

A top-down view of a still life featuring two bowls of orange soup, pumpkins, bread, and herbs on a light surface. The bowls are filled with a vibrant orange soup, topped with small cubes of white cheese and fresh herbs. One bowl has a spoon resting in it. To the right are two large pumpkins, one whole and one partially visible. In the bottom left corner, there are slices of toasted bread. Sprigs of fresh herbs like rosemary and eucalyptus are scattered around the bowls and pumpkins. The background is a light, textured surface.

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Nutrition, Convenience and Sustainability: It's in the Can

Presented by Toby Amidor, MS, RD, CDN

October 11, 2018

Today's Outline

- (1) Introduction: Leveraging Canned Foods
- (2) Canned Food – From the Perspective of Today's Consumer
- (3) Canned Food Nutrition – What's the Research Say
 - Nutrition Benefits
 - Affordability and Accessibility
 - Sustainability



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Introduction: Leveraging Canned Foods



In the Kitchen

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Vegetable:
No-salt-added canned green beans



Vegetable:
Canned carrot coins (rinsed, drained)





Healthier Convenience Options: Canned Foods

By: Toby Amidor, MS, RD, CDN



Fruits and Veggies

Canned fruit comes in handy for tossing on salads or as a snack. Choose fruits packed in their own juices, water or **100% fruit juice**. Even light syrup has tons of sugar – so avoid it. Typically canned vegetables contain about 15% of your daily sodium needs. Look for **“no salt added” versions**, which contain less than 1% of your daily sodium needs. Canned veggies work well in soups, stews or chili without much fuss – or just microwave them for a quick side dish.



In Your Body

- Canned food is versatile in the kitchen
 - Soups, stews, salads
- Canned food helps modern-day consumers get dinner on the table
 - Helps cut cooking time
- Canned food provides an important source of nutrition
 - Kids and adults who used 6+ canned foods per week were more likely to have diets higher in **17 essential nutrients**, including **nutrients of concern**



- ❖ Potassium
- ❖ Calcium
- ❖ Fiber



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**Canned Food:
The perspective of today's consumer**



A Healthy Eating Pattern

- According to the Dietary Guidelines for Americans, all forms of foods, including canned foods, can be included in healthy eating patterns
 - Mediterranean-Style Eating Pattern
 - U.S.-Style Eating Pattern
 - Vegetarian Eating Pattern
- Experts agree that eating more fruits and vegetables, whether canned, frozen, or fresh, is an essential part of a healthy eating pattern

Recommended Amount:

- ❖ Fruits: 2 cups/day
- ❖ Vegetables: 2.5 cups/day



A Healthy Eating Pattern

Comerford study (2015) found that compared with those who don't use cans, adults and kids who consume canned fruits and vegetables get **more energy, dietary fiber, choline, potassium**, and **less fat and saturated fat**.

- ✓ Choose a variety of fruits including canned pears and peaches
- ✓ Choose a variety of vegetables including canned corn, tomatoes, and beans like kidney, pinto, and white beans.



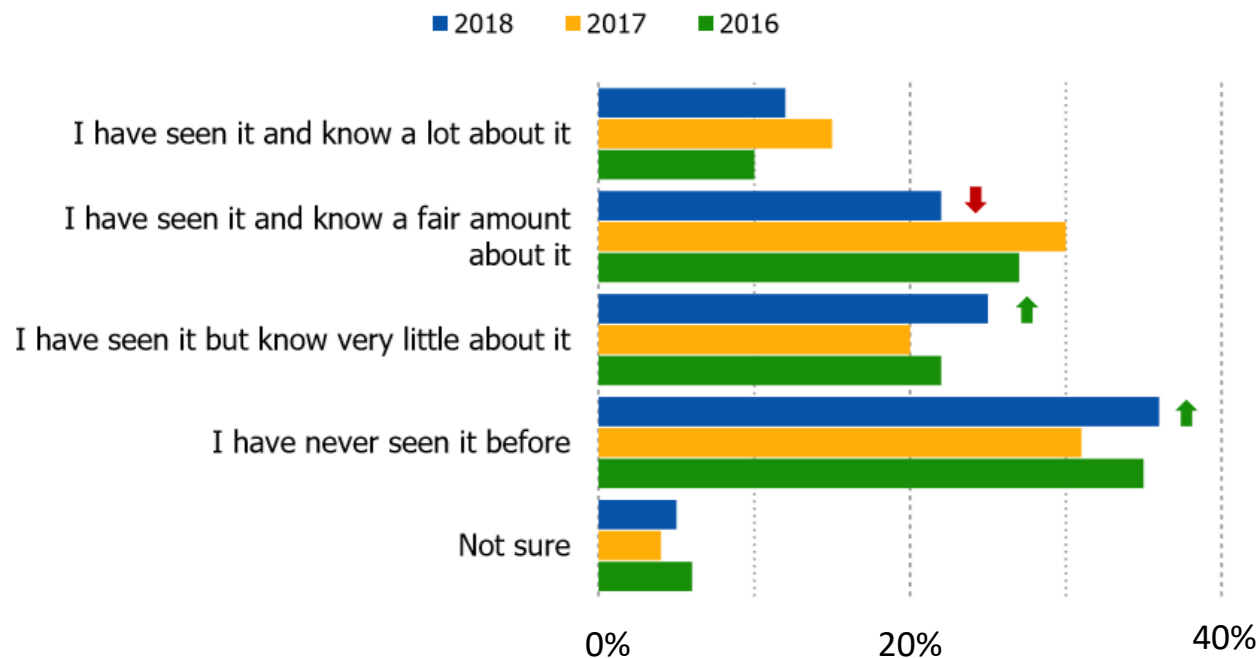
Consumers Perspective: 2018 IFIC Food and Healthy Study

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3 in 10 Know A Lot/Fair Amount About MyPlate

Younger consumers, those in better health, parents and women are particularly familiar with the icon

Familiarity with the MyPlate Graphic



59%
Have seen the MyPlate graphic

69%
Of parents with children under 18 have seen the MyPlate graphic



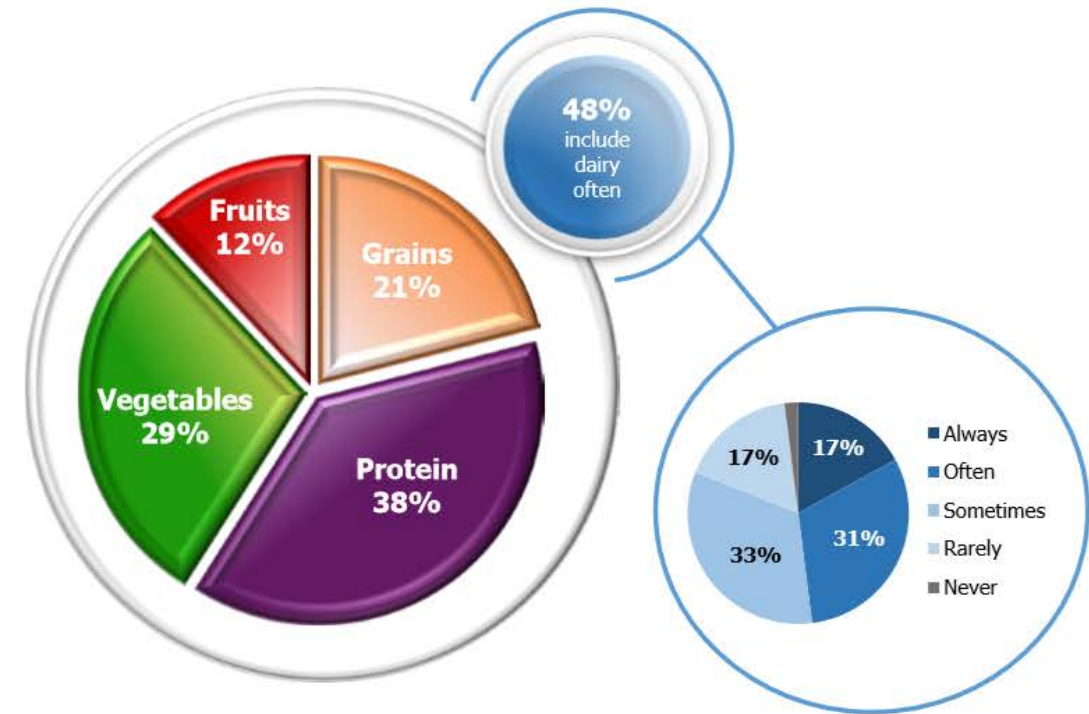
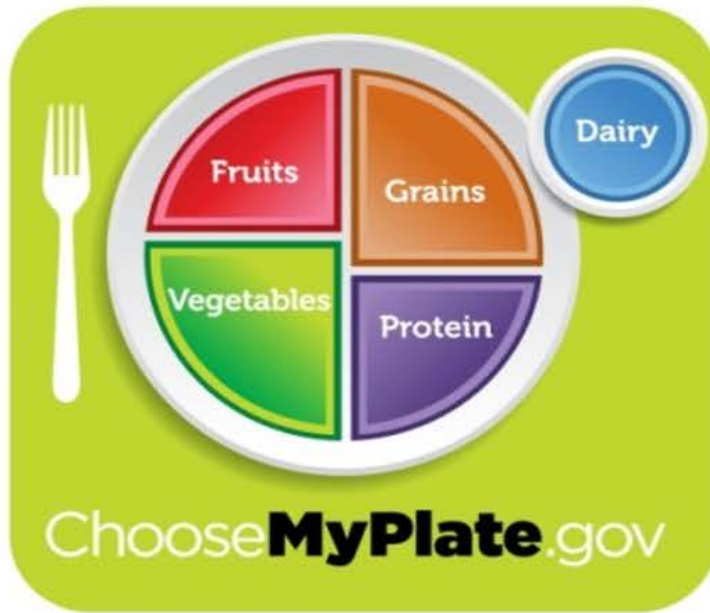
Consumers Perspective: 2018 IFIC Food and Healthy Study

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A Typical Dinner Plate is Mismatch to MyPlate

Americans report getting less fruits and vegetables, and more protein, than is recommended by MyPlate

My Plate Vs. What Consumers Say Is On Their Plate



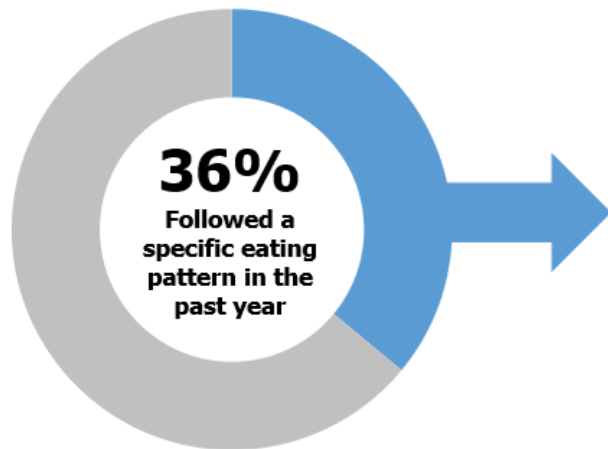
Consumers Perspective: 2018 IFIC Food and Healthy Study

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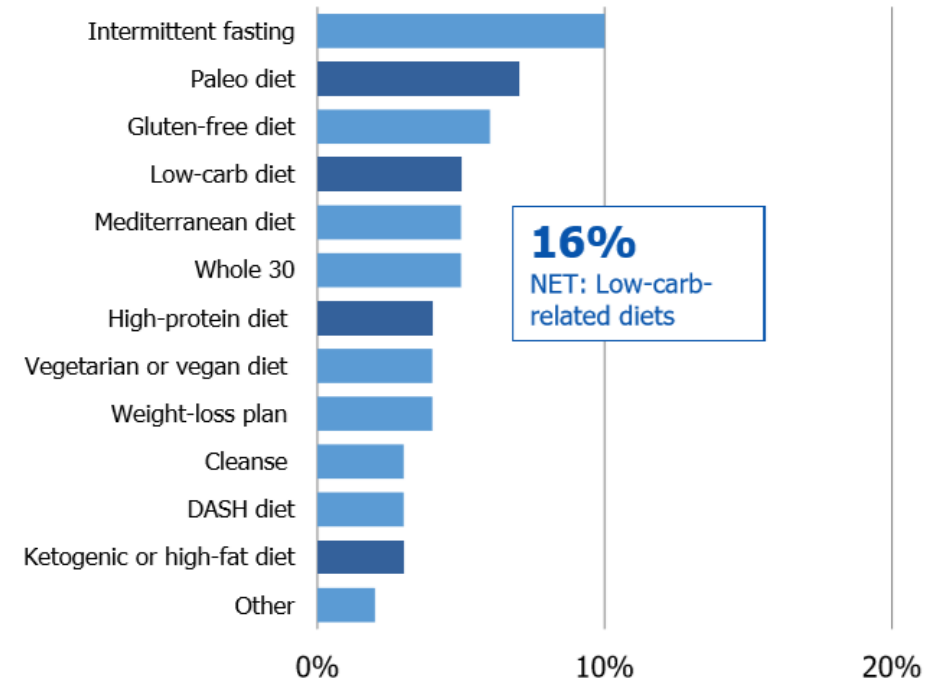
One-Third Follow a Specific Eating Pattern

A higher number of younger consumers (18 to 34) followed a specific eating pattern/diet

Following Specific Eating Pattern



Type of Eating Pattern Followed



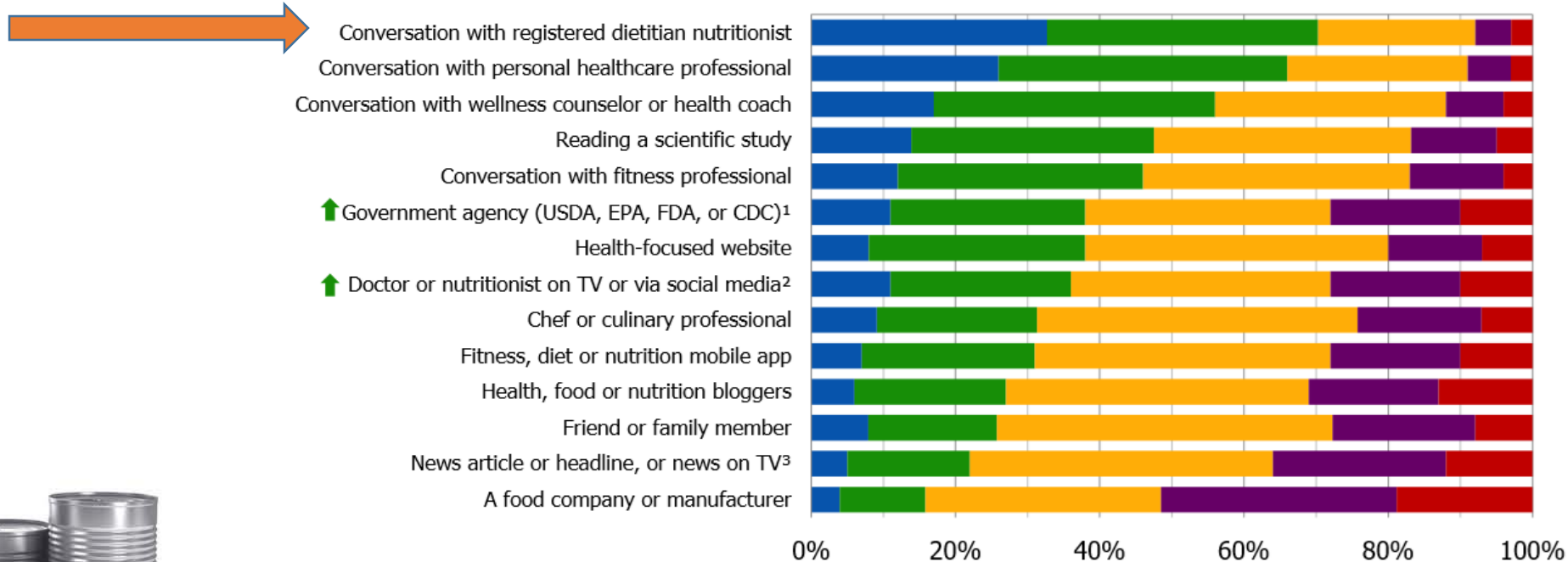
The RDNs Role in Communicating the Guidelines

Consumers Put Trust in Health Professionals

Trust in government agencies has increased significantly since 2017, going from 25% highly trust to 38%

Trusted Sources About Which Foods to Eat/Avoid

■ 5 - A lot ■ 4 ■ 3 ■ 2 ■ 1 - Not at all



76%

Of older Americans (those 65+) trust a registered dietitian, compared to **65%** of younger adults (<35 years old)

Younger adults also have more trust in technology-based sources of information, including fitness apps, bloggers and people on TV



Consumer Barriers to Canned Food Use

Guilt in Canned Food: Quantitative Research Summary Report (2018) by CMI

- **Objective:** As can usage increases among can-acceptors, guilt surrounding their use increases. How can this guilt be addressed and overcome in messaging?
- **Method:** 20-minute phone survey
- **Subjects:**
 - Millennial Moms: N=700; Age 21-36; Parent of child <18; Moderate can usage (at least 1x/month)
 - Food Realists: N=700
 - Wellness Mamas: N=405; Parent of child <18



What do they feel
most guilty
about?



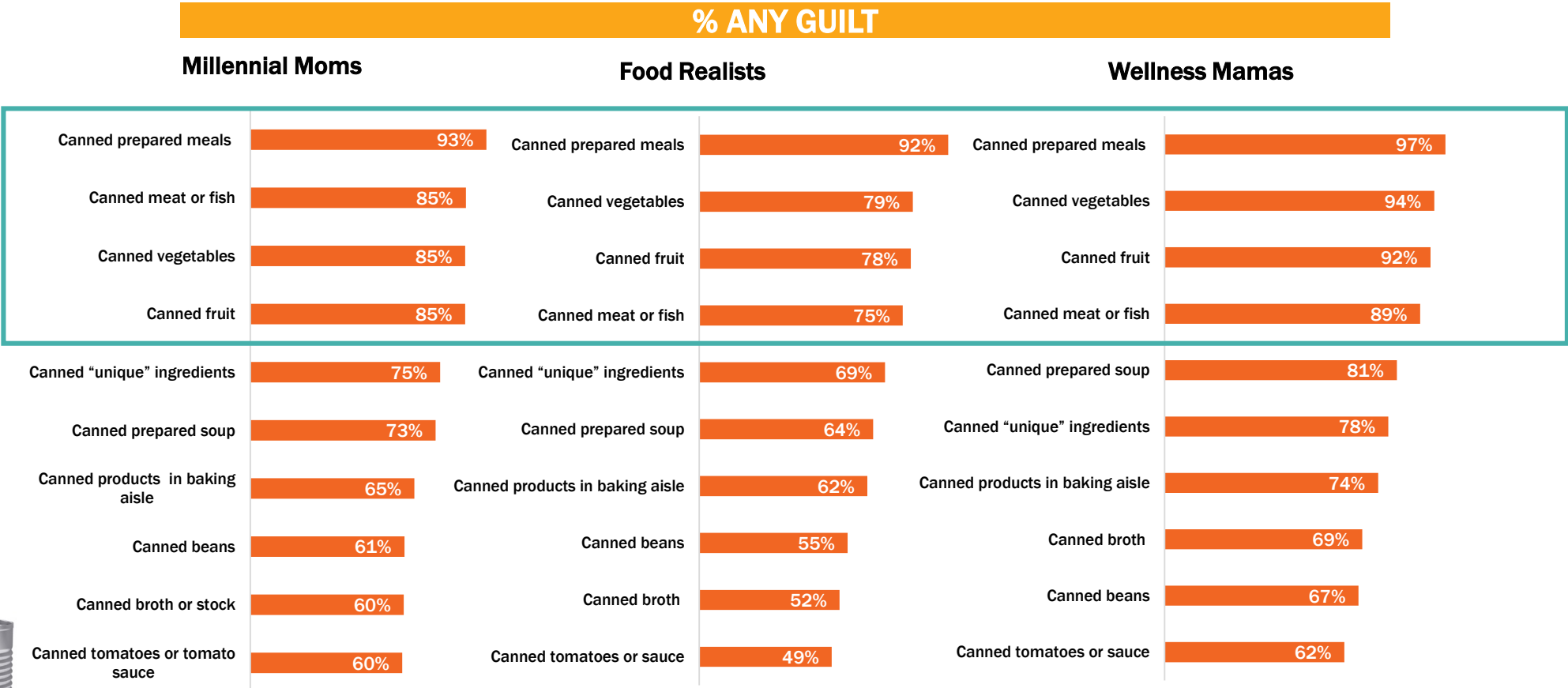
A preference for fresh is a leading barrier to additional canned purchasing.

	Millennial Moms (n=700) a	Food Realists (n=700) b	Wellness Mamas (n=405) c		Millennial Moms (n=700) a	Food Realists (n=700) b	Wellness Mamas (n=405) c
★ (NET) PREFER FRESH	28%b	19%	43%ab	(NET) QUALITY	6%b	3%	11%ab
Prefer to use fresh food	23%b	16%	36%ab	Canned food is less fresh	4%b	2%	8%ab
Fresh food tastes better	4%b	2%	5%b	Lower quality	1%	1%	2%
Fresh food is healthier	2%	1%	5%ab	Family deserves the best/not as good for my family	1%	0%	1%
★ Access to fresh food	2%	1%	3%b	Cheap	0%	0%	0%
(NET) HEALTH CONCERNS	17%b	8%	31%ab	(NET) AVAILABILITY	4%c	6%c	1%
Less healthy/less nutritious	7%b	4%	13%ab	Most of what I eat isn't available in cans	4%c	6%c	1%
Too much sodium/salt	7%b	3%	13%ab	(NET) PREFER FROZEN	3%	3%	4%
Too many preservatives	4%b	2%	8%ab	Prefer frozen food	2%	3%	3%
Too many additives/added ingredients/artificial ingredients	1%b	0%	1%	Frozen food tastes better	1%b	0%	1%
Too much sugar	1%b	0%	1%b	(NET) CONCERNS ABOUT CAN	2%b	0%	5%ab
(NET) TASTE	12%	9%	14%b	Concerns about aluminum/metal leeching	1%b	0%	3%b
Canned food doesn't taste as good	8%b	5%	11%b	BPA	1%	0%	3%ab
Don't like canned food	2%	3%	3%	(NET) MISCELLANEOUS	17%c	23%ac	5%
Don't like canned meat	1%	1%	0%	Already buy a lot of canned food	9%c	16%ac	2%
(NET) COST	4%c	11%ac	2%	Prefer to purchase a variety of food	5%c	5%c	0%
Price/canned food is more expensive	2%	7%ac	1%	Positive comment about canned food	2%	1%	1%
Depends on my budget/money available	2%c	4%ac	0%	Recycling/added trash/waste	1%	0%	1%
Depends on coupons/sales	0%	1%c	0%	Don't think about it/doesn't come to mind	1%	0%	0%
(NET) NEED	5%c	9%ac	2%	Nothing/none/no reason	6%c	10%ac	1%
Most recipes don't call for canned food	3%	6%ac	1%	Other	3%c	4%c	1%
Don't cook often	1%c	3%ac	0%				
Specific dietary requirements	1%	0%	1%				

Wellness Mamas are also held back by negative nutrition perceptions of cans – as well as sodium concerns.



Among those who feel guilt, they report notable levels of guilt across canned food categories, with particularly high guilt stemming from prepared meals, canned meat, canned fruits and vegetables (excluding tomatoes).



Claimed Concerns of Cans

Top claimed reasons for guilt focus on a perceived lack of nutrition associated with canned foods, as well as media attention being focused on fresh foods. Wellness Mamas more strongly identify with all of these reasons for guilt.

Top 2 Box	Millennial Moms (n=700) a	Food Realists (n=700) b	Wellness Mamas (n=405) c
The media talks a lot about fresh food being the best for you	67%	64%	73%ab
I believe that canned foods use preservatives	55%b	44%	75%ab
I don't read or hear very much about the nutritional benefits of canned foods	51%b	41%	60%ab
I don't see many chefs using canned foods	46%	42%	56%ab
I worry that the salt or sugar content is too high in canned foods	46%b	30%	75%ab
I worry that canned food is less nutritious than fresh food	47%b	26%	78%ab
I believe that canned foods aren't fresh because they sit on the shelf for long periods of time	43%b	27%	64%ab
I feel like I am not cooking from scratch when I use canned foods	40%b	25%	58%ab
When I see or received a dented can, I worry about using it	34%	34%	44%ab
I believe that canned foods have too many artificial ingredients	37%b	19%	61%ab
I feel that cans are processed foods, and processed foods are not good for you	37%b	19%	59%ab
I don't think canned foods taste as good	36%b	17%	59%ab
Using canned foods compromises quality for convenience	37%b	18%	57%ab
I do not believe canned foods are organic	38%b	24%	41%b



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Canned Food Nutrition: What's the Research Say?



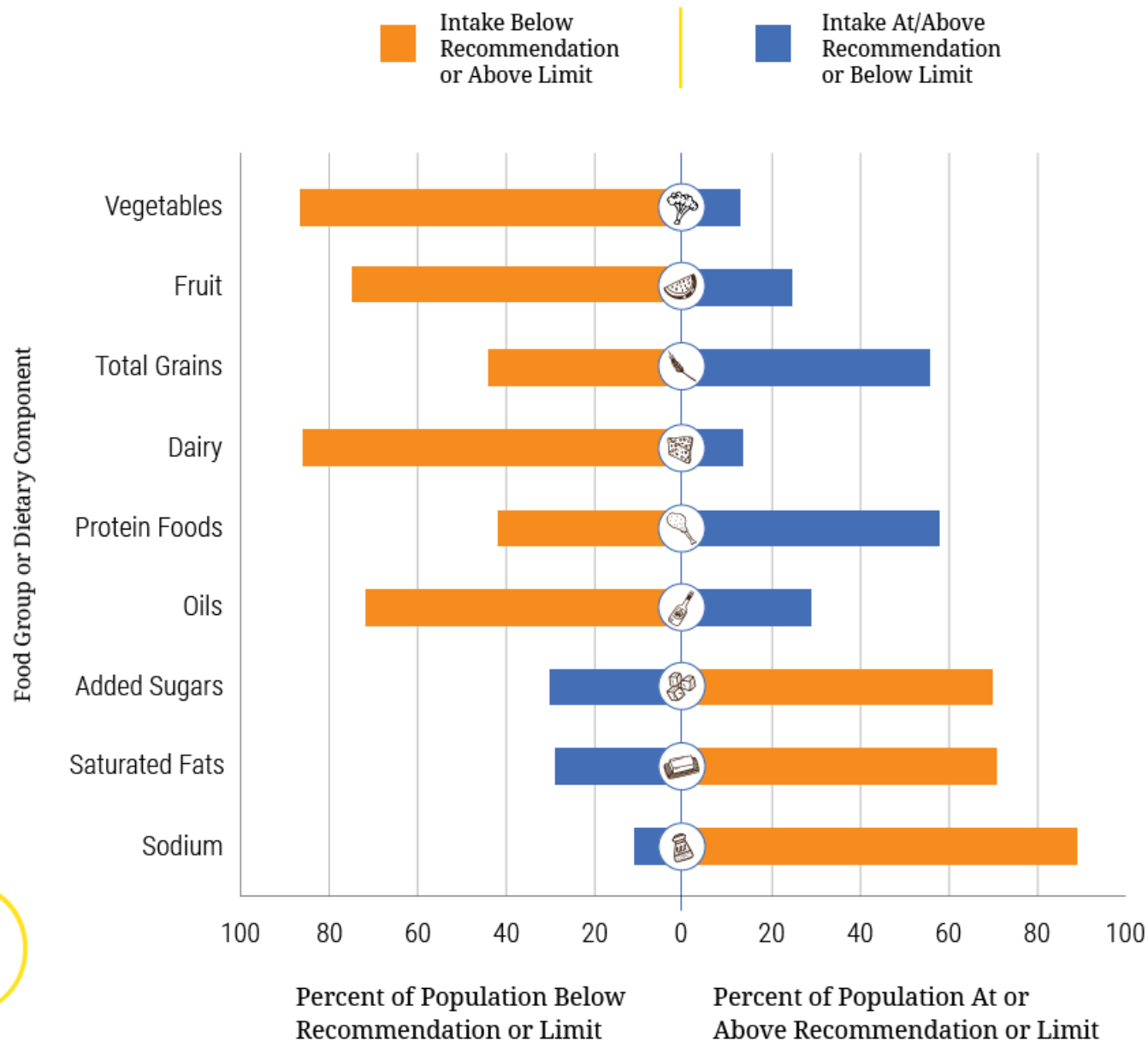
Dietary Guidelines for Americans



- Reduce overall calories
 - Added sugar
 - Solid fat
- Increase nutrient-dense foods
 - Vegetables
 - Fruits
 - Unsalted nuts and seeds
 - Beans and peas
 - Low-fat dairy
 - Seafood



Intake in U.S. compared to recommendations



Nutrition of Canned Food: Comerford Study via UC Davis

- **Purpose:** To compare nutrient-dense food group intake and nutrient intake between different levels of canned food consumption in the U.S.
- **Study design:** Cross-sectional (data collected 2 years)
- **Subjects:** N=9761 canned food consumers aged 2 years+

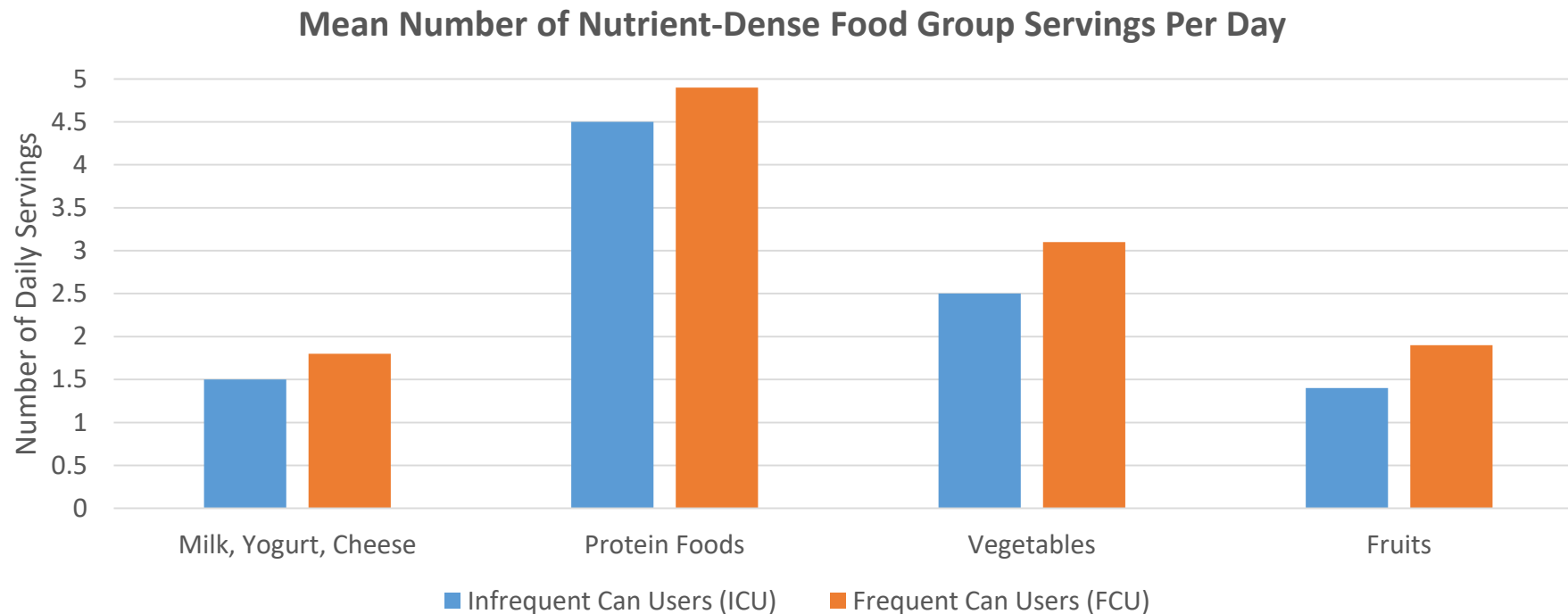
**Frequent Canned Food Use is Positively Associated with
Nutrient-Dense Food Group Consumption and Higher Nutrient
Intakes in US Children and Adults**

Kevin B. Comerford ^{1,2}



Nutrition of Canned Food: Comerford Study via UC Davis

- Canned food consumers divided into three groups:
 - ✓ **Frequent Can Users:** ≥ 6 canned items/week (N=2584)
 - ✓ **Average Can Users:** 3-5 canned items/week (N=4445)
 - ✓ **Infrequent Can Users:** ≤ 2 canned items/week (N=2732)



Nutrition of Canned Food: Comerford Study via UC Davis

- FCU were more likely to have diets higher in 17 essential nutrients
- FCU vs ICU consumed higher amounts of nutrients of concern

Table 2. Average daily nutrient intake between frequent and infrequent can users.

Frequent Can Users: (ICU, <i>n</i> = 2732; FCU, <i>n</i> = 2584)			
Nutrient	ICU	FCU	<i>p</i> -Value
→ Fiber (g)	13.1 ± 6.2	16.0 ± 7.4	<0.01
Protein (g)	69.7 ± 26.7	76.3 ± 29.9	<0.01
Vitamin A (RAE) (μg)	585 ± 417	732 ± 417	<0.01
Vitamin E (mg)	6.1 ± 3.5	7.1 ± 4.0	<0.01
Vitamin C (mg)	65.9 ± 64.6	89.7 ± 68.9	<0.01
Thiamin (mg)	1.6 ± 0.7	1.8 ± 0.8	<0.01
Riboflavin (mg)	1.9 ± 0.8	2.2 ± 0.9	<0.01
Niacin (mg)	20.9 ± 8.9	23.2 ± 9.7	<0.01
Vitamin B6 (mg)	1.6 ± 0.8	1.9 ± 0.9	<0.01
Folate/Folic Acid (μg)	370 ± 188	419 ± 200	<0.01
Vitamin B12 (μg)	4.8 ± 4.2	5.7 ± 5.2	<0.01
→ Calcium (mg)	873 ± 417	1027 ± 493	<0.01
Magnesium (mg)	219 ± 87	257 ± 101	<0.01
Phosphorus (mg)	1178 ± 437	1331 ± 522	<0.01
Iron (mg)	14.3 ± 7.1	16.4 ± 7.8	<0.01
Zinc (mg)	10.4 ± 5.4	11.6 ± 5.8	<0.01
Selenium (μg)	101 ± 44	108 ± 47	<0.01
Sodium (mg)	3168 ± 1283	3588 ± 1482	<0.01
→ Potassium (mg)	2132 ± 827	2586 ± 988	<0.01



Nutrition of Canned Food: Comerford Study via UC Davis

Study Discussion:

- More frequent canned food consumption is associated with healthier eating patterns
 - Greater likelihood to consume fruits, vegetables, dairy, and protein
- Canned foods are a way to get many recommended foods with their unique array of nutrients at affordable prices
- According to the CDC, canned foods (fruits and veggies) are not one of the top 10 sources of sodium in the US diet
 - Many low-sodium and sodium-free choices



Nutrition and the Canning Process

Myth: heating/processing of canned foods destroy nutrients

Debunking the Myth

- The heat used in canning **improves** the **quality and availability** of certain nutrients found in fruits, vegetables, and protein
- Canned tomatoes generally have **more lycopene and beta carotene**, than fresh tomatoes. Research suggests that dietary intake of foods high in lycopene and beta carotene has a positive association with **decreased risk of some cancers and heart disease**
- Canned foods have **similar (or better) nutritional profiles** as their fresh or frozen counterparts



Nutrition and the Canning Process

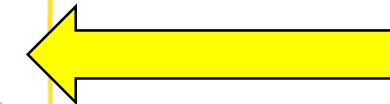
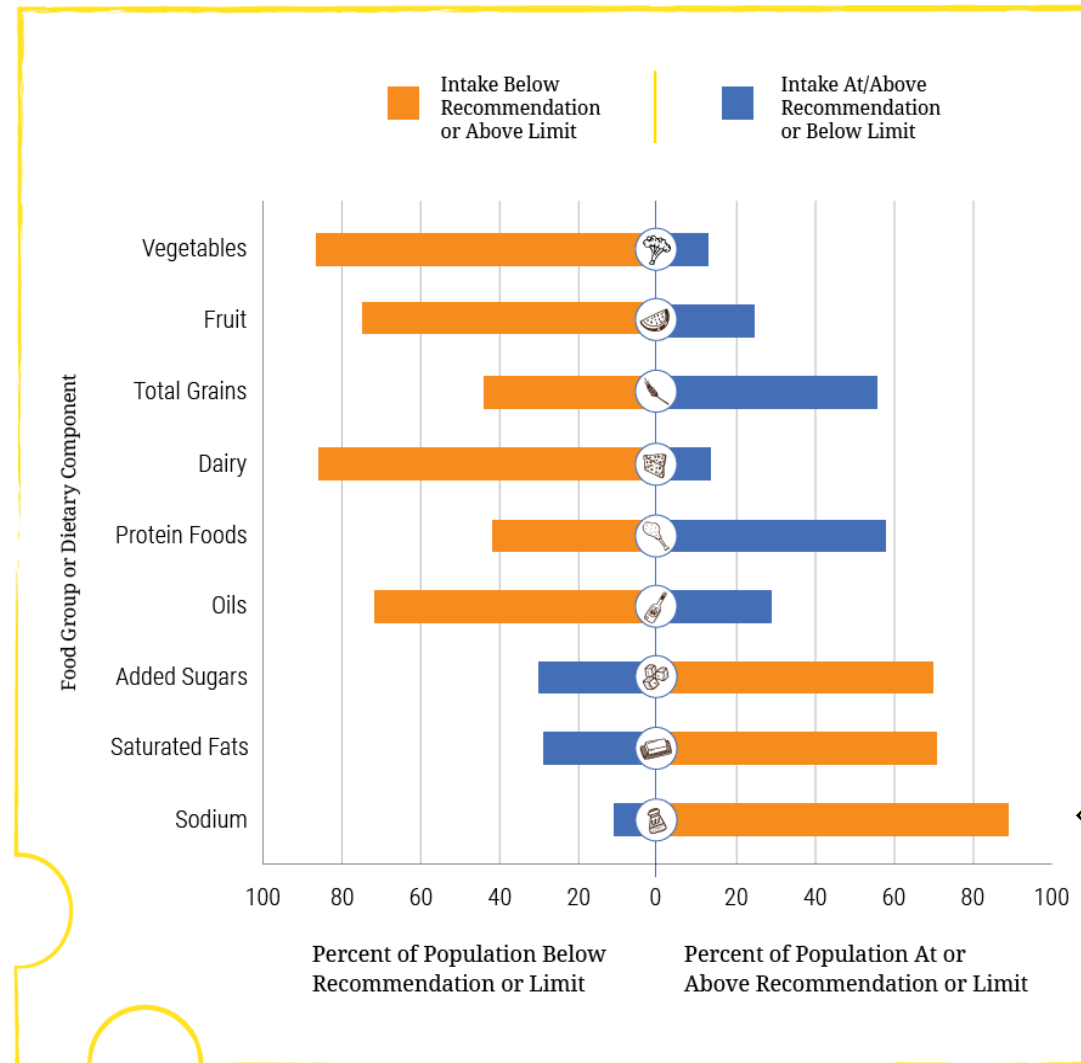
Debunking the Myth, continued...

- Canning improves the **protein and fiber content** of multiple **bean varieties**.
- Canning helps **make the fiber and protein** in **certain vegetables**, like beans, **more soluble** and therefore more useful to the human body.
- Canning **improves the protein quality of legumes**, such as canned chickpeas and pinto beans.
- Canning **reduces oxygen exposure** and increases shelf life.



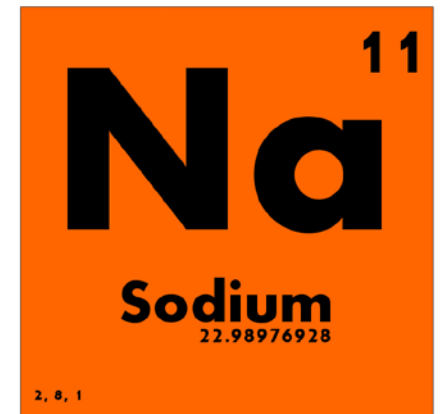
Sodium and the DGA

Intake in U.S.
compared to
recommendations



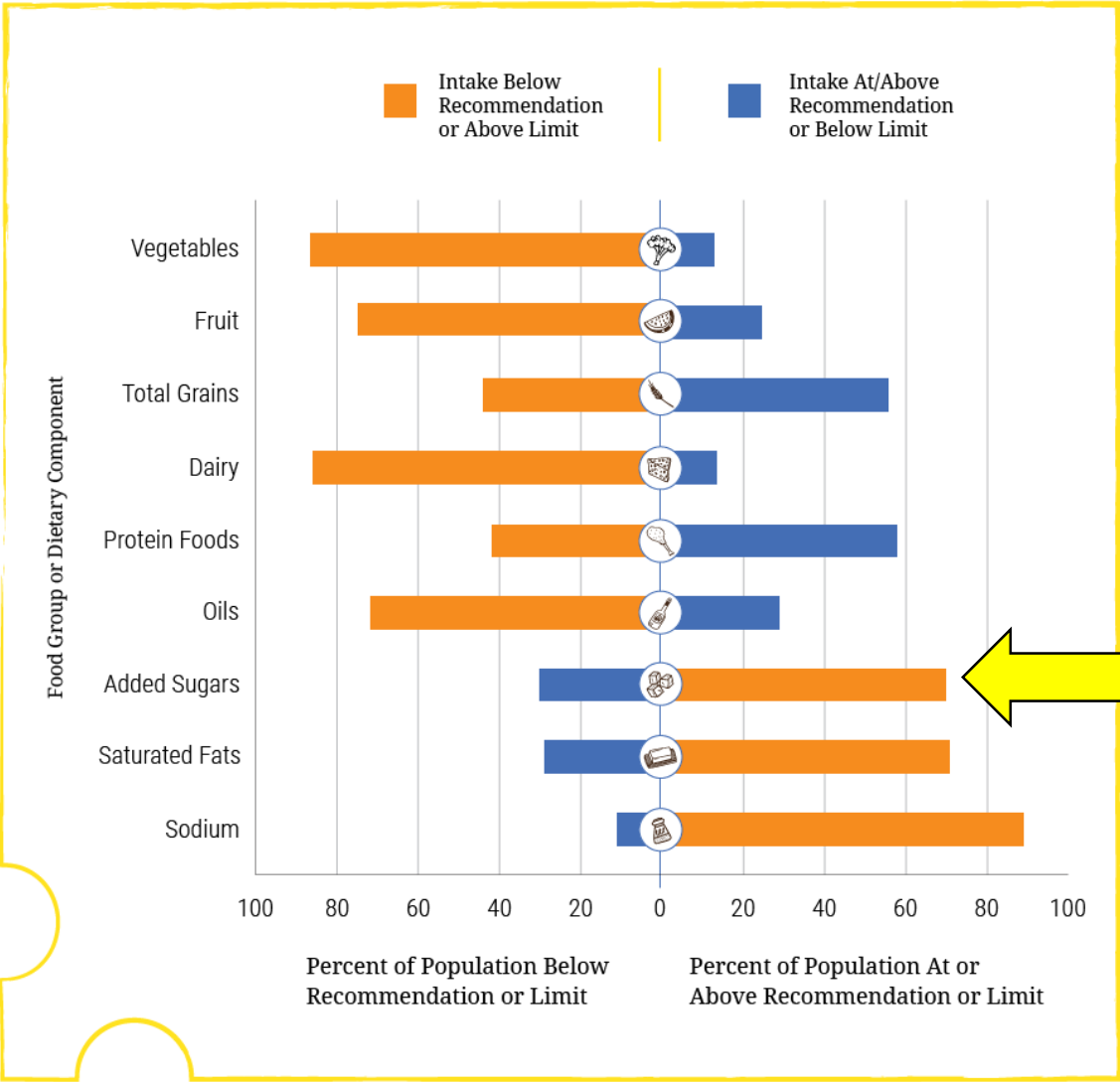
Sodium and Canned Food

- The 2015-2020 Dietary Guidelines for Americans list sodium as a nutrient of concern
- Only 11% of sodium in the diet comes from vegetables, *including* canned varieties
 - Daily intake of sodium is comparable for adults and children who *do* use canned foods and those who *do not* consume canned fruits and vegetables



Added Sugar and the DGA

Intake in U.S.
compared to
recommendations



Added Sugar and Canned Food

- **Recommendation:** 10% of total calories from added sugar
- Only 2% of added sugar in the diet comes from fruits and vegetables, **including canned**
- In the store:
 - Canned fruit with no added sugar
 - 100% fruit and vegetable juice



Canned Foods and Ingredient Lists

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- Many canned foods have minimal ingredients that are simple to understand, for example, corn and water.



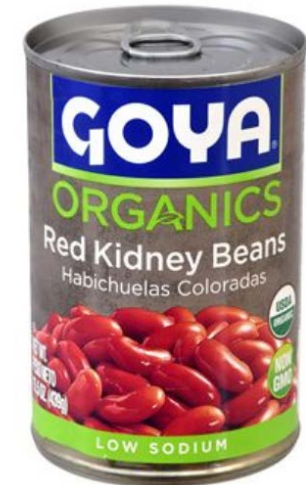
▼ Ingredients

Corn, Water, Salt (For Flavor).



▼ Ingredients

Pineapple, Pineapple Juice, Water And Clarified Pineapple Juice Concentrate And Citric Acid.



▼ Ingredients

Organic Red Kidney Beans, Water, Salt, Potassium Chloride, Calcium Chloride.

**Information and images from freshdirect.com*



Affordability and Accessibility

- **Kid tested, mom approved** studies show the importance of canned produce when feeding a family

The Role of Canned Produce in Increasing Children and Families' Consumption of Fruits and Vegetables – Moms' Fruit & Vegetable Challenges Survey



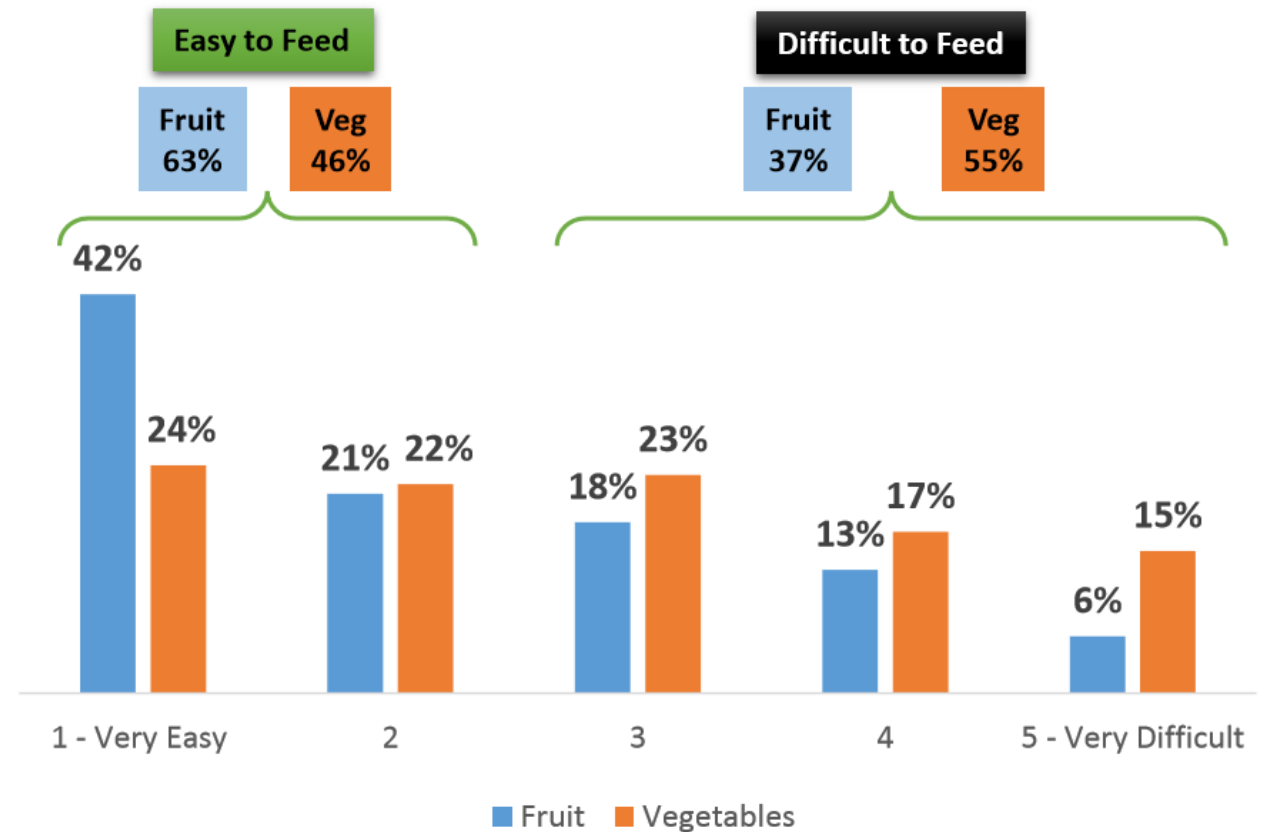
- **Objective:** Show that canned foods are a relevant, high quality option and can help moms overcome the challenges they face when trying to get their children to consume fruits and vegetables
- **Method:** Survey for moms to help identify challenges moms encounter when trying to get their kids to eat fruits and vegetables



Affordability and Accessibility

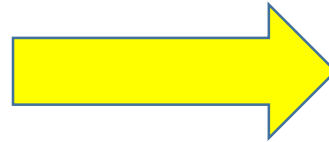
- Mothers find it more difficult to get their children to eat vegetables than fruit

Moms' Perceived Difficulty of Getting Their Children to Eat Fruit and Vegetables
(Base = 542 Moms' Ratings of 897 Children)



Affordability and Accessibility

- Based on moms estimates, 57% of children under consume either fruit or vegetables
- Nearly half of moms have children that are under consuming either fruit or vegetables



	Under Consume Fruit OR Vegetables
Children Aged 2-3	30%
Children Aged 4-8	50%
Children Aged 9-12	82%
TOTAL Children:	57%
TOTAL Moms:	49%



Affordability and Accessibility

- Nearly two-thirds of moms moderately agree that canned fruit and vegetables help save prep time and get a healthy, homemade meal on the table



I wish more F/V marketers would market the benefits of F/V consumption directly to children

Canned fruit and vegetables help save prep time and get a healthy, homemade meal on the table

Convenient prepared F/V in cans help me to get servings of F/V into my family's diet

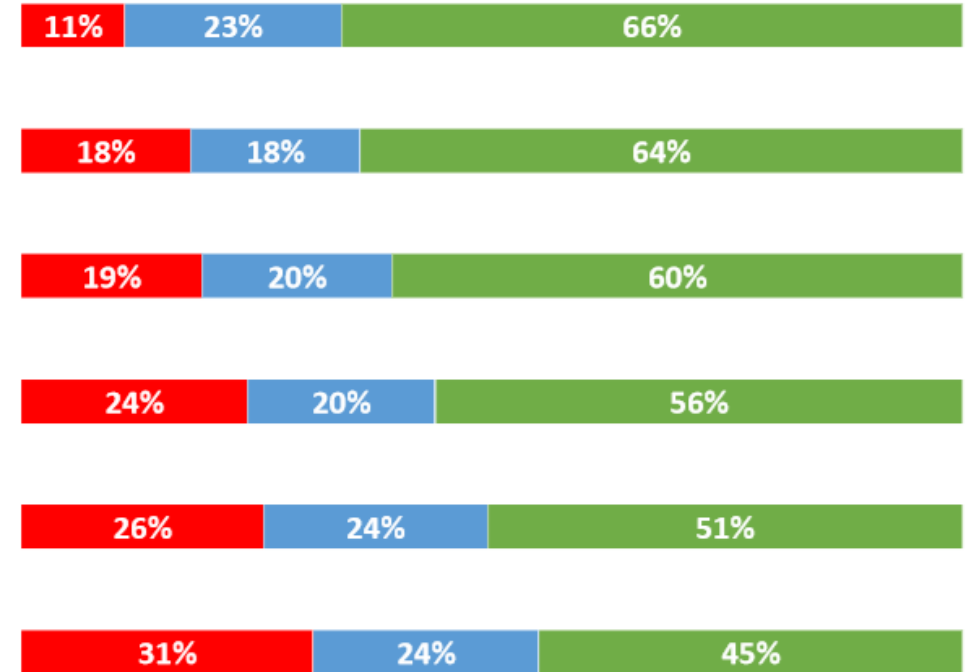
When eating out, I find that restaurant menus are not helpful in getting my children to eat F/V

Using canned fruit and vegetables makes it easier for me to get my children to eat fruit and vegetables

The addition of F/V to children's meals at fast food restaurants has positively impacted my child(ren)'s consumption

Aspects of the Environment that Impact Fruit and Vegetable Consumption*

(Base = 542 Moms)



■ 1/2/3 ■ 4 ■ 5/6/7

1=Completely Disagree,
7=Completely Agree



Affordability and Accessibility

Takeaways:

- Canned fruit and vegetables already play an important role in helping a majority, **76%**, of moms get fruit and vegetables on the table and into her kids
- Mom estimate that cans account for **1 out of every 4 servings of vegetables** and **1 in 5 servings of fruit** consumed in their homes
- **Convenience** of canned fruit and vegetables are used to **cut down meal prep time** and get a **healthy, homemade meal** on the table



Affordability and Accessibility

The Role of Canned Produce in Increasing Children and Families' Consumption of Fruits and Vegetables – In-Home Pressure Test

- **Objective:** Help moms feed fruit and vegetables to their picky kids
- **Method:** Participants received a Cantry in the mail and were asked to complete the following during the In-Home Pressure Test
 - **Pre In-Home Pressure Test Survey** about current fruit and vegetable consumption
 - **Diary entries**
 - Minimum 3 entries during week 1 and during week 2
 - Entries addressing meal preparation and child acceptance
 - **Post In-Home Pressure Test** about fruit and vegetable consumption during In-Home Pressure Test and in the future
 - N= 34 moms and their 63 kids



Affordability and Accessibility

Cantry Package Included:

- **Fruit:**
 - Pineapple Chunks in 100% Juice (2 cans)
 - Sliced Peaches in 100% Juice (2 cans)
 - Mandarin Oranges in Light Syrup (2 cans)
 - Sliced Pears in Extra Light Syrup (2 cans)
 - Mixed Fruit in 100% Juice (2 cans)
- **Vegetables:**
 - Cut Green Beans 50% Less Sodium (2 cans)
 - Sweet Peas 50% Less Sodium (2 cans)
 - Whole Kernel Corn No Salt Added (2 cans)
 - Sliced Carrots (2 cans)
 - Stewed Tomatoes No Salt Added (1 can)
 - Diced Tomatoes No Salt Added (1 can)
- **Cans Get You Cooking Recipe Booklet**



Affordability and Accessibility

- Children increased the consumption of fruit and vegetables during the test, and moms intend to serve more fruit and vegetables post Cantry
- More than half of kids increased their fruit consumption and almost half of kids increased their vegetable consumption during the 2-week In-Home Pressure Test

Change in Reported/Intended Fruit & Vegetable Consumption Vs. Benchmark

		Children's Intake During Test*	Moms Intended Daily Servings After Test**
FRUIT	Increased fruit consumption	54%	63%
	No change in fruit consumption	29%	22%
	Declined in fruit consumption	17%	14%
VEGETABLES	Increased vegetable consumption	49%	65%
	No change in vegetable consumption	44%	32%
	Declined in vegetable consumption	6%	3%

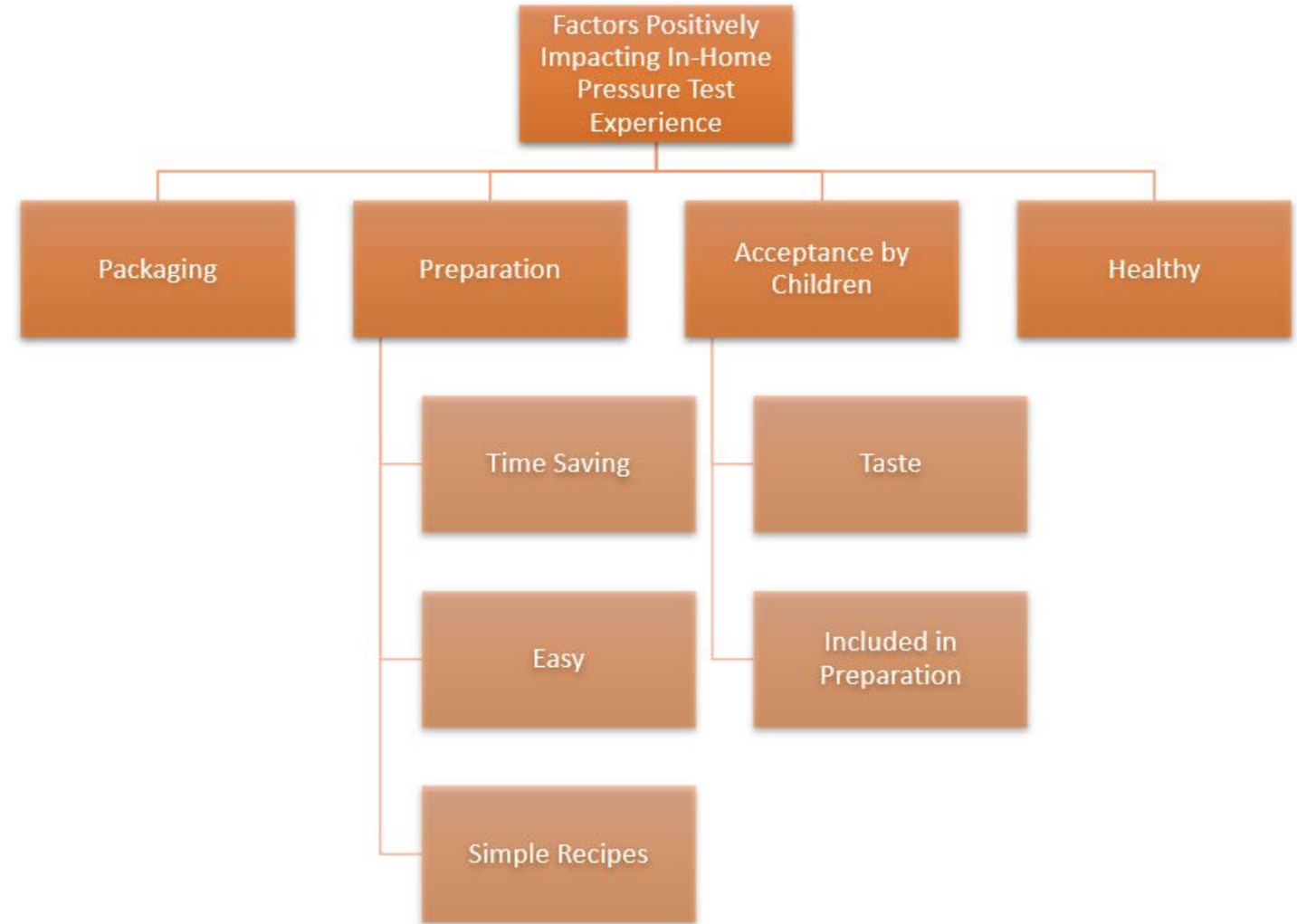
*% of 63 children

**% of 34 moms



Affordability and Accessibility

- Four factors emerged as drivers of moms and kids' positive Cantry experience



Affordability and Accessibility

Takeaways:

- The **great taste**, **consistent quality** and easy-serve **convenience** of canned fruits and vegetables can be an even bigger help to moms in feeding fruits and vegetables to their picky kids
- Following the rediscovery of canned produce, **nearly two-thirds of moms** increased their estimate of the number of fruit and vegetable servings they intend to feed their children
- Overall, over the 2-week test period, moms **perceived level of difficulty** in feeding their kids both fruit and vegetables was **greatly decreased**



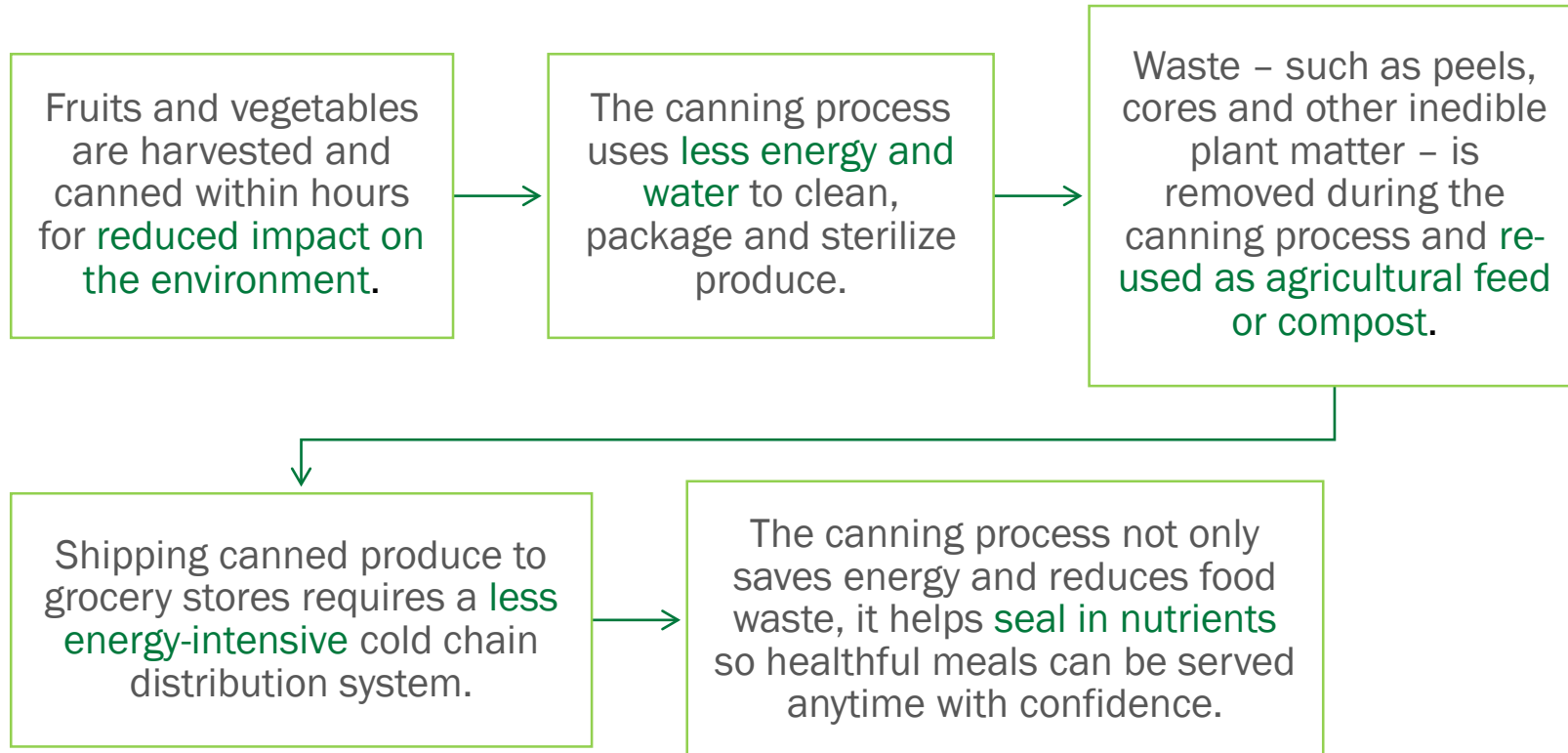
Sustainability of the Can

- Half of all fresh produce in the U.S. is thrown away. Produce is lost in fields, warehouses, packaging, distribution, supermarkets, restaurants and fridges.
- Most Americans throw away ~15 - 20% of the fresh fruits and vegetables they purchase every year.
- Fruits and vegetables are harvested and canned within hours for reduced impact on the environment.
- The canning process uses less energy and water to clean, package and sterilize produce.

Consumers have an increased concern with the sustainability of their food and the food system



Sustainability of the Can: The True Cost of Food



THE TRUE COST OF FOOD

CANS: A Sustainable Solution

Fruits and vegetables are harvested and canned within hours for **reduced impact on the environment**.

The canning process uses **less energy and water** to clean, package and sterilize produce.

Waste – such as peels, cores and other inedible plant matter – is removed during the canning process and **re-used as agricultural feed or compost**.

Shipping canned produce to grocery stores, requires a **less energy-intensive** cold chain distribution system.

The canning process not only saves energy and reduces food waste, it helps **seal in nutrients** so healthful meals can be served anytime with confidence.

A B C D
B₁₂ Iron Potassium Calcium

Length of Time Qualitative Audit - Duration and Steps in Processing Canned and Fresh Produce.
Can Manufacturers Institute, May 2016

Can Manufacturers Institute
@CansRecyclable
www.cancentral.com

Sustainability of the Can

- **Waste** – such as peels, cores and other inedible plant matter – is **removed** during the canning process and **re-used** as agricultural feed or compost.
- The canning process not only saves energy and reduces food waste, it **helps seal in nutrients** so healthful meals can be served anytime with confidence.
- **Metal cans are infinitely recyclable** and, in fact, are the most recycled containers in America, keeping metal out of landfills and saving significant energy.



Sustainability of the Can

- CMI conducted a food waste and nutrient meta-analysis (*research not yet published*)

Results:

- Canned spinach and tomatoes exhibit **less nutrient loss** and **food waste** than fresh, especially calcium, magnesium, protein, iron and antioxidants.
- **Canned kidney beans**, a nutritional and cost-effective protein source, exhibit **less nutrient waste than dried**.



Sustainability of the Can

Safe and Sustainable

Canning:

- Seals in fruits and vegetables at their peak ripeness
- Prevents the growth of microorganisms that cause foodborne illnesses, an important benefit, considering at least 128,000 Americans are hospitalized every year with foodborne illnesses⁴

Metal cans are endlessly recyclable, making canned foods an environmentally friendly choice.



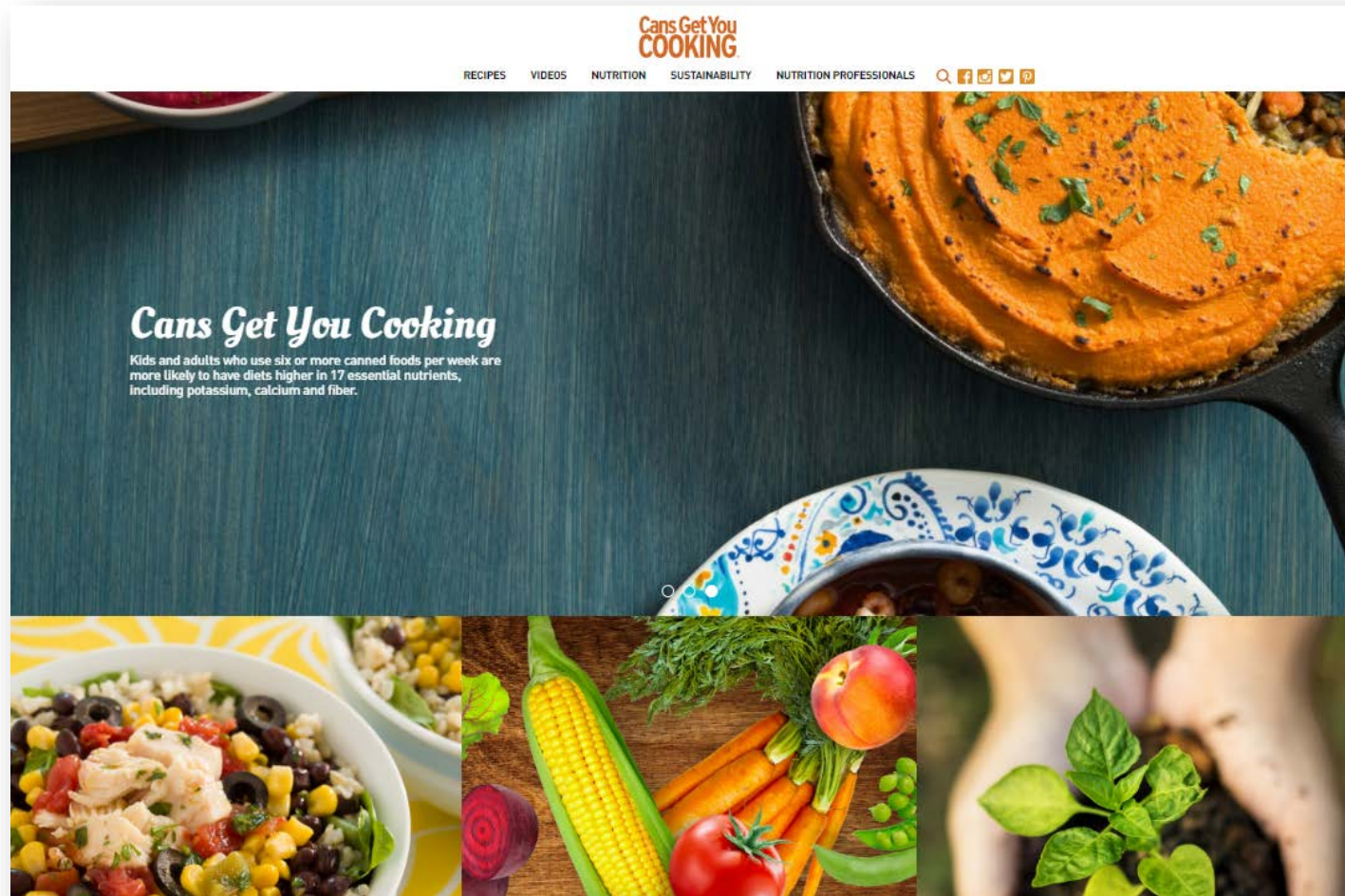
2.5 times higher

Steel food cans have a recycling rate that is more than **2.5 times higher** than most other packaging options.⁵



For more information...

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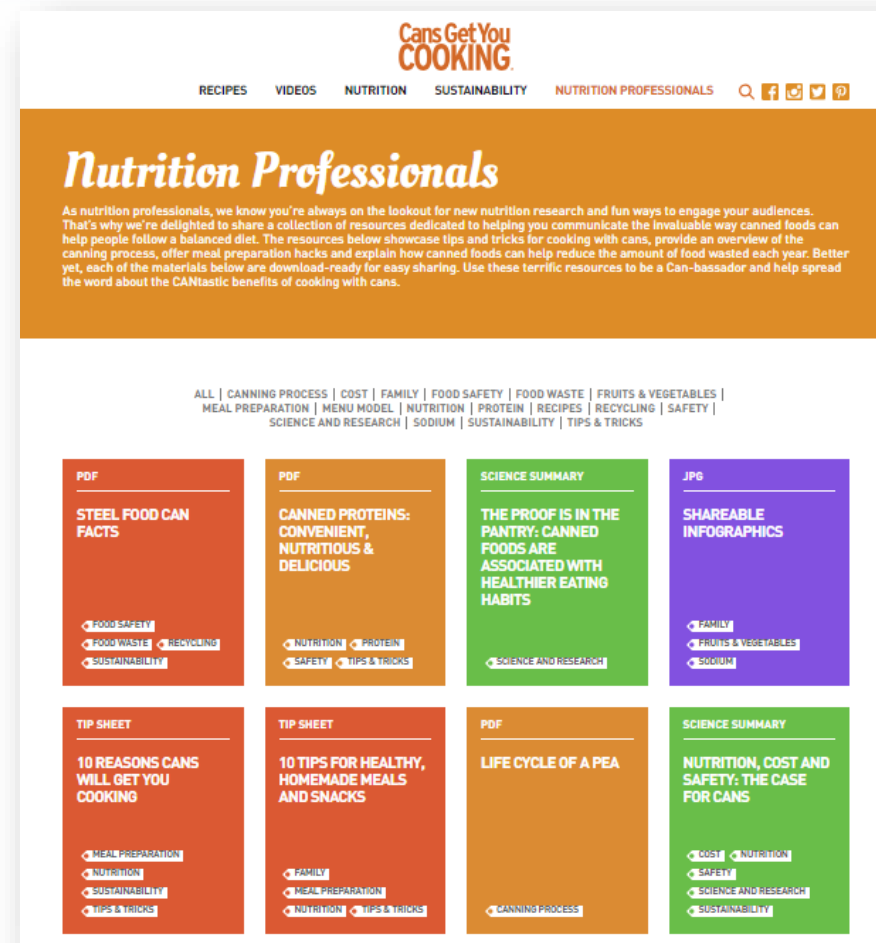


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Q&A

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Toby Amidor, MS, RD

www.tobyamidornutrition.com

Email: toby@namsko.com

Insta/twitter: @tobyamidor

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