



# The Sweet Side of Holistic Health & Wellness

What Consumers Want Today



# Speakers



## **Sarah Diedrich**

*Product Marketing Director,  
Sweetening Solutions & Fibers*

Sarah Diedrich is product marketing director of Sweetening Solutions & Fibers at Archer Daniels Midland Company (ADM). She leads activation strategy for ADM's global sugar reduction council, supports IMC strategy and performance, helps create dynamic content development, and promotes portfolio & category expansion, while also providing sales support.



## **Baljit Ghotra**

*Vice President,  
Food Research*

Baljit Ghotra is vice president of food research at Archer Daniels Midland Company. He is responsible for leading food research initiatives, providing strategic leadership to accelerate disruptive ingredients innovation based on carbohydrates, proteins, lipids, botanicals, and other specialty bioactive ingredients for food, beverage and wellness-centric end use products.



## **Shawn Sprankle**

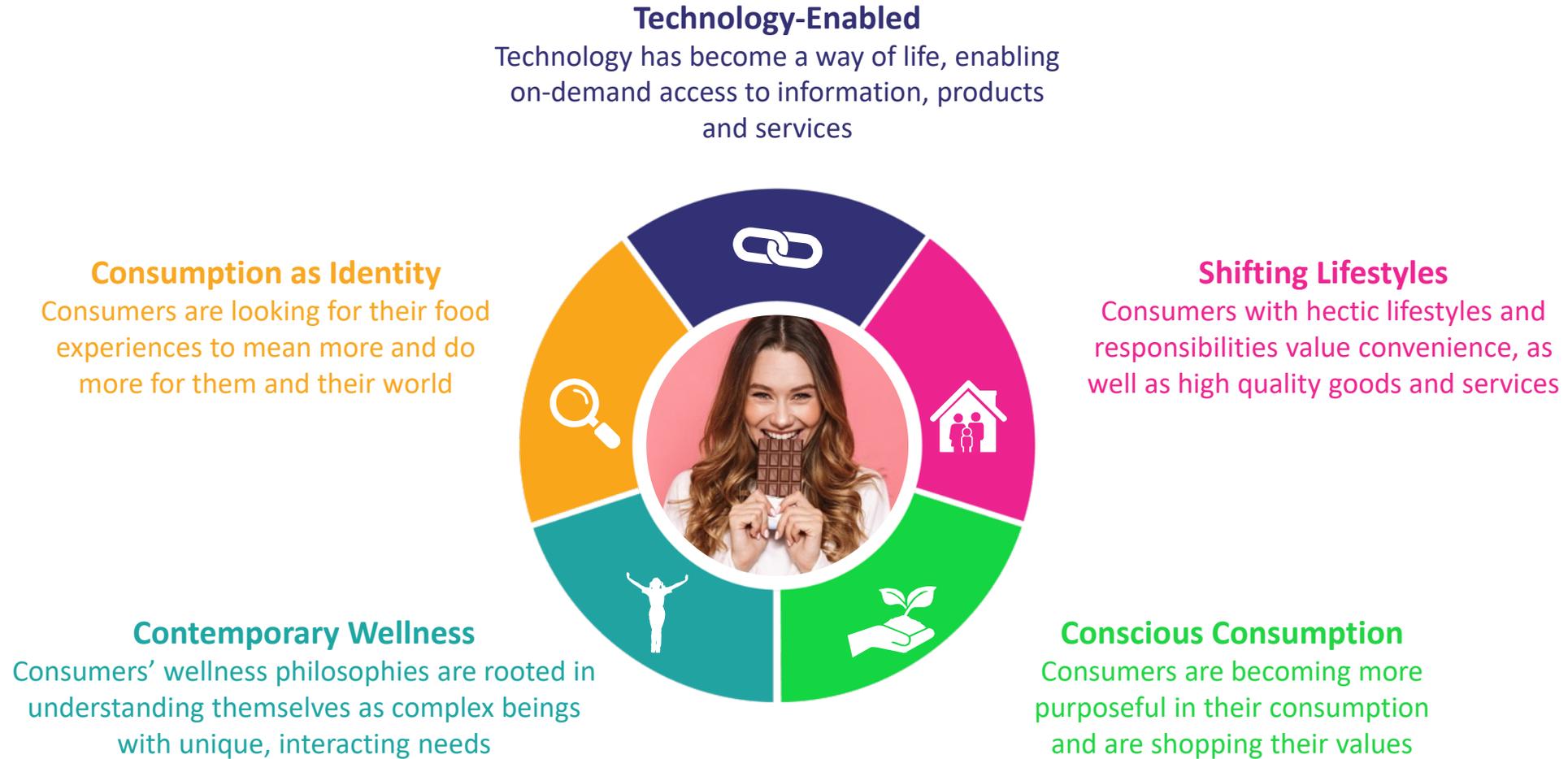
*Manager,  
Ingredient Applications Beverage*

Shawn Sprankle is manager of Ingredient Applications Beverage, Food Science and Technology Team at Archer Daniels Midland Company. Previously, as senior beverage scientist at ADM, Shawn championed projects that drove the technical knowledge of ADM's ingredient portfolio, with an emphasis in beverages and specializing in sweeteners and carbohydrates.

# Global Trends Impacting Consumers Today



# Five Interrelated Global Macro Trends



# Contemporary Wellness

Aspiring to live a higher-quality of life for longer is becoming an even more deeply entrenched value across the globe.

Today's consumers are reevaluating what it means to be well and how they manage their needs.

55%

of U.S. consumers would rather change their lifestyle than use medicine for a H+W issue<sup>1</sup>

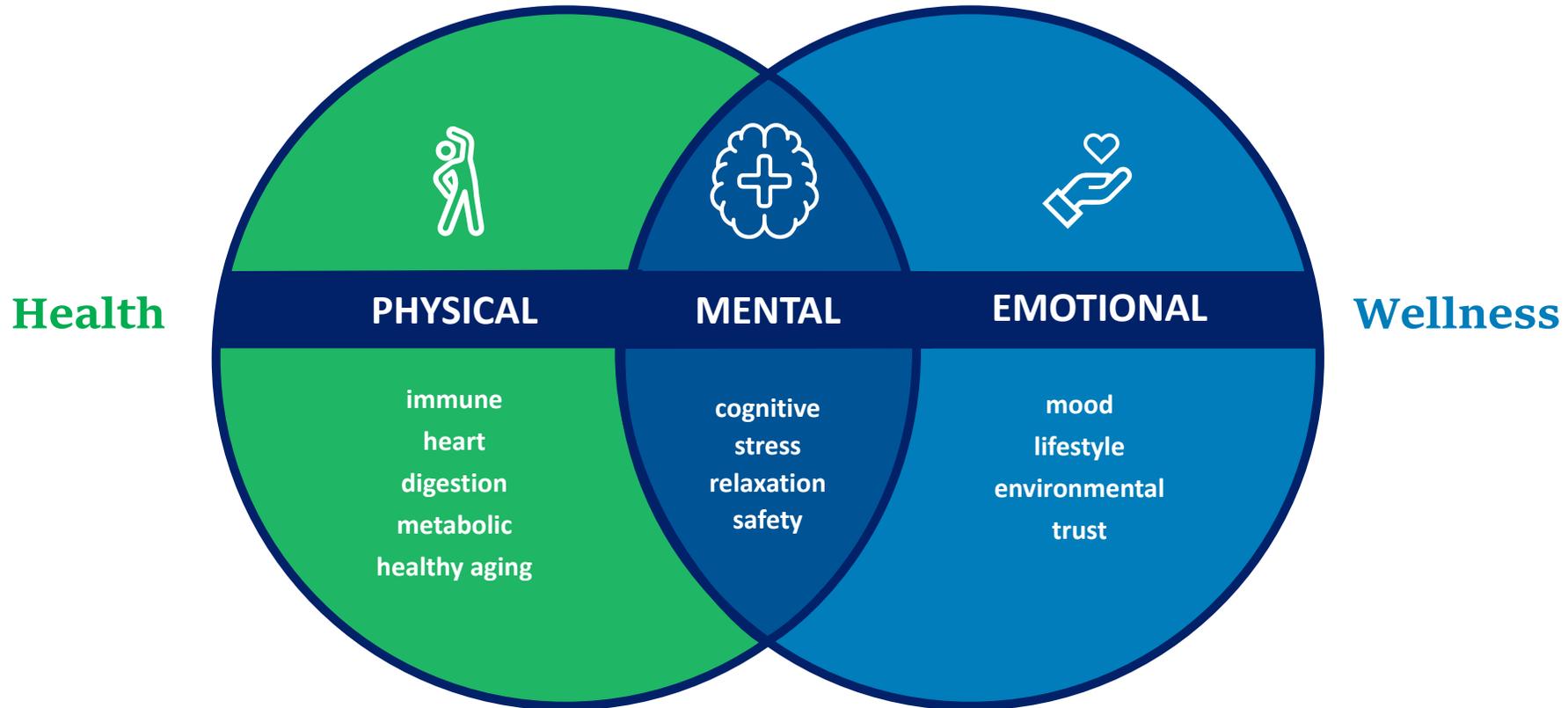
## Key Drivers

- Holistic wellness going mainstream
- Tailored and empowered approach to nutrition
- Personalized and optimized health performance
- Microbiome as the ultimate root of wellness
- Healthy aging and healthy living



# Nutrition for Holistic Health & Wellness

More than ever, consumers see connections between various components of their body, mind, habits and the worlds in which they live.

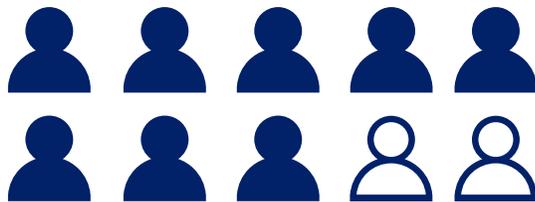


# Consumers' Taking Action to Reduce Sugars



**1 in 5**

Global consumers follow a diet that limits carbohydrates



**8 out of 10**

U.S. consumers are engaged in sugar reduction

## Sugar Reduction: % More Importance by Category



**83%**  
Beverages



**79%**  
Bars & Snacks



**75%**  
Sauces & Dressings



**70%**  
Baked Goods

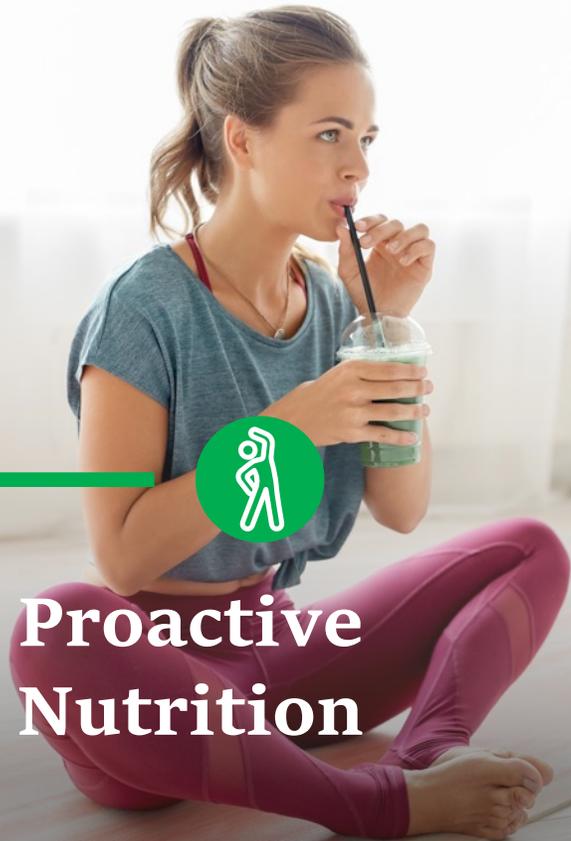


**69%**  
Dairy



**54%**  
Candies & Chocolate

# Consumers seek Sugar Reduction PLUS so much more



**Proactive  
Nutrition**



**Positive  
Packed**



**Permissible  
Indulgence**



# Proactive Nutrition

## Sugar Reduction PLUS Functional Benefits

### CONSUMER EXPECTATIONS

Becoming more proactive about managing their physical health, consumers want foods that can help them achieve a wide array of wellness goals.

Food is seen as part of the solution to a range of health concerns, and functional benefits and claims are becoming increasingly important.

**87%**  
of U.S. consumers are interested in products with immune health benefits<sup>1</sup>



*Achieve wellness goals*



*Trade up for better nutrition*



*Support immune health*



*Benefits from functional ingredients*

<sup>1</sup>The Hartman Group, Health & Wellness, 2019



## Sugar Reduction PLUS Proactive Nutrition

Sugar Reduction becomes %  
more important when seeking....

**62%**  
Low  
Calorie

**56%**  
Functional  
Food/Drink



## Proactive Nutrition Snacking Model



The desire for using food and  
beverage as preventative  
medicine has given rise to  
“**functional snacking**” with  
benefits including:

- hunger abatement
- sustained energy
- condition management



# Positive Packed

Sugar Reduction PLUS Clean & Clear Labels

## CONSUMER EXPECTATIONS

Today, nutrition-forward and other consumers are looking for more 'positive' claims, as they each define what clean label means to them.

Progressive shoppers have shifted away from an obsession with calorie counts and fat tallies and focusing on calorie 'quality' and food's intrinsic value.

**55%**

In the last 5 years, sustainability-marketed products represented more than half CPG market growth



*Recognizable*



*Free-from products*



*Plant-based & Botanicals*



*Search for sustainability*



## Sugar Reduction **PLUS** Positive Packed

Sugar Reduction  
becomes %  
more important  
when seeking...

**61%**  
Clean Label

**52%**  
Sustainably  
Sourced

**47%**  
Plant-Based



## Positive Packed Snacking Model



Consumer interest in foods packed with positive benefits has created an appetite for “**positive snacking**” with benefits including:

- recovery & rejuvenation
- mental focus
- stress management



# Permissible Indulgence

Sugar Reduction PLUS Balanced Lifestyle

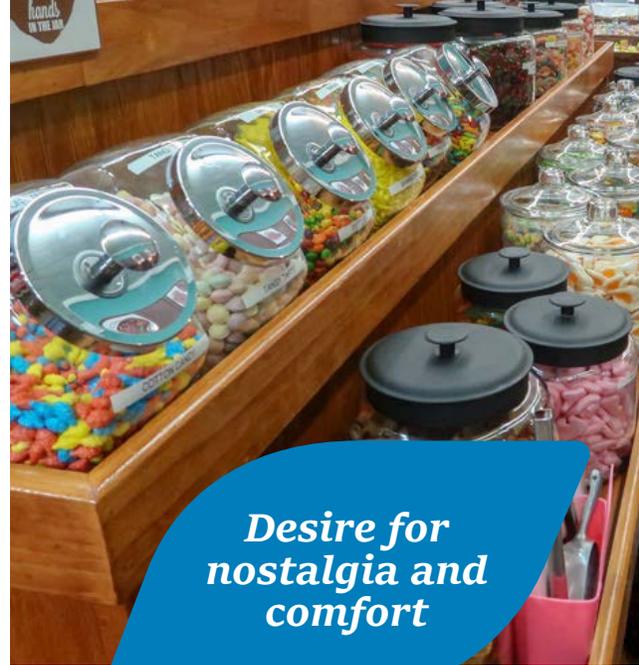
## CONSUMER EXPECTATIONS

More than ever, consumers believe that indulgence enhances quality of life by offering sensory pleasure, connection with others, stress relief, comfort and beyond, all of which should be appreciated rather than suppressed.

Many believe that denying treats may not only make life less pleasurable but may lead to increased desire and ultimately overindulgence.

5.8MM

#TREATYOSELF



*Desire for  
nostalgia and  
comfort*



*Seeking balance  
in pre-portioned  
packaging*



*Justifiable  
indulgence as  
reward*



*Discovering  
new and exotic  
flavors*



## Sugar Reduction **PLUS** Permissible Indulgence

Sugar Reduction becomes  
% more important when  
seeking...

**56%**  
Indulgent  
food /drink

The more  
indulgent the category=  
the higher the importance  
of sugar reduction  
+ another attribute



## Permissible Indulgence Snacking Model



Consumer interest in foods with comforting attributes has created an appetite for “**mood-based snacking**” with benefits that meet their desire for pleasure, including:

- rewards and treating yourself
- comfort & craving
- discovery

# Formulating to Meet Holistic Health & Wellness Trends



## Proactive Nutrition

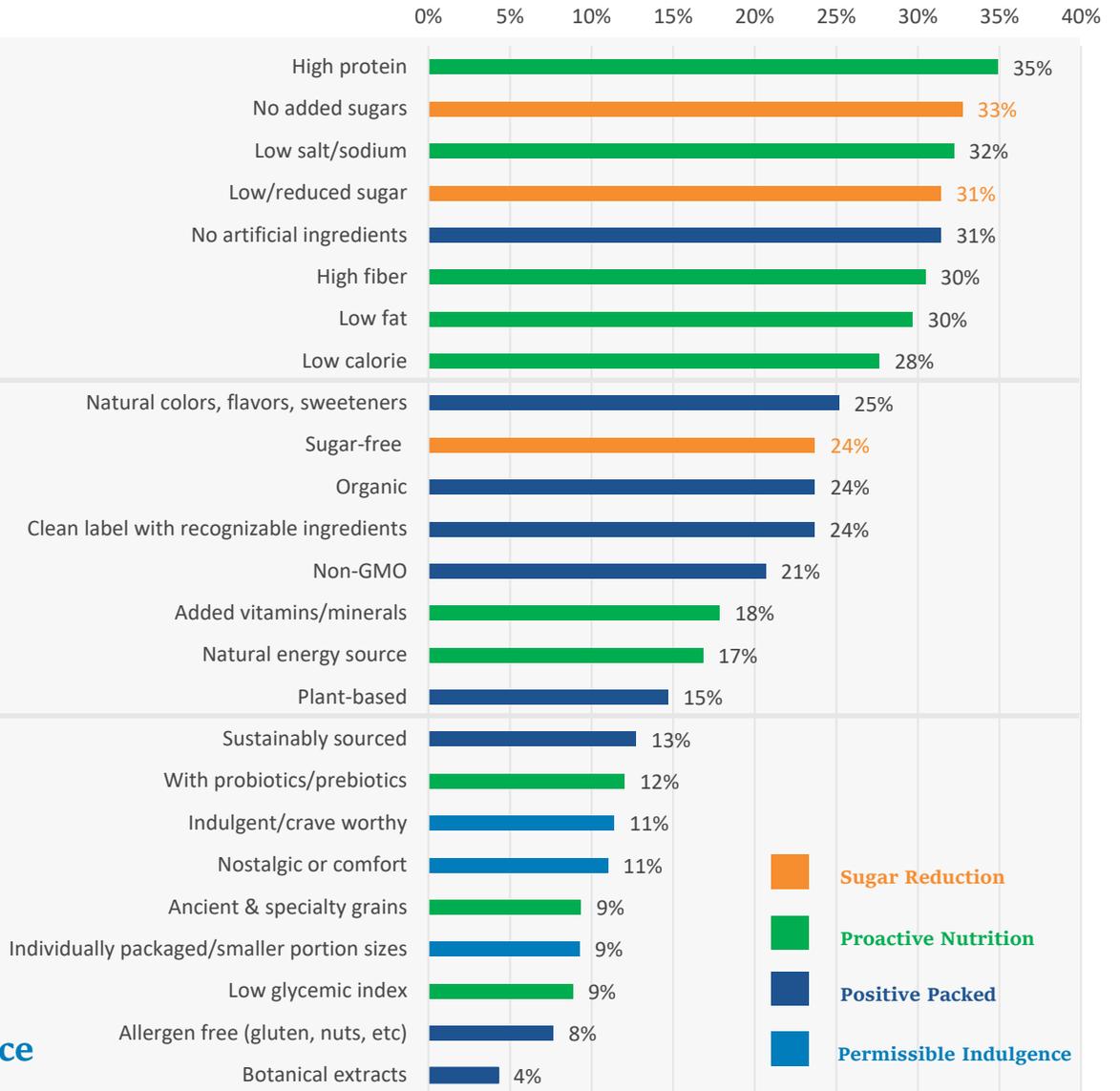


## Positive Packed



## Permissible Indulgence

### Consumers Most Sought After Food & Drink Attributes



# Sugar Reduction Success Requires SweetSavvy<sup>SM</sup>



Our Sweet Savvy<sup>SM</sup> approach  
brings together all the facets of  
sugar reduction choices – so you  
get the right solution, one with:

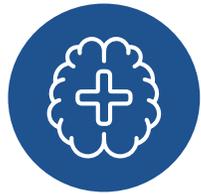
**Formulation Performance**  
**Commercial Viability**  
**Consumer Appeal**

# Effects of Sugar on Holistic Health & Wellness



## Physical health

- **Sugar in moderation can play a positive role in nutrition** within the context of a healthy diet pattern.
- **The recommended minimum intake of carbohydrates is 130g/day:** this is the amount necessary to provide the brain with glucose, its preferred source of energy.<sup>1</sup>



## Mental health

- **Low blood glucose is associated with symptoms including headache and impaired mood,** and acute intake of sugar can alleviate these symptoms.
- **High-glycemic index diets have been associated with increased risk of depressive symptoms.**<sup>2</sup>



## Emotional health

- **Self-identified comfort foods were associated with improvements in mood,** in a study examining effects of identified “comfort food.”<sup>3</sup>



<sup>1</sup>Dietary guidelines for Americans (2015-2020)

<sup>2</sup>Breymeyer, KL, et al. (2016) *Appetite*. 107: 253-259

<sup>3</sup>Wagner, HS; et al. (2014) *Health Psychol*. 33(12): 1552-7

# Carbohydrates & Nutrition

Carbohydrate continues to be an important component in calorie contribution

Dietary  
Guideline Advisory  
Committee  
Recommending  
**6%**  
**Added Sugars**  
2020 - 2025

	Source of Goal	Child 1-3	Female 4-8	Male 4-8	Female 9-13	Male 9-13	Female 14-18	Male 14-18	Female 19-30	Male 19-30	Female 31-50	Male 31-50	Female 51+	Male 51+
<b>Calorie Level(s) Assessed</b>		1,000	1,200	1,400, 1,600	1,600	1,800	1,800	2,200, 2,800, 3,200	2,000	2,400, 2,600, 3,000	1,800	2,200	1,600	2,000
<b>Macronutrients</b>														
Protein, g	RDA	13	19	19	34	34	46	52	46	56	46	56	46	56
Protein, % kcal	AMDR	5-20	10-30	10-30	10-30	10-30	10-30	10-30	10-35	10-35	10-35	10-35	10-35	10-35
Carbohydrates, g	RDA	130	130	130	130	130	130	130	130	130	130	130	130	130
Carbohydrates, % kcal	AMDR	45-65	45-65	45-65	45-65	45-65	45-65	45-65	45-65	45-65	45-65	45-65	45-65	45-65
Dietary Fiber, g	14 g/ 1,000 kcal	14	16.8	19.6	22.4	25.2	25.2	30.8	28	33.6	25.2	30.8	22.4	28
Added Sugars, % kcal	DGA	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%
Total Fat, % kcal	AMDR	30-40	25-35	25-35	25-35	25-35	25-35	25-35	20-35	20-35	20-35	20-35	20-35	20-35
Saturated Fat, % kcal	DGA	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%
Linoleic Acid, g	AI	7	10	10	10	12	11	16	12	17	12	17	11	14
Linolenic Acid, g	AI	0.7	0.9	0.9	1	1.2	1.1	1.6	1.1	1.6	1.1	1.6	1.1	1.6

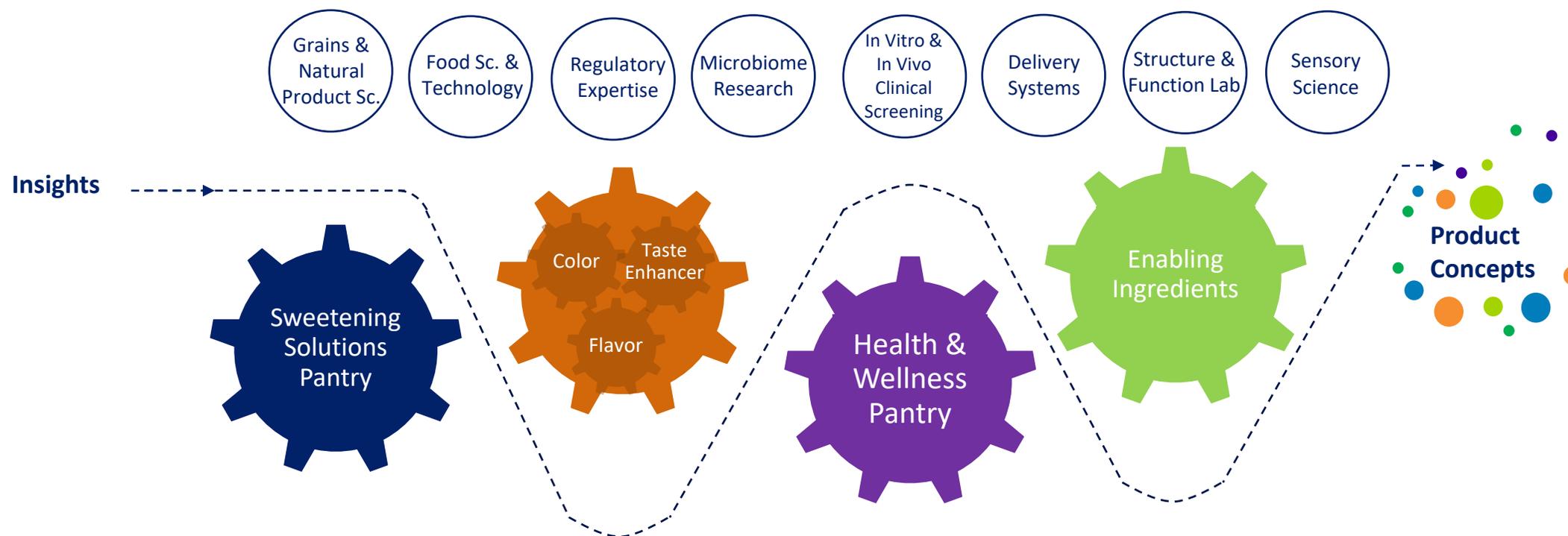


Daily reference intakes (DRI) recommends acceptable macronutrient distribution ranges (AMDR); 2015-2020 Dietary guidelines for Americans



# ADM Approach to Delivering Sweet Savvy<sup>SM</sup> Sugar Reduction

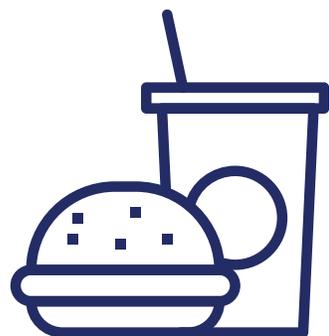
Enabling Science and Technologies to Deliver Effective Nutritive solutions



Integrated Ingredients and systems to deliver on texture, taste, stability and functionality

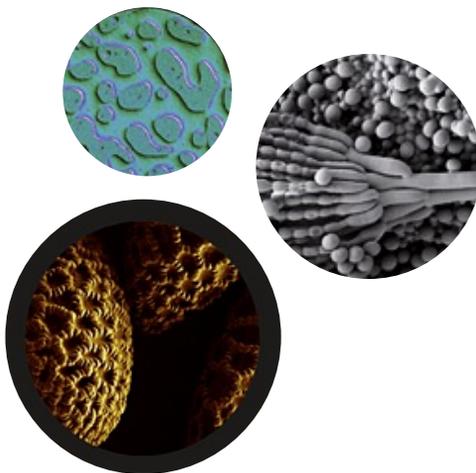
# Triggers and Challenges of Sugar Reduction

*Food Structure is built on intricate interactions of ingredients; Adding or limiting a food component causes challenges in maintaining structural integrity, taste and stability, nutritive efficacy*



Water  
 Sugar  
 Protein  
 Fats  
 Stabilizers  
 Flavors, Colors  
 Dietary Fibers  
 Wellness Ingredients

*A Typical Food Composition*



Food Structure is  
**Complex**



Sweetness  
 Challenge



Sensory  
 Acceptability



Functionality  
 Challenge



Cost  
 Sensitivities



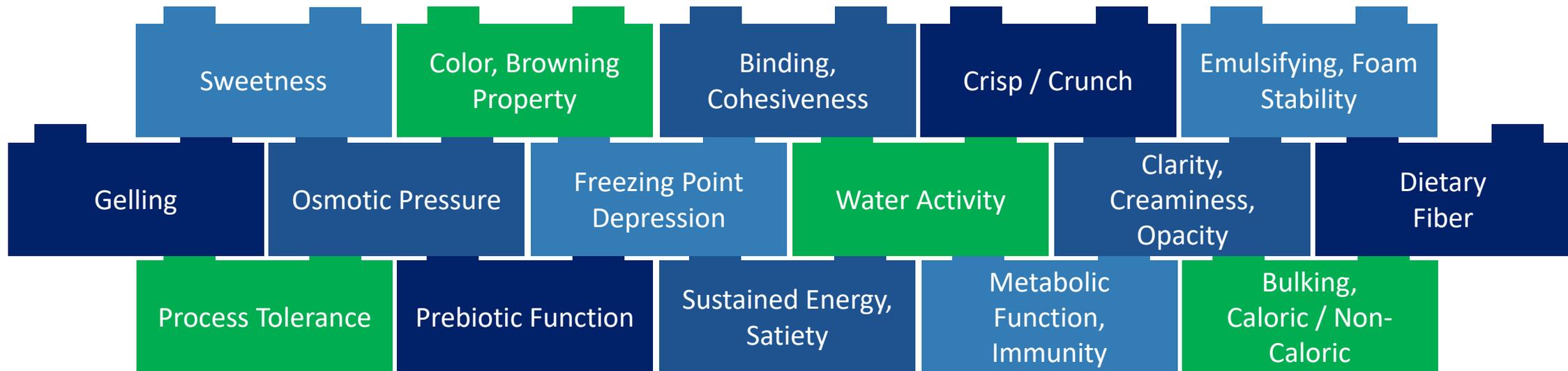
Label  
 Requirements



Health/Clinical  
 Efficacy

# Enabling Science for Sugar Reduction

ADM's deep understanding of the **BUILDING** blocks of texture, stability and nutrition functionality to ensure **Sweet Success**



# ADM's Unparalleled Sugar Reduction Toolbox

## Sweeteners

*Replace  
Sweetness*

### Corn or Wheat Based

Corn Syrups  
High Fructose Corn Syrups  
Crystalline Fructose  
Corn Syrup Solids  
Dextrose  
Maltodextrin

### Sucrose Based

Granulated Sugar  
Invert Sugar  
Liquid Sucrose

### Specialty Nutritive

Specialty Corn Syrups (i.e. RSGS)  
Tapioca & Rice Syrups  
Fruit Up™ Fruit Syrups  
Dry Honey, Molasses & Malt

### No / Low Calorie

Stevia  
Sucralose  
Monk Fruit  
Ace-K  
Allulose  
Erythritol  
Sorbitol  
Maltitol

## Flavors

*Rebalance  
Flavor*

### Characterizing flavors:

Profiles to bring out the best taste in your sweetener system

Flavors that improve overall taste perception, which can enable a 25-30% sugar reduction in the total product formulation

### Taste Modulation:

Reducing undesirable notes, such as bitter, sour or astringent

Enhancing desirable notes, such as sweetness

Improve mouthfeel perception

## Enabling Ingredients

*Rebuild  
Functionality*

### Sweeteners

**For sweetness plus structure, humectancy, and more**

### Polyols

Erythritol  
Maltitol  
Sorbitol

### Other Ingredients

**For structure, mouthfeel and more**

Fibersol® Dietary Fiber  
Resistant Starches  
Xanthan Gum

### Reduced Added Sugar Options

**For less "added sugar" on label while maintaining sweetness, binding, bulk and/or other functionality**

Fruit Juices  
Dried Fruit  
Nut Butters  
Reduced Sugar Glucose Syrup

# Bringing it All Together



# Consumers are seeking nutrition-backed solutions

## Consumers are increasingly taking actions to:

- ✓ check labels and limit the amount of sugar in their diets
- ✓ take a personalized approach to their nutrition and ingredient values
- ✓ buy items with added functional ingredients over traditional medicine
- ✓ find enjoyment in their consumption throughout the day



## Consumer Need States for Holistic Health & Wellness:



Mind



Heart



Digestive



Immune



Healthy Living



Healthy Aging



Beauty



# Sugar Reduction PLUS Proactive Nutrition Pantry Solutions

Our sugar reduction toolbox offers an entire pantry of sugar reduction PLUS proactive nutrition solutions.



## Proactive Nutrition Pantry Solutions

Microbiome Solutions

Functional Botanicals

Dietary Fibers

Natural Bioactives

Specialty Oils

Proteins



Sweet Success

**Sugar Reduction Toolbox**

**Sweetening Solutions**

**Flavors**

**Enabling Ingredients**





## Sugar Reduction PLUS Proactive Nutrition

Functional better-for-you ice creams and frozen desserts—like high protein, low sugar, keto-friendly versions—are making inroads.

### Consumer Insight:

Consumers seeking functional dairy products, are 53% more driven to value sugar reduction

#### Popular Positioning

“60% less calories”

High protein and fiber

Natural sweetness





# No Sugar Added Vanilla Ice Cream

## A Sweet Success Story

We removed added sugars entirely from this delicious functional vanilla ice cream. This new formula has an improved creamy mouthfeel texture and offers a bonus of well-tolerated dietary fiber.

### ADM Featured Ingredients:

- SweetRight™ Edge Stevia
- SweetRight™ Allulose
- Fibersol®-2
- Vanilla Extract

### Concept Highlights:

- No Added Sugars
- <1 g Added Sugars per pint
- Excellent Source of Dietary Fiber
- 20g protein per pint

### Functionality & Methods:

- Freezing Point Depression
- Osmotic Concentration
- Product Shrinkage
- Prevention of Ice Crystals
- Water Activity
- Flavor (Matching & Enhancement)
- Processing (Freezing and Overrun)

Fibersol® is certified low FODMAP\* – proving Fibersol is well tolerated



### Nutrition Facts

Serving size	2/3 cup (85g)
<b>Amount Per Serving</b>	
<b>Calories</b>	<b>110</b>
	<b>% Daily Value*</b>
Total Fat 5g	6%
Saturated Fat 3g	15%
Trans Fat 0g	
Cholesterol 15mg	6%
Sodium 65mg	3%
Total Carbohydrate 18g	7%
Dietary Fiber 8g	27%
Total Sugars 5g	
Includes 0g Added Sugars	0%
Protein 7g	
Vitamin D 0mcg	0%
Calcium 170mg	15%
Iron 0mg	0%
Potassium 0mg	0%

\* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

**INGREDIENTS:** FILTERED WATER, CREAM, FIBERSOL®-2 (SOLUBLE CORN FIBER), ALLULOSE, MILK PROTEIN CONCENTRATE, NONFAT DRY MILK, SWEET DAIRY WHEY, ADM STABILIZER BLEND (SOY LECITHIN, GUAR GUM AND XANTHAN GUM) VANILLA EXTRACT, STEVIA LEAF EXTRACT.

FODMAP - Fermentable Oligosaccharides, Disaccharides, Monosaccharides, and Polyols (FODMAP), which are short chain carbohydrates and sugar alcohols that are poorly absorbed by the body, resulting in abdominal pain and bloating.



# Sugar Reduction **PLUS** Positive Packed Pantry Solutions

ADM offers an entire pantry of sugar reduction **PLUS** positive packed nutrition solutions.



## Positive Packed Pantry Solutions

Gluten Free

Clean Label

Natural Flavors

Organic

Non-GMO

Plant-Based

Antioxidants



Sweet Success



**Sugar Reduction Toolbox**

**Sweetening Solutions**

**Flavors**

**Enabling Ingredients**



## Sugar Reduction PLUS Positive Packed

Even in categories where indulgence is a primary driver, sugar reduction gives fresh options in a traditional space.

### Consumer Insight:

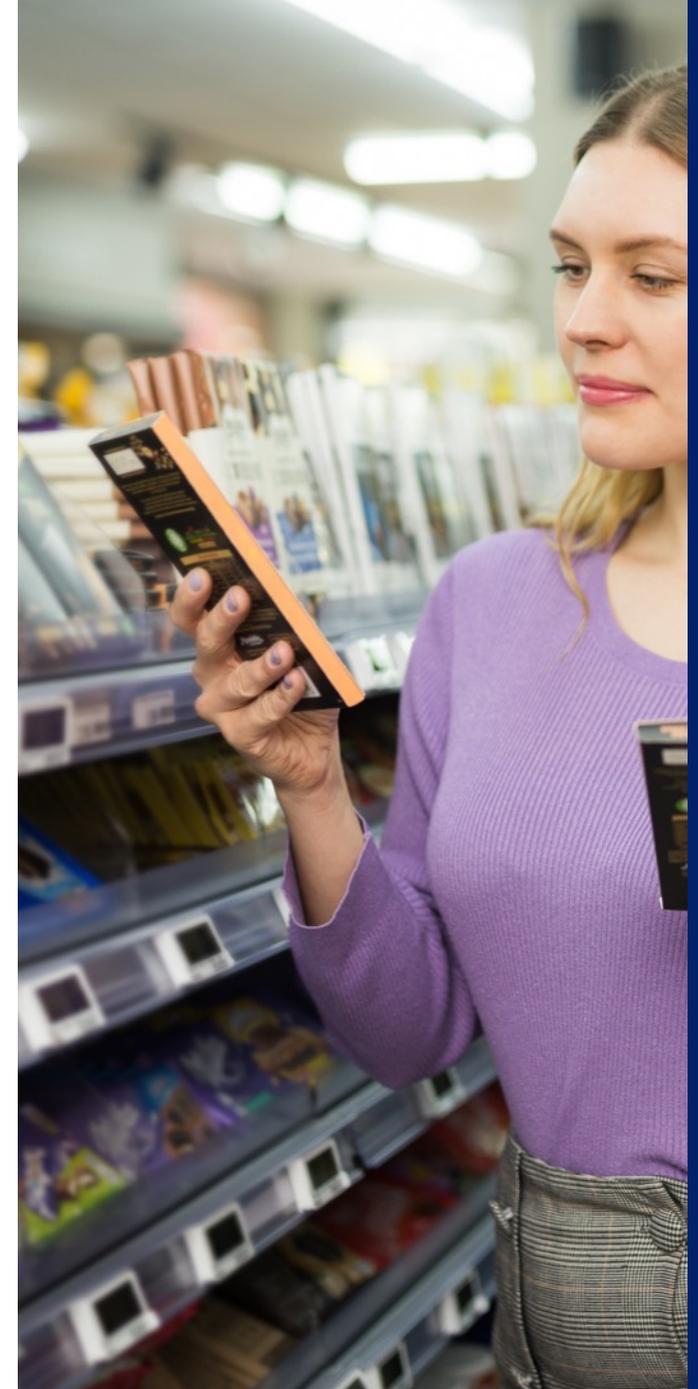
Consumers seeking **clean label candy and chocolates**, are **64% more driven to value sugar reduction**

#### Popular Positioning

Plant-based,  
vegan

Organic &  
GMO-free

Sustainably  
sourced





## 50% Reduced Sugar Mint Dark Chocolate A Sweet Success Story

Decadent mint dark chocolate is served up “naked,” without any inclusions or fillings. Our take on this sophisticated indulgence delivers rich sweetness and mouthfeel without the full calorie hit, along with the botanical bonus of sustainable peppermint oil.

### ADM Featured Ingredients:

- SweetRight™ Erythritol
- SweetRight™ Edge Stevia
- Natural Peppermint Oil

### Concept Highlights:

- 50% reduction in sugar versus control

### Functionality & Methods:

- Osmotic Concentration
- Solids
- Water Activity
- Refining to < 35 Microns
- Flavor (Matching & Enhancement)
- Processing (Melting and Tempering)

Sustainable  
& traceable  
mint



## Nutrition Facts

Serving size	6 pieces (30g)
Amount Per Serving	
<b>Calories</b>	<b>130</b>
	% Daily Value*
Total Fat 11g	14%
Saturated Fat 7g	34%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 17g	6%
Dietary Fiber 0g	0%
Total Sugars 8g	
Includes 8g Added Sugars	16%
Sugar Alcohol 6g	
Protein 1g	
Vitamin D 0mcg	2%
Calcium 0mg	0%
Iron 3.1mg	15%
Potassium 115mg	2%

\* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

**INGREDIENTS:** DARK CHOCOLATE (UNSWEETENED CHOCOLATE, SUGAR, COCOA BUTTER), ERYTHRITOL, COCOA BUTTER. CONTAINS 2% OR LESS OF EACH OF THE FOLLOWING: SOY LECITHIN, NATURAL FLAVOR, NATURAL VITAMIN E (MIXED TOCOPHEROLS, SOYBEAN OIL), NATURAL PEPPERMINT OIL, STEVIA LEAF EXTRACT.



# Sugar Reduction **PLUS** Permissible Indulgence Pantry Solutions

ADM offers an entire pantry of sugar reduction **PLUS** permissible indulgence solutions.



## Complete Pantry Solutions

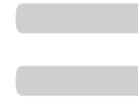
Wholesome Nutrition

Texture

Plant-Based Proteins

Wellness Ingredients

Color



Sweet Success



**Sugar Reduction Toolbox**

**Sweetening Solutions**

**Flavors**

**Enabling Ingredients**



## Sugar Reduction PLUS Permissible Indulgence

Consumers are more aware than ever of the calorie content in alcohol, particularly in their favorite RTD formats.

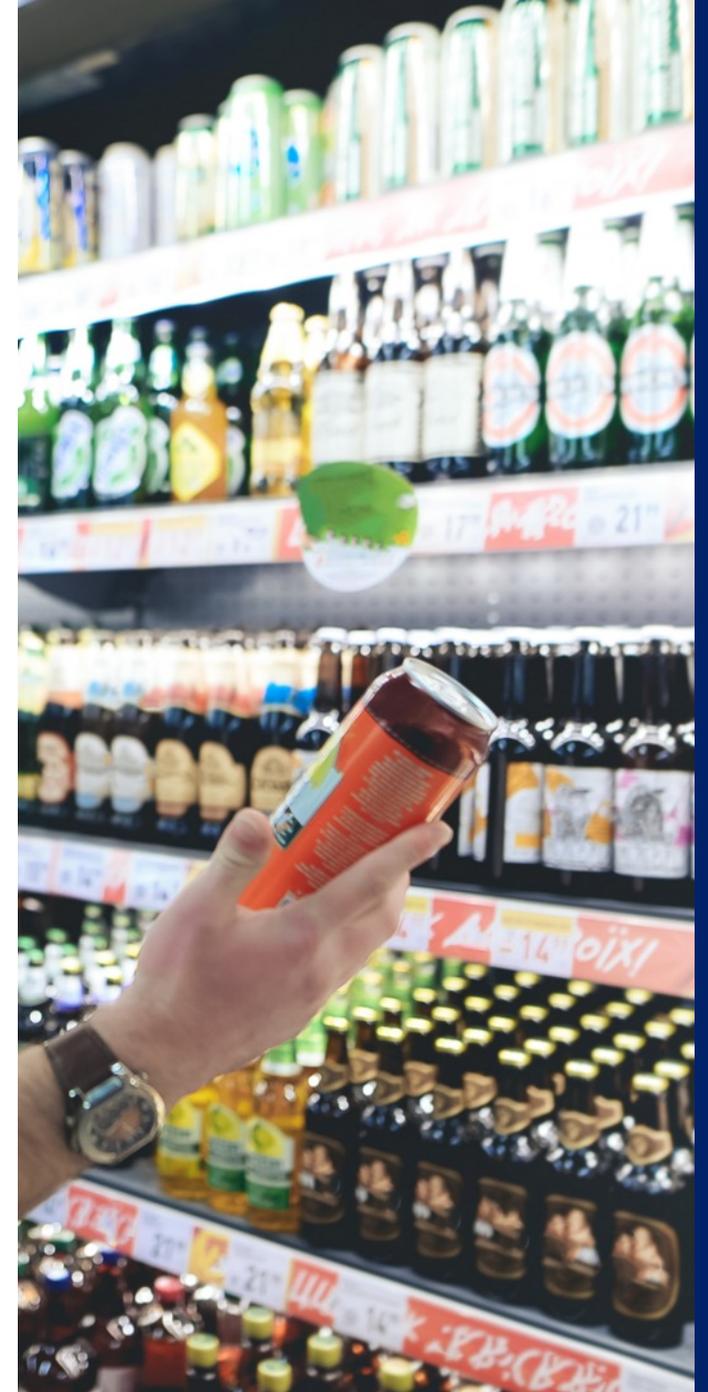
Consumers seeking **indulgent beverages**, are **55% more driven to value sugar reduction**

### Popular Positioning

100 calories or less

2 grams or less sugars

Natural flavors





## Sugar-Free Clementine Hard Seltzer

### A Sweet Success Story

Even when indulging in an adult beverage, consumers are looking for products that offer a better-for-you approach. This hard seltzer is right on trend, with a modest caloric count and zero sugars, with a touch of our SweetRight™ Edge stevia to replace sweetness and accompanied by refreshing taste of familiar citrus.

#### ADM Featured Ingredients:

- SweetRight™ Edge Stevia
- Natural Clementine Flavors
- Citric Acid

#### Concept Highlights:

- No Added Sugars
- 100 calories
- 5% Alcohol By Volume (ABV)

#### Functionality & Methods:

- Osmotic Concentration
- Sensorial Sciences Capabilities
- Flavor (Matching & Enhancement)

The most true-to-fruit flavor from the world's largest citrus oil processor



<b>Nutrition Facts</b>	
Serving size	1 can (12 oz) (354g)
<b>Amount Per Serving</b>	
<b>Calories</b>	<b>100</b>
	<b>% Daily Value*</b>
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 0g	0%
Dietary Fiber 0g	0%
Total Sugars 0g	
Includes 0g Added Sugars	0%
Protein 0g	
Vitamin D 0mcg	0%
Calcium 0mg	0%
Iron 0mg	0%
Potassium 0mg	0%

\* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

**INGREDIENTS:** FILTERED WATER, ALCOHOL, NATURAL FLAVORS, CITRIC ACID, STEVIA LEAF EXTRACT.



## ADM helps you deliver Sugar Reduction **PLUS**

Better-for-you doesn't mean bland. We help you deliver delicious health-forward nutrition in delightful indulgences, with truly innovative solutions that give you an edge in today's dynamic marketplace.



### Proactive Nutrition

Sugar Reduction PLUS  
Functional Benefits



### Positive Packed

Sugar Reduction PLUS  
Clean & Clear Labels



### Permissible Indulgence

Sugar Reduction PLUS  
Balanced Lifestyle

## ADM is the sweetening and sugar reduction innovation leader

SweetSavvy<sup>SM</sup> approach—equal parts technical expertise, ingenuity and innovation

Continued investment in our broad, unparalleled portfolio to help you meet changing market needs

Delivering the preferred sweetness, labels and sustainability consumers want next

*For more information contact:*



**800-257-5743 | [sweeteners@adm.com](mailto:sweeteners@adm.com) | [adm.com/yoursweeteners](http://adm.com/yoursweeteners)**

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