

# Keto Market Growth and Trends Forecasts for Retail Marketers

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**SPEARHEAD**

Avril 1909

L'ÉPILEPSIE N ALIMENTAIRE

LA MÉTHODE DU TRAITEMENT DE L'ÉPILEPSIE PAR LE SERVICE DE M. A. MARIE DE VILLEJUIF.

...ns le Service de Villejuif contre l'épilepsie qui donne des meilleurs résultats que les médicaments. C'est le résultat de nos travaux dans cette

...UST, 1921

...of diabetes we are enjoying is shown by the patients. The success of cases, depends on the time between symptoms and the time diabetes has been treated. Joslin, and the system of treatment is logical and less empirical. The literature of the subject is all writers as to the monograph, Falta (1891) (ehlfürchtekur), and

...OUR. A. M. A., JUNE 27, 1925

...ENIC DIET IN EPILEPSY \* BY R. L. TERMAN, M.D., ST. PAUL, MINN.

...one-half years, the ketone bodies were given a trial in the treatment of epilepsy, whose parents were

...G Techn., 1972

...Management of Epilepsy by Charles C. Thomas, M.D., by Doctor Livingston in the Johns Hopkins Hospital, practical, discussing the use of anti-epileptic drugs in the adult. There are suggestions of the epileptic patient along with social aspects of the epileptic patient. This book is professionally with the epileptic patient. You will find this book in the laboratory libraries.

...48(1):31-42, 2007 Freeman Pediatric Epilepsy Center

...is not a benign therapy. It is associated with a number of side effects. Some are common, and potentially life-threatening, and hypoglycemia (Bassett et al., 1999; Kang et al., 2004). The risk of hypoglycemia is at baseline. Other effects include isolated case reports, so we must be on their consistent relationship with the unknown (e.g., cardiomyopathy).

...of the ketogenic diet

Renal
Symptom
Fatigue
Dehydration
Neurologic
Basal ganglia
Optic neuropathy
Hematologic
Anemia
Easy bruising
Leukopenia
Orthopedic
Fractures
Infectious diseases
Susceptibility
Unknowns
Bone
Muscle
Liver

...l./Seizure 58 (2018) 1-10

...ng with the ketogenic diet in populations who are used to a high carbohydrate rich diet. It is considered to be much closer to the part of the world and the population. The life validation of the ketogenic diet is

...IVING TOLERABILITY

...ective, and demanding diet. The tolerability of the ketogenic diet is a limiting factor limiting individual compliance (1).

...ility of the ketogenic diet is a limiting factor for the continuation, warranting further research for improving palatability. The diet is compliant, as well as acceptance.

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# Introduction

During the past decades, the prevalence of obesity in the United States has grown steadily without showing any signs of slowing down. [According to statistics from the CDC](#), "the prevalence of obesity in the United States has increased substantially since the 1960s. From 1976--1980 to 2007--2008, obesity prevalence increased from 15% to 34% among adults and from 5% to 17% among children and adolescents." Today, that figure had sadly risen to [42.4%](#) in 2017 – 2018.

Obesity, of course, is linked to several serious health issues, including chronic heart disease, diabetes, and other metabolic disorders, all of which are among the leading causes of death in the United States. It should not come as a surprise that the state of Mississippi, which is the most obese U.S. state, also has the lowest [life expectancy of 74.5 years](#). Similarly, the second most obese state of West Virginia has the highest rate of type 2 diabetes in the U.S. at 15.7%.

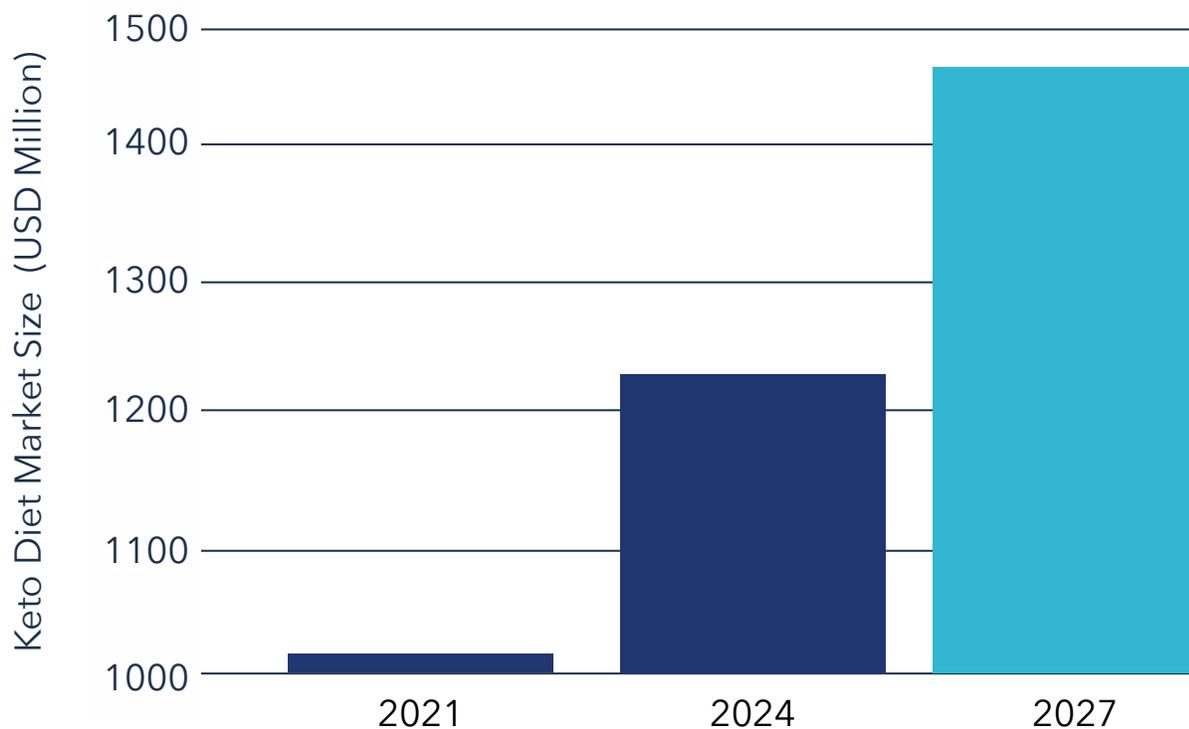
Obesity is thus seen as one of the primary public health problems in the country. Calculated in dollars and cents, the medical care costs of obesity are almost [\\$150 billion per year in the United States](#), over 20 percent of total medical spending in the United States. As obesity rise, the link between nutrition and health has never become clearer. [A 2018 CDC poll found that](#) "17 percent of Americans said they were on diets during the 2017-2018 survey period, up from 14 percent a decade earlier. Over the same period obesity rates rose in the U.S. to 42 percent of Americans, up from 34 percent."

In summary, people want to be healthier and achieve their optimum weights, but many of the diets they are following simply are not yielding tangible results. This issue is perhaps the most prominent driving force for the explosion in popularity of the ketogenic diet.

The keto diet has been used to successfully combat neurodegenerative disorders for over a century. In recent years, however, it has become the most popular and fastest-growing diet in America today. This growth is not fueled by an increase in people looking for innovative ways to treat epilepsy or other neurodegenerative disorders. Rather, the Keto diet has been shown to lead to rapid and effective weight loss.

The synthesis of ballooning obesity rates, a population fervently looking for practical ways to lose weight, and a diet that has been shown to let people shed pounds quickly has driven Keto to new heights. The Keto diet has been the most "Googled" diet in 2018 and 2020 and shows no sign of letting up. [One recent market report found that](#) the "global ketogenic diet food market is forecasted to reach USD 14.75 billion in 2027, at an estimated compound annual growth rate of 5.5 percent during the forecast period."

“ [The] global ketogenic diet food market is forecasted to reach USD 12.35 billion in 2024 at an estimated compound annual growth rate of 5.3 percent. ”



Graph based on data from Ketogenic Diet Market Size, Share & Trends Analysis Report, Grandview Research, 2020.

It is obvious that the keto diet's massive popularity is trending in the market due to its ability to aid in weight-loss goals. However, a more precise analysis of the conditions driving this growth is necessary to understand and forecast the future market direction for the keto diet. Below, we take an in-depth look at the specific, emerging consumer values that are driving the continued and sustained popularity of the keto diet. This analysis will help businesses within the consumer packaged goods (CPG) industry, and specifically within the health food and low carb sectors, better position their brands to align with the emerging consumer values driving the growth and popularity of Keto.

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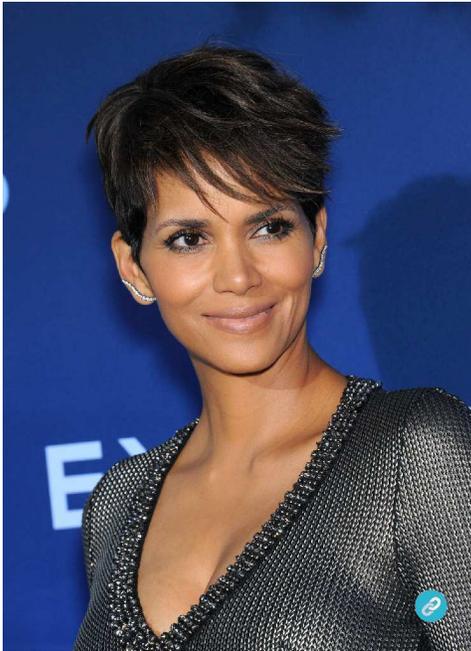
## Consumer-Led Demand for the Keto Diet

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The drivers of specific dietary tendencies and nutrition trends have historically been diverse and varied. [Recent research states that](#) the transitions in dietary tendencies "may be the result of differences in socio-demographic factors and other consumer characteristics. Among other factors including urbanization and food industry marketing, the policies of trade liberalization over the past two decades have implications for health by virtue of being a factor in facilitating the 'nutrition transition' that is associated with rising rates of obesity and chronic diseases such as cardiovascular disease and cancer."

Similarly, dietary guidelines published by national governments and even the role of celebrities and influencers inducing popular opinion can also play a major role in shifting nutrition patterns among large percentages of the population.

**halleberry** 7M followers



**halleberry**

OK so this #FitnessFriday I'm not showing any exercises, because I know you're not thinking about working out this weekend. You're thinking about that #SuperBowlLIII party - ya know the one with the nachos, french fries and chicken wings?? Well today I'm sharing quick, easy and KETO finger foods for Sunday that won't derail your fitness journey - BBQ Chicken Wraps, Stuffed Avocados, and "Chips" & Dip 🍌🍌🍌

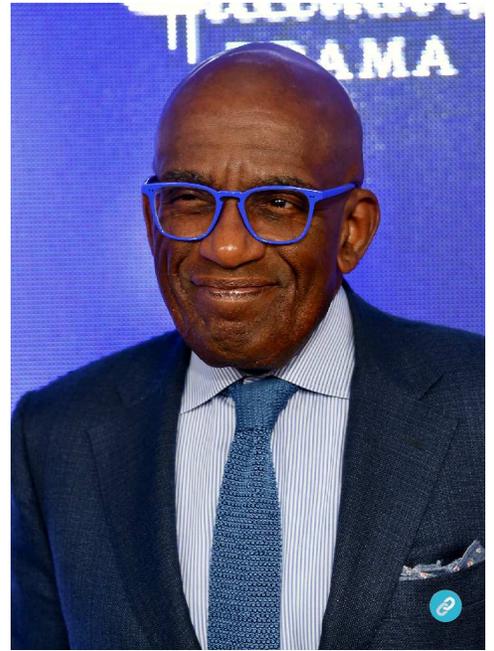
**kourtneykardash** Portofino, Italy



**kourtneykardash**

My body never looked better than when I did the keto two and a half years ago, when I did it for two months. In my experience, I've found the best method to train my body to curb sugar cravings, burn fat, and kick-start weight loss is by sticking to the keto diet.

**Al Roker** @alroker



**alroker**

So @JillianMichaels says #Keto is a bad idea. This from a woman who promoted on camera bullying, deprivation, manipulation and more weekly in the name of weight loss. Now those sound like bad ideas

**timtebow** 2.5M followers



**timtebow**

I'm on something called a ketogenic diet, which is high fat, moderate protein, low carb, low sugar.

**vanessahudgens** 42.2M followers



**vanessahudgens**

I'm always making sure I'm getting those healthy fats in, so I eat a LOT of almond butter. You feel really energetic and supported on the keto diet.

**jennacantlose** Beverly Hills, California



**jennacantlose**

I'm now a little under 4 months on the #ketodiet and it's not only given me physical results, I feel happier, smarter, and much more confident.

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## Consumer Demand for Regenerative Agriculture

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In the specific case of the keto diet, however, its massive popularity has mostly been propelled by consumer-led demand for low-carb diets, despite [medical reviews](#) suggesting that the ketogenic diet may have long-term risks that “may outweigh the benefits.”

It is evident, then, that nutrition parameters set forth by the government or the mainstream medical community have certainly not been the catalyst for the Keto diet craze. Consumers are leading the charge in the rapidly evolving food sector dynamics, specifically the rising demand for healthy, low-carb food products. In the past years, consumer demand for organic, non-GMO, and other health food products that align with their values and dietary tribes has been steadily increasing.

As we have stated above, the ketogenic diet trend that is taking the nation by storm has benefitted from the relatively quick and evident weight loss effects that it provokes. However, there are other consumer values and standards that make this restrictive diet so popular. Many consumers in the choose the keto diet due to a growing sense of environmental duty and responsibility. Others appreciate the ability of a keto lifestyle to deliver nutritional targets and indulgences.

Below, we look at four of the primary emerging consumer values and standards that will continue to be the foundation for the sustained popularity of the keto diet.

These four values and standards are:

- Health and Environmental Benefits of Regenerative Agriculture
- Plant-Based Lifestyles
- Functional Foods and Fibers
- Accurate Quantification of Net Carbohydrates

For many years, the meat industry was the main target for attack by both health and environmental organizations, and for a good reason. [According to one report](#), an estimated 90 percent of animals farmed worldwide — and 99 percent of U.S. livestock — are raised on CAFOs (concentrated animal feeding operations), factory farms, or feedlots." These highly concentrated animal "farms" require an enormous amount of antibiotics, growth hormones, and other inputs that are increasingly coming under attack for their adverse health effects. To name just one example, at least 60 percent of all antibiotics produced and used worldwide are used in animal production for both therapeutic and non-therapeutic purposes. The widespread use of these antimicrobial agents in animal husbandry has shown clear links to the development and spread of resistant bacteria.

On the environmental level, factory farms also present serious problems. The air pollution around factory farms and CAFOs has been a major source of litigation in recent years, as affected neighbors claim that these farms have negatively affected their health by releasing compounds such as hydrogen sulfide, ammonia, and methane. Furthermore, the 450 million tons of manure produced by factory farms in the United States each year also presents a serious environmental hazard and often ends up contaminating local watersheds.

Given these adverse effects associated with the factory farming of animals, consumers across the nation have widely accepted the promise of a healthy and environmentally-friendly form of animal agriculture. Regenerative agriculture is a holistic system of farming that prioritizes biodiversity, soil health, watersheds and ecosystems. Within the particular context of livestock farming, regenerative agriculture emphasizes grass-fed and/or pasture-raised animals, better animal welfare practices, and frequent paddock rotation to regenerate barren soils while potentially sequestering enormous amounts of carbon dioxide from the atmosphere.

[The Natural Resources Defense Council \(NRDC\) report states](#) that "regenerative farming also benefits water quality and quantity. Less chemical and pesticide inputs on regenerative farms and ranches means less chemical pollution impacting ground and surface water, and in turn, a reduction in harmful algal blooms and drinking water pollution."

The growth of regenerative, pasture-raised meat is slowly beginning to make its way into the mainstream, both of consumer values and major players within the industry. For example, transnational food companies such as General Mills plan to expand regenerative agriculture practices by [one million acres by 2030](#). The company released a lifecycle assessment with one of its animal suppliers (White Oak Pastures) that shows farms' net carbon benefit that practices regenerative grazing.

Some of the most ardent supporters of regenerative-raised meat claim that transitioning just [10 to 20 percent of agricultural production](#) to best practice regenerative systems will sequester enough carbon dioxide to mitigate climate change concerns.

However, academics and other researchers have been less optimistic about the carbon sequestration benefits of pasture-fed farms, claiming that further research is needed.

Consumers are certainly demanding more opportunities to purchase regenerative meat and animal byproducts despite the disagreements on the actual carbon sequestration potential of regenerative agricultural practices. This space in the health food industry should continue to provide a unique market niche for small farmers as well as larger, multinational food companies. Food brands that cater to people following keto lifestyles might consider searching for providers of meat, dairy, and other animal byproducts that follow regenerative agriculture practice.

Will Harris is the owner of White Oak Pastures, one of the nation's largest and most well-known regenerative farms. Despite his enormous success at raising and marketing pasture-raised and grass-fed animals, [he believes that](#) "there will never be a truly regenerative, humane, fair farm that will scale to a national level—much less multinational." This belief, widely shared amongst regenerative farmers, speaks to the real scalability problems associated with regenerative-raised meat, dairy, egg, and poultry products. However, the changing climate conditions are not only changing the way we produce food but also how consumers see and react to what they consume.

“ General Mills [plans] to expand regenerative agriculture practices by one million acres by 2030. ”



Regeneratively-Raised and Keto Certified Beefstix & Pecan Butter Snacks



Land to Market Partner and Keto Certified Grain-Free Cheese Pizza



REP Provisions Land to Market Verified and Keto Certified Classic Beef Bone Broth



Land to Market Verified Sweet and Spicy Sriracha EPIC bites

Increasingly, people are looking for ways to align their diets with their environmental values so that their food choices have a positive impact on both themselves and our environment. This gives them an ability to get to know their local beef, dairy, poultry, and egg producers while simultaneously lowering the carbon footprint associated with the distance transportation of the food they eat.

Food brands within the keto market should begin to search for ways to include regenerative farmers in their supply lines. By prioritizing regeneratively-raised animal products, these brands can help to create a firm sense of customer loyalty within the rapidly expanding keto diet. [REP Provisions](#), pictured above, is one strong example of a verified [Land-to-Market™](#) regenerative farm that has leveraged regenerative farming practices to attract and develop a loyal consumer base within the Keto market niche.

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## Opportunity Gap for Plant-Based Keto CPGs

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The keto diet is not just about eating large amounts of meat, eggs, and dairy. As a high fat and low carb diet, people following the keto diet can also include many plant-based keto-friendly foods.

The Plant-based Keto diet consists of high-fat plant-based foods, such as nuts, seeds, and certain vegetables such as avocado. Flaxseeds, walnuts, avocados, coconut oil, and olive oil are a few examples of keto-friendly fat sources. Plant-based fats are polyunsaturated, containing Omega-3 and Omega-6 fatty

acids that our bodies need, while also generally being high in essential vitamins and minerals, such as vitamin E.

Unfortunately, many people throughout the health food world tend to place plant-based diets, and the keto diet at the opposite (and opposing) ends of the dietary spectrum. Keto is seen as the "meat-friendly" diet and is often seen as a competitor to plant-based nutrition paradigms. However, a significant percentage of consumers are interested in low-carb diets but also want to lower, or eliminate altogether, their meat consumption.

Thus, there is a growing need for Plant-Based Keto Consumer Packaged Goods (CPG). The successful weight loss effects of the keto diet, alongside the growing number of individuals adopting plant-based diets worldwide, confirm that this is an unmet market niche. Consider the following:

- Only 2.5 percent of Americans over the age of 50 consider themselves vegetarian, while [7.5 percent of Millennials and Gen Z have completely given up meat](#).
- The younger generations have taken on a vegan diet at nearly double the rate of older Americans.
- The ['Vegetarian Times Survey' conducted in 2017](#) found out that around 26 percent of U.S. adults are consuming less meat weekly compared to 2016 (25 percent).
- According to new figures from the United Nations Food & Agriculture Organization (FAO) released last month, per capita consumption of meat [fell 3 percent](#) during the COVID pandemic.

These statistics substantiate the fact that the market for Plant-Based Keto CPGs is poised to witness significant growth during the coming years owing to factors such as growing consumer interest towards low carb high fat (LCHF) diets and the rising desire for plant-based natural ingredients among health-conscious individuals.

[One recent market study](#) confirmed this trend saying that "the market for the plant-based food category was valued at \$2,633 million in 2017 and is expected to reach \$3,278 million by 2022 across U.S., Europe, Asia Pacific (APAC), Middle East & Africa (MEA) and Latin America."

Transitioning to a fully plant-based diet can be challenging, especially when limiting carbs and finding ways to incorporate sufficient sources of plant-based fats. Thus, food brands looking to cater to consumers following plant-based diets should search for ways to provide convenient sources of protein and plant-based fats that can be easily integrated into everyday food choices like snacks or meals.

Whereas vegetarian diets have often been represented by foods such as tofu and soy, the new generation of plant-based dieters are certainly looking for more meal diversity, ready-to-eat plant foods, and healthy plant-based fats. There is certainly an opportunity to strengthen the plant-based keto market sector by driving a demand toward plant-based keto foods. As Paleo Foundation CEO Karen Pendergrass adamantly says: "Never ignore the vegans."

Some examples of innovative Plant-based Keto foods in the CPG sector include:



Lovve Lavva Plant-based Yogurt



Mooala Plant-based Original Creamer



Avocajoe Plant-based "bulletproof" coffee



DeVilliers No Added Sugar Chocolate



Primal Kitchen Vegan Mayonnaise Spread & Dip



Good Planet Plant-based Cheese Wedges

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## Keto CPG Products with Added Fiber

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One of the challenges that people who transition to a low-carb diet often face is the lack of soluble fiber in their diet. Soluble fiber plays an important role in the gut microbiome, attracting water and forming a gel-like substance with food as it is digested. This process slows down digestion and helps you feel full faster, an important element of weight management. Furthermore, adequate fiber intake may also help lower your risk of heart disease, regulate your blood sugar, and help reduce LDL cholesterol.

Because there is no fiber in meat or dairy products, many people on a keto diet may suffer from a lack of fiber in their diets. Thus, there is a noticeable demand for added fiber in keto products on the market with a low net carb per serving. Keto CPG companies might be able to attract consumers by adding high viscous, soluble prebiotic fiber at an affordable cost to improve the texture of their product while simultaneously reducing their manufacturing costs. As people search for easily digestible Keto products with lower net carbs and added fibers, this approach could help food brands drive sales growth.

Prebiotic fibers are a specific type of dietary fiber found in plants, animal products, and certain types of grains. The scientific and industrial interest in prebiotics has grown considerably since the discovery by Gibson and Roberfroid, as they play an important role in contributing to good gut health. Applications

for prebiotic fibers range from beverages to cookies, yogurt and to supplements and pharmaceuticals. [Once recent market report finds that](#) the "prebiotics market size is set to surpass USD 9.5 billion by 2027...Rising consumer awareness with regards to the health benefits of prebiotics and increasing incorporation of fiber-rich foods in daily diet by consumers should raise the demand for prebiotic ingredients during the predicted period. Moreover, the rising incidence of gastrointestinal ailments among the global population is compelling consumers to look for food products made from nutrient-rich ingredients, which should escalate the demand for prebiotics."

As the importance of prebiotics becomes more recognized, it is expected to become increasingly popular. Brands catering to people on the keto diet can expect to see further sales growth and increase customer loyalty through the addition of functional prebiotic fibers in their manufactured low-carb products.

One important classification of prebiotic fibers for Keto CPG brands to consider adding to their products is food-grade polysaccharide prebiotic fibers, known as hydrocolloids. Prebiotic hydrocolloids are polysaccharides that are soluble in cold water, e.g., guar gum, locust bean gum (LBG), [xanthan gum](#).

While previous consumer preferences from 2010 to 2017 showed a dislike for these gums and as such was often eschewed by CPG brands, [data from robust microbiome-focused research](#) has shown that these high-molecular-weight hydrocolloid prebiotic gums impart tremendous health benefits.

Nevertheless, when it comes to substances added to foods for health benefits, consumer acceptance should always be tested first.

The following are a few of the many advantages of adding fiber into CPG keto products' formulations:

- Lowers the cost of manufacture on a gram per gram basis in comparison with other ingredients.
- Drives down the net carbohydrate content per serving
- Improves protein to total energy ratio, which may increase satiety among individuals with a propensity toward poor dietary choices
- Provides nutritional value that consumers perceive as healthy and wholesome
- Provides viscosity to liquid product making it thicker or creamier, improving mouth "feel"
- Replaces part of the flour in baked goods like breads and cakes; Increases firmness or body to bakery foods
- Acts as a complete replacement of fat in chilled desserts, lowering the calories without affecting taste or texture
- Improves the nutritional profile of baked goods
- Improves the microbiome profiles for end-consumers.

Here are a few examples of products that have added functional fibers to their formulations to render them high-fiber keto products that compete with conventional products:



In short, adding fiber to Keto product formulations is an effective strategy to consider in order to remain competitive during this time of rapid growth in this market.

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## The Growing Importance for Accurate Net Carbohydrate Quantification

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The Keto category expects to see an increase in products claiming to be “keto” in coming years. However, an important step in satisfying consumer concerns will be in accurately quantifying the net carbohydrate content per serving of a keto-positioned product. In recent years, consumer trust in nutrition labels has been wavering, and keto brands can bolster brand loyalty by offering accurate, transparent, net carb quantification.

An important step in satisfying consumer concerns is accurately quantifying the net carbohydrate content per serving. It is currently viewed as one of the most important nutrients on food labels and certainly the only nutrient that can be manipulated like a budget.

Research shows that the number of low-carbohydrate foods on the market has grown exponentially since 2000. However, there are no regulations or standards for labeling these products to indicate relative carbohydrate content. The U.S. Food and Drug Administration (FDA) has been in the process of clarifying the regulations regarding its expectations for the quantification of net carbohydrates.

During an April 2018 webinar, they indicated that any brand that is not accurately quantifying their products' net carbohydrate content per serving might be subject to enforcement actions by the FDA.

While some protections for keto claims can be aided by adding [third-party Keto Certification](#) to product packaging, other methodologies for quantification of net carbohydrates that are far more accurate than the traditional method have emerged. The traditional method of determining carbohydrate content is by difference. While current procedures for the determination of net carbohydrates vary, many use the following formula:

Net carbohydrates = (100-protein-fat-water-ash) – sugar alcohols – fiber – polydextrose – glycerin – fructan

Assessing the accuracy of carbohydrate count on food labels using the traditional method is difficult because there are many types and combinations of carbohydrates and processing that can produce inconsistent results for net carbohydrate quantification. Due to the limitations with these methods, food chemists and food scientists developed a new method that used high-performance anion exchange and a pulsed amperometric detector (HPAEC-PAD) that was found to be accurate, consistent, and inexpensive.

“ ...an important step in satisfying consumer concerns will be in accurately quantifying the net carbohydrate content per serving...”

This method, HPAEC-PAD has shown considerable success with separating and detecting carbohydrates, including higher oligosaccharides that had previously been difficult to quantify. An HPAEC-PAD assay can be performed to accurately quantify net carbohydrates for products by requesting the [Eurofins FS217-1 HPAEC-PAD](#) test for net carbohydrates.

Food brands that use the best methods for net carb quantification can further cement their standing within the keto market.

In the coming years, the keto diet should continue to see continued growth. Brands within the keto CPG industry can take advantage of this expected market growth by leveraging the four emerging consumer values and demands explained above. ■

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