



The Role & Impact of the Dietitian in the Supplement Industry

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INTERNATIONAL VITAMIN CORPORATION



Presentation Overview

Part I: Market Data Insights

Part II: Dietitians by the Numbers

Part III: How a Supplement is Made

Part IV: Preparing Dietitians for the Future

Key



PART I: MARKET DATA INSIGHTS

The Future is Bright as Americans continue to focus on self-care, helping drive the sales of Dietary Supplements



95% Of Americans are prioritizing health and wellness in some way

74% Of U.S. Adults report taking supplements

60% Regularly take Vitamins and Supplements

Total MULO: Vitamin Sales are up \$84.2M / +0.7% vs YA with Store Brand Vitamins growing \$104.9M / +4.1%

Amazon.com: Vitamin Sales are up \$2.3B / +21.0% vs YA

Many consumers that jumped into the VMS Category during the pandemic continued to stay in 2023. Spending has also risen vs 2019.

83%

Of US Households purchase vitamins, up +2.9% vs 2019

\$169

Average per buyer spend for Vitamins per year, up \$44 vs 2019





Improving Sleep and Reducing Stress continues to be among the Top Health and Wellness Trends going into 2024

Improving Sleep Quality – Techniques and Products to Optimize Sleep and Reduce Stress

All About Gut Health – Probiotics and Plant Based Foods

Skin Care and its Role in Overall Health – “Strength Training” your skin to improve barrier/immune health

Sustainability – regenerative agriculture, upcycled ingredients, environmentally-conscious packaging

Well-Rounded Diets – Gone are specific and rigorous diets like Keto and IF. Expect to see increased popularity in healthy, flexible plans like Mediterranean diet.

Supplement Trends to Watch For...

“Supplements will continue to increase in popularity in 2024, specifically noting the following supplements” - Forbes Health Advisory Board

Creatine – Helps support lean muscle growth and muscle energy production.

Ashwagandha – Helps to maintain normal cortisol levels to promote a healthy response to everyday stress.

Berberine – Helps maintain healthy metabolism of blood sugar. Supports healthy immune and cardiovascular system.

Matcha – An antioxidant that helps support memory and cognition, healthy stress levels and the body’s immune system.

Mushrooms and Mushroom Powders – May support heart health, energy, stamina, mental clarity and immunity.

Marine Collagen and Sea Moss – Skin, hair, nail and joint support.

NAD (Nicotinamide Adenine Dinucleotide)

Supplements – Supports healthy aging, metabolism and cellular health.

Magnesium – Based on type of magnesium, can support sleep quality, bone, nerve, muscle and heart health.

Vitamin D – Supports bone and immune health.

Brain Health Supplements aimed at aging and brain health

Astaxanthin – An antioxidant that supports cardiovascular and eye health.

Choline – Supports healthy brain and cellular function

Among All Generations, Boomers Spend the Most on Vitamins



Generation Z

Born 1997 and After / Age: 26 and less

- Annual Vitamin Dollar Spend: \$113.9M
- Share of Vitamin Sales: 1.0%
- Percent HH Buying Vitamins: 67.1%
- Vitamin Dollars per Buyer: \$71.59
- Vitamin Dollars per Trip: \$16.31



Boomers

Born 1946 – 1964 / Age: 59 - 77

- Annual Vitamin Dollar Spend: \$4.9B
- Share of Vitamin Sales: 43.4%
- Percent HH Buying Vitamins: 77.5%
- Vitamin Dollars per Buyer: \$152.15
- Vitamin Dollars per Trip: \$20.32



Millennials

Born 1981 – 1996 / Age: 27 - 42

- Annual Vitamin Dollar Spend: \$2.2B
- Share of Vitamin Sales: 18.9%
- Percent HH Buying Vitamins: 70.1%
- Vitamin Dollars per Buyer: \$82.50
- Vitamin Dollars per Trip: \$16.77



Seniors & Retirees

Born 1925 – 1945 / Age: 78 and above

- Annual Vitamin Dollar Spend: \$1.3B
- Share of Vitamin Sales: 11.1%
- Percent HH Buying Vitamins: 81.3%
- Vitamin Dollars per Buyer: \$175.40
- Vitamin Dollars per Trip: \$22.44



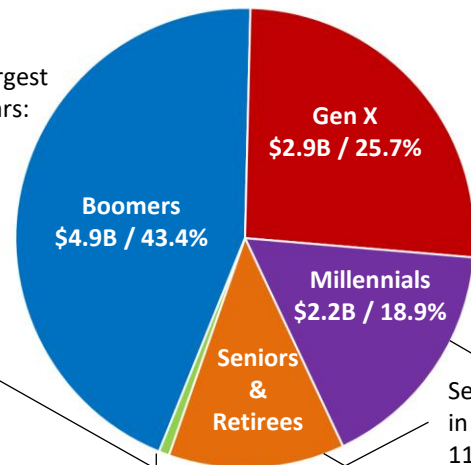
Generation X

Born 1965 – 1980 / Age: 43 - 58

- Annual Vitamin Dollar Spend: \$2.9B
- Share of Vitamin Sales: 25.7%
- Percent HH Buying Vitamins: 72.6%
- Vitamin Dollars per Buyer: \$107.66
- Vitamin Dollars per Trip: \$17.95

Boomers account for the largest percentage of Vitamin Dollars: \$4.9 Billion / 43.4%
Over 1.5X versus 2nd largest group, Gen X

Gen Z spends the least amount on Vitamins: \$113.9 Million / 1.0%



Gen X spends the second largest amount on Vitamins: \$2.9 Billion / 25.7%

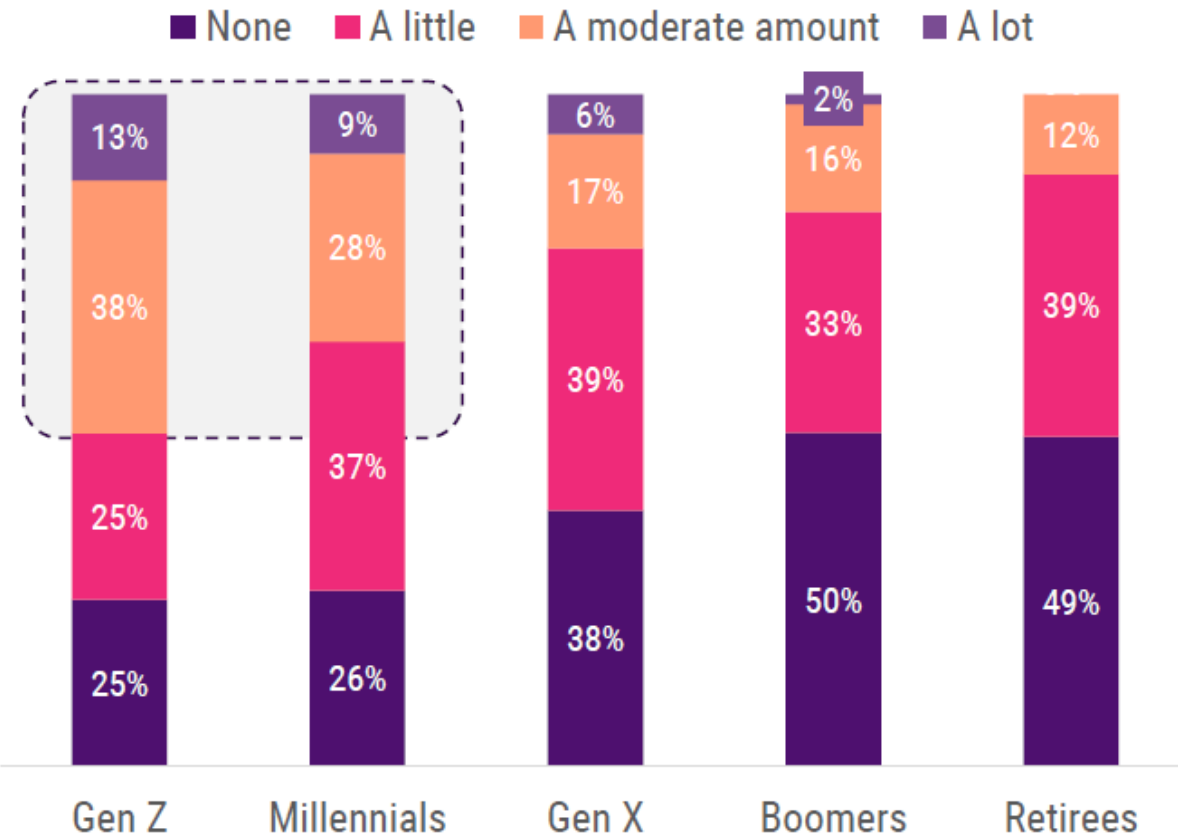
Millennials are the 3rd largest when it comes to Vitamin Dollar Spend: \$2.2 Billion / 18.9%

Seniors & Retirees come in 4th place: \$1.3 Billion / 11.1%



Gen Z and Millennials look to social media and influencers for self-care information

How much attention do you pay to social media as it relates to how you practice self-care?



For you personally, what role do social media influencers play when it comes to your own self-care?

Among Gen Z and Millennials

29% “Learning about new ways of practicing self care”

27% “Providing ideas for DIY self-care approaches”

25% “New product discovery”

Sustainability is driving consumer decisions



33%

of consumers look for natural / organic ingredients

55%

of consumers pay attention to sustainability benefits

36%

of consumers prefer products free of artificial flavors / dyes and additives

Key



PART II: DIETITIANS BY THE NUMBERS

Presence of Dietitians in the Industry

Total # of Dietitians (as of January 2021):

- 135,018 professionals + students combine

Source

Table 2. Practice area of practicing RDNs^a (weighted n = 4,973) and practicing NDTRs^b (weighted n = 177), based on primary position selected, from *Compensation & Benefits Survey of the Dietetics Profession 2021*

Practice area	RDNs	NDTRs
	←———— % —————→	
Clinical nutrition		
Acute care or inpatient	39	48
Ambulatory care	14	1
Long-term care	7	7
Community and public health nutrition	10	18
Management and executive leadership	10	15
Consultation, business and industry, entrepreneur	9	2
Education and research	6	2

^aRDN = registered dietitian nutritionist.

^bNDTR = nutrition and dietetics technicians, registered.

Source

Figure 3

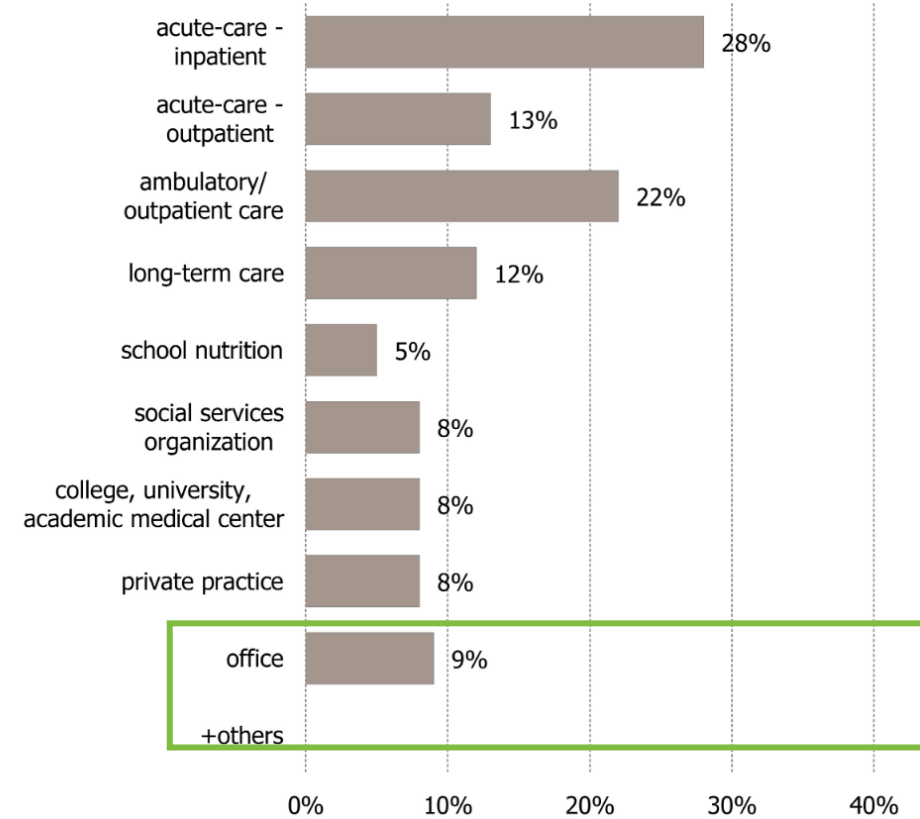


Figure 3. Primary work settings (20% or more of time) of registered dietitian nutritionists working in the field and surveyed for 2020 Needs Satisfaction Survey (multiple answers accepted).

Source

Where Dietitians Can Play a Role

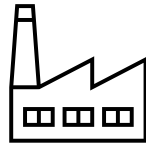
Everywhere!!!...



Ingredient Suppliers



Sales
R&D
Marketing



Manufacturing



Product Innovation
R&D
Quality/Regulatory
Sales
Marketing
Operations



Retail



Category Buyer/Manager

Key



PART III: HOW A SUPPLEMENT IS MADE

IVC by the Numbers



7

Operate 7 R&D centers globally

9

Operates 9 manufacturing sites and 1 sales & marketing company globally

10000+

10,000+ formulations in house

5000+

More than 5,000 employees across 11 locations worldwide

80+

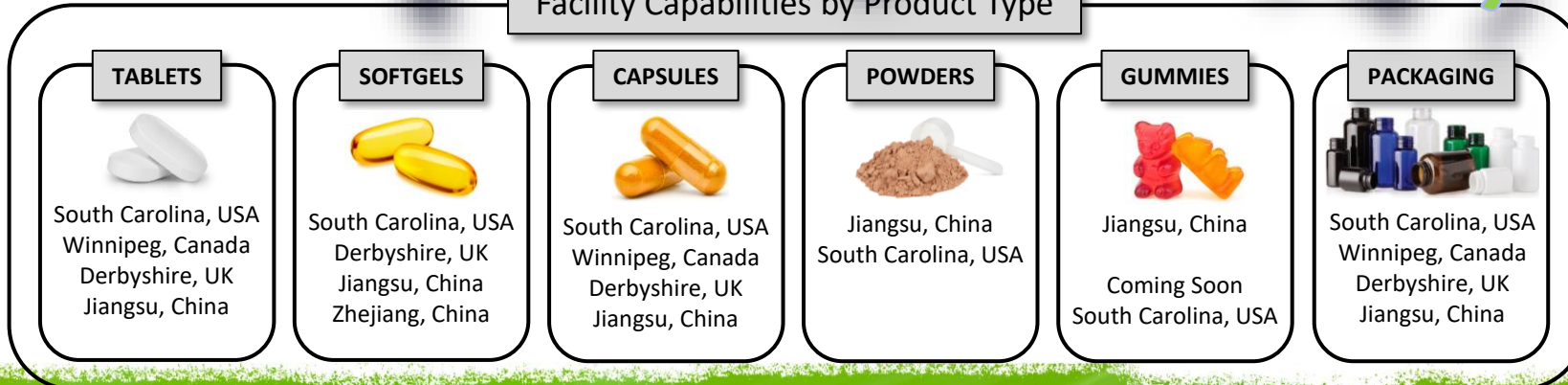
We partner with global customers in over 80+ countries and regions to create custom solutions.



9 Manufacturing Facilities in 4 Countries - Flex Manufacturing



Facility Capabilities by Product Type



IVC Global Dosage Forms

Tablet



Color-Coated Tablets



Sublingual Tablets



Micro-Effervescent Tablets



Time Release Tablets



Effervescent Tablets



Chewable Tablets



Lozenge



Orally Disintegrating Tablets

Gummy



Sugar-free Gummy



Filled Gummy



Veggie Gummy



Bi-layer Gummy



Gelatin Gummy



Mixed Gel Gummy

Powder



Effervescent Powder



Dissolvable Powder



Direct to Drink powder

Probiotics



Powder



Capsule



Tablet



Capsule



Veggie Capsule



Gelatin Capsule



Pellets Capsule

Softgel



Veggie Softgels



Gelatin Softgels



Bi-Layer Softgels

Sport nutrition



Tablet



Powder

Chewable Softgel



Veggie Chewable Softgel



Gelatin Chewable Softgel

Liquid



Pouch Bag

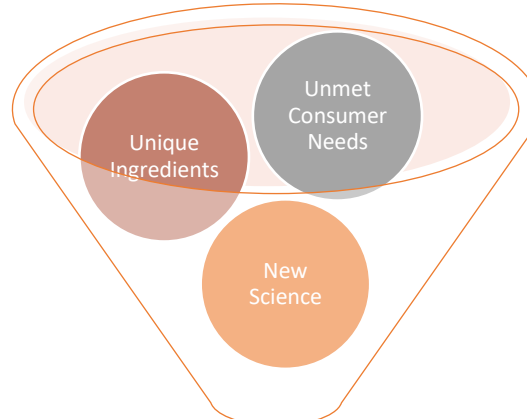


Stick Pack

Key Questions to Ask yourself

- Who is the end-customer?
- What is currently available?
- What trends are popular?
- How does your product differentiate?
 - Price
 - Delivery method
 - Less pills and/or smaller size
 - Time-Based claims
 - Potency
 - Sensory: Better taste, mouth-feel, smell, etc
 - More robust claims and substantiation
 - Innovative category
 - Novel ingredients/Technology
 - Enhanced features (zero sugar, NGPV, vegan/vegetarian, organic, whole-food, etc)

IVC New Product Development - Process



New Products Concepts Generated From...

- ✓ Customer requests & Collaboration
- ✓ National Brand Tracking & Monitoring
- ✓ IRI POS data & Consumer Insight
- ✓ Primary & Secondary market research
- ✓ Science, Technology & Ingredient Advances
- ✓ Industry Publications
- ✓ University Partnerships

Verify consumer demand
 Confirm feasibility
 Validate costing of finished dose
 Substantiate science

New Product Development (NPD) Request

Product Management

R & D

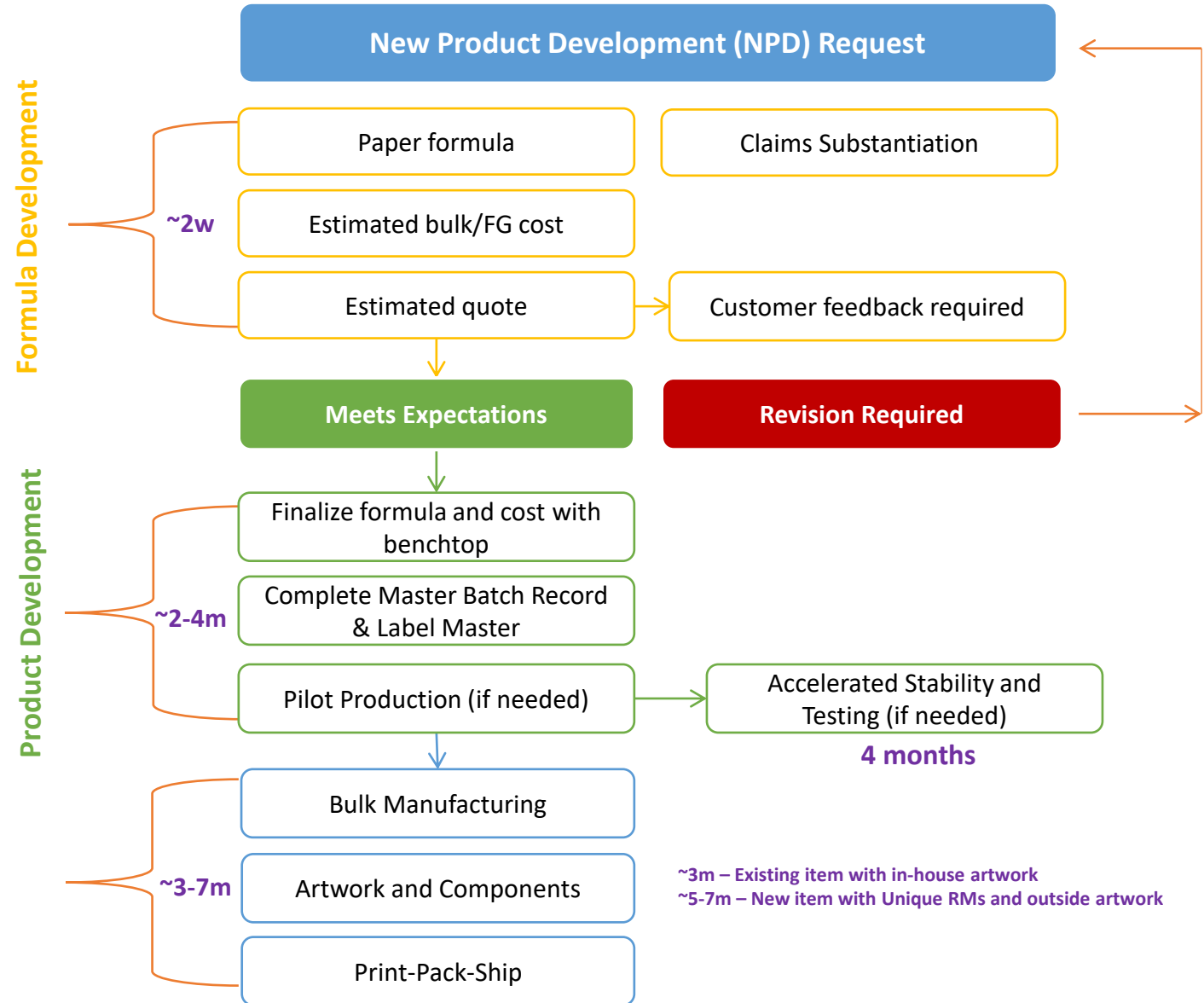
Production

Direct project milestones
 Facilitate product development
 Manage product lifecycle

Formulate
 Develop samples
 Quality/Regulatory Review
 Design stability program
 Manage testing

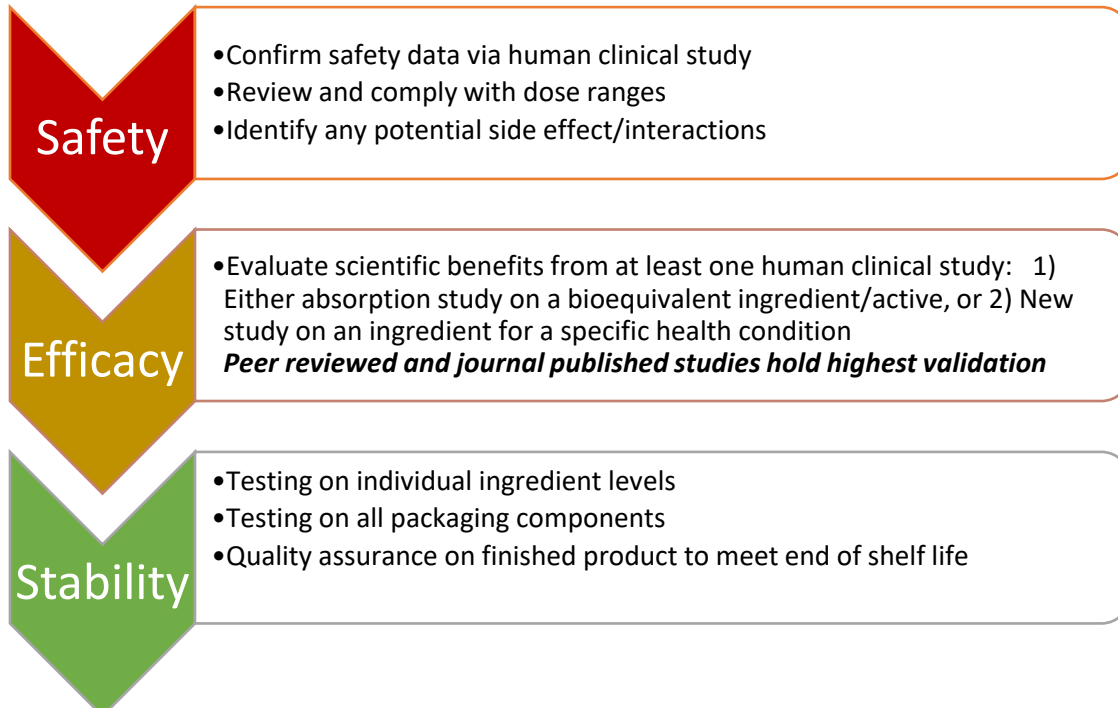
Sourcing
 Pilot run
 Manufacturing
 Packaging
 Shipping

IVC New Product Development - Timing



Substantiation

Current Methodology Ingredient-based science



Stability Requirement	Testing Time Prior to Launch	Condition
No Stability	None	Stability fully covered by existing data. Low risk.
Concurrent Stability	None	Stability partially covered by existing data. Medium risk.
Full Stability	4 Months	Stability not ensured. High risk or customer requirement (DSVP).

Key



PART IV: PREPARING DIETITIANS FOR THE FUTURE

University Partnership



+



Product Development Rotation

- Initiated March 2021
- To date: 53 interns have completed the rotation
- Virtual Rotation Outline: 80 hours (~3 weeks) as part of Community Rotation
- Primary Objectives:
 - Capstone Formula
 - IVC Vitamin University (Nutrition Education)
 - Attending Internal & External Meetings
 - Assist with other projects in real-time

Personal Mission Statement: To highlight non-traditional paths for future dietitians and expose them to a unique role that provides a meaningful impact on their education

Testimonials

This is a rotation that was created as a community sports nutrition rotation. Sam Kramer, an alum of FSU, wanted to precept interns through the process of developing a supplement. At the end of this rotation, interns give a capstone presentation about the supplement they created. This rotation covers an astonishing 24 ACEND competencies including leadership skills, marketing, working in a group, budget, distribution, product justification, data analysis and informatics to name a few. This is a unique opportunity using evidenced based research to develop a product for consumer use. In addition, it is a virtual rotation, allowing more students to complete rotation. Sam has been very accommodating working with our interns. I think the skills learned in this rotation will extend beyond just meeting competencies and teach students how to work in team settings, working within a system, and presenting to other team members. “Dr. Lisa Trone RDN, LDN – FSU DI Director

“The IVC dietetic rotation was both beneficial in applying knowledge surrounding supplementation while also challenging me to evaluate emerging research and claims and understand the larger systems surrounding supplement production. The rotation allowed for collaboration working with a variety of teams while building confident communication skills in presenting products to different target audiences. Within a short time, Sam and the entire team fostered an environment in which I was able to gain skills and knowledge that will continue to be applicable and relevant as a dietitian in any field.” Anonymous, DI Intern

Kids Gut Comfort Support Probiotic with *B. Lactis* LAFTI[®] B94

Background Information

Kids Gut Health

Why is this Product Needed?

Acute abdominal pain in children accounts for about **9% of primary care office visits**.

American Family Physician. (2016). Acute Abdominal Pain in Children.

It is the 2nd most frequent type of pain in children with **10-18% of children** experiencing it as some point during their childhood.

Olson K. Pain in Children. Pract Pain Manag. 2015;15(4).

Common causes of discomfort can include:

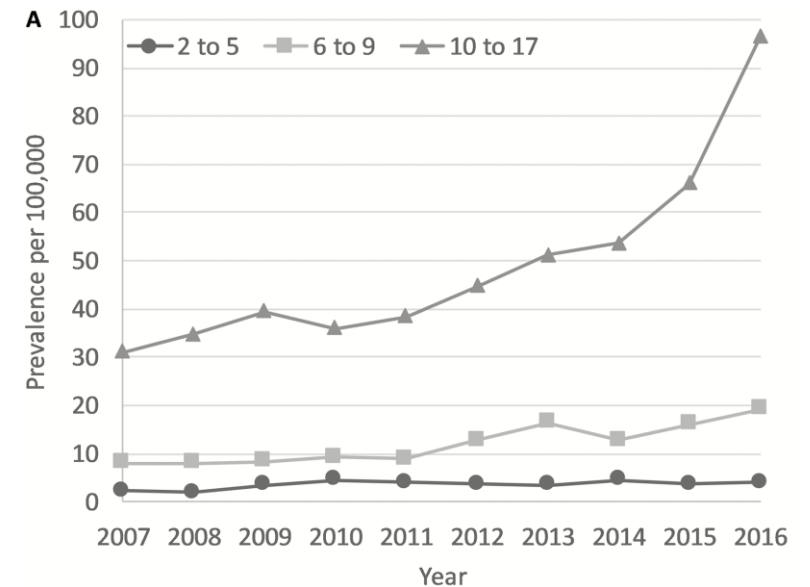
- Gas
- Bloating
- Constipation
- Diarrhea
- Certain gut infections

American Family Physician. (2016). Acute Abdominal Pain in Children.



Abdominal discomfort is a common feature of many gut disorders, including Irritable Bowel Syndrome, which has increased in prevalence among children.

Trend of IBD overall prevalence in children by age subgroup, 2007–2016



Recent Estimates From Large National Databases in the United States, 2007–2016. Ye et al. 2020.

Why is this Product Needed?

Dietary Supplement Use in Children and Adolescents Aged ≤19 Years — United States, 2017–2018 (CDC, 2020)

TABLE 2. Prevalence of use of most frequently used dietary supplement product types in the past 30 days among children and adolescents (persons aged ≤19 years), by age group — United States, 2017–2018

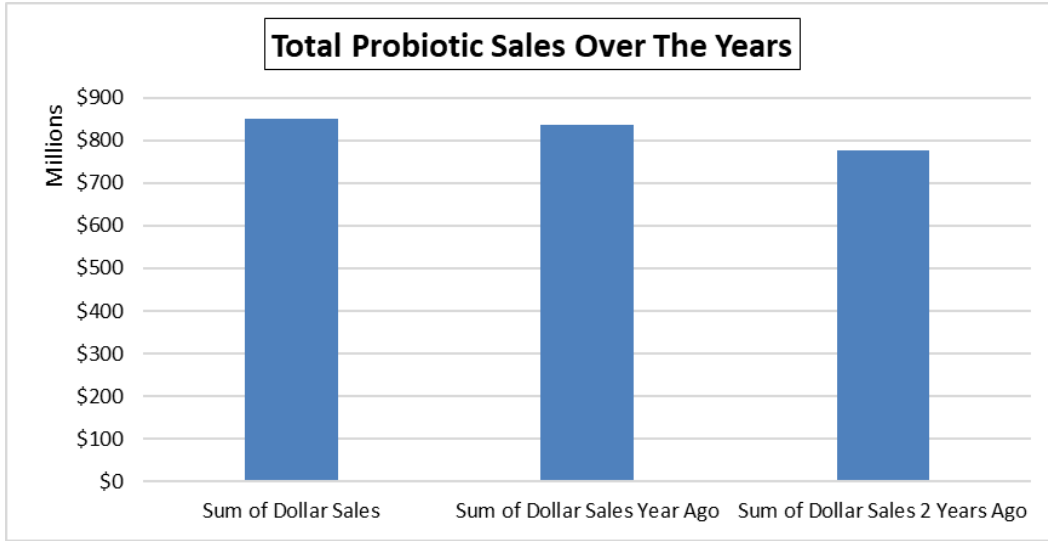
Product type	Age group (years), % (95% CI)					P-value for difference by age*
	All (n = 3,683)	<2 (n = 591)	2–5 (n = 784)	6–11 (n = 1,115)	12–19 (n = 1,193)	
Multivitamin-mineral	23.8 (20.3–27.7)	11.0 (7.3–15.5)	34.6 (28.8–40.7)	29.5 (24.5–34.8)	17.3 (13.7–21.4)	<0.001
Single ingredient vitamin D supplement	3.6 (2.2–5.5)	5.4 (2.8–9.3)	1.7 (0.6–3.9)	1.8 (0.8–3.5)	5.4 (2.9–9.0)	<0.001
Single ingredient vitamin C supplement	3.0 (1.9–4.4)	1.1 (0.1–4.6)	2.0 (0.7–4.4)	2.4 (1.6–3.5)	4.2 (2.1–7.6)	0.083
Probiotic	1.8 (1.1–2.8)	1.9 (0.7–4.3)	3.7 (1.9–6.2)	2.0 (0.7–4.6)	0.8 (0.3–1.7)	0.020
Melatonin	1.3 (0.7–2.2)	0.0 (0.0–0.6)	1.4 (0.5–3.0)	1.3 (0.7–2.3)	1.5 (0.5–3.2)	0.435
Omega-3 fatty acid	1.3 (0.6–2.4)	0.5 (0.1–1.6)	1.4 (0.5–3.0)	1.2 (0.3–3.1)	1.4 (0.3–3.9)	0.707
Botanical	1.1 (0.6–1.9)	0.5 (0.1–1.8)	0.5 (0.1–1.3)	0.3 (0.0–0.9)	2.1 (0.8–4.6)	0.001
Multivitamin	1.0 (0.5–1.6)	1.2 (0.3–3.2)	0.8 (0.2–2.0)	0.6 (0.1–1.6)	1.3 (0.6–2.4)	0.361

Abbreviation: CI = confidence interval.

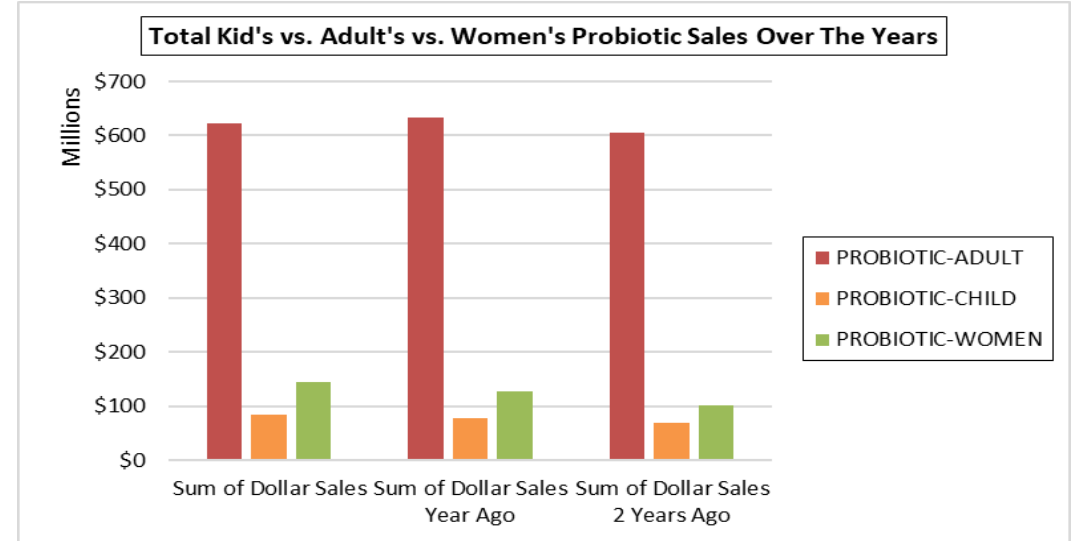
* p-values calculated using F-based second-order Rao-Scott test.

Probiotics for gut health are among the most used dietary supplements by all children, trailing in prevalence just behind multivitamin/mineral and single ingredient vitamin C and D supplements, and are the second most frequently used supplement among children aged 2 to 5 years old.

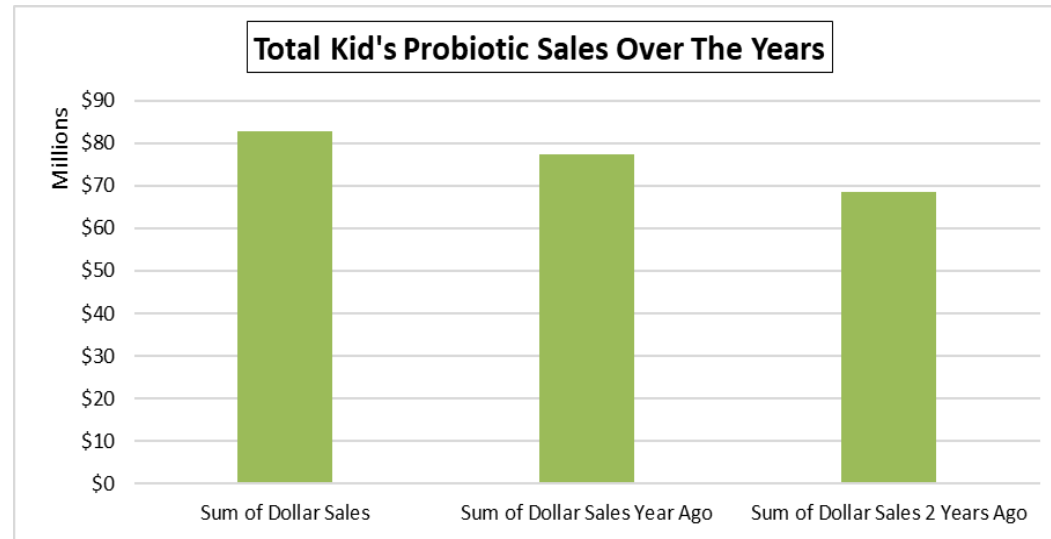
IRI Market Data



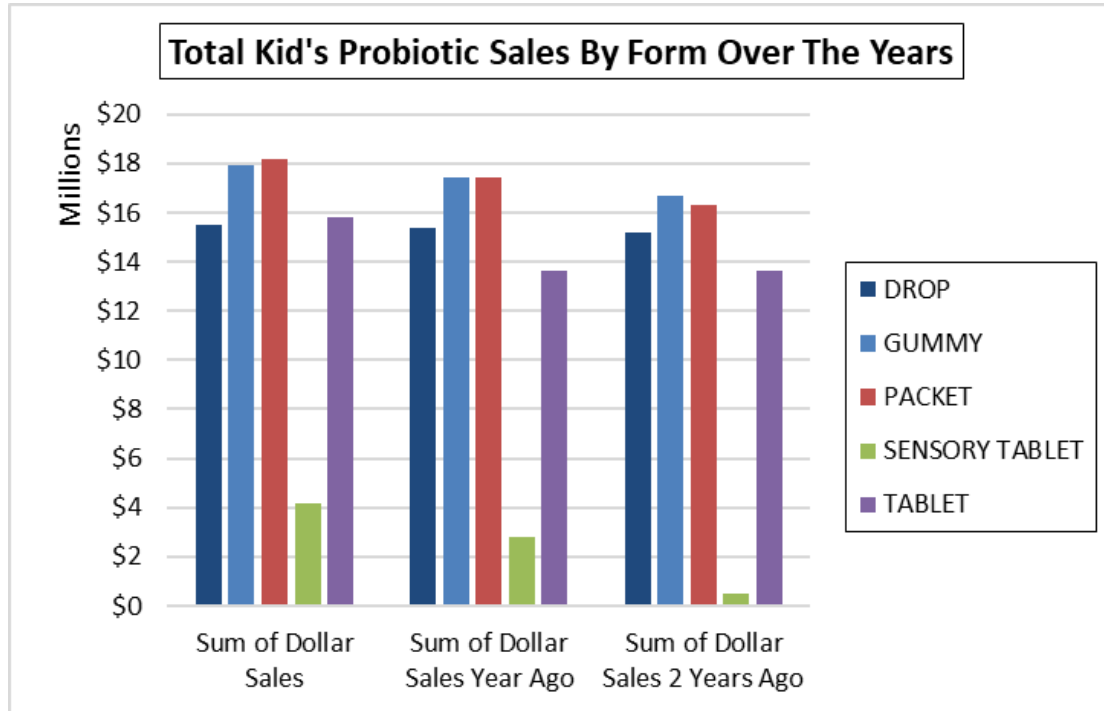
Geography :Total US - Multi Outlet **Time:** Latest 52 Weeks Ending 01-01-23



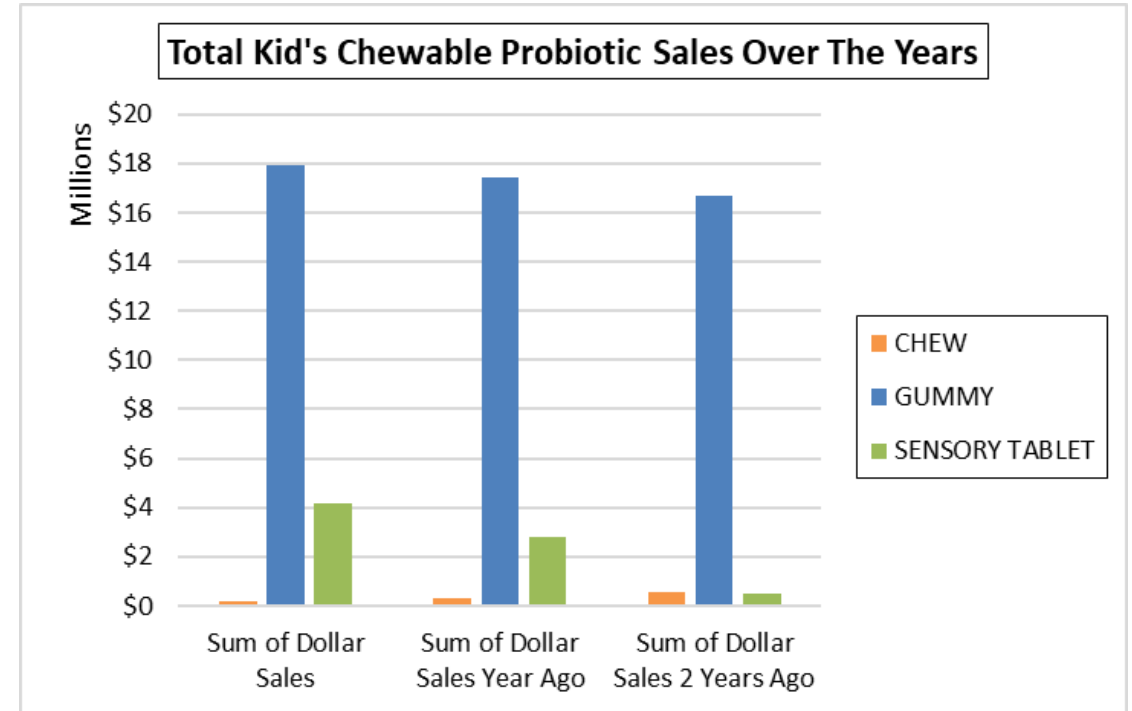
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Geography :Total US - Multi Outlet **Time:** Latest 52 Weeks Ending 01-01-23

Product Positioning

Kids Gut Comfort Support Probiotic

with *B. Lactis* LAFTI® B94

Key Claims & Features:

- ✓ Clinically Studied Probiotic
- ✓ May support relief for occasional abdominal discomfort, bloating, gas and constipation
- ✓ Supports GI and immune health
- ✓ 30 Chewable Tablets
- ✓ Natural Mixed Berry Flavor
- ✓ Sugar-free



Suggested Use: Children aged 4+: 1 chewable tablet daily.

Supplement Facts

Serving Size 1 Vegetarian Chewable Tablet

	Amount Per Serving	% Daily Value
Total Carbohydrate	< 1 g	< 1%*
Total Sugars	0 g	**
Includes 0 g Added Sugars		0%*
Sugar Alcohol	< 1 g	**
<i>Bifidobacterium lactis</i> LAFTI® B94 200 mg (5 Billion CFUs†)		**


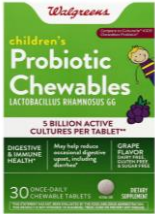


* Percent Daily Value are based on a 2,000 calories.

** Daily Value (DV) not established.

†5 Billion CFUs at time of expiry.

Ingredients: Xylitol, Microcrystalline Cellulose, *Bifidobacterium lactis*, Palm Oil Powder, Natural Mixed Berry Flavor.

Competitive Landscape

Product	Price	Delivery Form	Servings per bottle	Active Ingredients	Claims
 <p>Culturelle® Kids Purely Probiotics® Chewables</p>	\$22.99	Sensory Tablet	30	<i>Lactobacillus rhamnosus</i> GG 26mg (5 billion CFU)	Helps keep kids healthy* Supports kid's immune, digestive & oral health*
 <p>Walgreens Children's Probiotic Chewables</p>	\$14.99	Sensory Tablet	30	Probiotic Blend 112.5mg (5 billion CFU): <i>Lactobacillus acidophilus</i> CUL60 <i>Lactobacillus rhamnosus</i> GG	May help reduce occasional digestive upset, including diarrhea*
 <p>Equate Children's Probiotic Chewables</p>	\$15.28	Sensory Tablet	30	Probiotic Blend (5 billion CFU): <i>Lactobacillus plantarum</i> <i>Lactobacillus rhamnosus</i> GG	Helps maintain the balance of good bacteria in children's digestive system* Helps support immune health*
 <p>IVC Kids Gut Comfort Support Probiotic Chewable Tablet</p>	\$10.99	Sensory Tablet	30	<i>Bifidobacterium lactis</i> LAFTI® B94 200mg (5 billion CFU)	May support relief for occasional abdominal discomfort, bloating, gas and constipation* Supports GI and immune health*

Claim Substantiation

Clinical Research

Baştürk, et al. (2014) - Study Design & Methods

- **Children, girls and boys, aged 4 to 16 years old**
- Diagnosed with IBS, mostly constipation-predominant
- Randomized, double blind, placebo controlled, prospective
- 23 participants in **synbiotic group: 5 billion CFUs of *B. lactis* B94 and 900 mg inulin**
- 24 participants in **probiotic group: 5 billion CFUs of *B. lactis* B94**
- 24 participants in **prebiotic group: 900 mg inulin**
- **Taken twice a day for 4 weeks**
- **Measurements before and after 4 weeks of treatment** included % of participants in each group complaining of:
 - **Bloating after meals**
 - **Belching-abdominal fullness (gas)**
 - Mucus in stool
 - **Difficulty with defecation (constipation)**
 - Feeling of being unable to completely empty at bowel movements
 - Sudden urge to defecate

Baştürk, et al. (2014) - Results & Conclusions

Complaint	Prebiotic (n=24)			Probiotic (n=24)			Synbiotic (n=23)		
	Before	After	p*	Before	After	p*	Before	After	p*
Bloating after meals, %	50	50	1.000	75	45	0.016	69.6	30.4	0.004
Belching–abdominal fullness, %	54.2	45.8	0.250	75	25	<0.001	65.2	13	<0.001
Mucus in stool, %	33.3	29.2	1.000	41.7	37.5	1.000	52.2	17.4	0.021
Difficulty with defecation, %	62.5	50	0.250	70.8	45.8	0.031	56.5	21.7	0.021
Feeling of being unable to completely empty at bowel movements, %	58.3	41.7	0.125	62.5	45.8	0.125	47.8	26	0.063
Sudden urge to defecate, %	66.7	62.5	1.000	66.7	54.2	0.250	65.2	56.5	0.500

*Chi-square test was used.

- Significant improvement ($p < 0.05$) in bloating after meals, belching-abdominal fullness (gas & discomfort) and difficult with defecation (constipation) within Probiotic group taking *B. lactis* B94.
- Limitations: Children with IBS. Children with just occasional gut discomfort may benefit from 5B CFU daily.

Advertisement

**KID HAVING OCCASIONAL GUT DISCOMORT?
TRY KID'S GUT COMFORT SUPPORT PROBIOTIC
WITH CLINICALLY STUDIED PROBIOTIC *B. Lactis* LAFTI® B94**



ZERO
SUGAR

NATURAL
MIXED
BERRY
FLAVOR

CHEWABLE
TABLET

***May support relief for
occasional abdominal discomfort,
bloating, gas and constipation**

***Supports GI and immune health**

*These statements have not been evaluated by the Food and Drug Administration.
This product is not intended to diagnose, treat, cure, or prevent any disease.

Nutrition Education

Kids Gut Health and Comfort

Kids are prone to occasional gut discomfort. Probiotics are live beneficial bacteria that support digestive and immune health in a couple of ways:

- Attach to and reinforce the intestinal barrier
- Inhibit the growth of pathogenic bacteria
- Support a balance in gut microbe diversity
- Interact with and modify the immune system
- May shorten transit time for bowel movements



B. Lactis LAFTI® B94, present in Kids Comfort Support Probiotic, is a clinically studied probiotic that supports GI and immune health and may support relief for occasional abdominal discomfort, bloating, gas and constipation in children and teens.



IVC VITAMIN UNIVERSITY

Existing IVC Nutrition Education Platform

- 35 available in database
- 15 topics done in 2023
- Dietetic Internship partnership with Florida State University

Foundational Nutrition
Fiber
Fish Oil, EE vs TG, suppliers, technology and vegan alternative forms (algae)
Protein of the Future
Women's Health (Prenatal, Postnatal)

Targeted Nutrition
Cognition
Active Nutrition 2.0
Diabetes/BG Control Innovation
Kids Attention/Focus
Cellular Energy
Joint Health Now and the Future (Fast Acting)
Kids Gut Comfort (Probiotic)
Brain + Cellular Health
Reflux + Sleep
Heart Health & Nitric Oxide
Fast acting Joint
Liver Health
Skin probiotic
3-in-1 Baby Probiotic (Skin, gut, immune)
Probiotics for Sleep & Mood
Fast Acting Gut Comfort in 90 mins

Trending Topics/Pop Nutrition
Sugar, Sugar Alcohols, Substitutes
The Expanded Microbiome (Parabiotics and Postbiotics)
Personalized Nutrition (DNA)
Excipients
Adaptogens
Enhanced Absorption Technologies
Sustainability (packaging, operations, technology, supply chain)
Longevity/Cellular health/Mitochondria
Vegan Collagen
Mushrooms
Colostrum

IVC Vitamin University

Mission: Provide the most comprehensive, evidence-based health & nutrition science information that educates both internal and external stakeholders

Internal IVC Vitamin University

- A podcast-style course where FSU dietetic interns will be the expert in a topic and be interviewed
- # of courses: 15
- Duration: 30-45 minutes
- Each course will cover:
 - Part I: Background Information (historical, social, and physiological)
 - Part II: Current issues associated with the topic
 - Part III: Practical solutions & toolkits for success (supplementation, diet, exercise, alternative approaches, etc)

External IVC Vitamin University

- Personalized customer-focused education sessions
- Presented by credentialed practitioners in Nutrition Science
- Constantly evolves to adapt to emerging trends & technologies in our industry



IVC Vitamin University Curriculum

Tentative 2024 Curriculum – Suggestions Welcome!

Course 1: Ozempic, Berberine, Thermogenics, & Weight Loss
Course 2: Enhanced Absorption Form Of Macronutrients & Micronutrients
Course 3: Beets For Health & Performance
Course 4: All About Omega-3,6,9
Course 5: Stress & Mood
Course 6: Mushrooms
Course 7: Sleep (Melatonin & More)
Course 8: Collagen For Beauty, Joints, & More
Course 9: Cognition Beyond Memory
Course 10: Kids Needs
Course 11: Hydration & Electrolytes
Course 12: The Microbiome
Course 13: Fertility In Men & Women
Course 14: Cellular Health, Longevity, & Antioxidants
Course 15: Advanced Immune Health

Receive 25 iReward Points for each course completed!



ACKNOWLEDGEMENTS

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Terry Papadopoulos MS, RD: VP Marketing & Innovation, IVC

Dana Stango MS, RD, CISSN: Product Innovation Nutrition Scientist, IVC

All past, present, and future dietetic interns!