

The Science of Taste

Healthy Reduction

 **EDLONG**[®]
The Scientific Art of Authentic Taste[®]



Key Trends in Lower Sugar, Salt and Fat Formulations



Today, consumers see healthy eating as a top priority. A recent Gallup poll reported that 51% of all adults are actively trying to avoid sugar in their diet, 50% are avoiding fat and 42% are avoiding salt.

Other studies reflect even higher numbers. However, the trend is not elimination, but moderation of these ingredients. According to Hartman Group *Health and Wellness 2017*, consumers' dominant approach to reducing sugar, salt and fat is not to avoid them completely, but to ration or limit these ingredients to specific special occasions.

Permissible indulgence

“Consumers are looking for better nutrition and indulgence—or ‘permissible indulgence’,” says Edlong Chief Commercial Officer Beth Warren. **“Food options that taste rich but have healthier benefits.”** Research shows those who avoid or limit one “red flag” ingredient—such as sugar, salt or fat—are also more likely to avoid others (Hartman Group *Health + Wellness 2017*). Therefore, catering to these consumers becomes even more important as they are likely avoiding or limiting multiple ingredients they identify as unhealthy. Providing indulgent and authentic eating experiences that meet these healthy reduction demands can lead to both improved sales and greater brand loyalty.

Taste is key

Global food and beverage manufacturers are responding by developing a greater number of products that feature a healthier nutritional profile with lower sugar, fat and sodium. But creating these products often results in an unacceptable taste, compromising the eating experience. As consumer sophistication and expectations increase, the current competitive climate simply won't allow inferior taste. Food developers who can't deliver the taste profiles customers expect, in healthier formulations, will be left off the shelves.

Sugar takes center stage

When it comes to eating healthy, consumers are more concerned with sugar than ever before. According to a recent Mintel study (Mintel Nutrition, *Health & Wellness 2018*), sugar is taking center stage in consumers' eyes while reduced fat moves to the back burner, as health departments draw consumers' attention to the risks of a diet that is high in sugar, particularly refined sugar. In some markets, such as the UK, sugar content is the most important factor for consumers who are trying to eat healthy. (Source: *Attitudes Towards Healthy Eating - UK*, Mintel, February 2018.) At the same time, fully half of U.S. consumers look for low/no sugar in healthy snacks. (Source: *Better for You Snacks - U.S.*, Mintel, September 2017).

“The low/no/reduced sugar product category is ready for dairy flavor innovation as consumers seek reduced sugar but still expect great taste,” says Anne Marie Butler, Edlong Global Applications Manager, Europe. **“Dairy flavors, in both dairy and dairy-free formats, have the unique ability to improve the taste profile of reduced sugar products as they can balance and elevate sweetness while imparting mouthfeel.”**

One of our newer technologies, for example, are Edlong® Sweet Spot flavors. These enhance the perception

of sweetness, often mask off notes, and round the mouthfeel to elevate richness and indulgence.

“As the only flavor company dedicated exclusively to dairy flavors, our expertise in capturing the inherent sweetness of dairy, even in dairy-free and vegan products, is unique and unmatched,” says Warren. **“We help create indulgent and delicious applications with reduced added sugar in foods and beverages throughout the world.”**

For example, in response to consumer demand for reduced sugar coffee and ready-to-drink beverages (RTD), the company created several indulgent options including: a **vegan cardamom cold brew latte** with an Edlong® Sweet Spot flavor to enhance the perception of sweetness while reducing added sugar by 30% and an **iced mocha** featuring a different Edlong® Sweet Spot flavor along with an Edlong Natural Chocolate flavor for a 40% added sugar reduction.



Easy on the Salt



Reducing or avoiding salt is emerging as a major concern for consumers. And it's difficult to do. Salty snacks inherently encourage overindulgence and enjoyment; they're delicious, usually portable and easy to pick up on the go. Salt is also often added to low-fat formulations to recapture some of the flavor lost when reducing fat.

But while reduced sugar foods are in high demand, and lower fat foods are still prevalent, foods with lower or no salt are catching up in popularity. High sodium diets have been linked to high blood pressure, a major risk factor for heart disease and stroke. Consumers tend to focus more on sodium reduction as they age, however, nearly half (47%) of Millennials avoid sodium; the number jumps to 57% for Gen X and 66% for Baby Boomers (numbers courtesy of the *Health + Wellness 2017* report by Hartman Group). According to a 2017 report by the non-profit global trade association Consumer Goods Forum, companies including Walmart, Dole, and Smuckers altered 179,600 products to reduce the level of ingredients such as salt, sugar and saturated fat in 2016, up from 84,000 reformulations in 2015. The most-removed product ingredient in 2016 was sodium, cited by 67% of the surveyed manufacturers and retailers. (Source: *Health & Wellness Progress Report*, Consumer Goods Forum, March 2017.)

Often, high amounts of sodium can be found in packaged and prepared foods due to food safety and shelf life considerations. Food and beverage manufacturers have been searching for lower sodium options that still meet these functional benefits without sacrificing taste. Adding in authentic dairy flavor can improve the overall taste profile and reduce the reliance on salt for flavor. ***“Dairy flavors offer a unique and unexpected way to optimize the taste profile in reduced sodium products,”*** says Edlong Chief Commerce Officer Beth Warren. ***“Sharp Cheddars, Parmesans and even bleu cheese flavors can be used to add a savory and umami character that is often missing in reduced-sodium applications.”***

Natural dairy flavors can also be used in reduced-sodium applications to provide the named character, or to help to customize and build more complex and interesting flavor profiles. ***“For example, Edlong has been successful with lowering potassium***



chloride by 35% and including dairy flavors to elevate the perception of salt while masking metallic aftertaste usually associated with potassium based ingredients,” according to Lourdes Mato, PhD, Edlong Dairy Research Scientist.

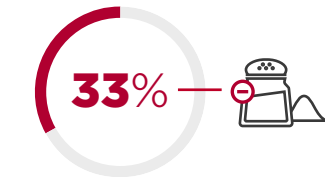
Mato adds, ***“Edlong dairy-free flavors are clean label and labeled as natural flavors which is an beneficial tool for product developers. No specific steps are required for incorporating these ingredients in the formulation.”***

As a demonstration, Edlong's Applications Lab created a Cheddar & Pasilla Negro Chile Cauliflower Dip that features an on-trend flavor profile and main ingredient, and significantly lowers sodium and elevates the taste. Rich, spicy and authentically cheesy, the dip reduces sodium by 51% vs. a typical canned nacho cheese sauce.

Healthy Reduction Trends at a Glance: The Science of Taste

Consumer Demand for Permissible Indulgence Continues to Grow

Global consumers say healthy reduction claims are “**very important**” to their purchasing decisions¹:



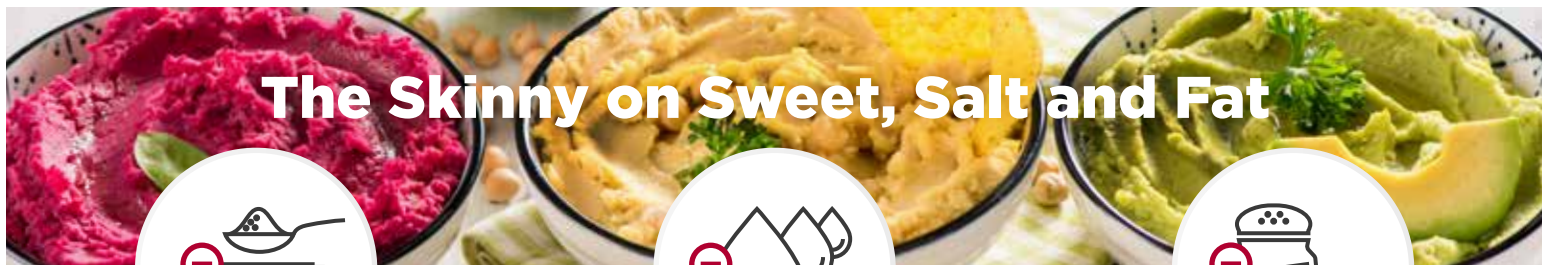
want low sodium/salt



want low sugar/sugar-free



want low/no fat



The Skinny on Sweet, Salt and Fat



Not Sweet on Sugar



In the UK, sugar content is the most important factor for consumers who are trying to eat healthy²



Percentage of U.S. consumers looking for low or no sugar in healthy snacks³



The Skinny on Fat



Percentage of U.S. consumers avoiding saturated or trans fats⁴



Percentage of new product launches in Europe, Mexico and the U.S. with low/no/reduced fat claims (between 2015-2017)⁵



Skipping the Salt



Percentage of U.S. Baby Boomers who avoid sodium
Along with **57%** of Gen Xers and **47%** of Millennials⁴



Total number of countries with a national salt reduction strategy, more than double reported in 2010⁷



Product Ingredients Matter

46%

Americans who say food packaging claims (such as reduced sugar, salt or fat) influence their purchasing decisions, across all categories.⁶

Elong Provides Permissible Indulgence

Taste. Consumers say it's the #1 reason they purchase a food or beverage⁸. But they also want to eat healthy. Fortunately, Edlong incorporates a variety of technologies to elevate the taste and richness of low sugar, low fat and low sodium products.



Forget the Fat, Not the Taste

Add richness and creaminess to food and beverage products with lower fat and sugar profiles by using Edlong flavors. Proven synergies include elevating mouthfeel in healthier options so consumers can experience indulgence, even in **plant based** and **vegan** applications.



Sweet Complexity

Lower sugar food and beverages have multiple taste challenges that require a unique approach to solve.

The **Edlong® Sweet Spot** portfolio of flavors provides a sweeter taste profile while also enhancing mouthfeel to elevate the richness of a low-fat dessert or the indulgence of a beverage. We move the standard taste profile to a premium one.



Take a Pass on the Salt

Savory profiles lower in sodium require optimization. Edlong flavors provide tools to round the overall taste profiles while masking undesirable metallic after-tastes. Dairy profiles provide saltiness in unexpected ways.

1. *Health Eating Trends Around the World*, Nielsen, January, 2015

2. *Attitudes towards Healthy Eating - UK*; Mintel, February 2018

3. *Better for You Snacks - U.S.*; Mintel, September 2017

4. *Hartman Group Health + Wellness 2017*

5. *Mintel Global New Products Database*

6. *More Americans are Avoiding Sugar*, Food Navigator, April, 2018

7. *Salt Reduction Initiatives Around the World - A Systematic Review of Progress Towards the Global Target*; PLoS One, July 2015

8. *Importance of taste, nutrition, cost and convenience in relation to diet quality*, June 2016



The Skinny on Fat



Consumers are turning away from low-fat diets as they become more aware of the benefits of certain fats and oils. The rising interest in alternative fats such as olive oil, coconut oil, avocados and walnuts, finds many consumers around the world beginning to reconsider if any and all fat content is worth avoiding, according to a recent Mintel study (Mintel Nutrition, *Health & Wellness 2018*). However, reduced fat products are still very much in demand.

“Edlong flavors can add back the mouthfeel that might be missing in reduced-fat applications, so that consumers can still experience the richness and creaminess of full-fat alternatives,” says Anne Druschitz, CRC, Edlong Corporate Research Chef. *“They can also help mask the off-notes of healthier fats incorporated into foods and add balance to the overall taste experience, allowing consumers to enjoy these preferred sources of fat while maintaining the same indulgent taste they expect.”*

At the 2018 IFT Show in Chicago, Edlong offered a trio of globally inspired cottage cheese dips that showcased a cottage cheese base in surprising ways. These dips all had lower milk fat, lower cholesterol, lower calories and higher protein than traditional cream cheese and sour cream dip options, but were just as creamy and rich.



Bridging the Gap Between Healthy and Delicious

Maintaining taste profiles and mouthfeel, despite the absence of sugar, salt and fat, can be challenging. Through insight, innovation, commitment and a unique selection of more than 250 dairy-free and vegan flavors, Edlong can play a significant role for food and beverage developers looking to create delicious yet healthier products.





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