



SOLVING TASTE CHALLENGES IN KETO

How Flavor Improvement Helps Consumers Stay on Track

The high-fat, low-carbohydrate ketogenic (“keto”) diet is a hot trend that comes with major restrictions. Beyond merely a fad diet, keto is a lifestyle that can truly upend consumers’ eating habits. For many new dieters, there will be a significant shift toward consuming foods and beverages formulated with low-net carbohydrate, high protein ingredients. Furthermore, keto consumers, in large part, give up the convenience of most packaged goods.

Many consumers who endeavor to such a dietary overhaul find themselves taking “cheat days” or simply quitting altogether, the result often being a major setback. By taking on a single carb-heavy day, keto dieters can [undo the metabolic shift](#) they have worked hard to create and even increase risk for [cardiovascular](#) problems.

“Keto consumers want a larger variety of convenient products that taste good, help with diet adherence, and provide supplemental nutrition that may be lacking by following a keto lifestyle,” said Philip Caputo, Marketing & Consumer Insights Manager at Virginia Dare, a leading flavor and extract manufacturer. “By offering options that are convenient, flavorful, and compliant with their nutritional requirements, brands can strategically target a ubiquitous pain point.”



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Keto consumers present significant opportunities for food and beverage brands. Nearly half (46%) live in households with more than \$100,000 in annual income, according to Nielsen [data](#). Brands have opportunities to cater to this audience by making their lifestyle more attainable and boosting their confidence that they can indeed maintain the compliance they need to achieve the results they want. Continue reading to learn more about how natural, foundational flavors can create opportunities for formulators and marketers to appeal to consumers who struggle to stay on track with their lifestyle-related nutrition goals.

LOW-CARB CPGs FOR NUTRITION LIFESTYLES

The movement against carbs and sugar shows no signs of slowing down. Consumer research from the International Food Information Council Foundation ([IFICF](#)) suggests that over half of the U.S. market believes sugars (33%) or carbohydrates (25%) to be the central cause of weight gain. Comparatively, only 17% believe that calories from all sources have an equal effect on weight. Over half (59%) had a negative opinion of sugar. Tellingly, about one-third (36%) said they follow a specific eating pattern or diet.

Weight loss and heart health are the primary reasons most Americans take an interest in nutrition, according to IFICF [data](#). Long-term weight management and cardiovascular health require a long-term commitment to change one's lifestyle. In addition to eschewing sugar, carbohydrates, and, in some cases, animal products, lifestyle nutrition plans tend to result in consumers unintentionally giving up the convenience of consumer packaged goods.

Food and beverage brands can cater to these needs by providing easy-to-use, low-carb solutions that help consumers stick to their plans and avoid “cheat” days. Marketers who cater to these consumers have opportunities to supply flavors and textures that can take the place of the ingredients they can no longer eat.



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NUTRITION, KETOSIS, AND CPGs

Nutrition-based lifestyles demand sacrifice from dieters, which makes staying disciplined about healthy eating a challenge. Data from [Mintel](#) suggests that merely 7% of U.S. consumers strictly maintain their diets to maximize healthiness. In contrast, 73% agree that “indulgences” are allowed on their diet plan. However, for keto dieters, taking a “cheat day” could potentially nullify weeks of diligent ketosis management.

The goal of keto is to nearly eliminate carbs and focus on dietary fats, which creates a metabolic shift in how the body creates energy for itself. By switching to ketosis, a predominantly fat-burning metabolism, many dieters are able to significantly lose weight and reduce body fat.

Within the market for fast-moving consumer goods, the number of product launches with “keto” in the title [exploded](#) over recent years, and the trend continues to show momentum. According to a 2019 analysis by Innova Market Insights, the majority of consumers following a keto lifestyle are from the United States. Between Jan 2017–Oct 2019, products launched in the U.S. accounted for 80% of new products bearing a “keto” claim.

While the keto diet remains a popular means of weight management, physicians and nutritionists are increasingly warning against it. Chief among their complaints is the elimination of foods and ingredients with established health benefits, such as fruits and legumes. Furthermore, a recent study shows that for individuals on high-fat, low-carb diets, taking a high-carb “cheat day” has the potential to [damage](#) the endothelial tissues that line blood vessels.

Given these countervailing factors, keto consumers need options to provide those missing nutritional elements and to help them stay in ketosis. Working with formulation experts like those at Virginia Dare can help you develop great-tasting products that restore necessary nutrients to keto consumers’ diets.



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KETO PROBLEMS AND TASTE SOLUTIONS

PROBLEM	DESCRIPTION	FLAVOR CHALLENGE	SOLUTION	APPLICATIONS
Consistency	Keto dieters are their own worst enemy – taking a day off can disrupt the ketosis cycle	Replacing sugar and carbohydrates	Brands can provide keto dieters with variety to keep them interested and familiarity to resemble foods they gave up	Vegetable-based alternatives to flour to make keto-friendly pasta, pizza, and breads Non-sugar sweeteners to make low-carb desserts
Forbidden fruit	Keto dieters will miss fruity flavors, which can make an apple irresistibly tempting	Creating apple, orange, pomegranate, and other fruit flavors without using juice	Formulate with fruit flavors that are made naturally with the fruits people love, but minus the carbs	Keto-friendly gummy snacks with varietal apple flavors, such as sweet Red Delicious
Time-consuming	Most CPG applications are not keto-friendly, which means more time is needed to prepare foods at home	Reducing carbs in ready-to-eat goods without making them dull	Combine natural high intensity sweeteners with sour flavors	Meal replacement shakes made with stevia and flavored with tropical fruit
Specialty oils and ketones	MCT oils and BHB ketones come with off flavors	Difficult flavors to mask or blend	Balance with sweet and savory flavors, use masking flavors	A coffee flavor base to counter MCT oil's kick Blending BHB with the sharp, tart flavor of Granny Smith apples
Vegetal flavors in drinks	Highly nutritious green vegetables are popular in beverage applications	Leafy greens and cruciferous vegetables, such as kale and broccoli, contain bitter notes and tough textures	Flavor modulation and mouthfeel management, use masking flavors	Low-carb smoothies and shakes with green vegetable bases, non-sugar sweeteners, and floral notes
Fortification	Keto-friendly applications may benefit from fortifying with vitamins and other nutrients to provide for complete nutrition	Adding vitamins and minerals can introduce unintended flavors	Mask with sweet, sugar-free flavors, impactful characterizing flavors, use masking flavors	Low carb snacks, bars, and cookies fortified with calcium and iron Keto-friendly pre-workout drinks fortified with magnesium and caffeine
Plant protein	Keto 2.0 is a plant-based, modified ketogenic diet	Unappetizing flavors and chalky textures	Create preferred taste and mouthfeel, use impactful characterizing flavors with masking flavors	Milk substitutes and coffee creamer made with plant protein

GROWTH IN PLANT-BASED INGREDIENTS

Consumers, generally, are consuming more plant-based products. According to research by [NPD](#), nine-in-ten consumers of plant-based products, who are neither vegan nor vegetarian, simply want options.

Keto 2.0, a plant-based alternative that resembles the ketogenic diet, is an emerging diet trend with implications for food and beverage marketers. While the modified system eliminates many of the saturated fats that are commonly consumed for the standard ketogenic diet, Keto 2.0 reduces an already sparse flavor landscape to only low-carbohydrate plant-based ingredients. It should be noted that the focus of Keto 2.0 is maintaining a plant-based diet that is low in net carbs and not necessarily to keep one in ketosis.

“Consumers want more choices when choosing plant-based foods, particularly when they’re replacing high carbohydrate or animal-based ingredients,” Caputo said. “Flavor improvement in CPGs can help them to make these changes.”

For example, many consumers are replacing the traditional carb-loaded breakfast with high-protein meal replacement drinks. Survey [data](#) from Mintel suggests that 79% of these consumers are reaching for drinkable meals for their convenience and 69% as an effective source of nutrition. Keto-friendly meal replacement applications rely heavily on protein powders. For Keto 2.0 and vegan consumers, common protein sources such as whey and casein will not work, in which case plant-based protein sources become essential.

Many of the plant-based proteins are bitter and carry off-notes. Strong base flavors, such as coffee or cocoa, can be useful in masking the plant-like character of such ingredients. However, strong, foundational flavors are not always a good fit for every application that incorporates plant-based proteins. Vegan milk substitutes, for example, which are often formulated on pea- and soy-based protein ingredients, may require more subtle flavor modulation and mouthfeel management to create a palatable consumer experience. This approach utilizes a combination of masking flavors, flavor modifiers, and delicate characterizing flavors.



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The keto lifestyle may negatively impact digestion and the gut microbiome due to the lack of prebiotic dietary fiber, which supports probiotic organisms in the digestive tract. While healthy fats such as coconut oil are needed to maintain the desired metabolic state of ketosis, there are fats not recommended, such as those high in omega-6 fatty acids, which may promote inflammation. An unwanted symptom of keto due to lack of carbs and natural sugars is sluggishness.

There is increased interest in functional food and beverage products designed for keto consumers that support healthy gut flora with dietary fiber, provide healthy fats, and are rich in micronutrients, are higher in omega-3s, and that ward off unwanted symptoms such as mental and physical fatigue.

There are plenty of novel ingredients that help address these concerns – such as hemp, coconut, lupini beans, and baru seeds – emerging in the formulation of convenience products such as cookies, brownies, bars, and coffee creamers.

EXPERTS IN KETO FLAVOR CHALLENGES

When it comes to creating formulations to help keto dieters maintain their nutrition lifestyle, having access to experienced flavorists and food technologists can make all the difference. Virginia Dare is a leading innovator in delivering preferred taste. Our Taste Foundations and Taste Improvement platforms are indispensable tools for creating appealing, keto-friendly applications.

To learn more about our expertise and how we can help overcome the challenges of keto-friendly applications, please [reach out](#) to us.



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