, supplements, sugar and sweeteners.

Stevia Spotlight

Stevia is a natural fit as consumers look for plant-sourced alternatives to sugar. An herb native to Latin America, the stevia plant contains molecules that are 150 to 300 times sweeter than sugar. Since EU approval in 2011, stevia-based sweeteners have quickly become a favorite high-intensity sweetener as they are an easy-to-use, heat-stable, zero-calorie option for a wide range of applications.

Early on, higher usage levels proved challenging, until Cargill harnessed the unique interactions between stevia's 40-some different sweet molecules. We developed a proprietary model to predict optimal interactions between the stevia plant's many sweet components, resulting in a clean, sweet taste.

By minimizing the bitterness and licorice notes previously common at high concentrations, our ViaTech® stevia leaf extract enables sugar reduction of up to 70% and more.

Once sugar-reduction targets are set, then the real work begins. After all, sugars play many roles in formulations, impacting taste, appearance, physical and textural attributes, shelf life and more. No single ingredient will replicate all of sugar's functional benefits.

Adding to the challenge, in today's label-conscious environment, not just any substitute will do. Artificial sweeteners are not always a preferred alternative, and consumers may shy away from newer, less familiar ingredients. Determining which sweetener to use will depend on many factors, including product application, ingredient availability, price, regulatory requirements and consumer perceptions.

52%

rate artificial sweeteners as "bad"

90%

think foods made without artificial sweeteners are at least somewhat healthier

47%

say foods made without artificial sweeteners are a lot healthier

Source: HealthFocus International, 2020 YTD.

Against this backdrop, nature-derived **stevia** sweeteners are the clear winner, with product launches containing the sweetener growing YoY and reaching more than 6000 new products globally in 2020YTD, according to Innova Market Insights data. And little wonder. Stevia has a lot going for it from a product development standpoint, as well as with consumers. According to Cargill proprietary research, European consumers perceive stevia as one of the healthiest sweetener options available.[18]

Lower-calorie **polyols** are also finding a place in low-sugar and no-sugar-added products. With just 2.4 kilocalories per gram, they can help replace both the bulk and sweetness of sugar. Maltitol is the closest to sucrose in terms of relative sweetness, while sorbitol is often used as a humectant, to keep products soft and moist longer.

Erythritol, the only zero-calorie option in the polyol family, continues to gain popularity, with global launches using the ingredient more than tripling since 2015.[19] It's naturally present in certain fruits and vegetables, and is made commercially through fermentation. Erythritol is often paired with high intensity sweeteners like stevia, helping to replace sugar's bulk and rounding out stevia's flavor profile.

The Cargill advantage

It's clear that product formulators now have a multi-pronged mandate to offer great tasting products with less sugars, yet landing on a winning formula is no easy task. Regulatory constraints, calorie reduction goals, clean label expectation, cost implications and processing realities all add to the job complexity – yet consumer demands for great taste and texture remain unwavering. Cargill can help brands navigate these challenging waters, partnering with them to identify the best sweetening solution for their unique product, market and consumer segment.

We offer a broad range of **nature-derived sweetening solutions**, with full-, low- and no-calorie options, including cereal sweeteners, polyols, erythritol and stevia. In addition, we can help product developers replace sugar's bulk and functionality. **Bulking agents** like maltodextrins or soluble fibres can replace the mass and volume lost when sugar is removed. As an added benefit, fibres may also improve the nutritional profile of the final product. Further textural adjustments may be needed, and our extensive portfolio of **texturizers**, including starches, pectins and carrageenan, can help address mouthfeel and other organoleptic issues.

By collaborating with Cargill, brands gain access to our broad ingredient toolbox, deep technical expertise, and proprietary consumer understanding, further supported by our nutrition, sensory and regulatory specialists.

Sugars reduction is here to stay

The pressure for brands to reduce sugars will only increase, as the overconsumption of calories – including those from sugars – continues to have a negative impact on public health. In this environment, sweetener choices will face heightened scrutiny, as consumers seek products made with nature-derived ingredients that support lower calorie and sugar content, without compromising on taste, texture and other product attributes.

To be successful, brands need a deep understanding of what consumers want in their particular product. Once sugar-reduction goals are set, partnering with a knowledgeable ingredient supplier can help address formulation challenges and meet taste expectations, all while using simple, label-friendly ingredients that truly resonate with consumers.

Learn more about Cargill's sugar reduction ingredients and expertise at **cargill.com/food-beverage/emea/calorie-and-sugar-reduction.**

References

[1] HealthFocus International, "Navigating the World of Sweeteners," 2018.
[2] Sugar reduction and wider reformulation - GOV.UK (www.gov.uk)
[3] Cargill compiled data
[4] World Health Organization, "The Challenge of Obesity – Quick Statistics." http://www.euro.who.int/en/health-topics/noncommunicable-diseases/obesity/data-and-statistics
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[8] Ibid, HealthFocus International.
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[11] Cargill IngredienTracker™, proprietary consumer research, 2020.
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[14] Innova Database, January 2021. All categories excluding clinical nutrition, pet food, supplements, sugar and sweeteners.
[15] Ibid, Innova.
[16] Mintel, "Find a Positive Role for Sugar in the Diet," July 2018.
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[18] Cargill IngredienTracker™, proprietary consumer research, 2020.
[19] Nielsen, 52-week period ending June 15, 2019.

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