

Leveraging Leading Metatrends to Reach Today's Consumer

Dr. Rachel Cheatham
Foodscape Group, LLC
August 2021



AGENDA

- CURRENT LANDSCAPE
- TOP 10 METATRENDS
- NEXT, A CLOSER LOOK AT THESE THREE:
 - PLANT FORWARD
 - ENVIRONMENTAL IMPACT
 - DIETARY PATTERNS
- LEVERAGING METATRENDS EFFECTIVELY

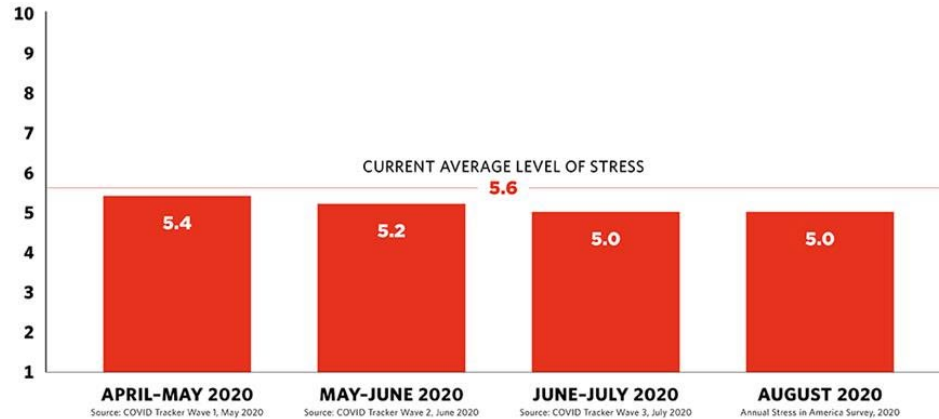
CURRENT LANDSCAPE



THE COVID EFFECT: Stress Levels

POST-INAUGURATION STRESS SURVEY

Americans Report Highest Average Level of Stress Since April 2020



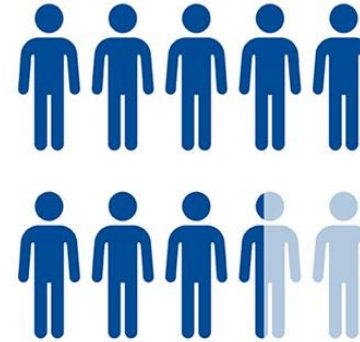
STRESS IN AMERICA™ January 2021 Stress Snapshot

1 = Little or no stress 10 = A great deal of stress

© American Psychological Association

POST-INAUGURATION STRESS SURVEY

More Than 8 in 10 Americans (84%) Report Feeling Emotions Associated With Stress in the Last Two Weeks



MOST COMMON EMOTIONS

Anxious 47%

Sad 44%

Angry 39%

STRESS IN AMERICA™ January 2021 Stress Snapshot

© American Psychological Association

APA Tips to Manage Stress



Take a break
from the news
and social media



Find **three good**
things that
happened to
you each day



Practice **self-care**
in 15- or 30-minute
increments
throughout the day



Stay connected
with friends
and family



Keep things
in **perspective**

STRESS IN AMERICA™ January 2021 Stress Snapshot

© American Psychological Association

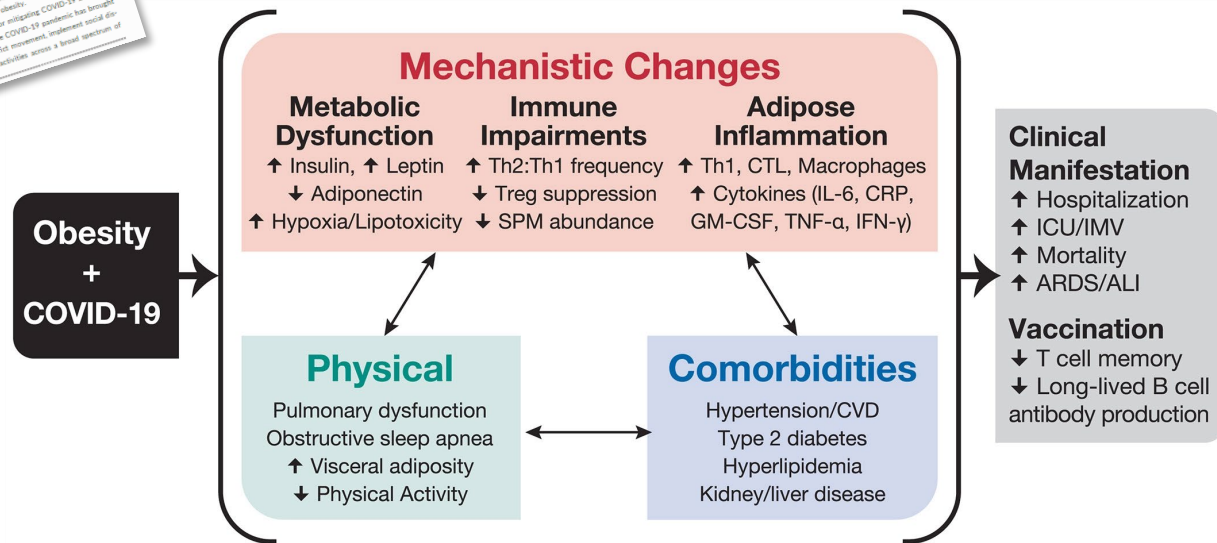


THE COVID EFFECT: Obesity

5



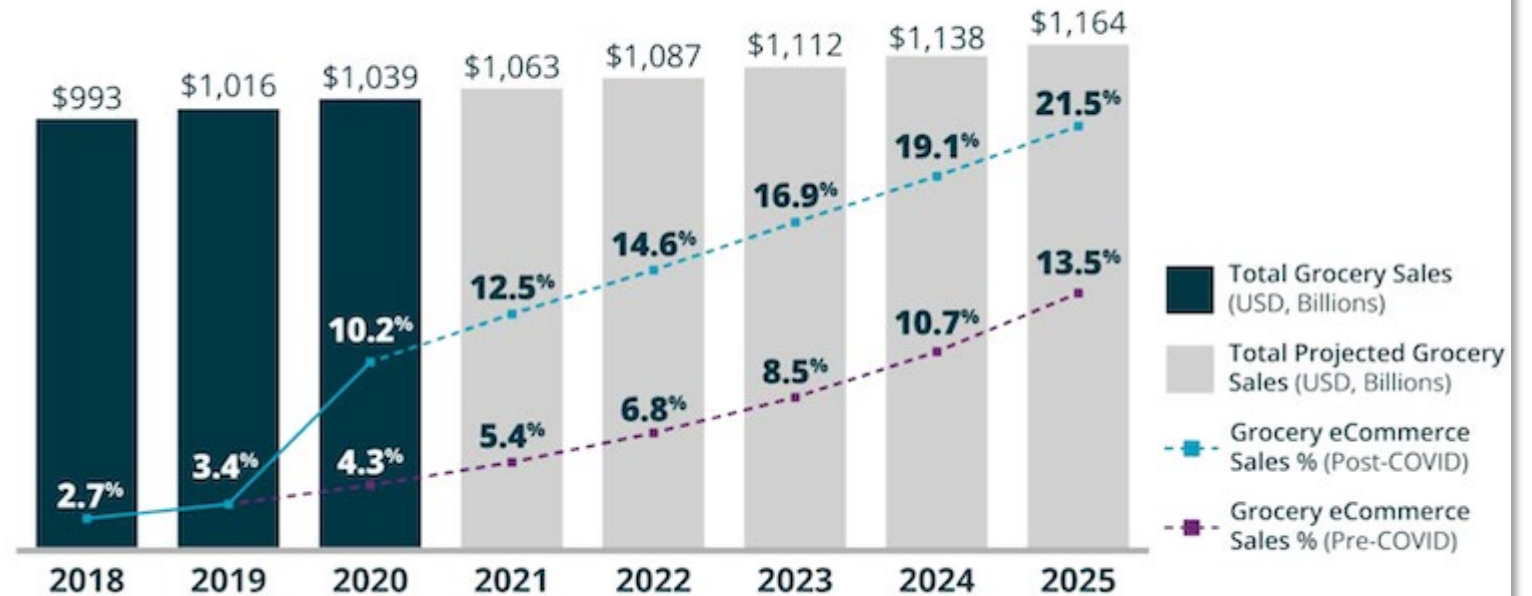
- Systematic review of 75 studies finds individuals with obesity (BMI>30) were more at risk for:
 - Testing COVID positive (46% higher)
 - Hospitalization for COVID (113% higher)
 - ICU admission for COVID (74% higher)
 - Mortality (48% increase in deaths)



THE COVID EFFECT: Online Grocery

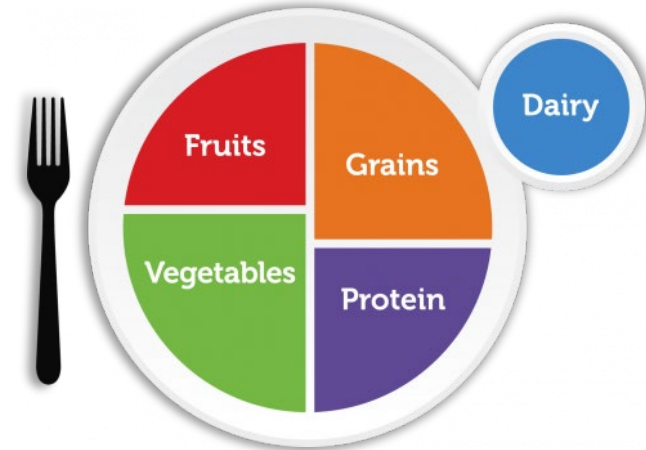
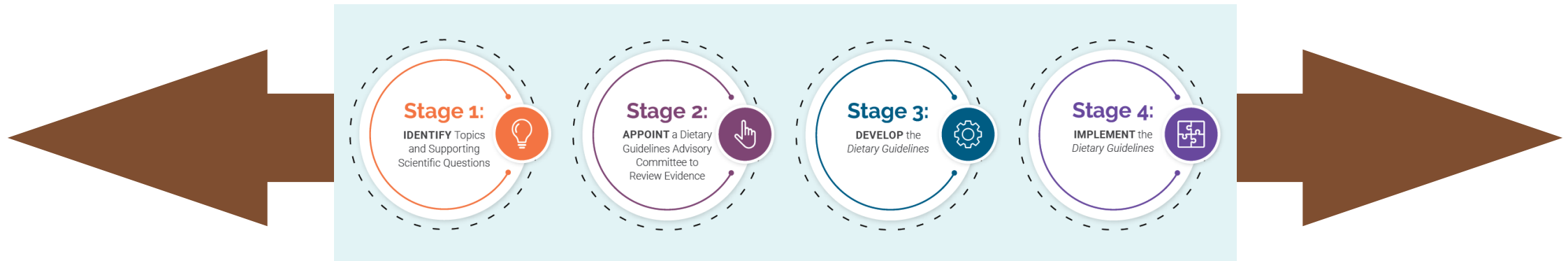
- Polled nearly 60,000 U.S. consumers across 20 states
- 5-year growth forecast marks a more than 60% increase over pre-coronavirus pandemic dollar sales estimates for the online grocery space

CAGR for Online Grocery



FORMAL DIETARY GUIDANCE

7



WHO USES DGAs?

The Dietary Guidelines has a significant impact on nutrition in the United States because it:

- *Forms the basis of federal nutrition policy and programs*
- *Helps guide local, state, and national health promotion and disease prevention initiatives*
- *Informs various organizations and industries, such as the food and beverage industry*



Supplemental
Nutrition
Assistance
Program (SNAP)

Special
Supplemental
Nutrition
Program for
Women, Infants,
and Children
(WIC)



“MAKE EVERY BITE COUNT”: 4 Steps



- 1. Follow a healthy dietary pattern at every life stage.*
- 2. Customize and enjoy nutrient-dense food and beverage choices to reflect personal preferences, cultural traditions and budgetary considerations.*
- 3. Focus on meeting food group needs with nutrient-dense foods and beverages, and stay within calorie limits.*
- 4. Limit foods and beverages higher in added sugars, saturated fat, and sodium, and limit alcoholic beverages.*

NUTRIENT DENSE DEFINED

10



Nutrient-dense foods and beverages provide vitamins, minerals and other health-promoting components and have little added sugars, saturated fat, and sodium.

Vegetables, fruits, whole grains, seafood, eggs, beans, peas, and lentils, unsalted nuts and seeds, fat-free and low-fat dairy products, and lean meats and poultry – when prepared with no or little added sugars, saturated fat, and sodium – are nutrient-dense foods.



DGA ADHERENCE AS MEASURED BY HEI

11

- The Healthy Eating Index (HEI) is a measure of diet quality used to assess how well a dietary pattern aligns with key recommendations of the DGAs
- Overall score is made up of 13 components that reflect the different food groups

Figure I-1

Adherence of the U.S. Population to the *Dietary Guidelines* Over Time, as Measured by the Average Total Healthy Eating Index-2015 Scores

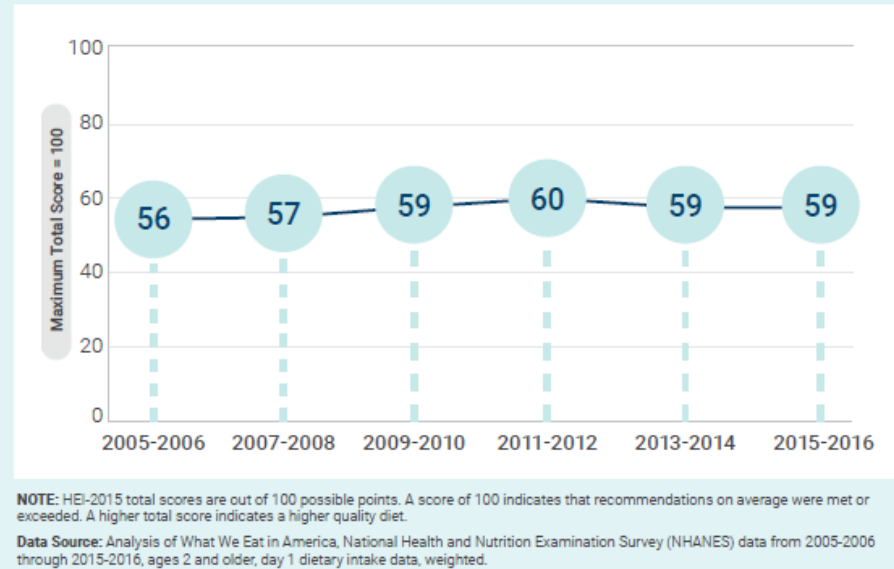
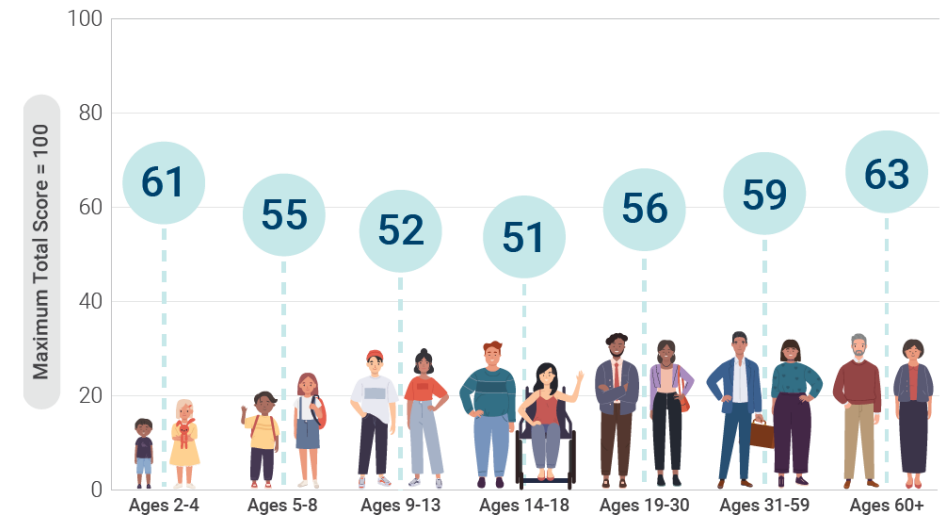


Figure 1-4

Adherence of the U.S. Population to the *Dietary Guidelines* Across Life Stages, as Measured by Average Total Healthy Eating Index-2015 Scores





About 80 PERCENT of the U.S.
population does not meet fruit
recommendations.



DIETARY GUIDELINES FOR AMERICANS: What about “Apple” mentions?

13



Fruits



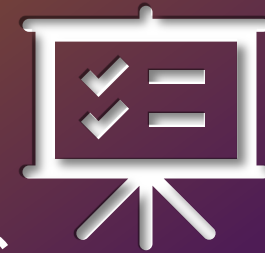
Fruits

- All fresh, frozen, canned, and dried fruits and 100% fruit juices: for example, apples, Asian pears, bananas, berries (e.g., blackberries, blueberries, currants, huckleberries, kiwifruit, mulberries, raspberries, and strawberries); citrus fruit (e.g., calamondin, grapefruit, lemons, limes, oranges, and pomelos); cherries, dates, figs, grapes, guava, jackfruit, lychee, mangoes, melons (e.g., cantaloupe, casaba, honeydew, and watermelon); nectarines, papaya, peaches, pears, persimmons, pineapple, plums, pomegranates, raisins, rhubarb, sapote, and soursop.

For example, snacks can be used as a way to promote intake of **nutrient-dense fruits** and vegetables, like carrot sticks and hummus or apple slices, instead of foods like chips or cookies.

At least half of the recommended amount of fruit should come from whole fruit, rather than 100% juice.

THE TOP 10 METATRENDS



WHAT IS A TREND? PREDICTION? META?

TREND:

- *An upwards or downwards shift in a data set over time (dictionary)*
- *Signals a general direction in which something is moving, a permanent shift. Trends can be local, regional or national and they may linger only for a short time or remain embedded for years (Nestle)*
- *Observes the cool, the contrary and the innovative from around the world (Intel)*

PREDICTION:

- Determination about what the future likely holds...
- Part crystal ball, part qualitative analysis, and in some cases, use of predictive equations which must consider which variables of interest matter the most in order to use coefficients of variation



METATREND:

- A measurement of the trends of the trends
- Not a prediction
- Something Foodscape started measuring annually in 2016

METATRENDS METHODOLOGY

SOURCE THE REPORTS

LATE 2020 TO JAN 15, 2021

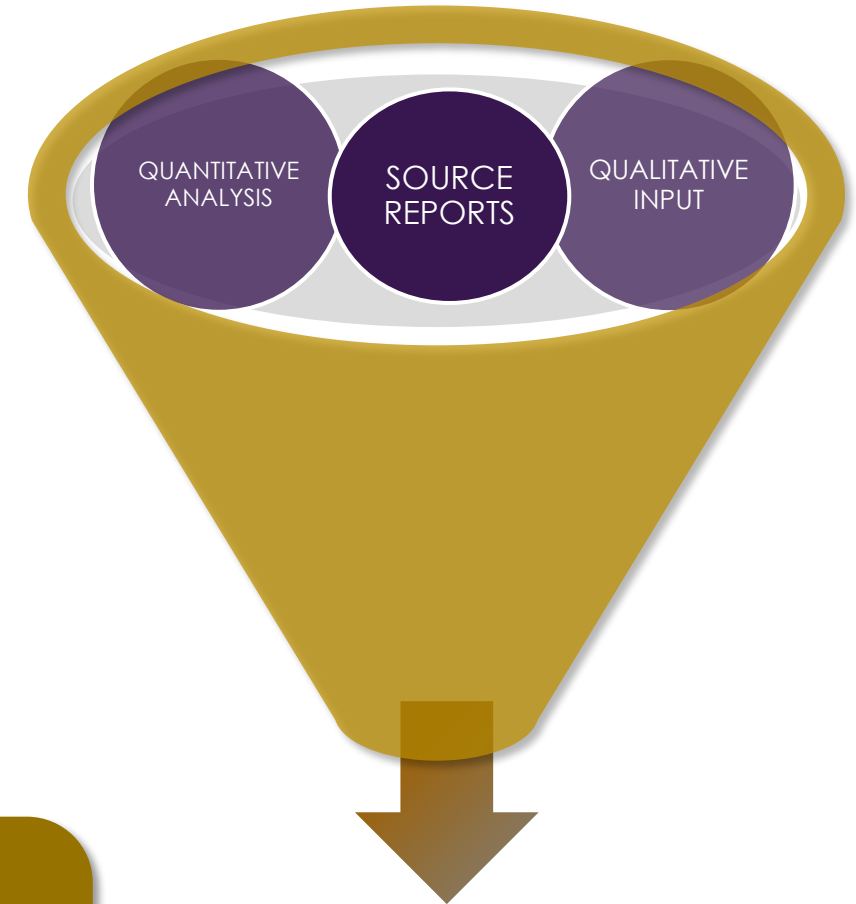
Pull 100+ trends reports from a variety of outlets including retail chains, popular consumer health websites, marketing agencies, nutrition influencers and others

FILTER FOR QUALITY

Eliminate reports that are poor quality- blatant plagiarism, media duplicates, pure marketing material for single food/ingredient, etc.

CALCULATE METATRENDS

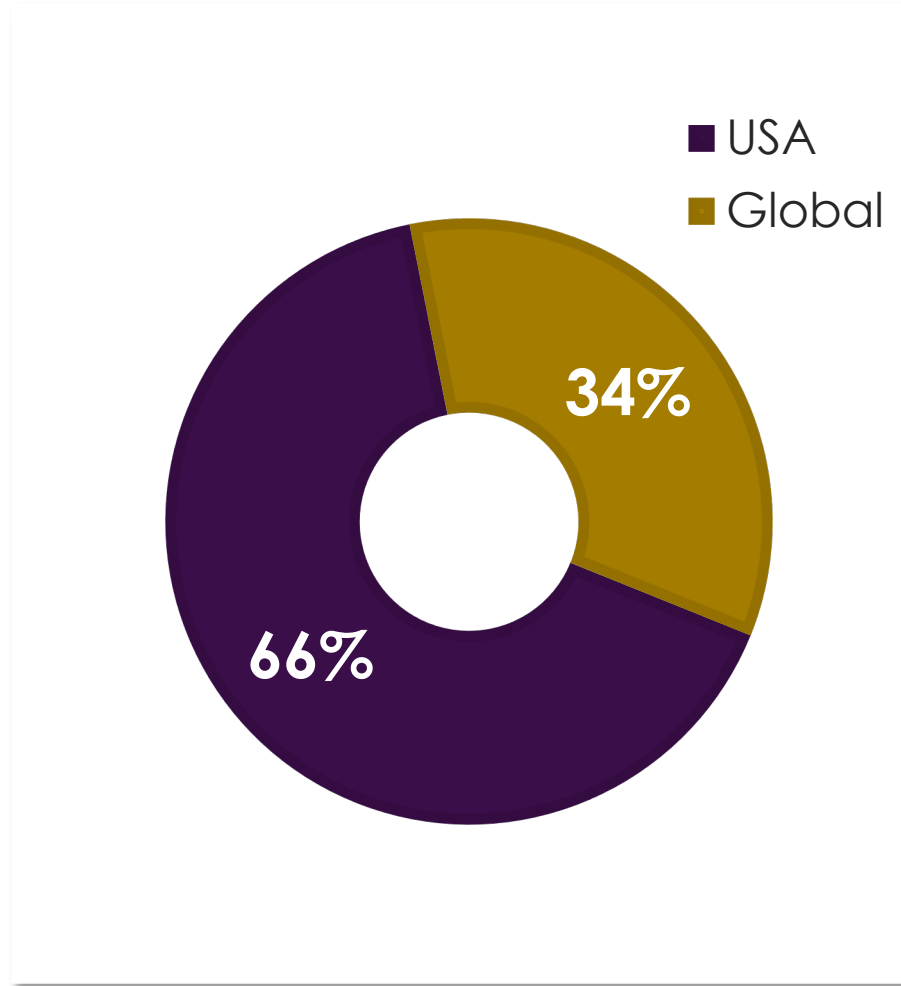
Log and tabulate reported trends using relational database to determine top metatrends – **a measure of the trends of the trends** - with corresponding subtrend maps



FOODSCAPE
METATREND



US & NON-US MIX



Countries represented in the 2021 Metatrends:

- USA
- Israel
- Switzerland
- Germany
- Spain
- Australia
- India
- Canada
- UK

TIMELINE & COVID

18

2020 METATRENDS:

Data collection late 2019 through Jan 15, 2020

2020 METATRENDS:

Released Spring 2020, reflecting a pre-COVID reality based on timing of sourced reports

COVID HITS!

March 2020

2021 METATRENDS:

Data collection late 2020 through Jan 15, 2021

2021 METATRENDS:

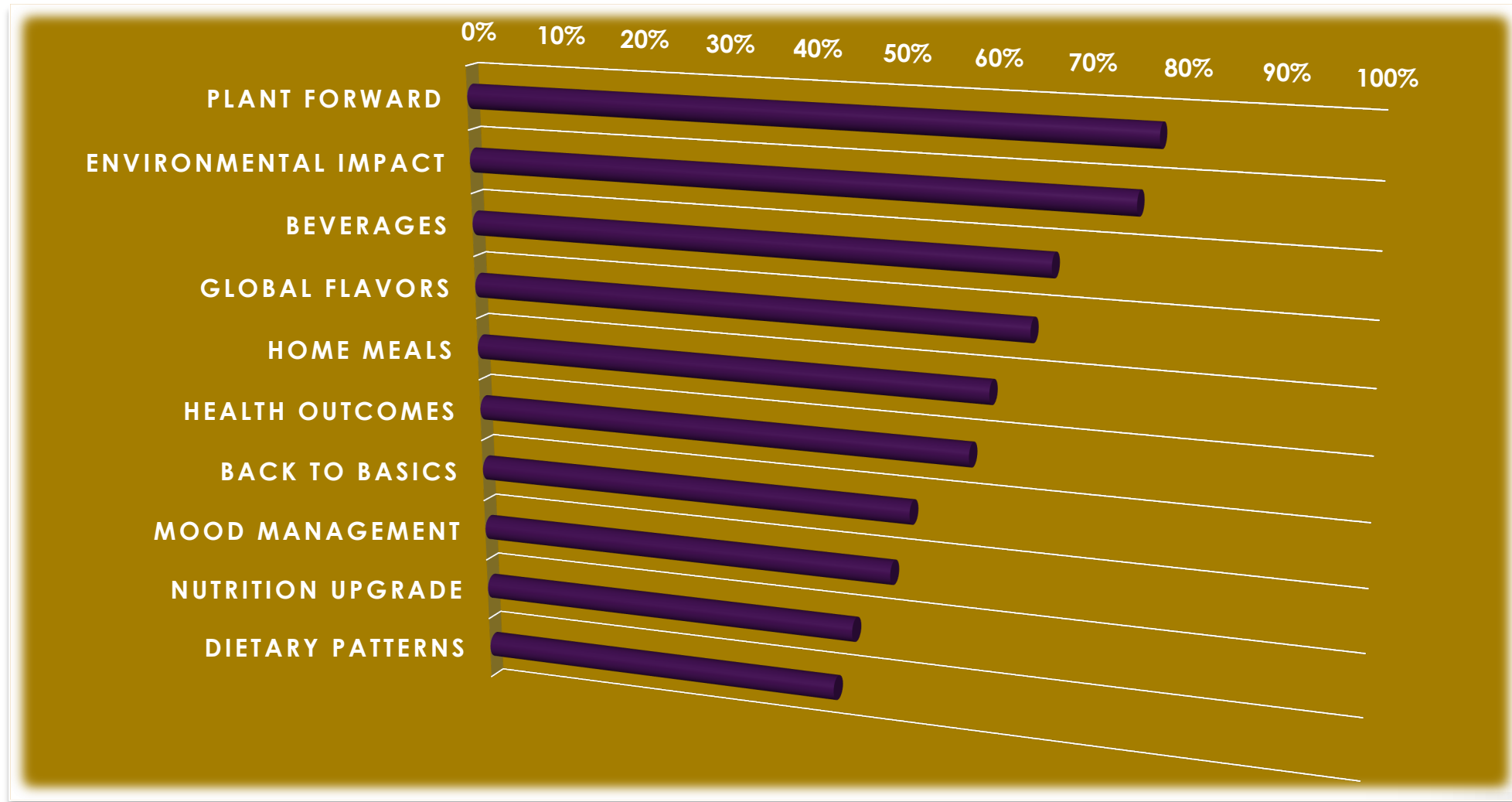
Released Spring 2021, reflecting a COVID reality since reports sourced were published during COVID times

2022 METATRENDS?

Will reflect a COVID-managed world as report sourcing will begin in late 2021 after many months of vaccine and related efforts

TOP 10 METATRENDS: Reporting Frequencies

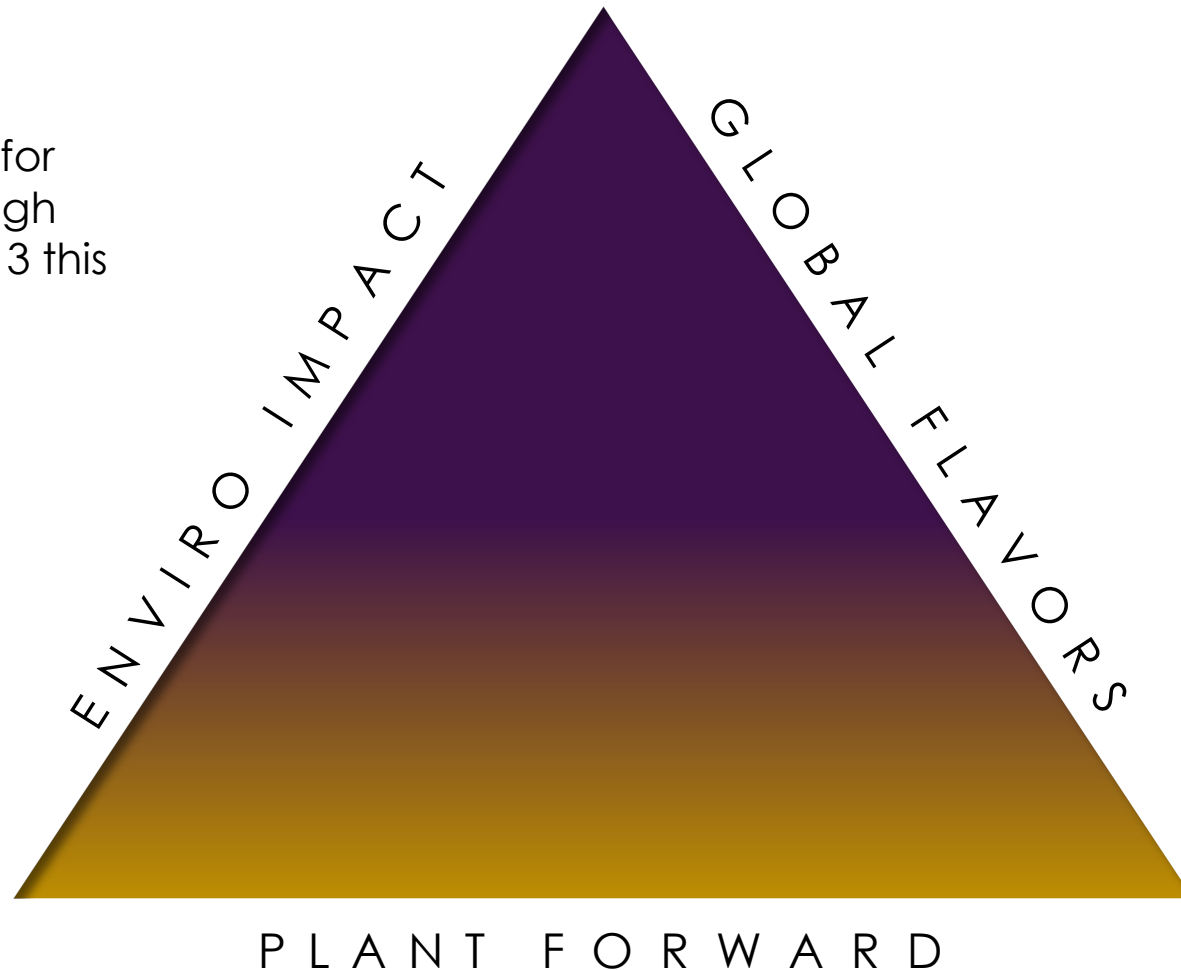
19



THE POWER TRIO

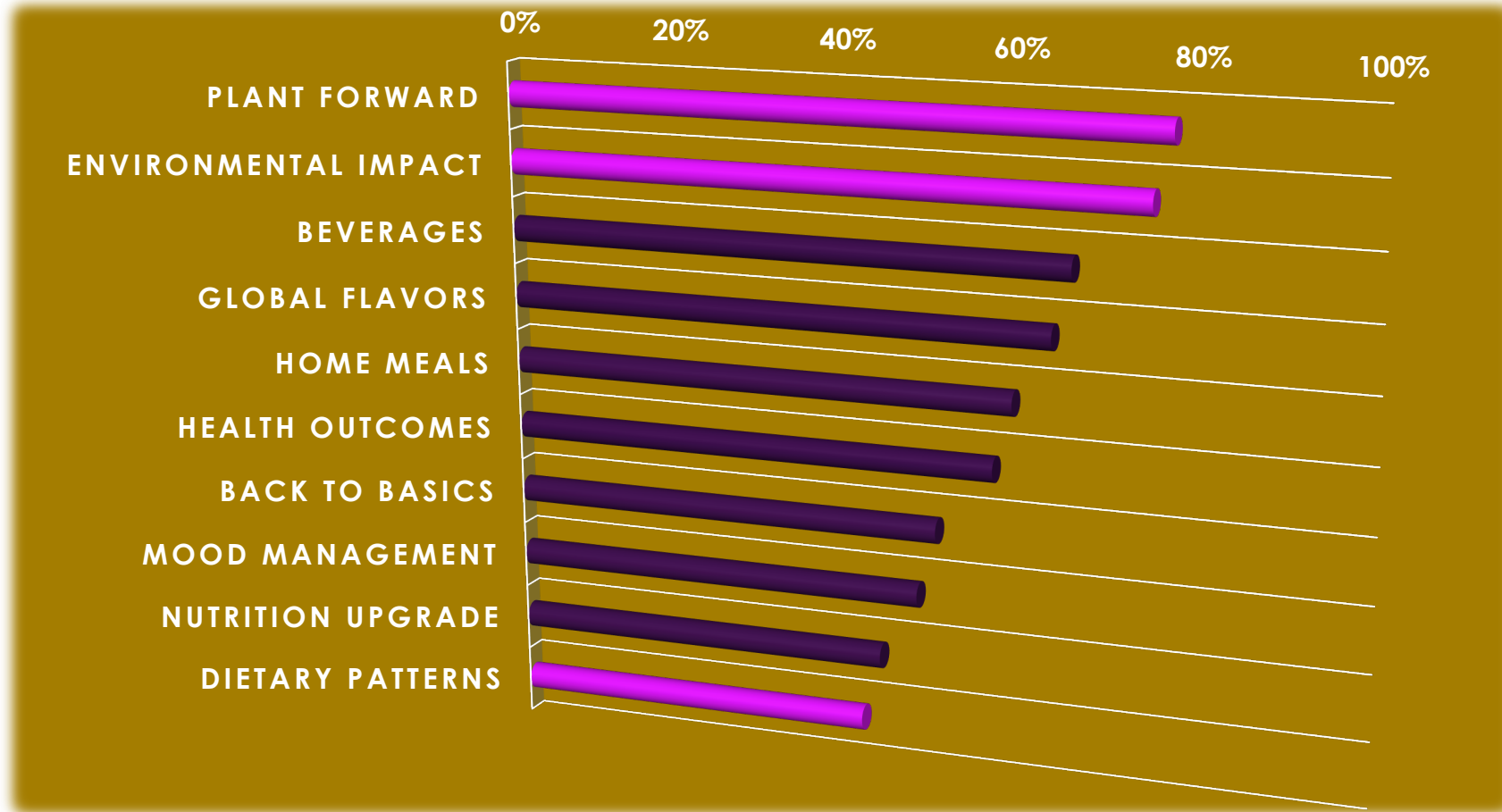
THE POWER TRIO REMAINS A HALLMARK FEATURE:

- Combo of plants, eco and global holds true yet again for the third year in a row, though beverages snuck in the top 3 this year for the first time



A CLOSER LOOK:

Plant Forward, Enviro Impact & Dietary Patterns





PLANT
FORWARD

PLANT BASED FOODS GROWTH

23



GROWTH OF
TOTAL PLANT-BASED FOODS
BY CATEGORY

CATEGORY	SALES	% GROWTH
	2020	PAST YEAR
Milk	\$2.5B	20.4%
Meat	\$1.4B	45.3%
Frozen Meals	\$520M	28.5%
Ice cream + frozen novelty	\$435M	20.4%
Creamer	\$394M	32.5%
Yogurt	\$343M	20.2%
Protein powders	\$292M	9.6%
Butter	\$275M	35.5%
Cheese	\$270M	42.5%
Tofu + Tempeh	\$175M	40.8%
Baked goods + cookies	\$152M	(1.2)%
Ready-to-drink beverages	\$137M	12.0%
Condiments, dressings and mayo	\$81M	23.4%
Dairy spreads, dips, sour cream, and sauces	\$61M	83.4%
Eggs	\$27M	167.8%
GRAND TOTAL	\$7B	27.1%

Source: 52-week calendar year ending December 27, 2020. Raw data commissioned from SPINS powered by IRI and coded by PBFA + GFI.

plantbasedfoods.org

PLANT BASED
FOODS ASSOCIATION

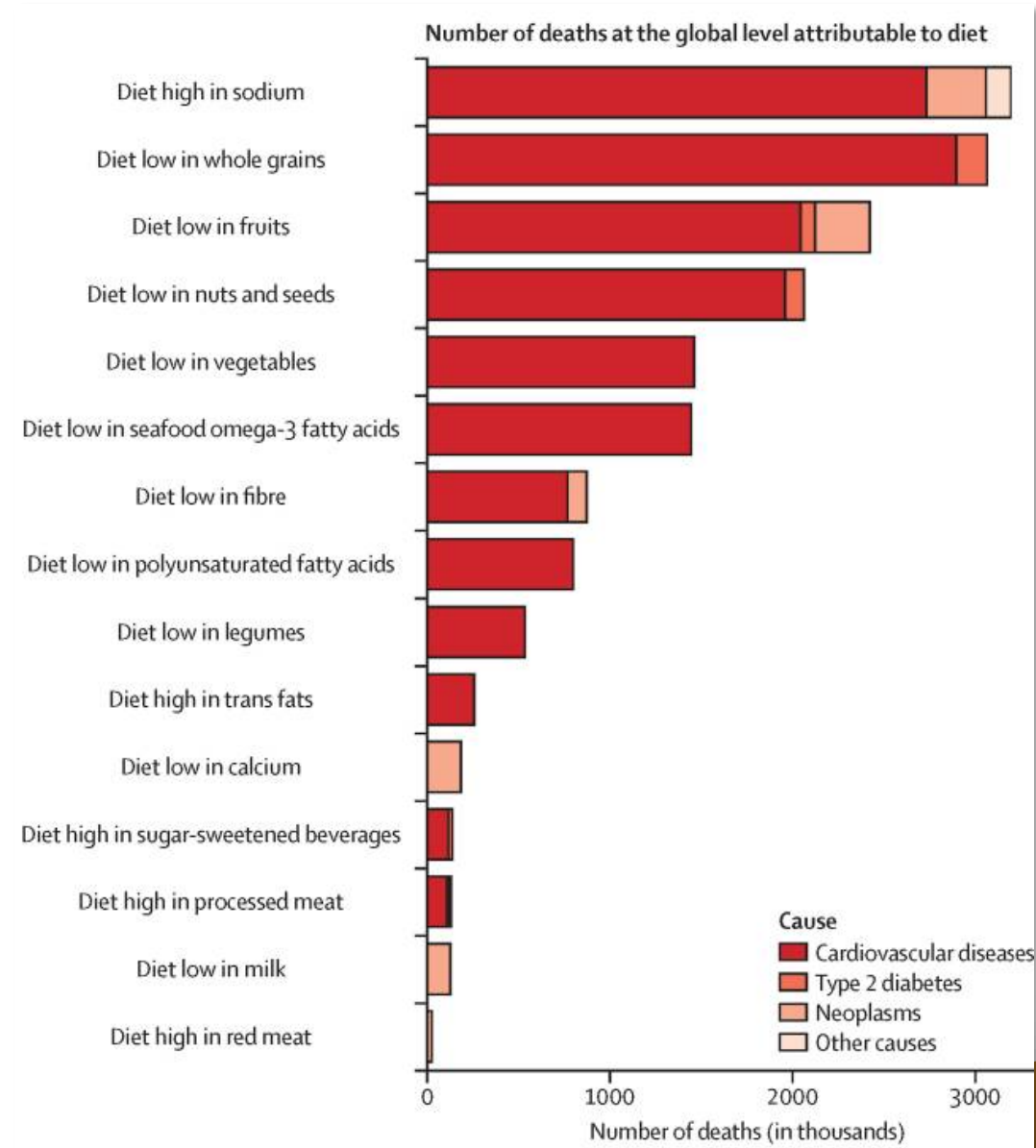
- Dollar sales of plant-based foods was \$7B in 2020
- All categories of plant-based foods grew except for baked goods + cookies



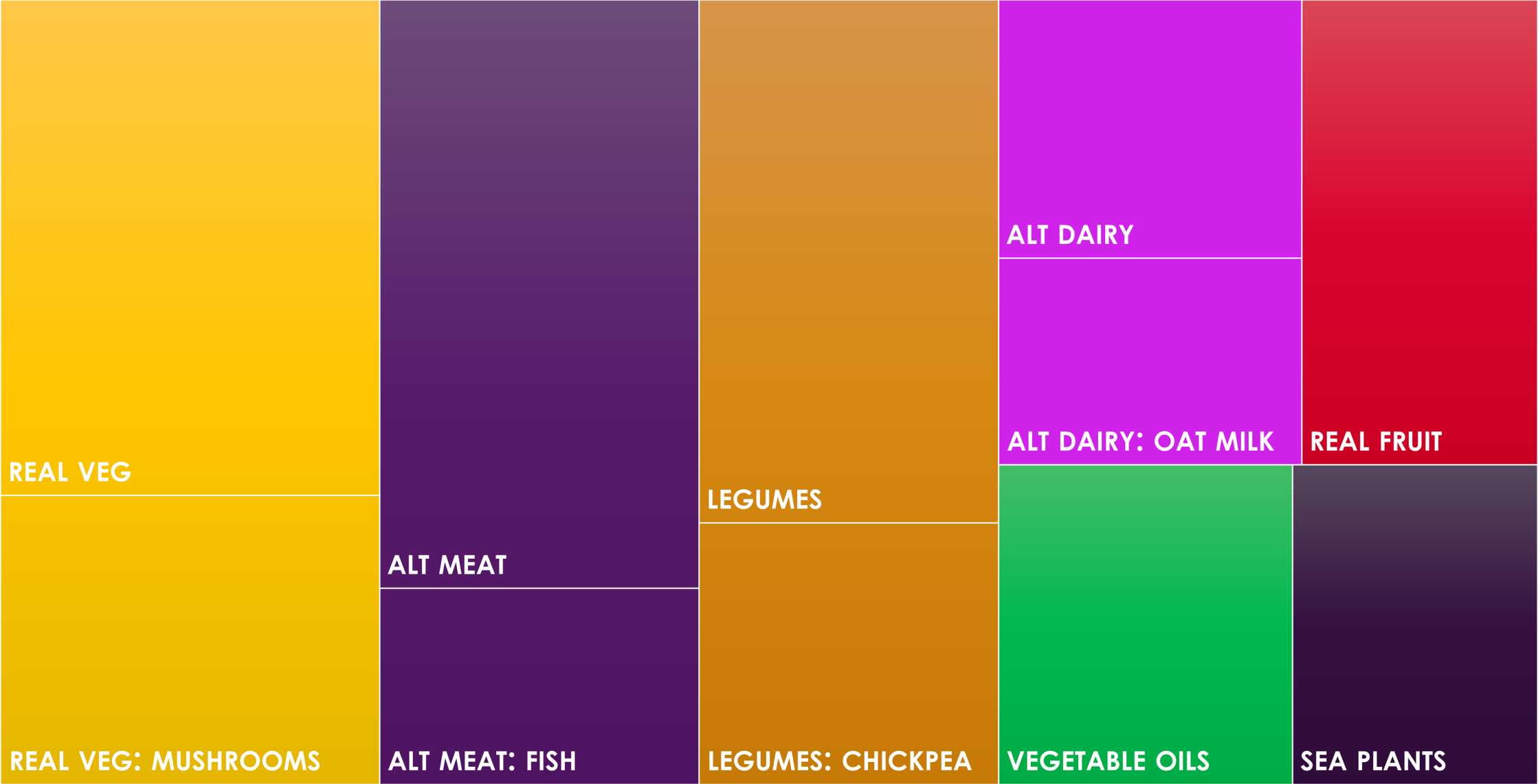
GLOBAL DEATHS ATTRIBUTABLE TO DIET

24

- 195 countries worth of dietary data analyzed in relation to death by heart disease, diabetes, cancers and other causes
- Dietary challenges are more about a LACK of a positive food/nutrient category, including low fruit intakes!

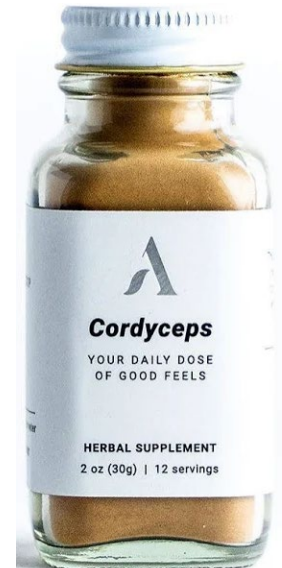


PLANT FORWARD: SUBTRENDS



MUSHROOMS

26



Ingredients you want on your team.

Organic Cordyceps (1500 mg per serving)

Cordyceps are famous among endurance athletes all around the world. Studies show that it supports energy and endurance. The power comes from the fruiting body of Cordyceps mushroom. In nature, it grows on caterpillars, but we love our multi-legged furry friends so we don't use that kind. Ours are 100% vegan and cruelty free.

Nutrition Facts	
4 Servings Per Container	
Serving Size 8 fl oz (240 mL)	
Amount Per Serving	% Daily Value*
Calories 80	
Total Fat 3.5g	4%
Saturated Fat 0g	0%
Monounsaturated Fat 2.5g	
Polysaturated Fat 0.5g	
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 110mg	5%
Total Carbohydrate 12g	4%
Dietary Fiber 2g	7%
Total Sugars 2g	
Includes 2g Added Sugars	4%
Protein 1g	
Vitamin D 0mcg	0%
Calcium 240mg	15%
Iron 0mg	0%
Potassium 150mg	4%

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

INGREDIENTS: OATMILK (WATER, OAT), SUNFLOWER OIL, CALCIUM CARBONATE, TRICALCIUM PHOSPHATE, SEA SALT, POTASSIUM CITRATE, NUTRITIONAL YEAST, ORGANIC CORDYCEPS EXTRACT, ORGANIC LION'S MANE EXTRACT, LOCUST BEAN GUM, GELLAN GUM.

DISTRIBUTED BY CALIFIA FARMS LLC
BAKERSFIELD, CA 93308 | califiafarms.com



Ingredients: Oatmilk (Water, Oat), Sunflower Oil, Calcium Carbonate, Tricalcium Phosphate, Sea Salt, Potassium Citrate, Nutritional Yeast, **Organic Cordyceps Extract**, Organic Lion's Mane Extract, Locust Bean Gum, Gellan Gum

BPA-FREE • GLUTEN FREE • KOSHER • NON-GMO • VEGAN

CORDYCEPS: A Research Example

3 RCTs in
humans in
last 10 years

STUDY TITLE	INGREDIENT FOCUS	DETAILS
Rhodiola/Cordyceps-Based Herbal Supplement Promotes Endurance Training-Improved Body Composition But Not Oxidative Stress and Metabolic Biomarkers: A Preliminary Randomized Controlled Study	<i>Rhodiola crenulate</i> and Cordyceps sinensis	Given as RC combo of 20 mg/kg/day among 14 young adults for 8-week exercise intervention – “RC supplementation faintly enhanced endurance training-induced positive adaptations in body composition in young sedentary individuals, whereas the blood lipid profile and systemic oxidative stress states were not altered after such intervention.”
Clinical Effects of a Commercial Supplement of <i>Ophiocordyceps sinensis</i> and <i>Ganoderma lucidum</i> on Cognitive Function of Healthy Young Volunteers	Ophiocordyceps sinensis and <i>Ganoderma lucidum</i>	OG supplement combo at high/low doses for 30 days – “these results indicate that a combination of <i>O. sinensis</i> and <i>G. lucidum</i> supplements for 30 days did not enhance cognitive function domains in young healthy participants.”
A double-blind, randomized, placebo-controlled trial of <i>Ganoderma lucidum</i> for the treatment of cardiovascular risk factors of metabolic syndrome	<i>Ganoderma lucidum</i> (reishi) plus Cordyceps sinensis	3 g/day of GL with or without cordyceps in 84 participants with T2D over 16-week trial – “Evidence from this randomised clinical trial does not support the use of <i>Ganoderma lucidum</i> for treatment of cardiovascular risk factors in people with diabetes mellitus or metabolic syndrome.”

MUSHROOMS: May Lower Cancer Risk?

28

Higher Mushroom Consumption Is Associated with Lower Risk of Cancer: A Systematic Review and Meta-Analysis of Observational Studies

Dijlrid M Ba,¹ Paddy Ssentongo,¹ Robert B Beelman,² Xiang Gao,³ and John P Bickie, Jr.¹
¹Department of Public Health Sciences, Penn State College of Medicine, Hershey, PA, USA; ²Center for Plant and Mushroom Foods for Health, Department of Food Science, College of Agricultural Sciences, Pennsylvania State University, University Park, PA, USA; and ³Department of Nutritional Sciences, Pennsylvania State University, State College, PA, USA

ABSTRACT
Mushrooms are rich in bioactive compounds. The potential health benefits associated with mushroom intake have gained recent research attention. We thus conducted a systematic review and meta-analysis to assess the association between mushroom intake and risk of cancer at any site. We searched MEDLINE, Web of Science, and Cochrane Library to identify relevant studies on mushroom intake and cancer published from 1 January 1966, up to 31 October 2020. Observational studies (n = 17) with RRs, ORs, or CIs of cancer risk for ≥2 categories of mushroom intake were eligible for the present study. Random effects meta-analyses were conducted. Higher mushroom consumption was associated with lower risk of total cancer (pooled RR for the highest compared with the lowest consumption groups: 0.86, 95% CI: 0.66, 1.17). Higher mushroom consumption was also associated with lower risk of breast cancer (pooled RR for the highest compared with the lowest consumption groups: 0.85, 95% CI: 0.66, 1.09). When site-specific cancers were examined, a significant association with mushrooms consumption was only observed with breast cancer (pooled RR for the highest compared with the lowest consumption groups: 0.85, 95% CI: 0.66, 1.09). Limitations included the potential for recall and selection bias in case-control designs, which comprised 11 out of the 17 studies included in this meta-analysis, and the large variation in the adjustment factors used in the final models from each study. The association between higher mushroom consumption and lower risk of cancer, particularly breast cancer, may indicate a potential protective role for mushrooms in the diet. *Adv Nutr* 2021;00:1–14.

Keywords: mushroom, cancer risk, diet, epidemiology, dose response, observational studies

Introduction

Cancer constitutes a major threat to public health in both high- and low-income countries. Globally, cancer is considered the second leading cause of death after cardiovascular disease with an estimated 9.6 million deaths according to GLOBOCAN in 2018 (1). Modifiable risk factors such as a healthy diet are considered to play a significant role in the prevention of cancer (2). Mushrooms have been consumed as a functional food by many cultures for centuries because of their unique taste, subtle flavor, and role in a

healthful diet, being low in calories, carbohydrates, sodium, and fats and cholesterol-free (3–6). Edible mushrooms are also rich in bioactive compounds, including phytochemicals (7, 8), alkaloids, phenolic acids, flavonoids, carotenoids (9, 10), vitamins (e.g., fiber, polysaccharides (9), selenium (10, 11), vitamins B (thiamin, riboflavin, ascorbic acid, and vitamin B12) (12–14), and the crucial antioxidants ergothioneine and glutathione which may play a significant role in the prevention of cancer (15–19). Many of the protective effects of mushrooms are thought to be mediated through their antioxidant properties that vary by mushroom type (6, 7, 20). Ergothioneine concentrations vary by mushroom type (21). Ergothioneine concentrations are higher in mushrooms with shiitake, oyster, maitake, and king oyster mushrooms which are widely consumed in Eastern Asian countries, having higher concentrations than the white button, crimini, and portabella mushrooms which are broadly distributed

A dose-response meta-analysis indicated that higher mushroom consumption of 18 g/d was associated with a 45% lower risk of total cancer than an intake of 0 g/d.

The potential biological mechanisms underlying the association between mushroom consumption and lower risk of cancer may stem from their antioxidant properties due to the specific mushroom components ergothioneine and glutathione.



5000+ PHYTOCHEMICALS

29

It has been established that more than 5000 different phytochemical compounds are present in grains, vegetables and fruits, though many more remain unidentified. Enormously advantageous attributes of whole grains, vegetables, and fruits have been associated with bioactive non-nutritional chemical components commonly known as phytochemicals.



Figure 1. Brief overview of plant-derived bioactive compounds.



Figure 3. Potential health-promoting properties of bioactive components.

PROCESSING FACTORS

30

Vegetables and fruits are a main source of phenolic compounds. For example, several fruits as apple, berries are very rich in polyphenols with more than 200 mg per 100 g of fresh fruits. However, the content and the bioavailability of these phenolic compounds are influenced by the food-processing technique(s) applied. For instance, and since many food processing methods involve heat treatment, it is believed that higher temperatures may lead to detrimental changes in fruits and vegetables in terms of their nutritional profile; however, some studies observed quite the opposite.

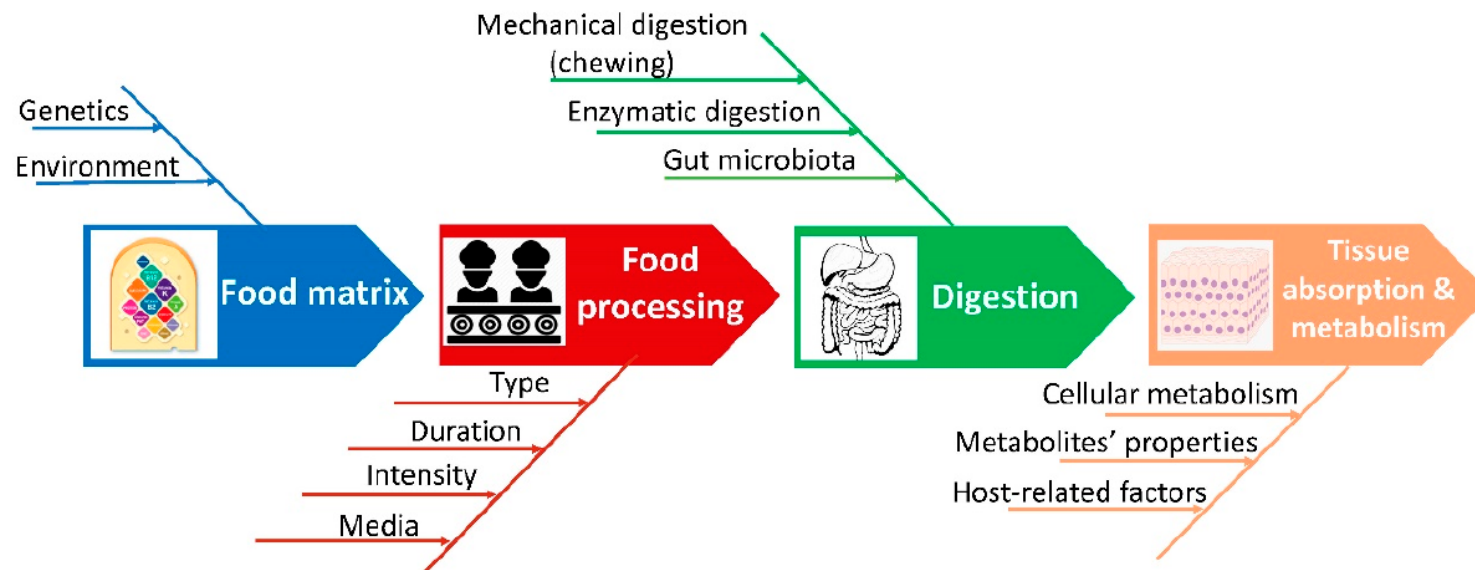
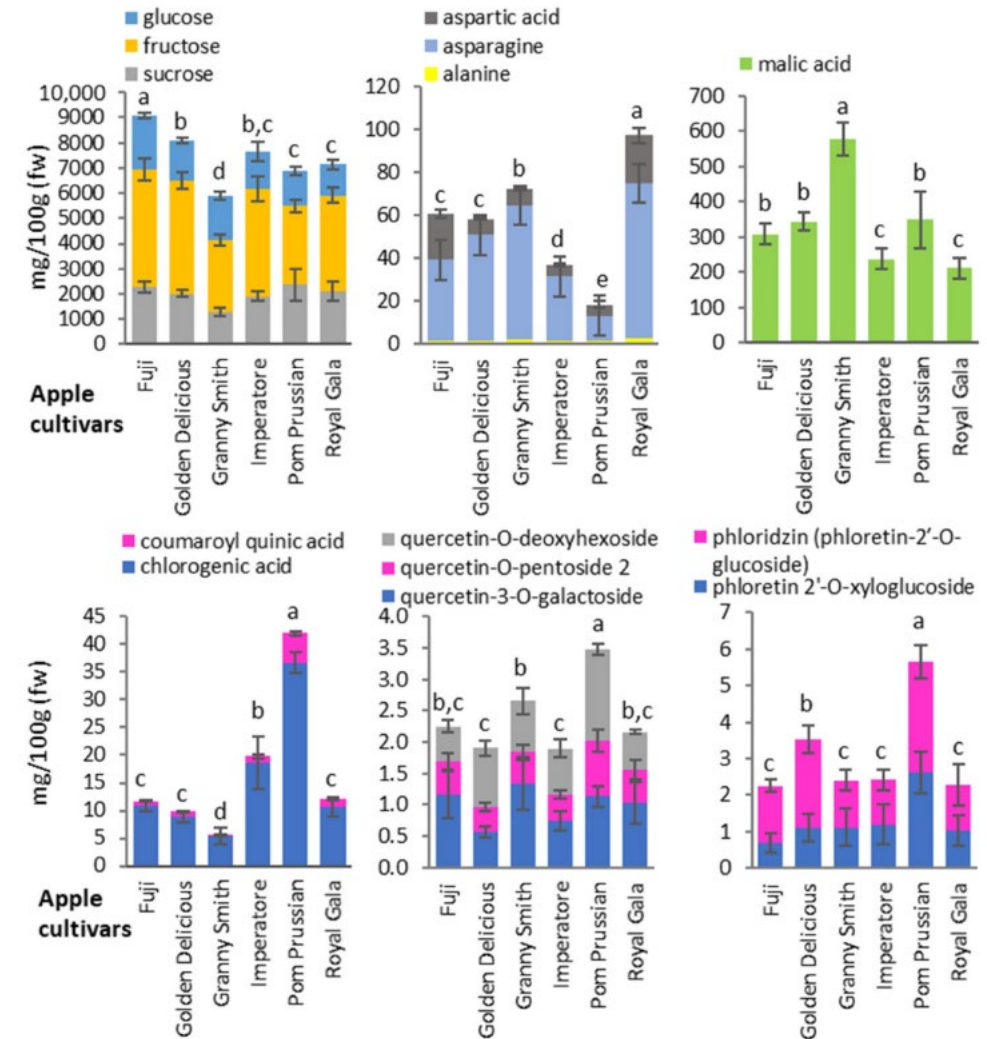
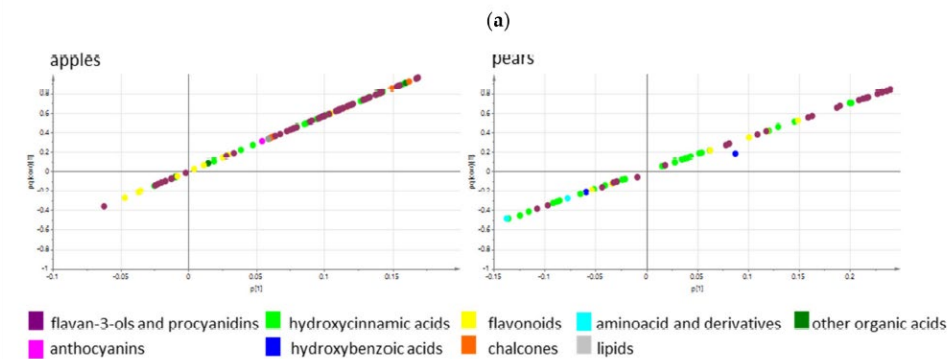
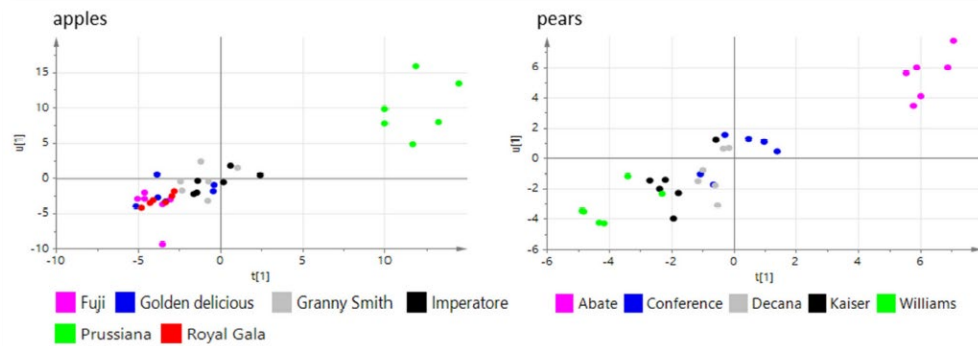
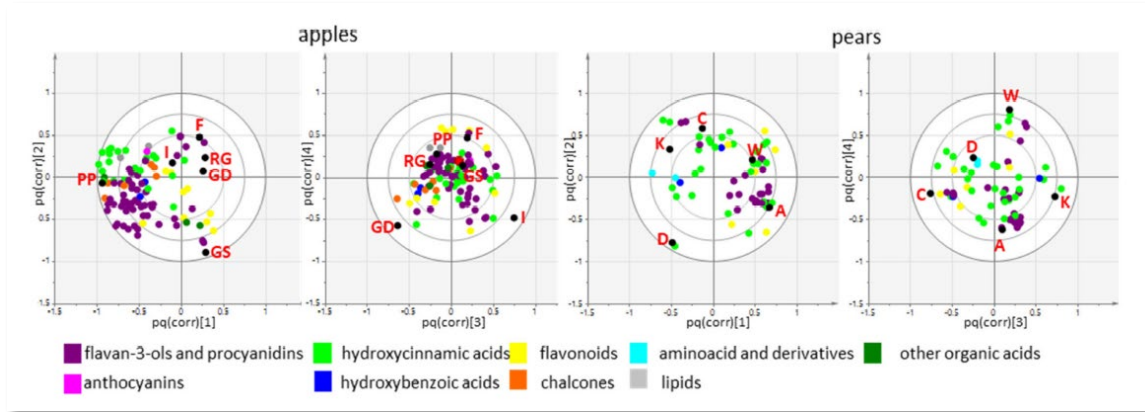


Figure 2. Main factors affecting dietary plant polyphenols content and bioavailability.

PHYTOCHEMICALS: Metabolites in Apples

31



APPLE CHIPS + “BOOSTED” QUERCETIN?

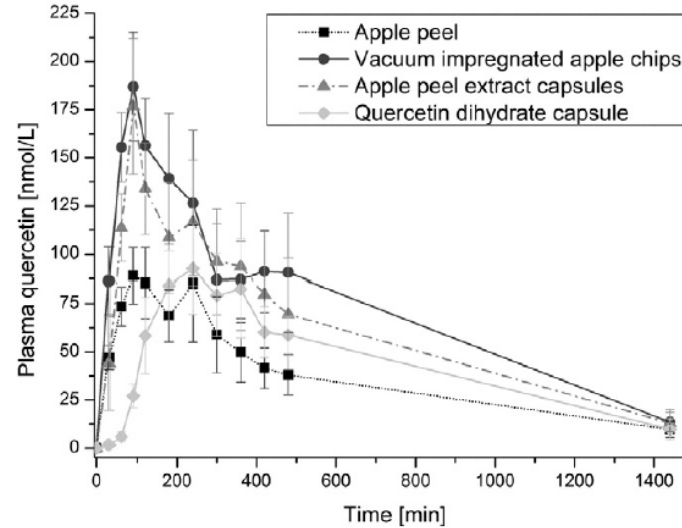


Fig. 1. Mean (\pm SEM) quercetin plasma concentration curve after consumption of apple peel (■), vacuum impregnated apple chips (●), apple peel extract capsules (▲) and the reference quercetin dihydrate capsule (◆).

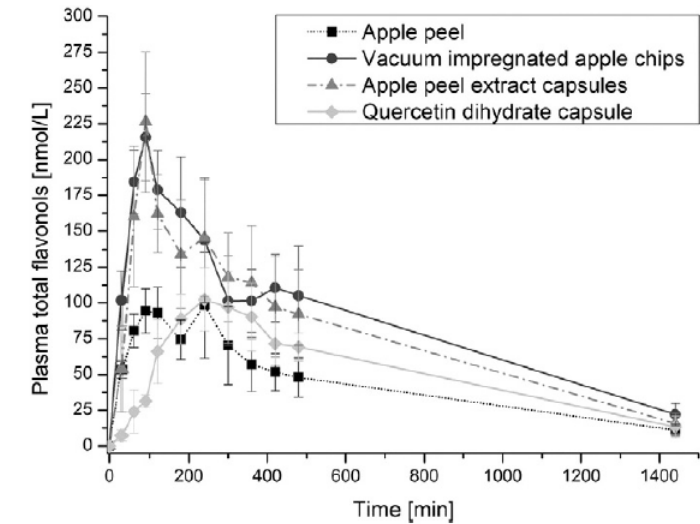
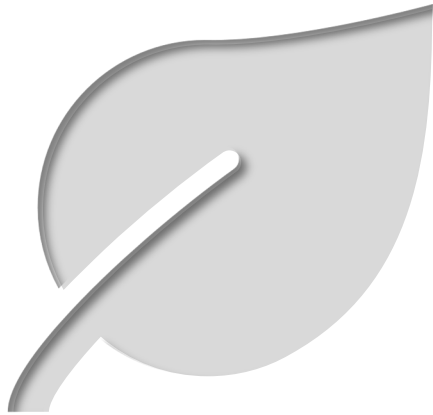


Fig. 2. Mean (\pm SEM) total flavonol plasma concentration curve after consumption of apple peel (■), vacuum impregnated apple chips (●), apple peel extract capsules (▲) and the control quercetin dihydrate capsule (◆).

The inclusion of quercetin derivatives in the intercellular spaces of apple parenchyma as matrix modification by vacuum impregnation did not result in a retardation of their release or a lowered bioavailability. I.e. apple fruit flesh provides an adequate matrix for a functional food that is enriched with quercetin derivatives or other functional nutrient by vacuum impregnation.

PLANT FORWARD NOTES

- Plant-based is hitting virtually every food/beverage category, though current trends (& investment funding) are still heavily focused on alt-dairy and alt-meat
- Expect an eventual next wave of plant-based products to emphasize and celebrate real, recognizable plant ingredients starring as themselves as opposed to a “substitute” for the animal version
- The role of phytonutrients is coming more to the forefront with the recognition that a lack of “positive nutrients” may prove more impactful than excess fixation on reducing the “negative nutrients”
- Processing matters – whole foods approach for the first half of intake, then all forms count to close the fruit gap!



ENVIRONMENTAL IMPACT



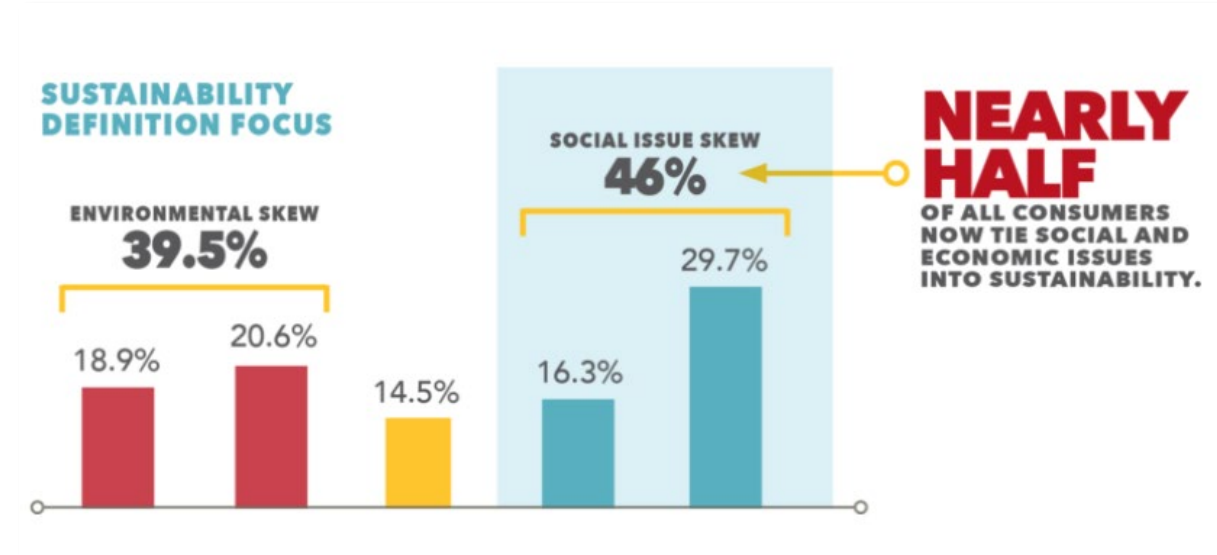
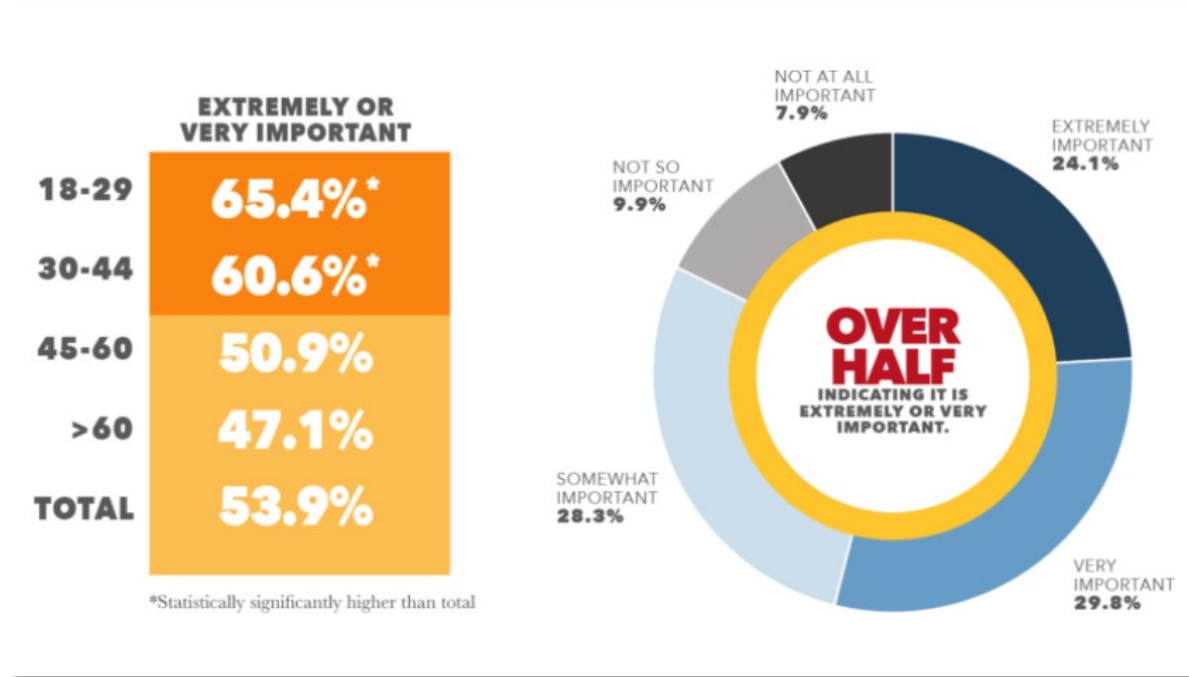
ENVIRONMENTAL IMPACT: SUBTRENDS

35



HOW IMPORTANT IS SUSTAINABILITY RELATED TO FOOD?

36



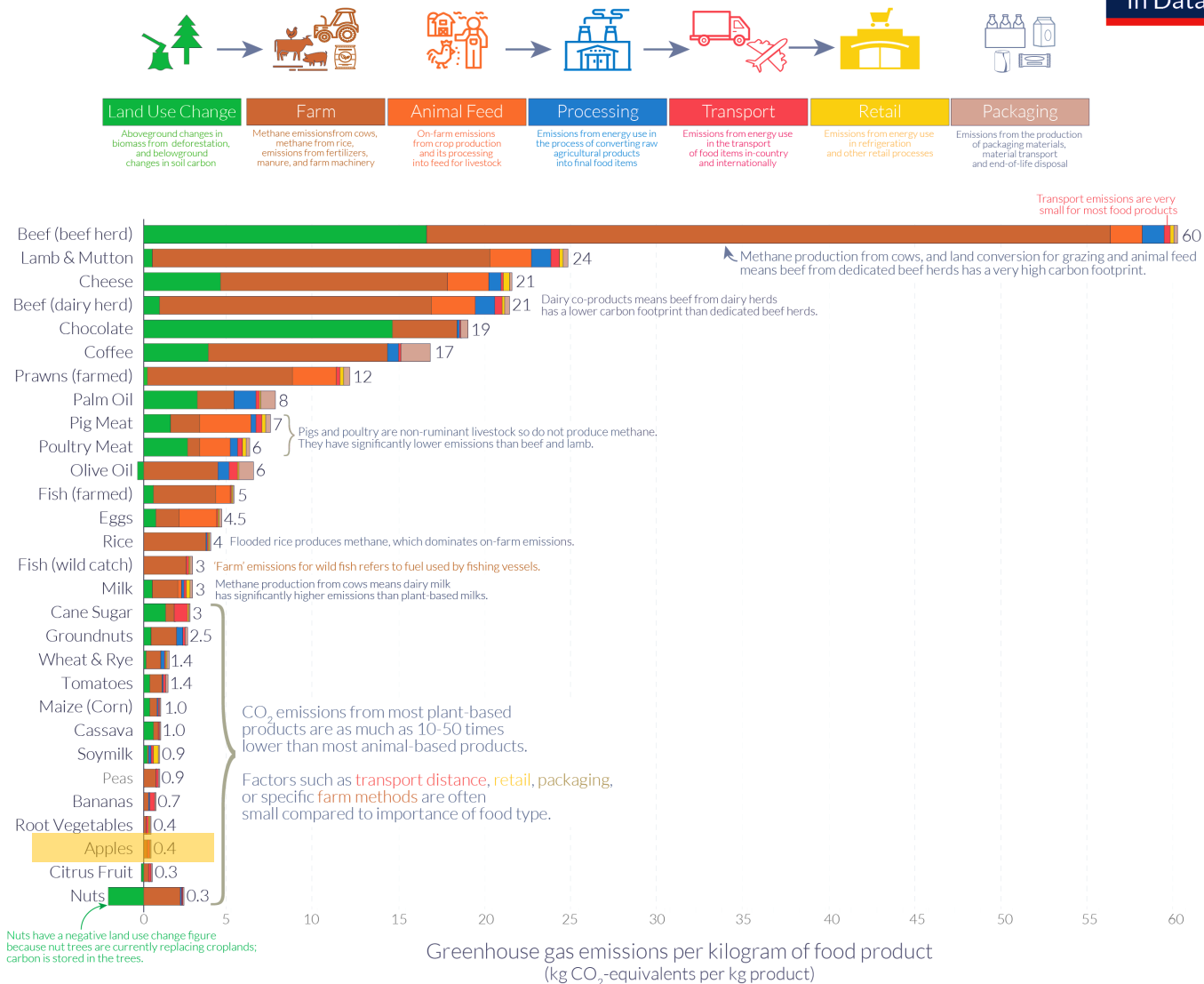
- Survey commissioned by C.O.nxt and conducted in collaboration with Maeve Webster of Menu Matters; 750 US consumers, ages 18+



GREENHOUSE GAS EMISSIONS

Food: greenhouse gas emissions across the supply chain

Our World
in Data



Note: Greenhouse gas emissions are given as global average values based on data across 38,700 commercially viable farms in 119 countries.
Data source: Poore and Nemecek (2018). Reducing food's environmental impacts through producers and consumers. *Science*. Images sourced from the Noun Project.
OurWorldinData.org – Research and data to make progress against the world's largest problems. Licensed under CC-BY by the author Hannah Ritchie.

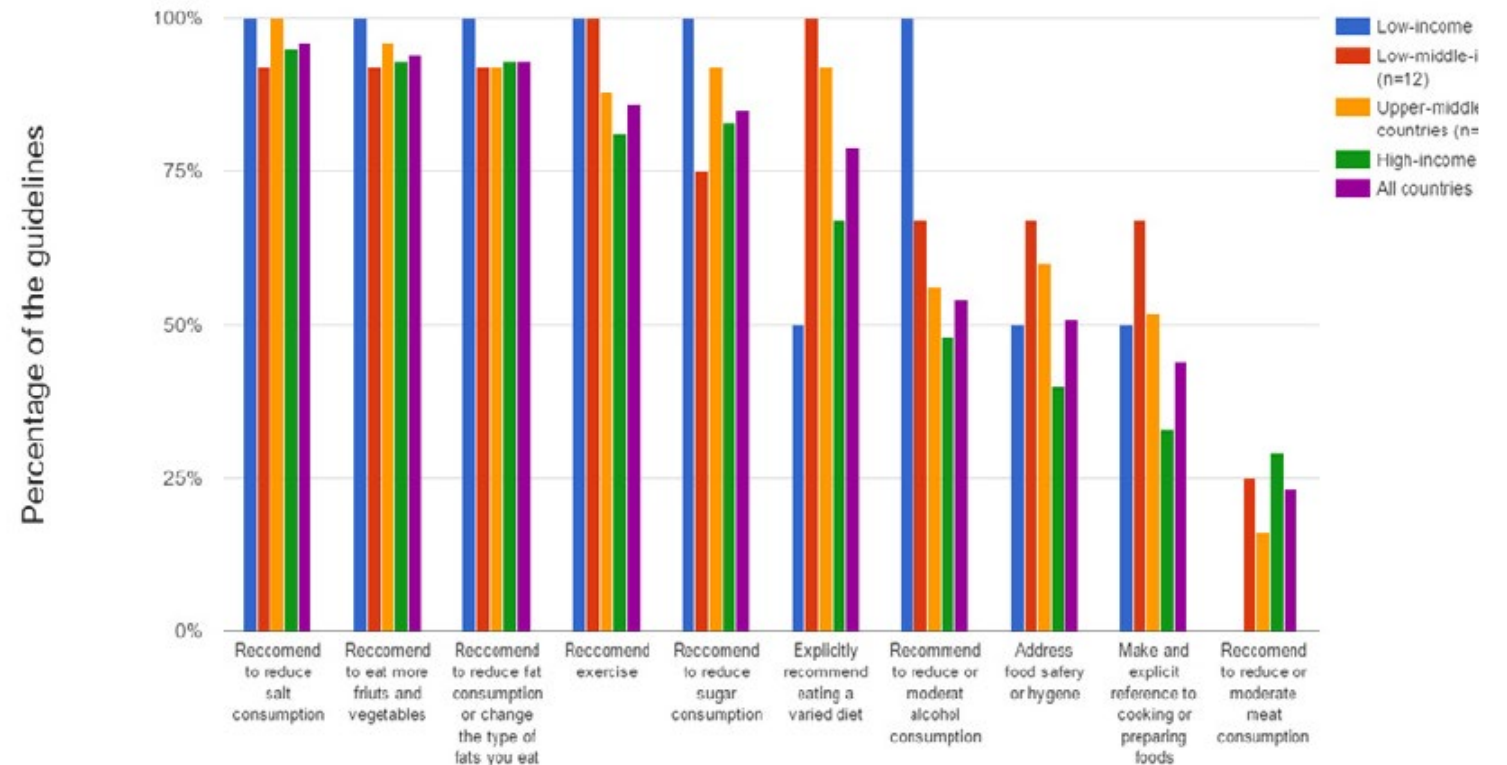




- Of the **83 countries** identified who have official dietary guidelines, **only 4 explicitly reference environmental factors** in their main messaging:

- Germany
- Brazil
- Sweden
- Qatar

Figure 2: Summary of the most common messages in the guidelines by income level.



MODELING 'SUSTAINABLE DIETS' IN RESEARCH

39

Table 2. Relative effect (%) on health outcomes by dietary category [exposure versus baseline] in 18 studies included in systematic review (n = number of measurements; ASF = Animal Sourced Foods; PSF = Plant Sourced Foods; SS = Starchy Staples; * = single study; ¥ = duplicates removed (multiple environmental outcomes)) and Relative effect (%) on environmental footprint by dietary category [exposure versus baseline] in 18 studies included in systematic review (n = number of measurements; ASF = Animal Sourced Foods; PSF = Plant Sourced Foods; SS = Starchy Staples; * = single study; ¥ = duplicates removed (multiple health outcomes)).

Diet category	Type of study	Health Outcomes	n	% effect by health outcome [95% CI]	n	% effect on combined health outcomes [95% CI]	Environmental footprint	n	% impact by environmental footprint [95% CI]	n	% impact on combined environmental footprints [95% CI]
"Low GHG Emission Diets"	Empirical	Respiratory Disease	2*	14.1 [5.48 to 22.7]	9*	12.8 [8.78 to 16.9]	Greenhouse Gas Emissions	2*	-16.9 [-29.6 to -4.21]	4*	-17.5 [-26.6 to -8.33]
		CVD	2*	14.0 [4.31 to 23.6]			Land Use	2*	-18.0 [-31.1 to -4.95]		
		Cancer	2*	9.31 [8.14 to 10.5]							
		All-cause mortality	2*	13.9 [6.15 to 21.7]							
	Modelling					--	--	--	2*	-7.40 [-10.3 to -4.49]	
Dietary Guidelines	Empirical	--	--	--	6*	6.12 [-4.70 to 16.9]	Greenhouse Gas Emissions	6*	1.10 [-0.74 to 2.93]	12*	1.52 [0.39 – 2.66]
						Land Use	6*	1.86 [0.71 to 3.21]			
	Modelling	Nutrition Related Chronic Diseases	4	-4.61 [-9.04 to -0.18]	20	-8.16 [-16.9 to 0.54]	Greenhouse Gas Emissions	4	-36.6 [-56.0 to -17.2]	12	-32.3 [-37.5 to -27.0]
		Cancer	4	-7.37 [-16.7 to 1.94]			Land Use	2*	-29.3 [-33.6 to -24.9]		
		Diabetes	4	-12.3 [-24.3 to -0.27]			Nitrogen Use	2*	-30.6 [-34.6 to -26.5]		
		Cardiovascular Disease	8	-8.29 [-17.2 to 0.60]			Phosphorus Use	2*	-31.3 [-35.2 to -27.3]		
					Water Use	2*	-29.2 [-33.5 to -24.9]				
Flexitarian	Modelling	Nutrition Related Chronic Diseases	3	-10.1 [-21.7 to 1.51]	7	-7.06 [-16.3 to 2.16]	Greenhouse Gas Emissions	3	-46.9 [-55.2 to -38.5]	15	-12.9 [-23.7 to -2.14]
		Cardiovascular Disease	2*	-1.75 [-2.65 to -0.84]			Land Use	3	-1.82 [-12.6 to 8.96]		
							Nitrogen Use	3	-13.0 [-22.3 to -3.80]		
							Phosphorus Use	3	-6.95 [-20.7 to 6.78]		
							Water Use	3	4.09 [-15.7 to 23.9]		
Mediterranean	Empirical	--	--	--	4	-4.37 [-29.6 to 20.8]	--	--	--	2	-34.2 [-74.2 to 5.85]
	Modelling	--	--	--	2*	-3.50 [-3.78 to -3.22]					
Pescatarian /increase in fish	Modelling	Nutrition Related Chronic Diseases	4	-8.43 [-18.6 to 1.74]	8	-6.20 [-13.5 to 1.14]	Greenhouse Gas Emissions	4	-46.5 [-83.4 to -9.54]	16	-16.9 [-31.0 to -2.76]
			2*	-3.81 [-4.15 to -3.48]			Land Use	3	-3.14 [-13.9 to 7.62]		

'sustainable diets' were associated with both positive health effects and reduced GHG emissions in the majority of reported measurements (n = 151[87%])



UPCYCLED FIBERS AS SWEETENERS

40

'Upcycling' creates new sugars with fewer calories than traditional sugar



Photo: The Supplant Co.

06.24.2021 By Jeff Gelski



LONDON – The Supplant Co. has introduced Supplant sugars from fiber, a new blend of sugars found naturally in plant fiber that have been shown to lower calories in foods. Supplant sugars also are “upcycled” ingredients in that the London-based company uses a patented method that upcycles agricultural side streams such as straw, stalks and cobs of corn, wheat and rice to make the sugars.

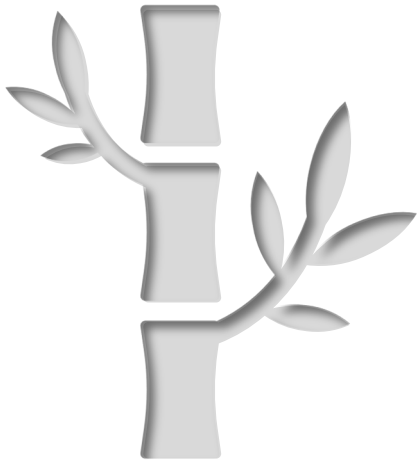
Supplant sweeteners caramelize, bake and cook like traditional sugar, according to the company. Since it is made from fiber, Supplant offers certain benefits. It is 1.8 calories per gram compared to sugar at 4 calories per gram, said Tom Simmons, PhD, chief executive officer and founder of The Supplant Co. Supplant's glycemic index is less than 15% of glucose, which has a glycemic index of 100, he added, and Supplant is a prebiotic.



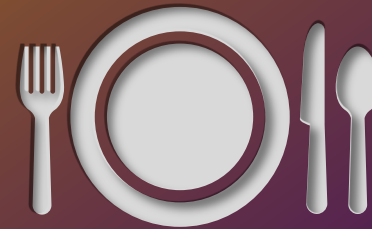
UPCYCLED™
FOOD ASSOCIATION

ENVIRONMENTAL IMPACT NOTES

- Consumers see sustainability as important, now linked to social and economic issues too
- Recognize that overarching goal of lining up health-promoting diets for people AND planet
- Expect more upcycled ingredients to be used in regular supply chains

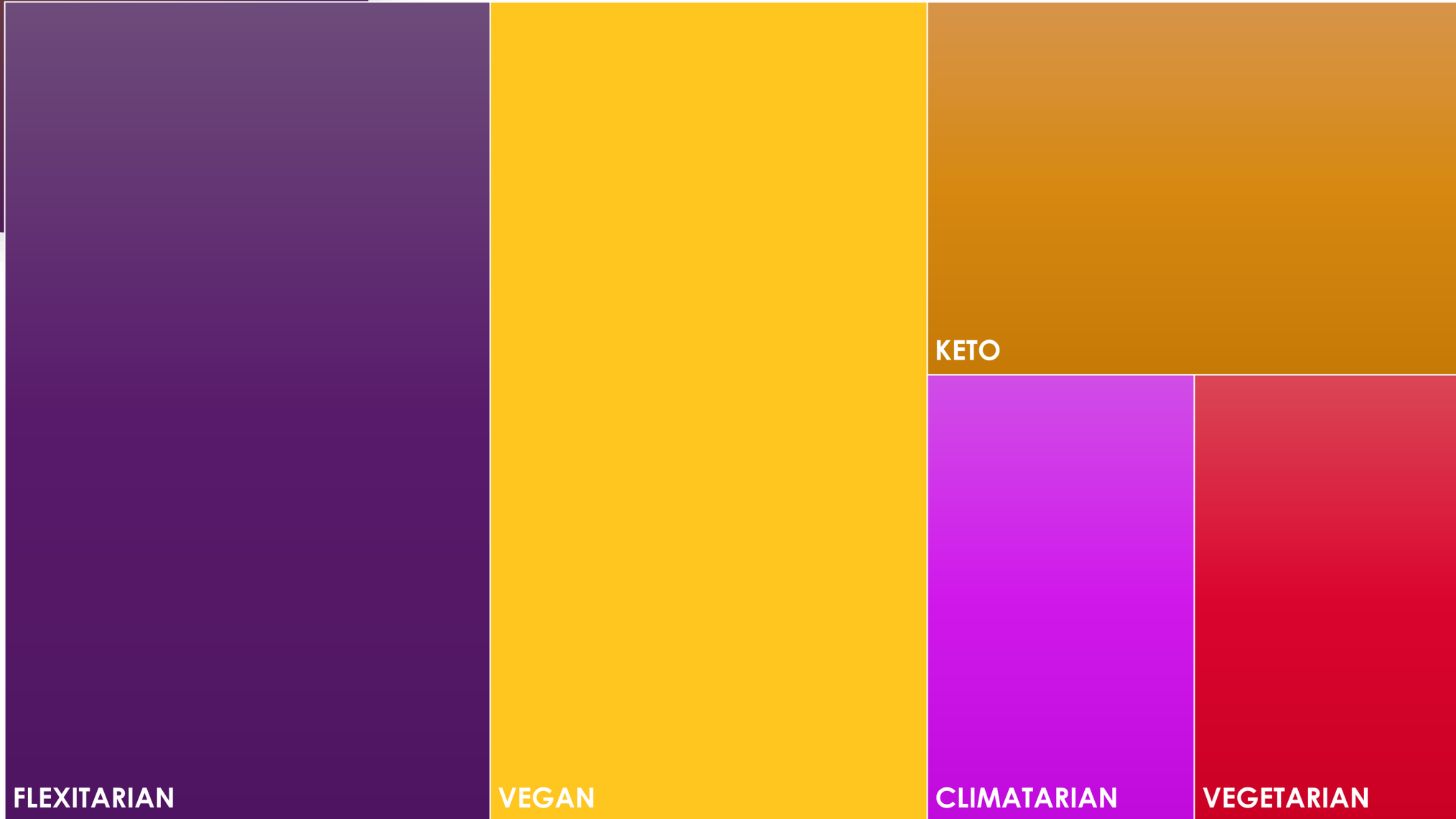


DIETARY PATTERNS

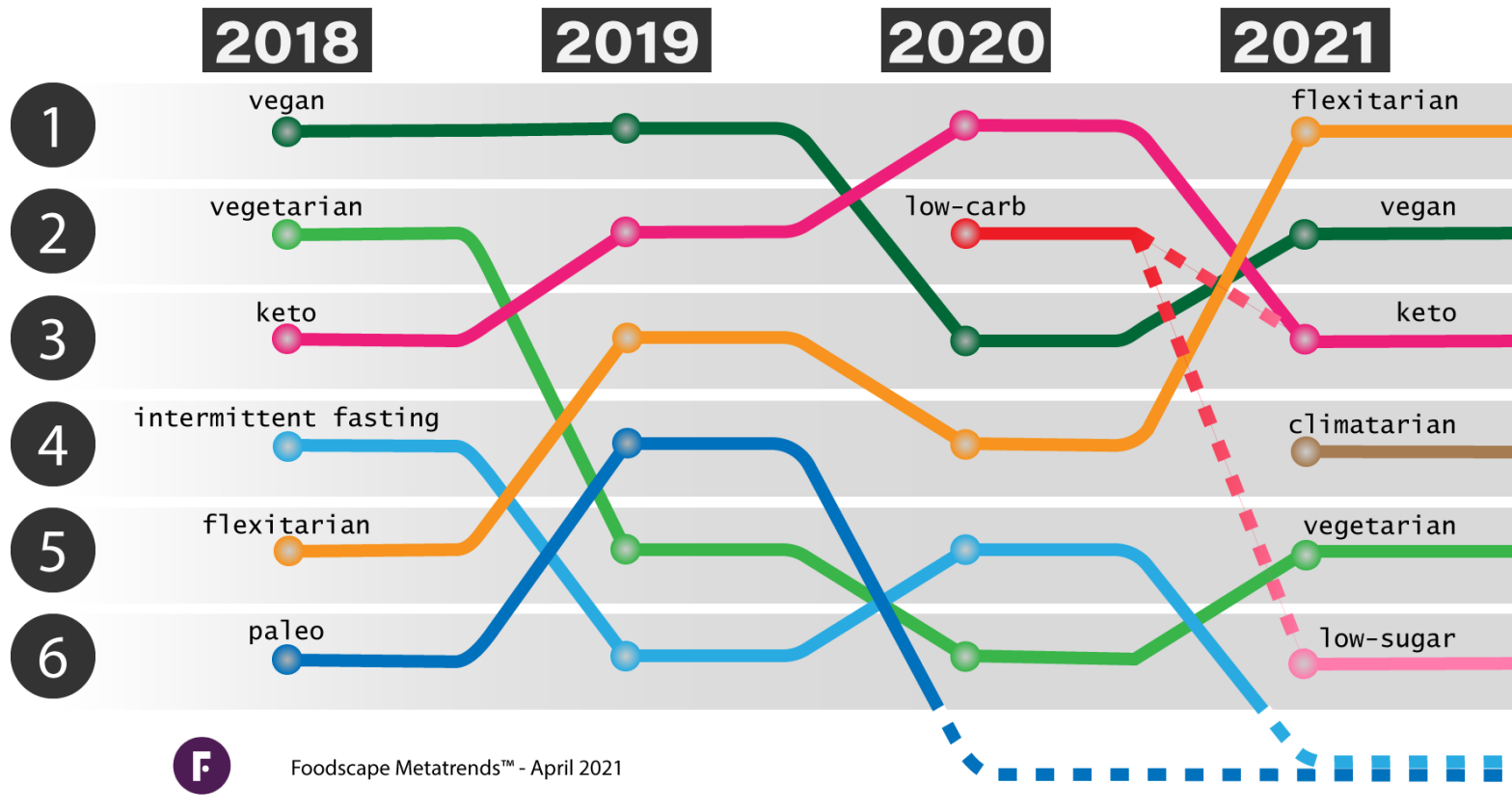


DIETARY PATTERNS: SUBTRENDS

43



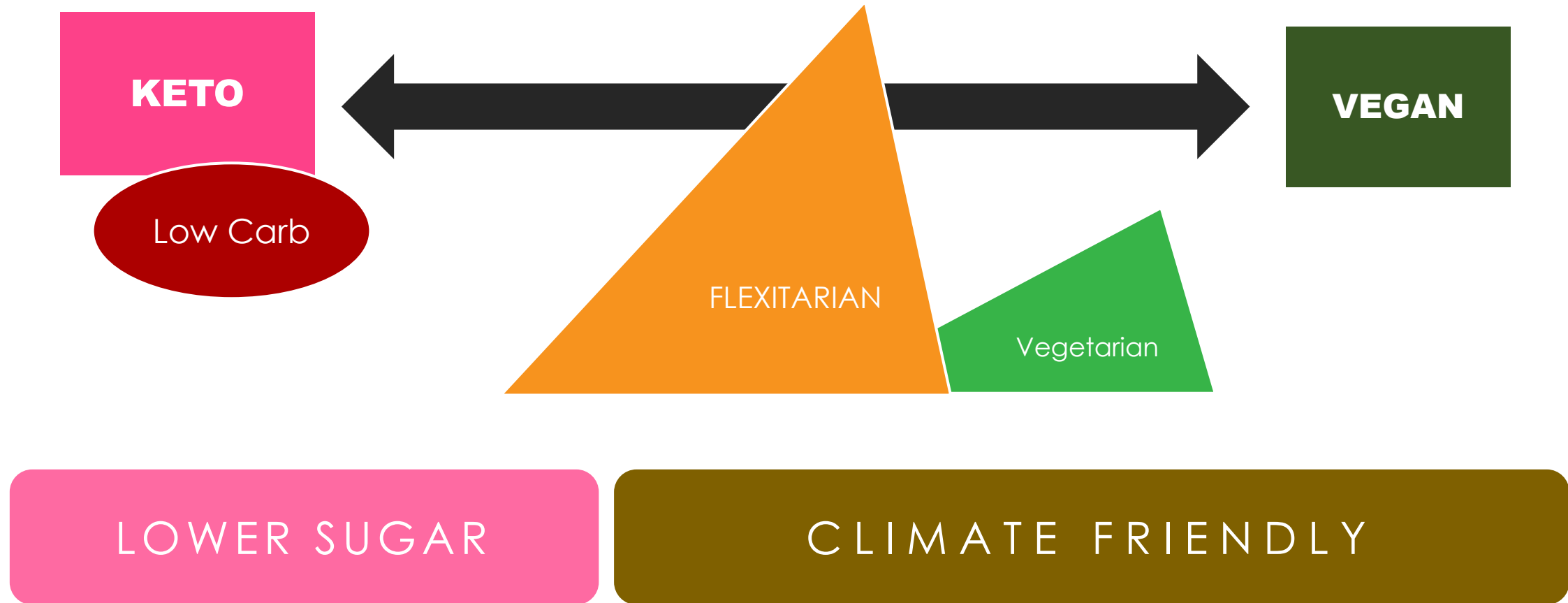
LONGITUDINAL DIET METATRENDS



- Rising over time, flexitarian takes the lead this year!
- Vegan comes in second
- Low carb evolving into versions of keto (dirty keto, lazy keto or keto 2.0) and/or low-sugar approaches
- Climatarian appears on the scene for the first time

LINING UP THE CONTINUUM

45



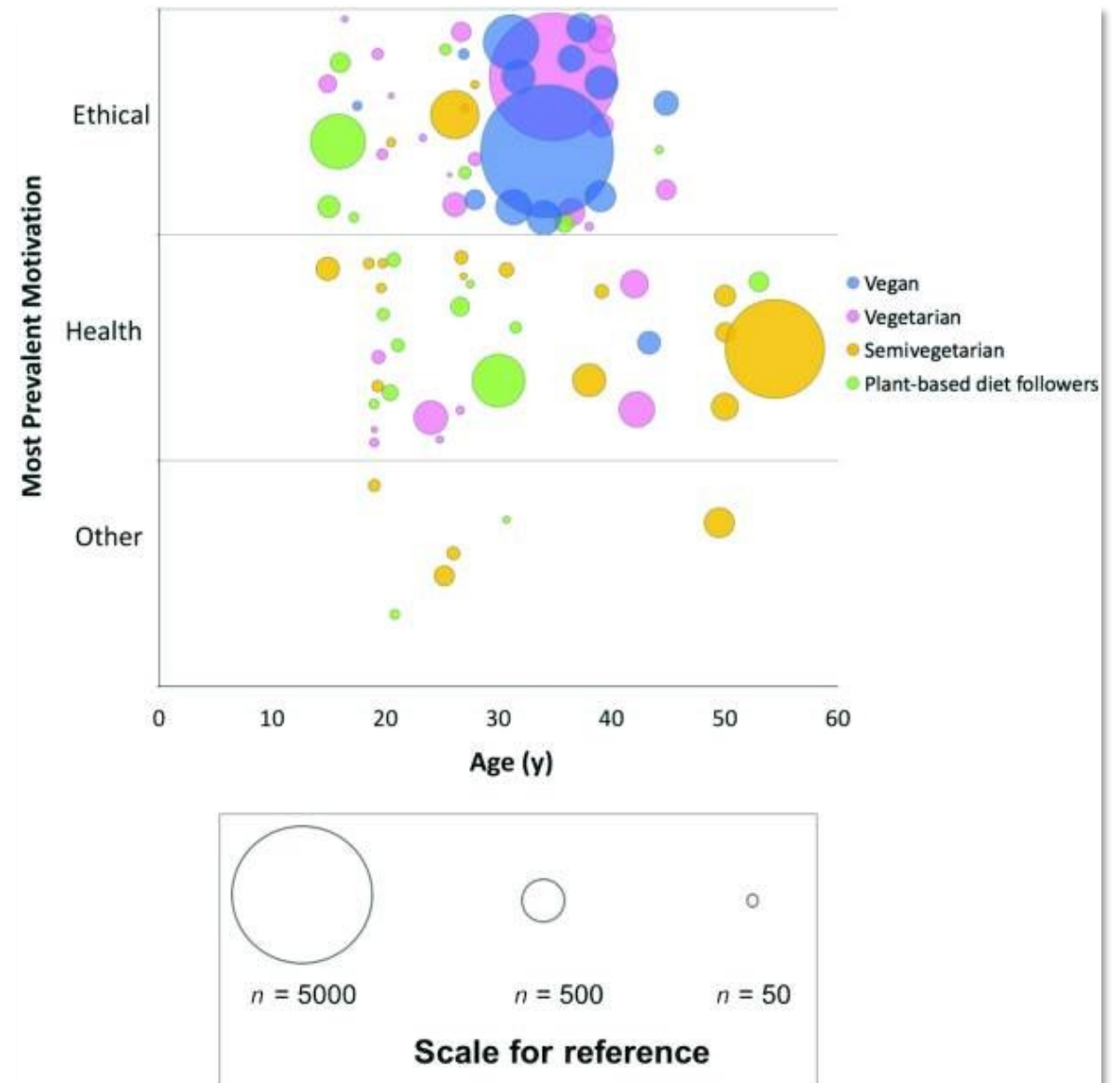
FLEXITARIAN MOTIVATIONS

46

As previously noted, definitions of vegetarian and semivegetarian have been largely inconsistent. Plant-based diets exist as a spectrum of abstention from animal products, and self-chosen labels such as flexitarian and eating practices are often not based on discrete categories.

TABLE 4 Commonly identified motivations to adopt plant-based diets

Motivation group	Motivations
Ethical	Ethical
	Moral
	Ideological
	Animal welfare
	Environmental concern
	Ecological
	Religion
	Spiritual belief
	World hunger
	Social justice
Health	Health
Other	Weight
	Other
	Sensory
	Taste
	Disgust
	Political
	Finances
	Social influence
	Familiarity
	Habit
	Mood
	Convenience
	Natural content



KETO EVOLVING



Ingredients

ORGANIC CASSAVA FIBER, ORGANIC ALMOND FLOUR, ORGANIC DATES, ORGANIC SOY PROTEIN CONCENTRATE, SUGAR-FREE CHIPS (UNSWEETENED CHOCOLATE‡, ERYTHRITOL, COCOA BUTTER‡, SUNFLOWER LECITHIN, STEVIA EXTRACT), ORGANIC SOY FLOUR, UNSWEETENED CHOCOLATE‡, WALNUTS, ORGANIC ALMOND BUTTER, ORGANIC ERYTHRITOL, COCOA‡, NATURAL FLAVORS, ORGANIC HIGH OLEIC SUNFLOWER OIL, ORGANIC VIRGIN COCONUT OIL, ALKALIZED COCOA‡, SEA SALT, BAKING SODA, SOY LECITHIN, MIXED TOCOPHEROLS (ANTIOXIDANT), STEVIA EXTRACT.

‡Rainforest Alliance Certified

Allergen statement

CONTAINS ALMONDS, WALNUTS, COCONUT, AND SOY. MAY CONTAIN PEANUTS, OTHER TREE NUTS, AND MILK. MAY CONTAIN NUTSHELL FRAGMENTS.

Nutrition Facts		Amount/serving	% DV	Amount/serving	% DV	Amount/serving	% DV
Serving size							
1 brownie / 4 bites (40g)							
Calories per serving							
140							
Total Fat		9g	11%	Cholesterol	0mg	0%	Incl. 0g Added Sugars
Saturated Fat		2.5g	12%	Sodium		115mg	5%
Trans Fat		0g		Total Carb.		19g	7%
Polyunsat. Fat		2g		Dietary Fiber		11g	40%
Monounsat. Fat		3g		Total Sugars		4g	
Vit. D		0mcg	0%	Calcium		39mg	2%
Vit. E		20%		Iron		2mg	10%
				Potassium		233mg	4%
				Phosphorus		8%	
				Magnesium		15%	

★★☆☆☆ 2

Departure from Luna's strength-based messaging

Comments about Walnut Fudge

This is a delicious, balanced bar...but I'm disappointed that a company I associate with promoting female empowerment has named and marketed it in such a way as to promote a "keto" diet. This is both misleading (ketogenesis is not something that results from a snack bar but from an extreme and medically-necessary diet) and triggering in a way that suggests a cultural preference for smaller bodies rather than stronger ones.

Bottom Line No, I would not recommend to a friend

SUBMITTED 9 DAYS AGO

BY EMILY
FROM APPLETON, WI

● VERIFIED BUYER



SWEETENERS:

Subtrends

48



- Sugar reduction ranked the highest back in 2017, currently ranks as the #17 metatrend
- However, it's now more foundational and integrated into other dietary patterns as a core tenet rather than the "no sugar diet" approach of past years



DIETARY PATTERNS NOTES

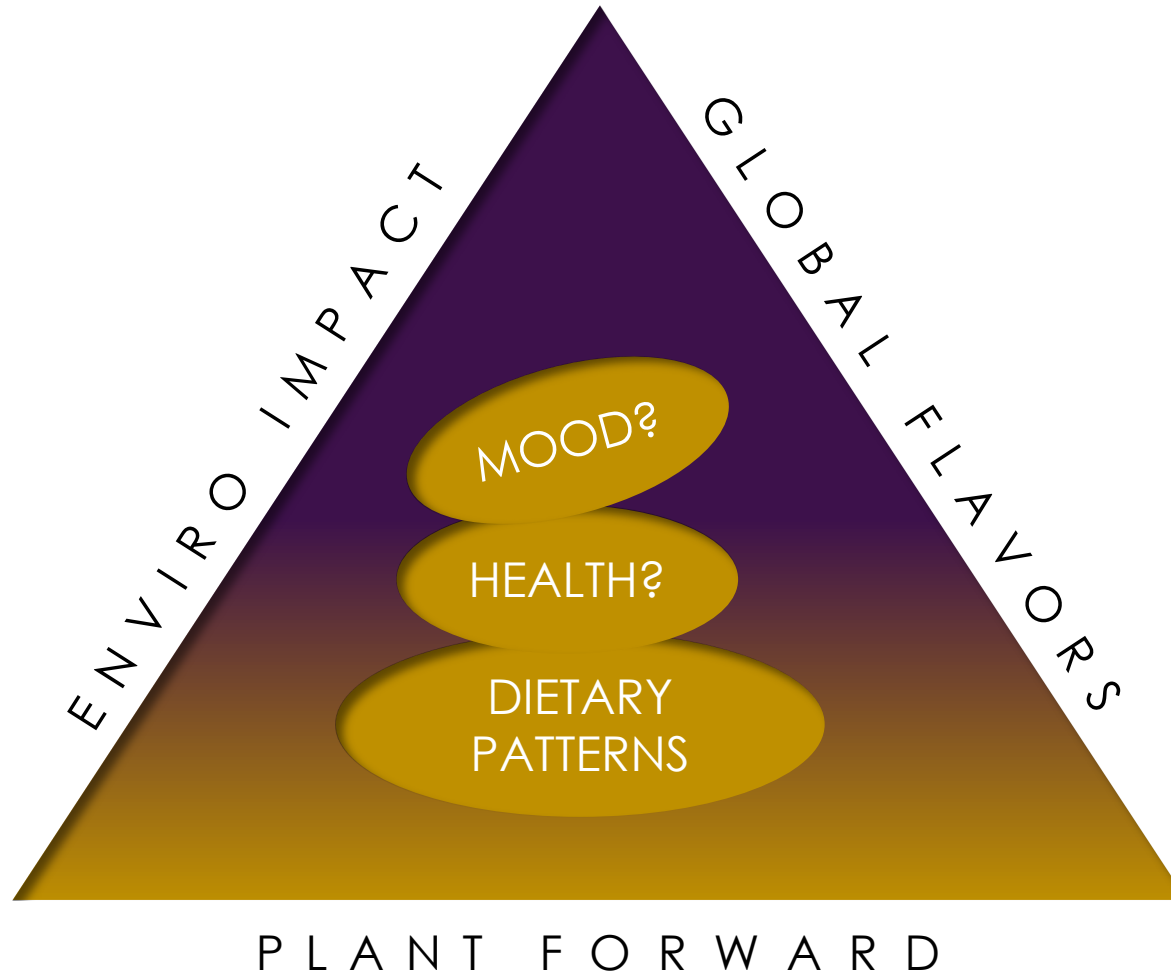


- Flexitarian takes the clear lead and will likely continue to dominate as it allows for a more individualized, personalized approach
- Keto is evolving into “keto 2.0” as consumers seek to find a pattern that is doable and satisfying for the longer term
- Regardless of the dietary pattern preferred, desires to limit sugar remain strong as the conversation shifts to which non-nutritive sweeteners are preferred

LEVERAGING METATRENDS EFFECTIVELY

WHAT? ANCHOR TO ENDURING METATRENDS

51



- First, build the Power Trio of enduring metatrends:
 - Plant Forward
 - Environmental Impact
 - Global Flavors
- Next, consider if/how two or more metatrends could be leveraged in both R&D and marketing for customers and consumers
- No need to force fit into metatrends – they are observational insights, not predictions of an absolute future vision



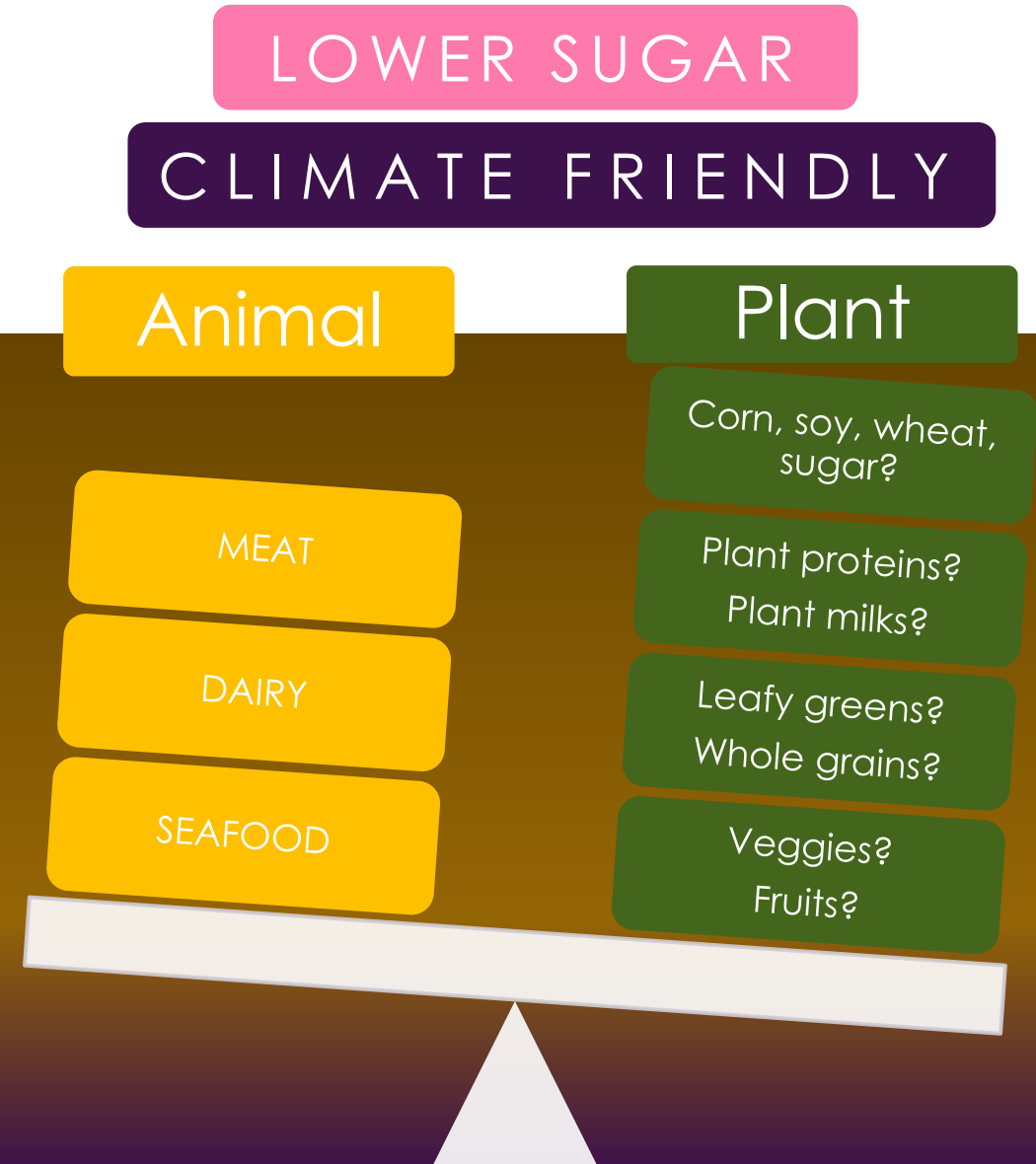
WHO? TARGET THE TRANSITIONING OMNIVORE

52

The Transitioning Omnivore aims to increase the relative intake of plant-based foods while enjoying meat, dairy, eggs and other animal products in flexible moderation

Global survey asked 28,000 respondents in 30 countries about their dietary changes during the pandemic. The poll included 2,000 Americans and found 33 % have made a “major dietary change” including:

- 54 % eating more fruit and vegetables
- 43 % eating less meat
- 25 % reduced or eliminated dairy
- 23 % reduced or eliminated eggs



HOW? LEVERAGE INHERENT NUTRITION!

- Aim to close the fruit gap – 80% of U.S. consumers fall short
- Remember, all forms count, just help consumers get at least half from whole fruits first
- Highlight the inherent reasons to believe in apples:
 - Plant forward
 - Naturally nutrient dense
 - Source of phytonutrients
 - Source of natural sweetness
 - Availability
 - Cost
 - Familiarity
 - Taste!



THANK YOU & QUESTIONS

Dr. Rachel Cheatham

Rachel@foodscapegroup.com

Foodscape Group, LLC

August 2021



APPENDIX



BEVERAGES:

SUBTRENDS

56



GLOBAL FLAVORS:

SUBTRENDS

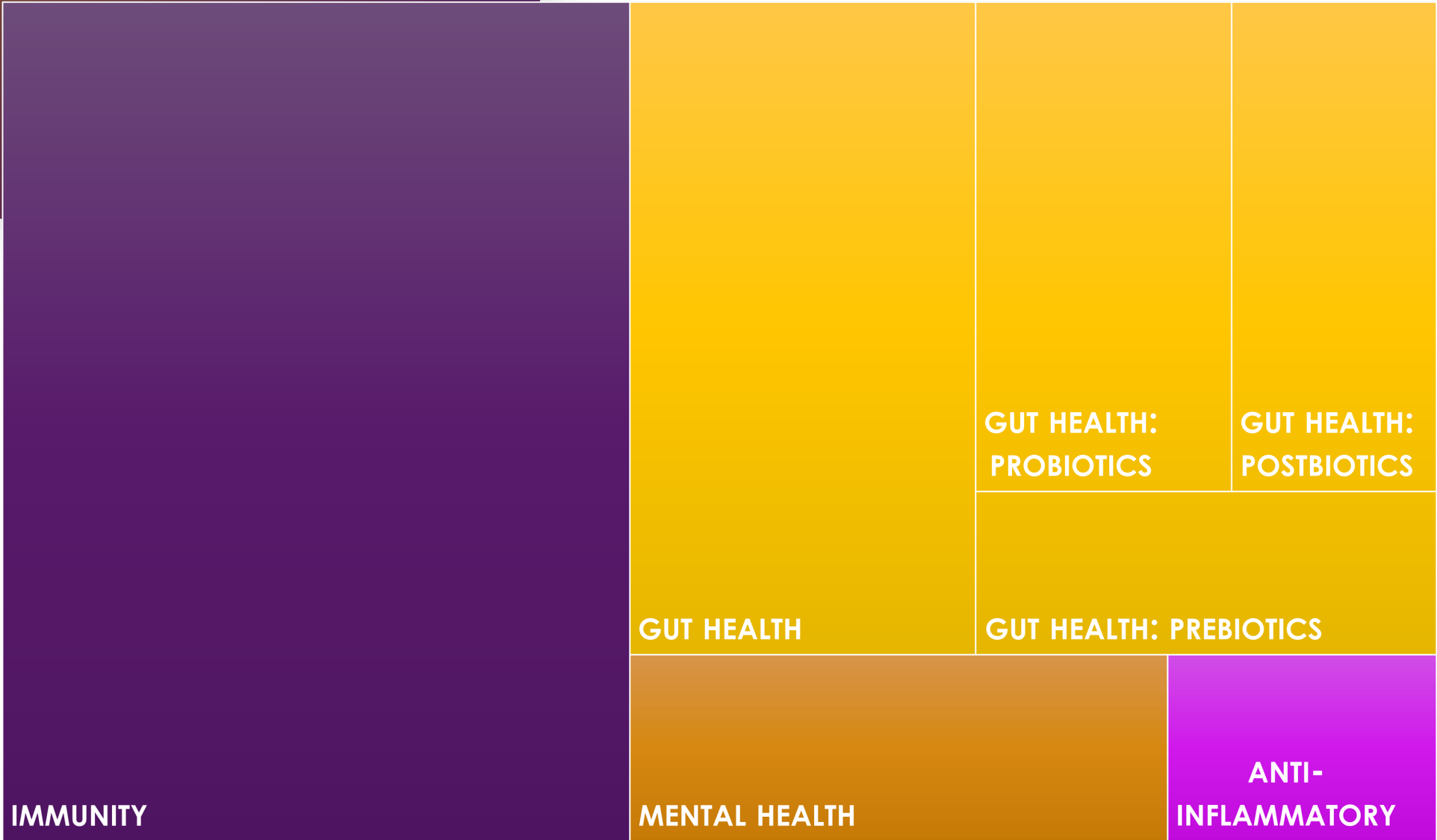


HOME MEALS: SUBTRENDS

58

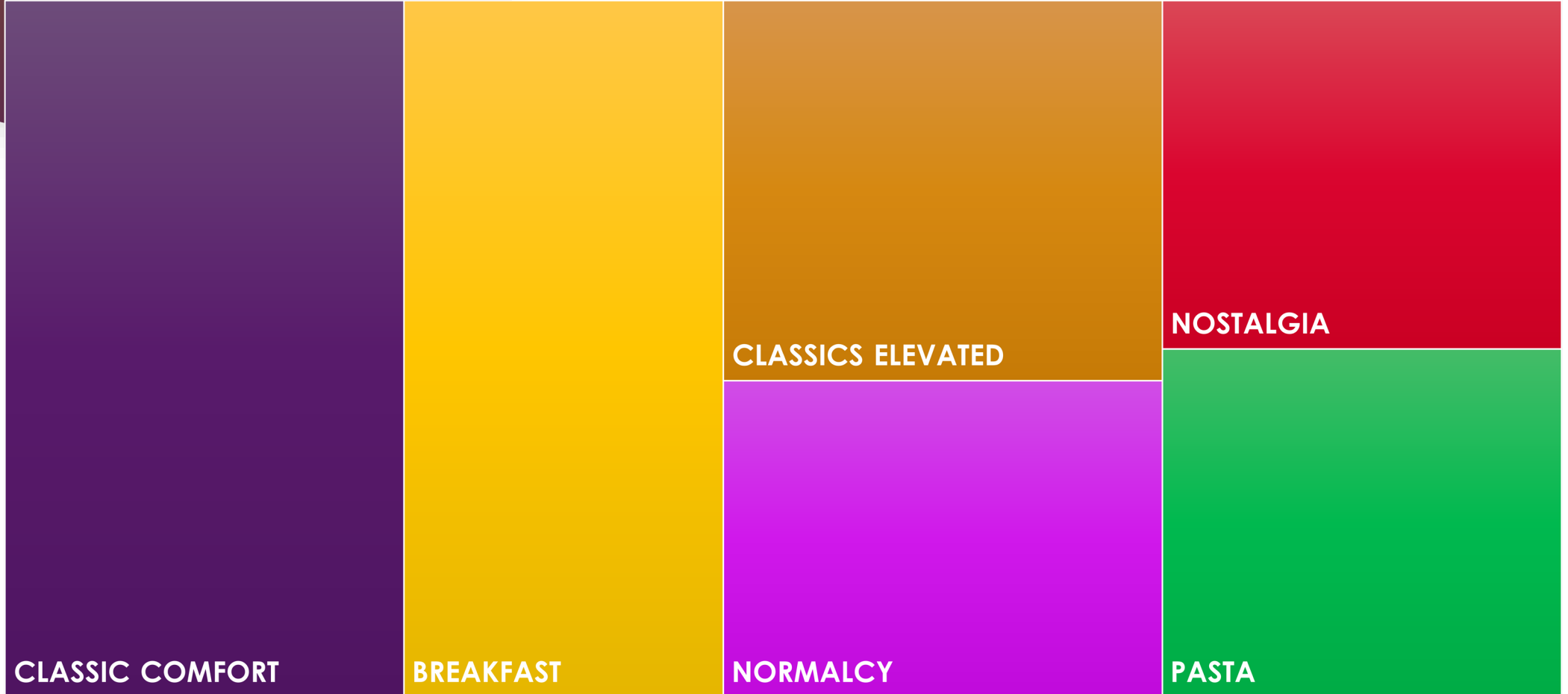


HEALTH OUTCOMES: SUBTRENDS



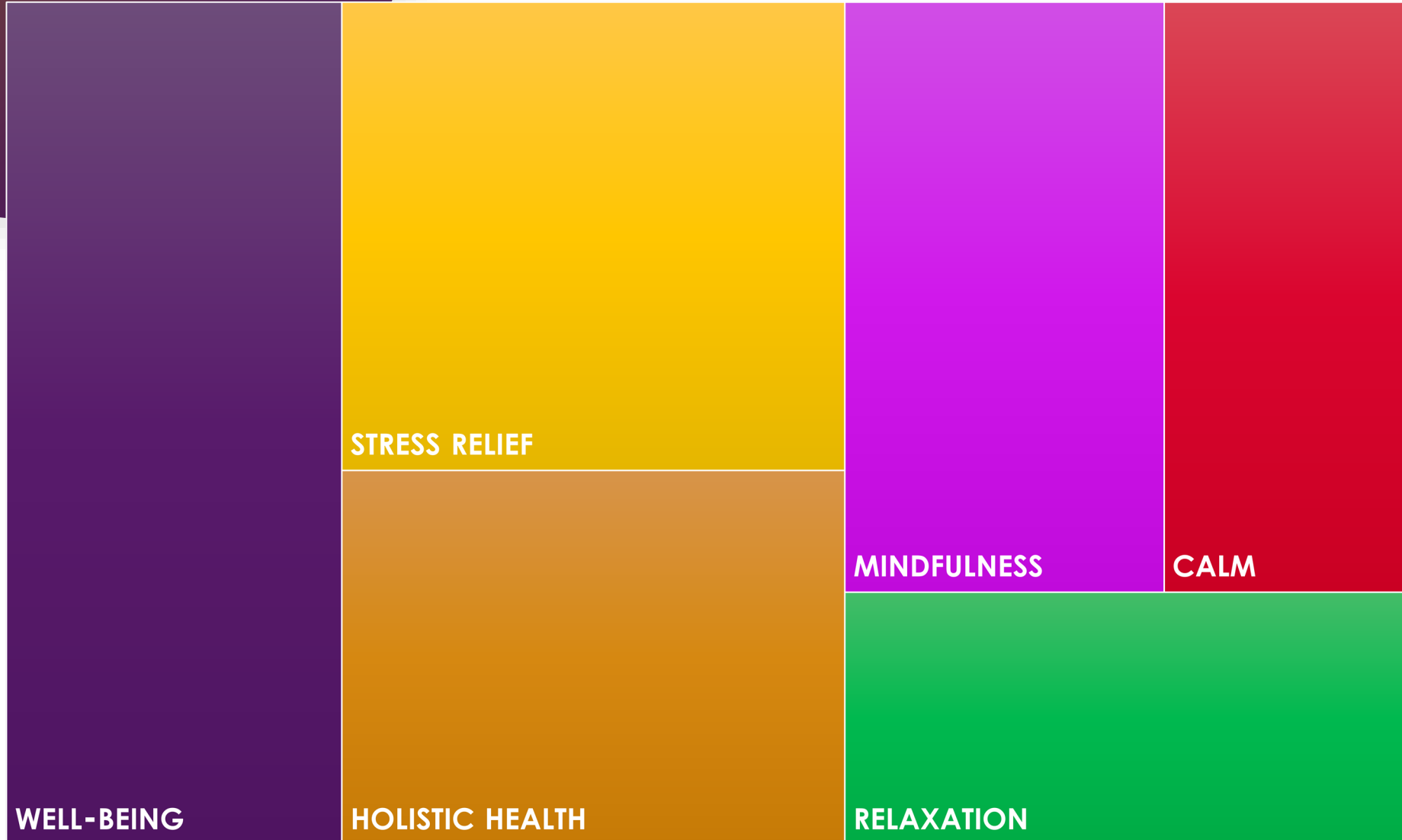
BACK TO BASICS: SUBTRENDS

60



MOOD MANAGEMENT: SUBTRENDS

61



NUTRITION UPGRADE: SUBTRENDS

62

