



Postbiotics: The Next Evolution in Immune & Gut Health

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#1 POSTBIOTIC BRAND



Cashtyn Lovan
Marketing Manager
Cargill Health Technologies | EpiCor



Justin Green, PhD
Director of Scientific Affairs
Cargill Health Technologies | EpiCor

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Agenda

- Intro: What are postbiotics?
- Postbiotic Category
 - Awareness
 - Consumer Perceptions
 - Current Market
- Deep Dive into Understanding Pre/Pro/Postbiotics
- ISAPP Definition
- EpiCor[®] Postbiotic Overview

What Are the Differences?



Prebiotics

Probiotics

Postbiotics

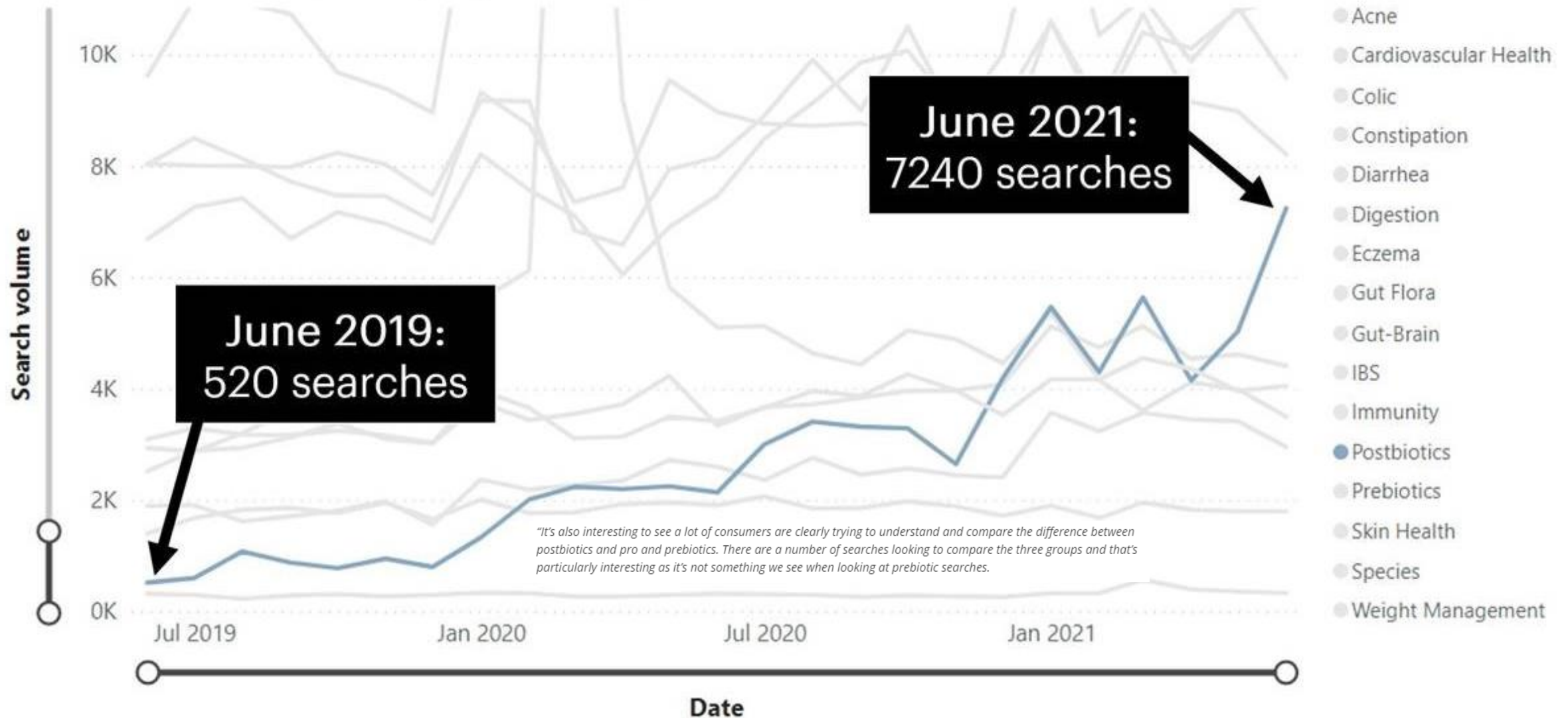
Growing Consumer Awareness of Postbiotics



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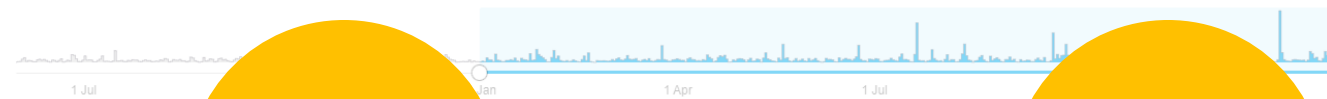
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Postbiotics see 1,300% increase in Google searches



Postbiotic Mentions: Jan 2020 to June 2021

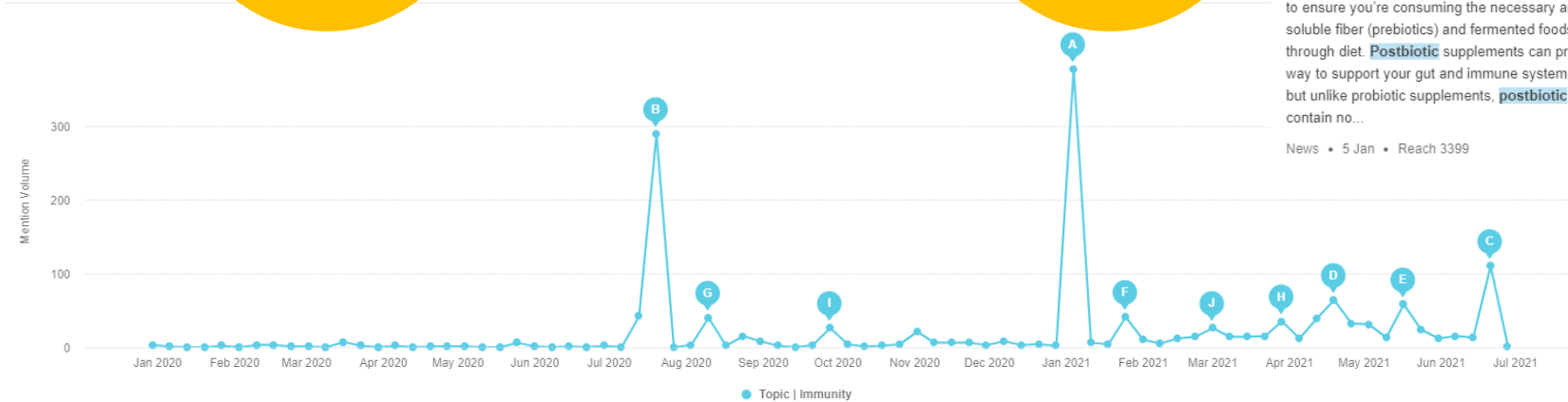
All 60 days 30 days 14 days 7 days Today 1 Jan 2020 – 29 Jun 2021



Total Mentions [?]
1535
 ↑ **1,390%**
 From previous period

Unique Authors [?]
245
 ↑ **483%**
 From previous period

Volume Over Time [?]



Mentions Sort by: Reach ▾

Date: Jan 04, 2021 ✕

ask.com

What are postbiotics and why should they be part of your daily routine?

...fiber (prebiotics) and fermented foods (probiotics) through diet. **Postbiotic** supplements can provide a simpler way to support your gut and immune system. Not only that but unlike probiotic supplements, **postbiotic** supplements contain no live cultures, so they're more stable and have a longer shelf life. Proactive immune support: The **postbiotic** EpiCor...

News • 5 Jan • Reach 4787

chron.com

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sfgate.com

What are postbiotics and why should they be part of your daily routine?

...gut into balance, it can be something of a guessing game to ensure you're consuming the necessary amounts of soluble fiber (prebiotics) and fermented foods (probiotics) through diet. **Postbiotic** supplements can provide a simpler way to support your gut and immune system. Not only that but unlike probiotic supplements, **postbiotic** supplements contain no...

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Taste for Life @TasteForLife

Learn why more and more people are using biohacking as strategy to improve overall health. [🔗](#) [📌](#) [🔖](#) [#microbiome](#) [#probiotics](#) [#prebiotics](#) [#postbiotic](#) [#postbioticmetabolites](#) [#biology](#) [#technology](#) [#humanbiome](#) [#health](#) [#bacteria](#) [#genes](#) [#dna](#) [#guthealth](#) <https://t.co/Bj3Ag8HLY6> <https://t.co/5Wdb32Bnsy>

Twitter • 22 Jul • Reach 4988

ask.com

How to help maintain your immune system with fermentation

...fermented, the bacteria produce metabolites that affect the texture, taste and nutritional qualities of the food. These non-living metabolites are postbiotics, which are an essential part of the fermentation process. Probiotic vs. **postbiotic** Many people have heard of probiotics supporting digestive health. Probiotics are live microorganisms that can be...

News • 20 Jul • Reach 4787

chron.com

How to help maintain your immune system with fermentation

...the food. These non-living metabolites are postbiotics, which are an essential part of the fermentation process. Probiotic vs. **postbiotic** Many people have heard of probiotics supporting digestive health. Probiotics are live microorganisms that can be present in foods like yogurt. However, when focusing on fermentation products, the benefits also...

News • 22 Jul • Reach 3990

Postbiotic Mentions: Trends Jan 2020 – June 2021



Fading

Trending



GOAL:

Leader in Postbiotic Technology

- Investment in Research
- Investment in Brand
- Investment in Category Awareness (Consumer and Industry)

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Postbiotics: Consumer Perceptions



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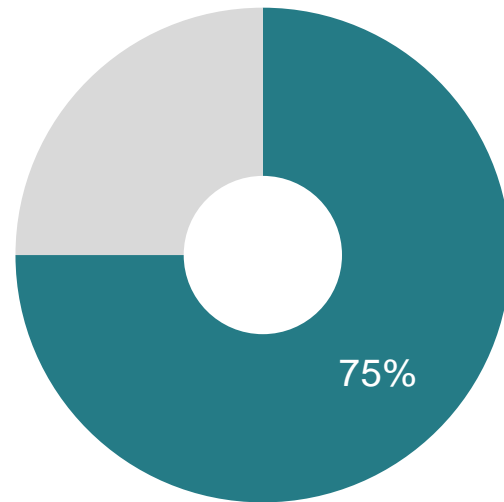
Most wellness product buyers are aware of the effects of the gut microbiome



Impact of gut microbiome

% of wellness product buyers who agree with the following statement

“I believe that I can affect my health through my gut microbiome”



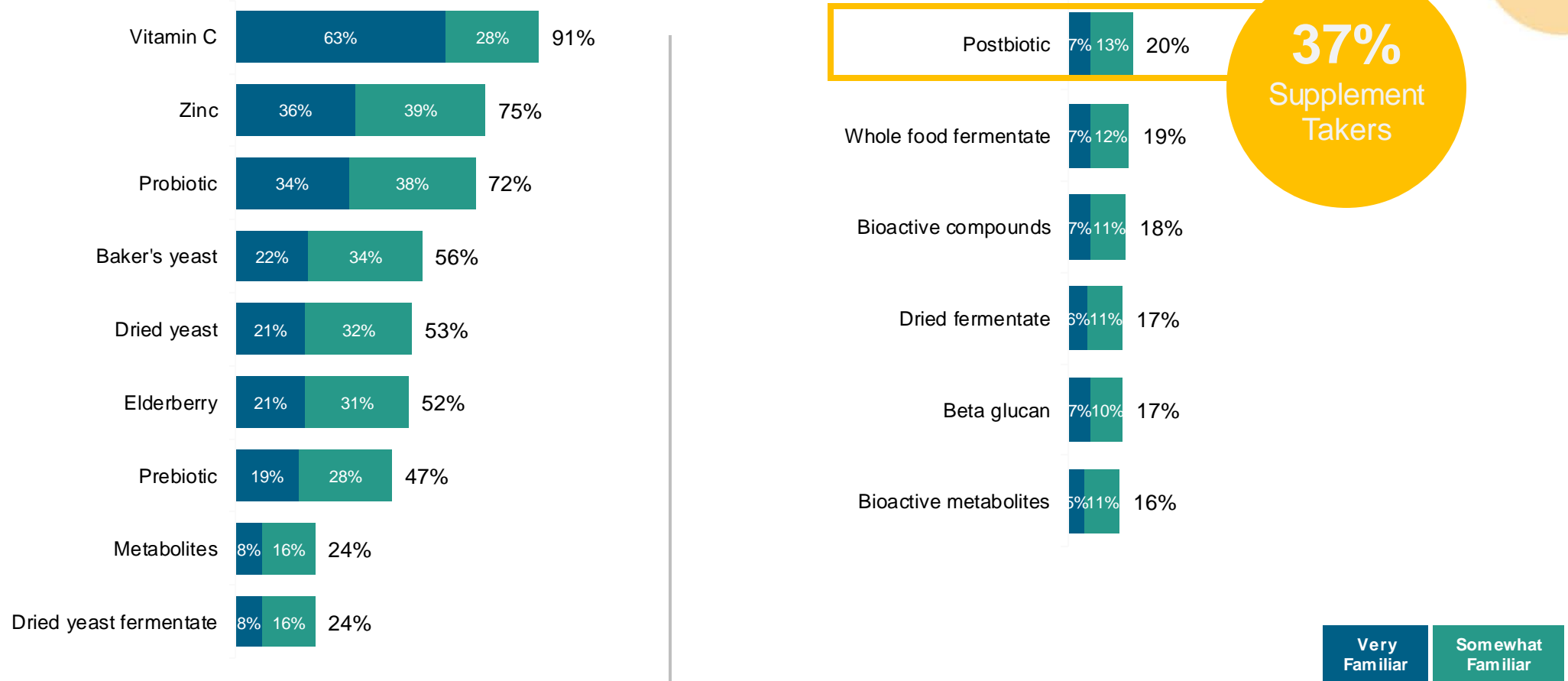
Areas of Impact

% who believe the gut microbiomes impacts the following

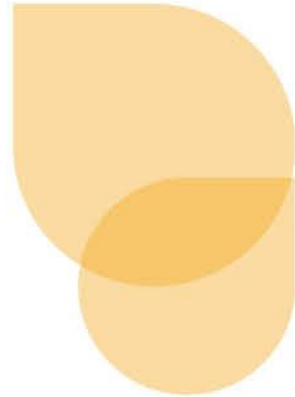
Digestive system	82%
Immune system	61%
Weight	51%
Mood	39%
Sleep	35%
Heart health	28%
Cognition	23%

Gen pop consumers have low familiarity with many immunity ingredients

Familiarity for Immunity Ingredients

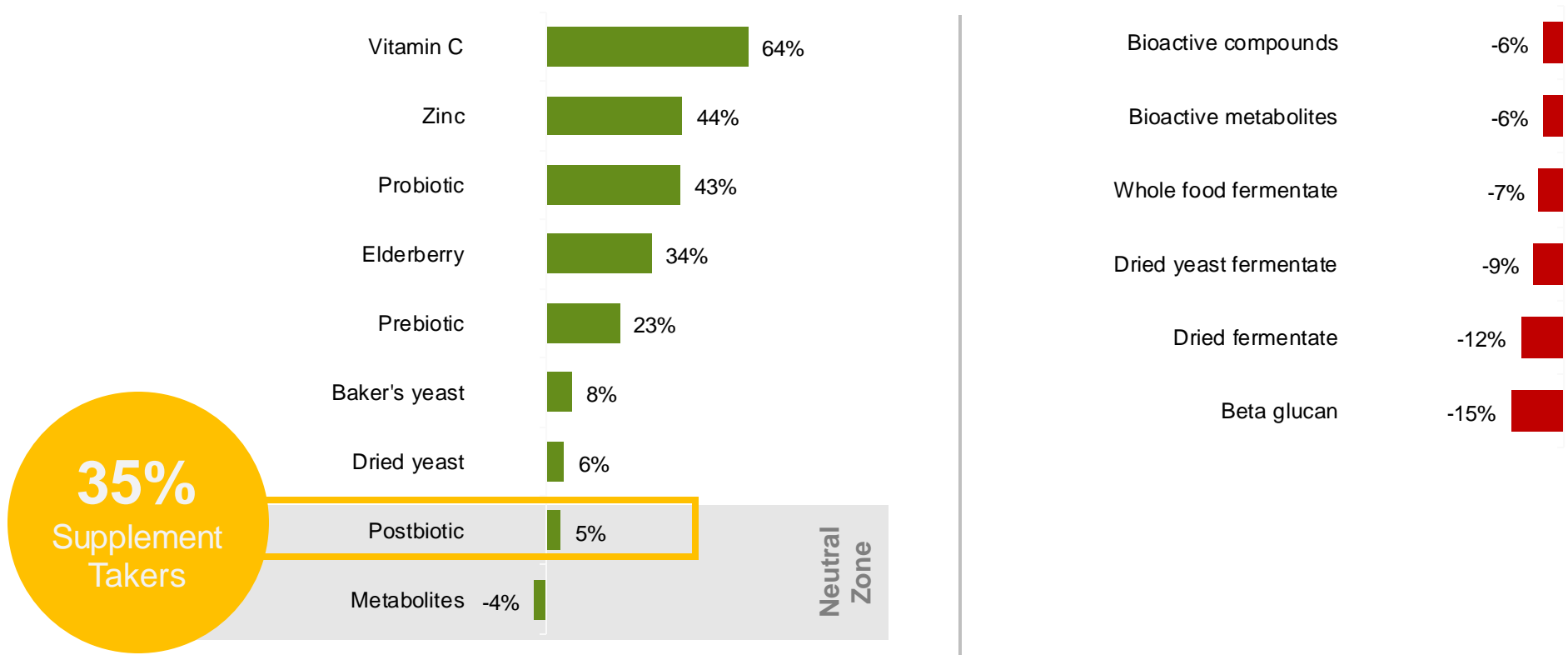


Probiotics, prebiotics and postbiotics all have positive purchase impact for gen pop



NET Purchase Impact for Immunity Ingredients

NET Scores = More likely (T2B) minus Less Likely (B2B)



Postbiotic: Familiarity & purchase impact vs non



Clean Label Seekers
<p>Familiarity 29% (+14)</p> <p>Purchase Impact 14% (+16)</p>



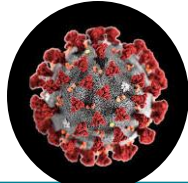
Willing to Pay More for Healthy
<p>Familiarity 35% (+24)</p> <p>Purchase Impact 16% (+18)</p>



Sustainability Seekers
<p>Familiarity 29% (+18)</p> <p>Purchase Impact 16% (+22)</p>



Plant-Based Eaters
<p>Familiarity 34% (+22)</p> <p>Purchase Impact 16% (+18)</p>



COVID-Concerned
<p>Familiarity 37% (+22)</p> <p>Purchase Impact 15% (+13)</p>

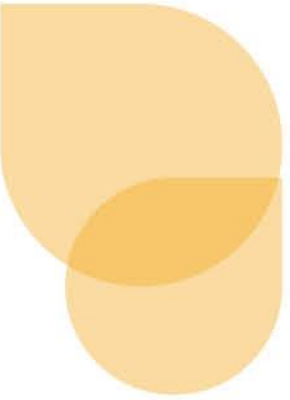


Immunity Seekers
<p>Familiarity 23% (+9)</p> <p>Purchase Impact 13% (+24)</p>

Other segments: Familiarity & purchase vs non



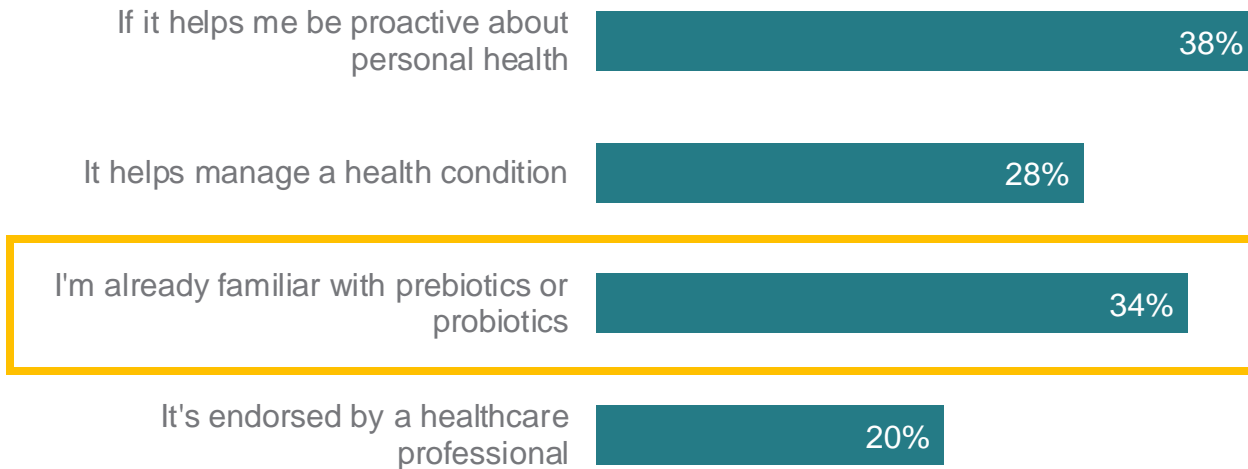
Millennial plant-based eaters	Keto Dieters	Weight Loss Program Dieters
Familiarity 49% (+34)	Familiarity 34% (+15)	Familiarity 39% (+20)
Purchase Impact 28% (+27)	Purchase Impact 30% (+26)	Purchase Impact 35% (+32)



What motivates consumers to try postbiotics

Reasons for trying postbiotics

% of wellness product buyers who say the following reasons would encourage them to try postbiotics



Benefits for taking postbiotic

% of wellness product buyers who say the following benefits would make them to take postbiotics

Supports overall health	59%
Supports digestive health	53%
Supports immunity	46%
Supports the gut microbiome	33%
Acts as a multivitamin for the immune system	33%



For those aware of EpiCor, social media and word-of-mouth is most important for discovery

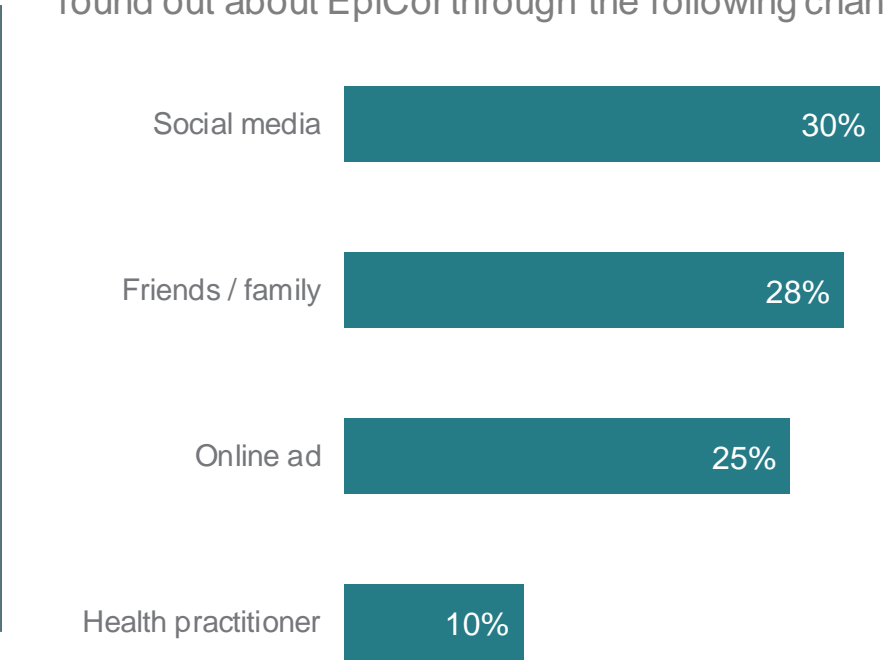
EpiCor brand perception

% of EpiCor aware wellness product buyers who agree with the following statements regarding EpiCor

A postbiotic	78%
Helps with digestive health	77%
Helps with immunity support	77%
Backed by science	75%
A brand I trust	71%
Supports wellness and vitality	69%

EpiCor brand discovery

% of EpiCor aware wellness product buyers who say they found out about EpiCor through the following channels



Source: GWI Core Q1 2021. Base: 208 wellness product buyers aged 18-54. Markets: U.S. Indexes: versus the average internet user in selected markets.

Current Postbiotic Market



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Products with Pre/Pro/Post

Prebiotic

Probiotic

Postbiotic

2,394
Supplements

6,889
Supplements

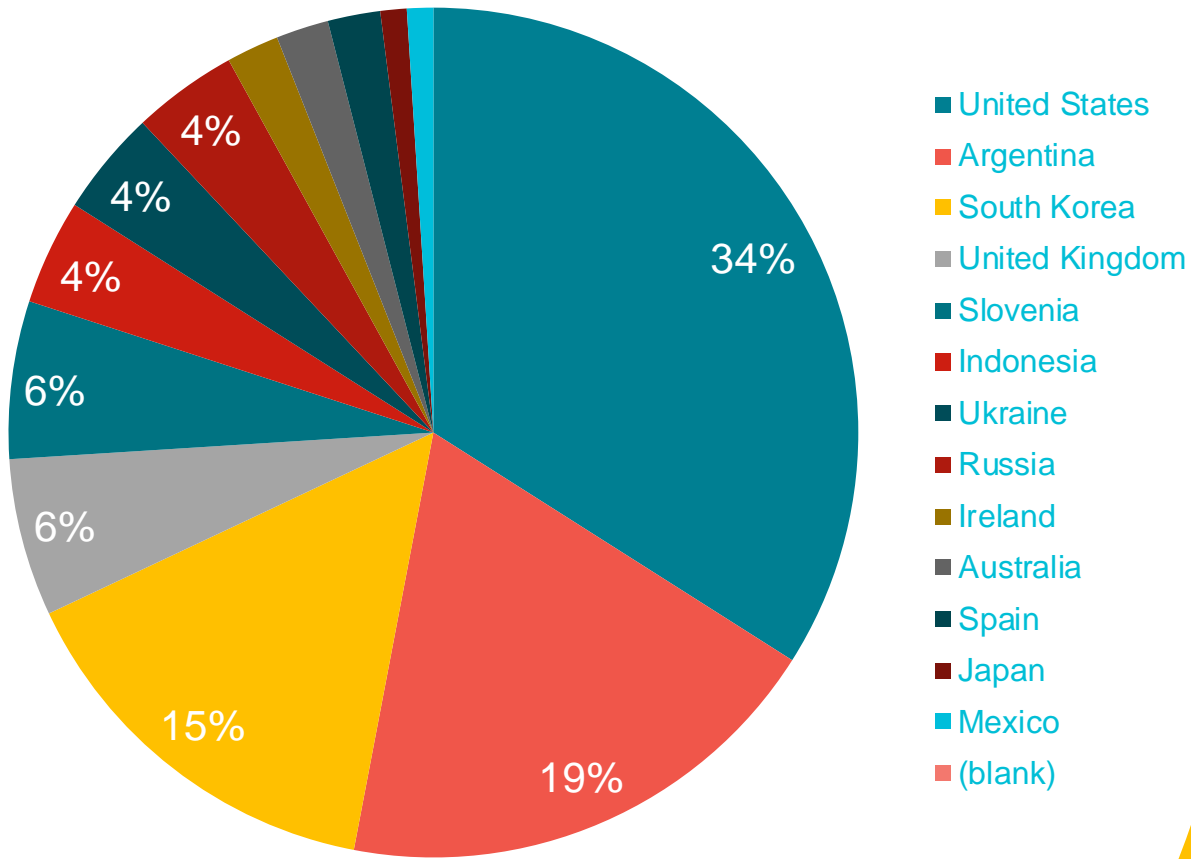
47
Supplements

12,794
Food/Beverages

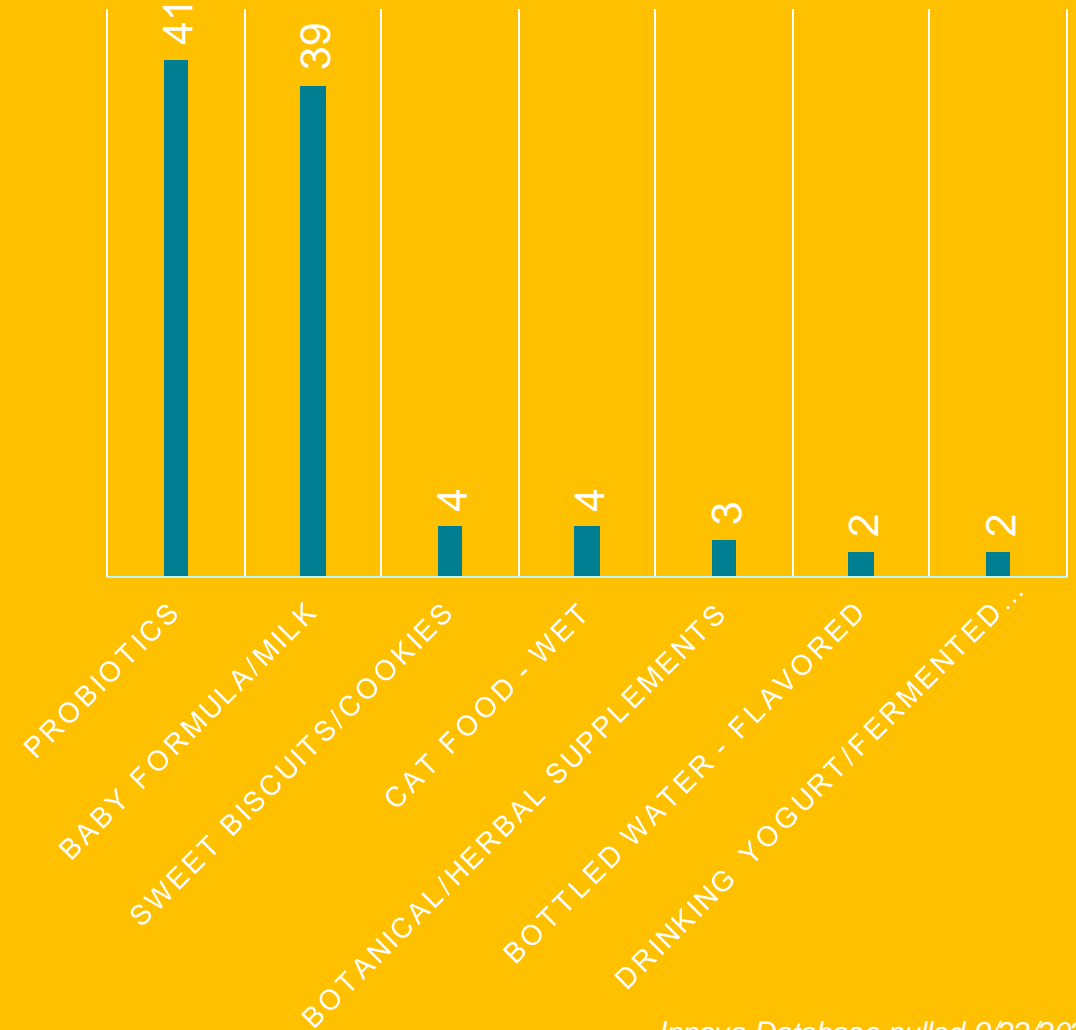
16,097
Food/Beverages

53
Food/Beverages

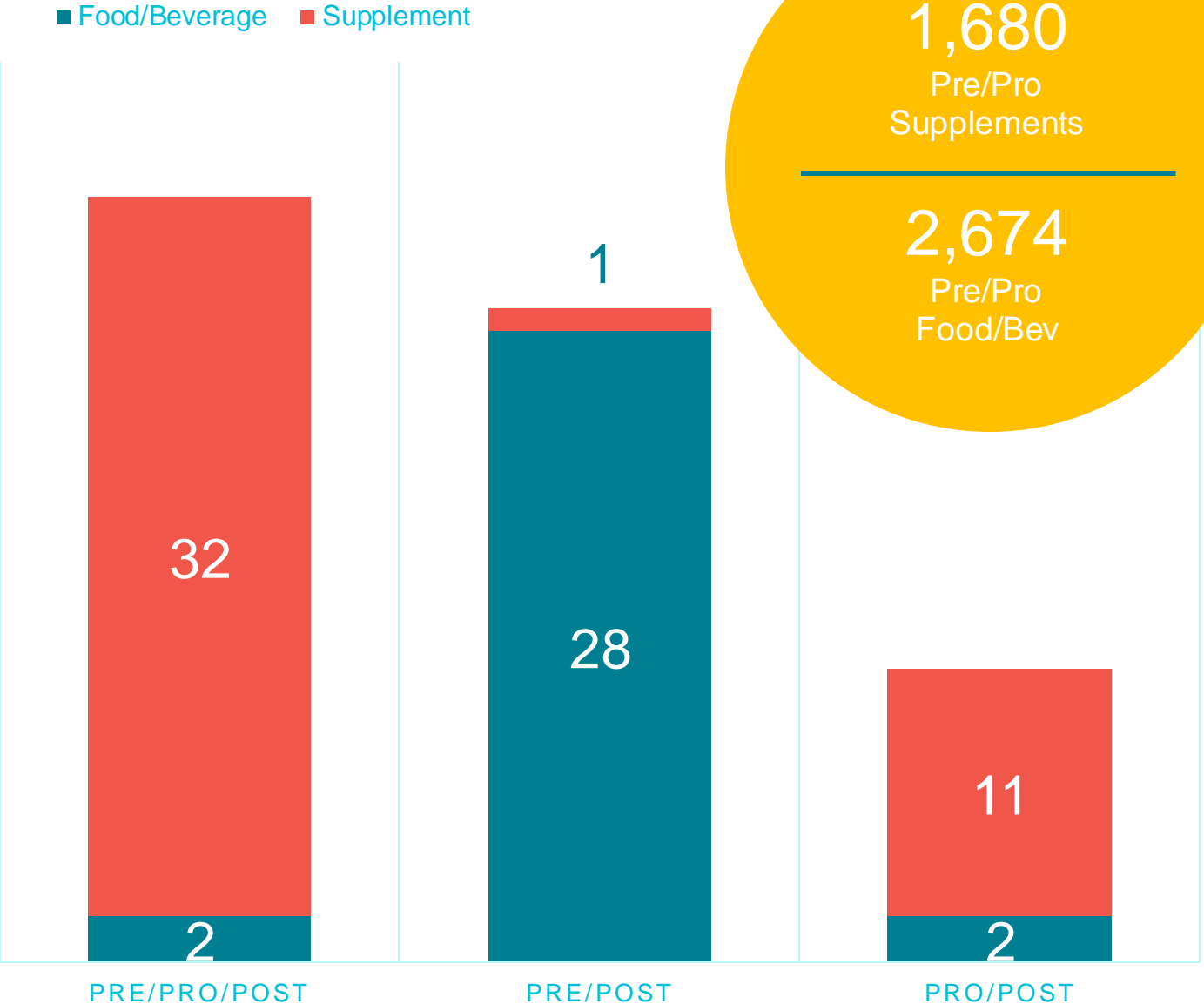
Postbiotics: By Country



By Product Type



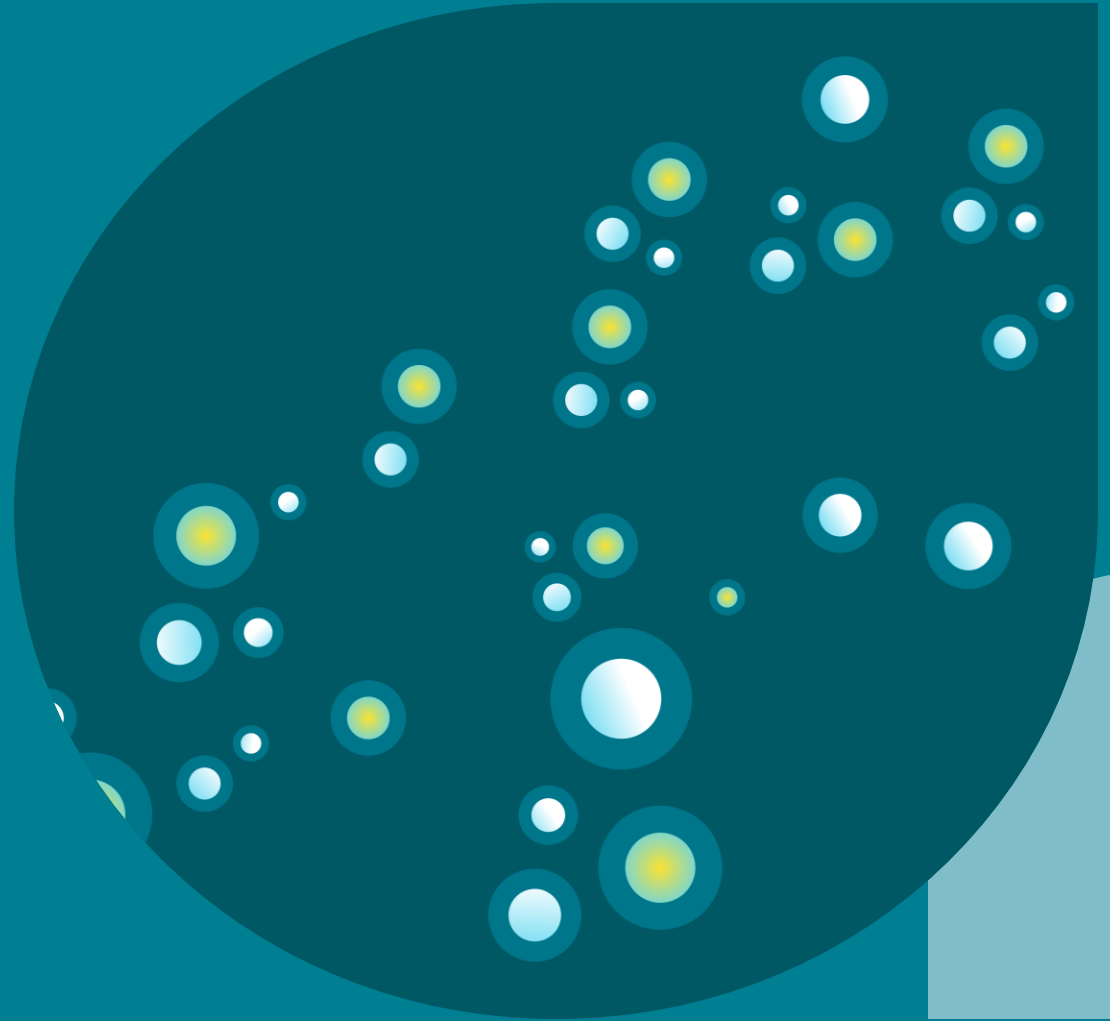
Combination Products Pre/Pro/Post



Deep Dive into Postbiotics

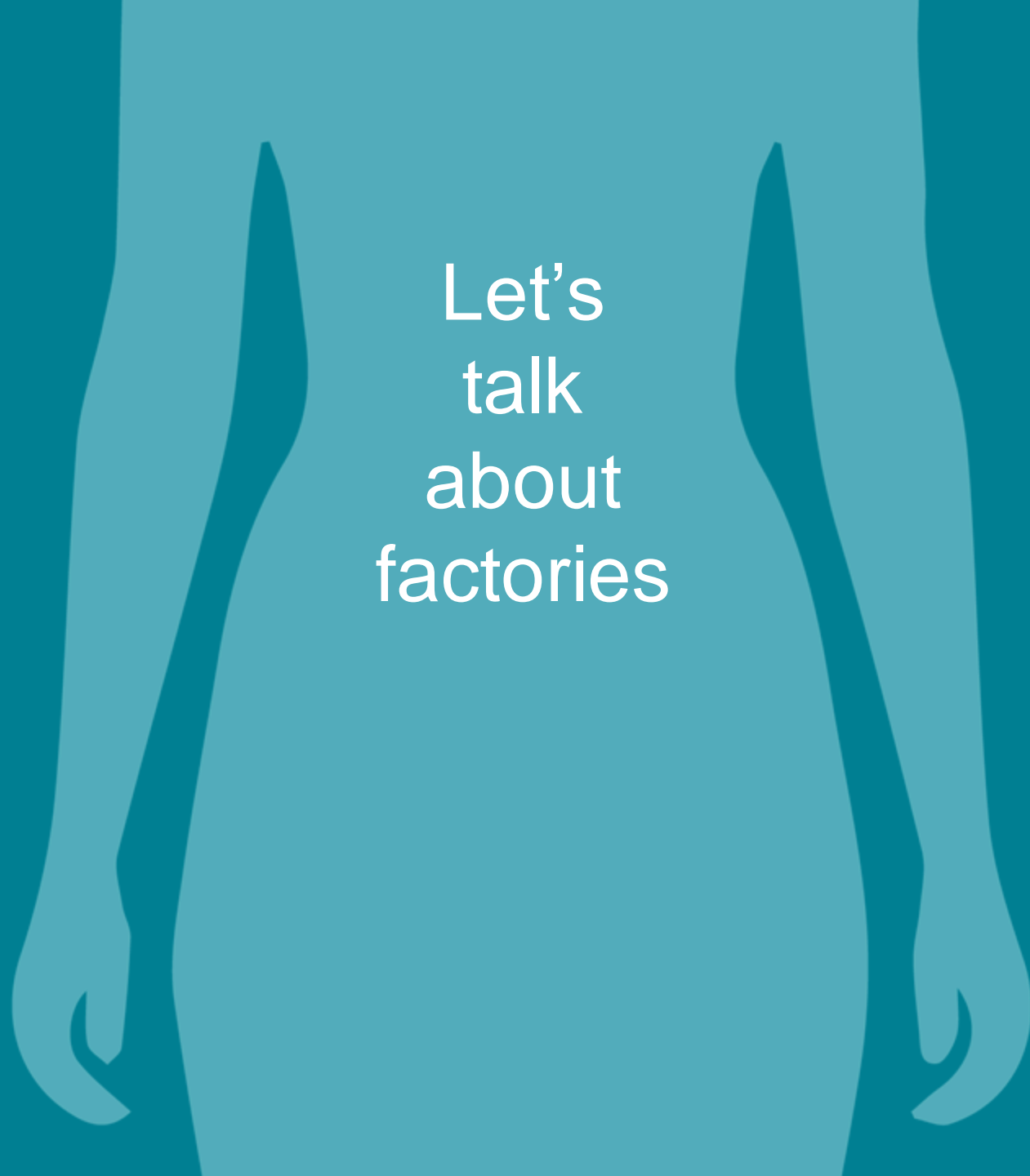
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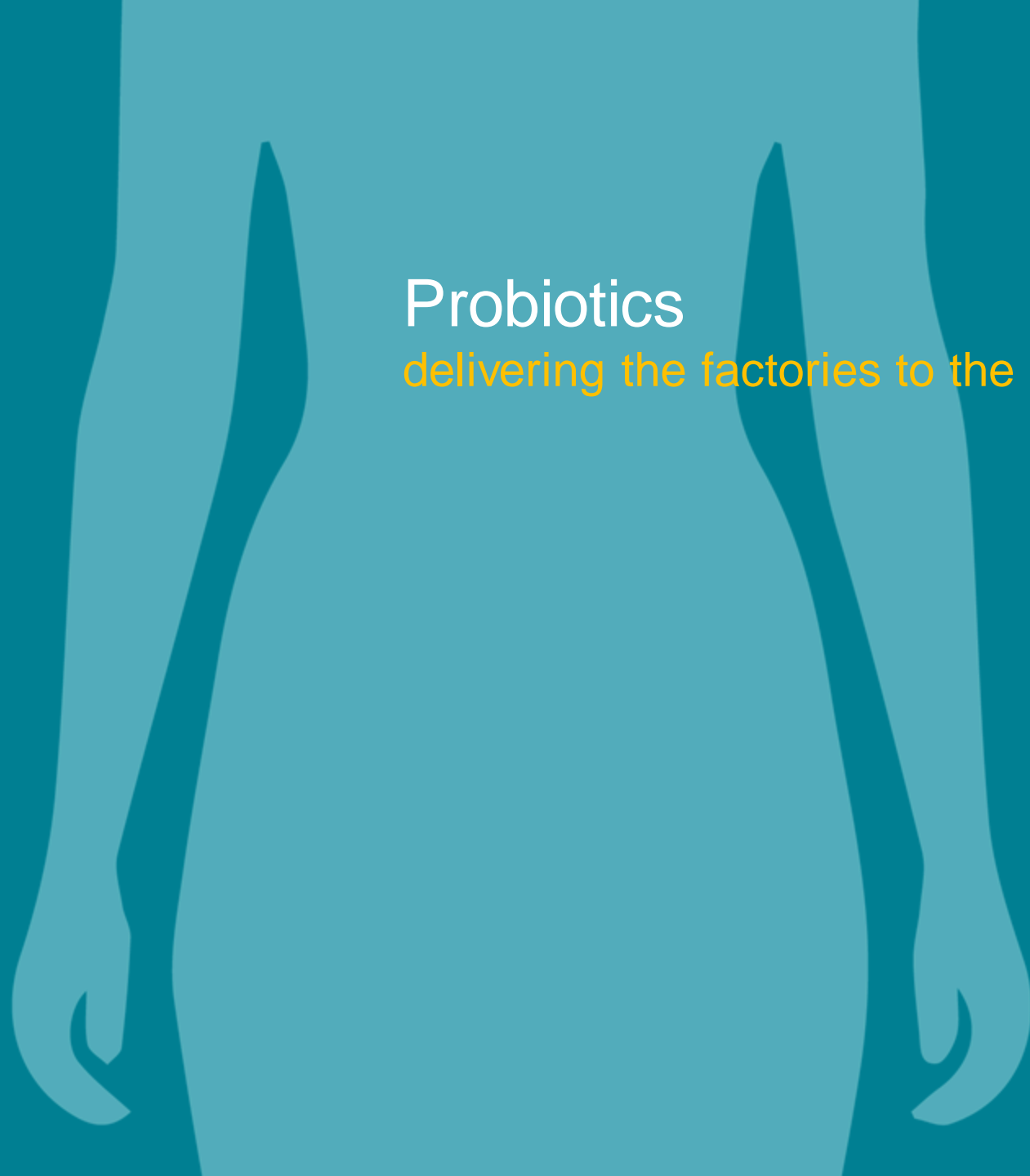
Biotic
Breakdown

Let's
talk
about
factories



Biotic Breakdown

Probiotics
delivering the factories to the gut



Biotic Breakdown

Probiotics

delivering the factories to the gut

Fiber prebiotics

delivering the fuel to the factories

Biotic Breakdown

Probiotics

delivering the factories to the gut

Fiber prebiotics

delivering the fuel to the factories

Postbiotics (including fermentates)

delivering the goods themselves

Each Postbiotic is Unique

- Microorganism used
 - Yeast, Bacteria, Algae
- Fermentation medium
- Fermentation method
- Post fermentation process
- Health benefits



EpiCor[®] Postbiotic: Whole Food Yeast Fermentate

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EpiCor®...The Discovery 75 years in the Making

1900s

As a boy, C.W. Bloomhall noticed improvements with farm animals he fed with partially fermented table scraps

1943

Diamond V begins making fermented yeast for animals benefitting their gut and immune health

1990's

Discovery: Diamond V plant workers exposed to fermented yeast product took less sick days than office workers

2000's

Pilot studies: Tests showed that plant workers were healthier and had stronger immune systems

2005

EpiCor® postbiotic a whole food yeast fermentate made specifically for humans was created

2018

EpiCor® postbiotic is acquired by Cargill.

Postbiotic: Whole Food Yeast Fermentate

- Fermented using a specialized proprietary method
- Specific nutrient medium
- Heated and dried
 - Yeast dies as water evaporates
- ALL that remains, the fermentate, is EpiCor
- Identity & consistency verified with FTNIR spectroscopy

Postbiotics

A New ISAPP Consensus Definition

“A preparation of inanimate microorganisms and/or their components that confer health benefits on the host”

Salminen, S., Collado, M.C., Endo, A. et al. The International Scientific Association of Probiotics and Prebiotics (ISAPP) consensus statement on the definition and scope of postbiotics. *Nat Rev Gastroenterol Hepatol* (2021).



Postbiotic

EpiCor[®] postbiotic is a whole food fermentate of a specific species of microorganism:
Baker's yeast
(*Saccharomyces cerevisiae*)

“A preparation of inanimate **microorganisms** and/or their components that confer health benefits on the host”

Postbiotic

EpiCor[®] postbiotic is a whole food fermentate of a specific species of microorganism:
Baker's yeast
(*Saccharomyces cerevisiae*)

The cells are completely inanimate, killed by heat-drying

“A preparation of **inanimate microorganisms** and/or their components that confer health benefits on the host”

Postbiotic

Every part of the cells are in EpiCor[®] postbiotic nothing is filtered out or isolated

EpiCor[®] postbiotic is a whole food fermentate of a specific species of microorganism:
Baker's yeast
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“A preparation of inanimate microorganisms and/or their components that confer health benefits on the host”

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“A preparation of inanimate microorganisms and/or their components that confer health benefits on the host”

Over a dozen published studies, including multiple human clinical trials, show that EpiCor[®] postbiotic supports immune & gut health.

EpiCor Published Studies

8 Human Clinical Studies on:

- Winter Immune Support^{1,2}
- Spring Immune Support³
- Overall Immune Support^{4,5,6}
- Gut Health⁷

7 Pre-Clinical Studies on:

- Immune Support^{8,9}
- Gut Wall Integrity^{10,11}
- Microbiome Modulation^{12,13}



EpiColImmune.com

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2. Moyad, M. A., et al. (2010). Immunogenic yeast-based fermentate for cold/flu-like symptoms in nonvaccinated individuals. *J Altern Complement Med* 16 (2), 213-8.
3. Moyad, M. A., et al. (2009). Immunogenic yeast-based fermentation product reduces allergic rhinitis-induced nasal congestion: a randomized, double-blind, placebo-controlled trial. *Adv Ther* 26 (8), 795-804.
4. Jensen, G. S., et al. (2010). Antioxidant bioavailability and rapid immune-modulating effects after consumption of a single acute dose of a high-metabolite yeast immunogen: results of a placebo-controlled double-blinded crossover pilot study. *J Med Food* 14, 1002-10.
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9. Evans, M., et al. (2012). A dried yeast fermentate prevents and reduces inflammation in two separate experimental immune models. *Evid Based Complementary and Alternat Med* 2012.
10. Ducray, H. A. G., et al. (2016). Mitigation of heat stress-related complications by a yeast fermentate product. *J Therm Biol* 60, 26-32.
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12. Possemiers, S., et al. (2013). A dried yeast fermentate selectively modulates both the luminal and mucosal gut microbiota and protects against inflammation, as studied in an integrated *in vitro* approach. *J Agric Food Chem* 61 (39), 9380-92.
13. Marzorati, M., et al. (2014). The HMI module: a new tool to study the Host-Microbiota Interaction in the human gastrointestinal tract *in vitro*. *BMC Microbiol* 14, 133.

EpiCor Postbiotics Benefits

- Not living/alive (minimizing stability issues)
- No need to overcome the challenge of colonization efficiency
- Do not need to rely on resident gut microflora
- Lower dose than fiber prebiotics
- Microbiome and Natural (fermentation) Trends
- EpiCor[®] Postbiotic:
 - 500 mg dose¹
 - Published human clinical research
 - Supports immune health
 - Modulates the gut microbiome

Stability enables flexible formulation

Subject	Result
Dissolution	90% dissolve in water
Taste in powder	Roasted, fermented note, a bit savory
Taste in water	Herbal tea taste, a bit like umami, slightly bitter
Visual	Brown color
Stability test	Tested under acidity (pH 1-5), pressured (autoclaved condition), baking temperature and pasteurization high heat condition (100 °C)
Efficacy evaluation	<ul style="list-style-type: none">• pH stability evidenced by in vivo testing and clinical endpoints in human clinical trials• Stability assay result of active ingredients showed no significant difference before and after under the evaluation of FT-NIR
Shelf life	<ul style="list-style-type: none">• 3-year shelf life at ambient temperature• Somewhat hygroscopic





Questions?

Justin Green, PhD
Director of Scientific Affairs
Cargill Health Technologies

Cashtyn Lovan
Marketing Manager
Cargill Health Technologies

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APPENDIX

Resources

- Lumina Intelligence
- BrandWatch
- Cargill's *IngredienTracker*TM
- Consumer Survey Global Web Index
- Innova Database

INGREDIENTTRACKER™



- What is it?
 - Cargill's proprietary annual tracker of U.S. consumer perceptions around ingredients
 - 2021 results assessed over 260 ingredients
 - 11,265 respondents completed online survey (representative sample)
- What can we learn?
 - Identifies ingredients that drive seeking or avoidance of a product
 - Highlights changes over time
 - Looks at the relationship between purchase impact and other factors (e.g., perceived healthfulness & ingredient familiarity)