

From Sugar to Sweet:

White paper on the
evolution of gummies for
modern consumers

By: Funtrition®



The Global Sugar Challenge

Globally, consumers are realizing that sugar, a traditional ingredient used in food, beverages, and recipes, is linked to health problems such as obesity and diabetes. According to the World Health Organization (WHO), **high sugar consumption contributes to over 2.5 billion adults being overweight¹, with 830 million affected by diabetes in 2022².** The food industry is committed to responding to these challenges and finding solutions to key market needs, such as:



How do we find alternative ingredients that don't cause health problems?



How do we replace an ingredient that is widely used and fulfills its purpose?



How do we substitute an ingredient that produces energy, warmth, and provides fun and delightful sensations?

According to Mintel's 2024 UK Sugar and Gum Confectionery Market Report, there is a **significant increase in consumer interest in healthier alternatives, driving innovation in sugar-free and reduced-sugar products³.** Additionally, the US Non-Chocolate Confections Market Report 2024 highlights that the non-chocolate confectionery sector is thriving as consumers look for affordable and simple ways to satisfy cravings and boost their mood, with an increased demand for sugar-free options⁴. These insights suggest a growing opportunity for brands to innovate in the sugar-free gummy segment.

For the gummy technology, this trend has been an inspiring challenge, as it requires innovative approaches to replicate sugar's unique properties. **Gummy formulations must balance sweetness, texture, and functionality, all while adhering to consumer demands for health-conscious, natural, and enjoyable products.**

Funtrition[®], a leading provider of gummy technologies, has tackled this by integrating cutting-edge ingredient alternatives and advanced processing techniques to deliver **high-quality gummies that retain the sensory appeal of traditional sugar-based products,** through the perfect mix between art and science, supported by a standardized flexibility model.



Market change reality

Global initiatives are driving significant changes, with **sugar reduction** becoming a key focus for both manufacturers and consumers.



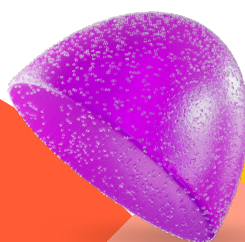
Over 50 countries have implemented measures such as **taxes and front-of-pack labeling initiatives**, which are gaining attention by making it easier for consumers to identify unhealthy products and influencing manufacturers through restrictions on the marketing of such foods.⁵

Consumers are increasingly seeking to **reduce their sugar intake**, yet taste remains a critical factor. Sweetening solutions that closely match the taste profile of sugar are, therefore, highly desirable.⁷



Proactive health concerns, including both future and present challenges, now drive sugar reduction efforts more than weight loss alone. Consumers recognize and choose reduced sugar products as healthier alternatives⁸, with weight gain emerging as the second concern.⁹

The FDA is joining this global effort by **proposing a new front-of-package (FOP) labeling system**. The "Nutrition Info" box will provide, at a glance, ratings of key nutrients such as saturated fat, sodium, and added sugar using a simple "Low," "Med," or "High" scale⁶. This initiative aims to empower consumers to quickly assess a food's nutritional value and make healthier choices.





Sweetening **Naturally – Alternatives** to Sugar

As consumer preferences evolve, the demand for healthier, more natural sweetening options has never been higher. **Today's health-conscious consumers expect their indulgences to align with their wellness goals, and sweet alternatives are at the forefront of this movement.** In gummy innovation, the challenge lies in replacing sugar while **preserving the sensory qualities—taste, texture, and enjoyment—that define a delightful gummy experience.** By harnessing science and nature, innovative sweeteners are bridging the gap, creating new opportunities to deliver guilt-free indulgence. Below, we explore key sugar alternatives widely popular and explored by **Funtrition®**:



Allulose

Allulose or d-psicosa is a monosaccharide that is present in small amounts in wheat, fruit and other types of foods. It is possible to synthesize allulose through enzymatic epimerization of fructose into d-psicose. It is also a rare sugar composed of 70% sweet and provides only 10% of calories that saccharose provides.

Unlike other sweeteners, this rare sugar gives the same sensorial and functional benefits as sugar. **At Funtrition®, we have successfully developed and launched products with allulose, aiming to naturally replace 100% of sugar.** Allulose is often used in combination with **PEC-G™ technology**, enhancing plant-based and natural product formulations.



Stevia

Stevia, a zero-calorie sweetener, is known for being **250-300 times sweeter than sugar**. However, its use can present challenges, such as a slightly bitter or licorice-like aftertaste, which can require masking agents in formulations. These limitations must be carefully met to ensure the product meets consumer expectations for taste. Derived from the Stevia rebaudiana plant, it is composed of glucosides that are not metabolized by the human body, which is why it **doesn't provide calories or affect glucose levels in the bloodstream, making it ideal for people with diabetes**. Stevia does offer a natural and effective alternative to sugar. Currently, **over 80% of sugar-free gummies developed at Funtrition® utilize stevia as a high-potency sweetener to achieve optimal sweetness.**

Stevia not only provides a natural, zero-calorie alternative but also allows us to meet the growing consumer demand for healthier and **guilt-free indulgences without compromising on taste.**



Polyols

These industrially produced carbohydrates include sorbitol, maltitol, xylitol, isomalt, mannitol, and erythritol. **Polyols protect teeth from cavities, provide low or zero calories, and don't affect glycemic levels.** However, they cannot be labeled as "natural" and are unsuitable for products marketed as 100% natural.

Additionally, they are significantly more accepted in the market due to their lower risk of adverse effects compared to other artificial sweeteners available.

At Funtrition®, these ingredients are widely used to reduce or replace sugar and are among the most utilized, either alone or in combination with other natural sugar substitutes. Their versatility allows them to be seamlessly incorporated across all Funtrition® gummy technologies (more information below).



Tapioca Fiber (Fibersmart)

Tapioca fiber is a soluble dietary fiber with prebiotic properties, derived from tapioca. It falls into the category of inulins and fructooligosaccharides (FOS) due to its molecular similarity in blends.

At Funtrition®, it is widely used in pectin-based gummies due to its excellent stability within the gummy matrix. Compared to polyols, it provides a softer texture, making it a valuable ingredient for enhancing product quality. Additionally, it is an ideal complement for probiotic formulations, as it helps achieve the necessary dosage to support gut health.



Inulin is a storage carbohydrate that can be found in a variety of plants, vegetables and fruits like roots, figs, yacon, chicory, etc. It is composed by fructose chains called fructanos. The most studied and used fructanos within the food industry are inulin, oligo fructose and fructooligosaccharides (FOS). Inulin is not metabolized by digestive enzymes of humans and animals because they are non-digestible carbohydrates. We have successfully developed and launched various products with these alternatives, taking advantage of their prebiotic properties. **Their natural, plant-based origins make them particularly suitable for pectin-based technologies, although they can be effectively used across all Funtrition® matrices and technologies.** Ideal for probiotic formulations.



Inulin and FOS



Miracle Fruit

Native to Africa, the *Synsepalum dulcificum* fruit contains miraculin, a compound that alters taste perception by masking sour flavors with sweetness. This effect can last up to two hours, making it **an innovative solution for masking undesirable aftertastes in gummy formulations.**





Fruit Concentrates

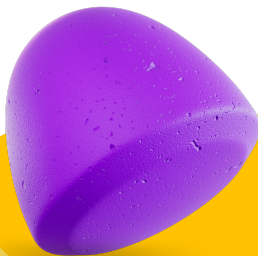
Fruit concentrates, such as apple juice or white grape juice, are commonly used as sweeteners to replace fat in low-fat products, as they help retain moisture and add volume, enhancing both the appearance and mouthfeel of the product. **At Funtrition®, we have developed formulations that utilize fruit juices to naturally replace 100% of the sugar content.**

These ingredients are especially preferred in pectin-based gummies, as pectin enhances the fruity flavor and juiciness sensation. However, they can also be applied across all gummy technologies. The most commonly used fruit concentrates include orange juice, tangerine juice, and apple juice. Additionally, they are particularly well-suited for pectin-based gummies.

Extracted from the **Siraitia grosvenorii** plant, monk fruit is 150-200 times sweeter than sugar and calorie-free. Its **mogrosides provide sweetness without affecting glycemic levels, and it contributes to both the texture and taste of gummies.** While Funtrition® has experimented with this ingredient, no products featuring monk fruit have been developed or launched to date.



Monk Fruit





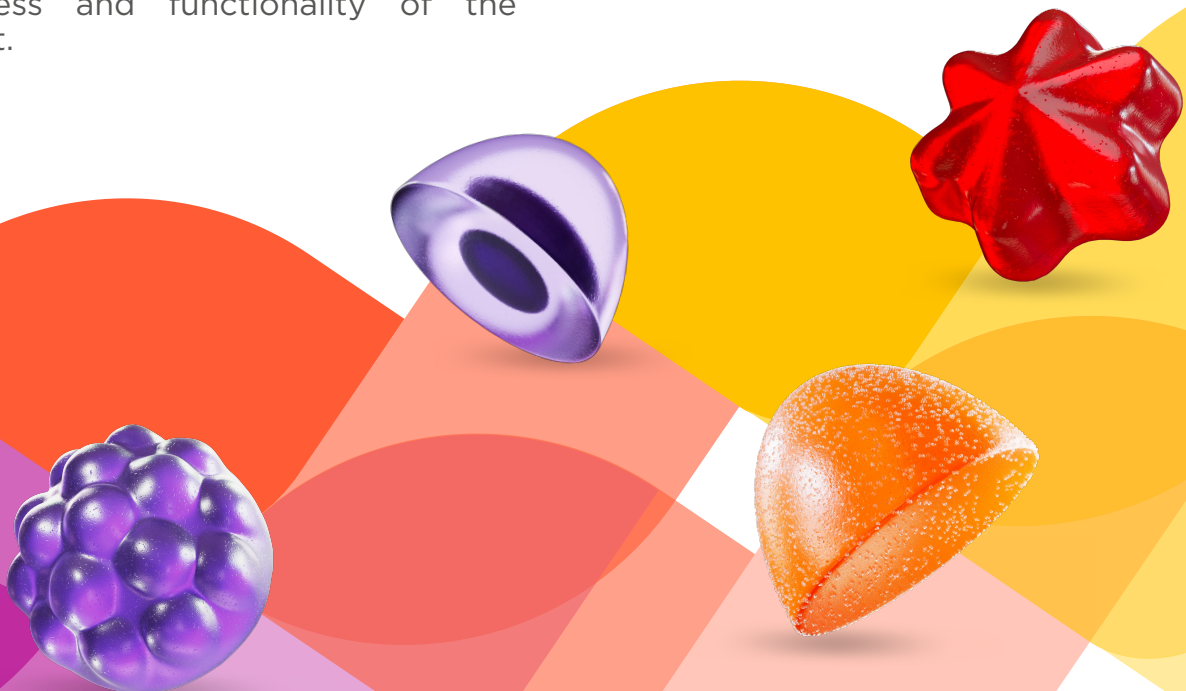
Sugar-Free Gummy Innovations

Funtrition®'s gummy technologies are designed to meet the growing demand for sugar-free and low-sugar options. Our advanced platforms leverage gelling agents such as **Pec-G™ (our pectin-based solution)** and our proprietary **Gummygels™ (gelatin gummies)** to create products that maintain optimal texture and taste without relying on sugar. Additionally, **GummieX™ (mixed gummy matrices)** allows us to combine various ingredients that enhance mouthfeel and structure, ensuring consumer satisfaction.

Our newest technologies, **Air-G™** and **Layer-G™**, are also ideal platforms for incorporating sugar-free formulations. These cutting-edge advancements allow for creative textures and multi-layered formats while maintaining the desired sweetness and functionality of the product.

We continuously innovate to provide solutions that address the evolving needs of health-conscious consumers. Whether it's formulating with natural sweeteners, integrating prebiotic fibers, or adapting to specific dietary requirements, our gummy technologies offer unparalleled flexibility. Funtrition's unique combination of art and science enables us to produce gummies that meet **the highest quality standards, backed by certifications such as NSF, HACCP, GMP, organic, Halal, and more.**

Partnering with us will allow companies to revolutionize their gummy offerings with cutting-edge sugar-free solutions tailored to their brand and market needs.



Mastering Gummy Innovation:

Where Health Meets Indulgence and Art Meets Science

At Funtrition®, we believe that true innovation happens where art meets science. Driven by this philosophy and supported by a structured flexibility model, we create cutting-edge gummy solutions that blend creativity with scientific expertise.

As a leading provider of contract manufacturing and product development services in advanced gummy technologies for the global nutraceutical industry, we partner with top brands across the US, LatAm, and Europe to develop unique gummy products that quickly become best-sellers in their markets. Our ability to deliver tailored solutions that meet evolving consumer demands sets us apart. With extensive expertise in both product development and gummy manufacturing, we help companies bring innovative supplements to market faster.

Our advanced technological gummy platforms—including gelatin and non-gelatin options such as Pec-G™ (pectin), center-filled gummies, and GummieX™ (mixed gummy matrices)—are designed to create healthier, sugar-free solutions. Technologies like Pec-G™ (our pectin-based solution) and our proprietary Gummygels™ allow us to produce gummies that maintain their desired texture and mouthfeel without relying on sugar.



These innovations ensure that we meet modern consumer expectations for health-conscious indulgence, all while maintaining the premium sensory experience that defines high-quality gummies. Our commitment to excellence is reinforced by certifications such as **HACCP, GMP, organic, Halal, Health Canada, and TGA**, ensuring best-in-class support across all stages of product development and delivery.

At Funtrition, we're not just making gummies—we're leading a movement. We invite you to join the gummy revolution and explore how our expertise, technology, and passion can bring your innovative gummy ideas to life.

Are you facing challenges in formulating gummies with sugar alternatives? Or looking for the right partner to turn your vision into reality? **Funtrition has the knowledge, technology, and dedication to help you succeed.**



**Join the
Gummy
Movement!**



Contact us today
at hello@funtrition.com or visit
www.funtrition.com to learn more
about how we can help you create
next-generation, healthy gummy
supplements.

Sources

¹ WHO. Obesity and overweight(1 March 2024). Retrieved January 28, 2025, from <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>

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³ Mintel. UK Sugar and Gum Confectionery Market Report 2024. <https://store.mintel.com/report/uk-sugar-and-gum-confectionery-market-report>.

⁴ Mintel. US Non-chocolate Confections Market Report 2024 <https://store.mintel.com/report/us-non-chocolate-confectionery-market-report>

⁵ Kerry Health and Nutrition Institute. Sugar Reduction: Sweetness' Role in Health, the Environment, and Taste. Feb 20 2024

⁶ FDA. Front-of-Package Nutrition Labeling (January 14, 2025). Retrieved January 29, 2025, from <https://www.fda.gov/food/nutrition-food-labeling-and-critical-foods/front-package-nutrition-labeling>

⁷ Mintel. Patent insights: explore sugar reduction strategies. May 10 2023

⁸ Kerry Sensibly Sweet Embracing Sweetness Study. Cited by Food Navigator Europe. Weight loss no longer primary motivator for sugar reduction: consumer research. 16 May 2023.

⁹ Kerry. Sensibly Sweet Embracing Sweetness. 12,784 people surveyed across 24 countries (US, Canada, UK, Germany, France, Italy, Spain, Poland, Mexico, Brazil, Colombia, Argentina, Australia, China, India, Saudi Arabia, Egypt, Thailand, Indonesia, Malaysia, Vietnam, South Africa, Kenya, and Nigeria) at the end of 2022.

