

THE IRREPLACEABLE WINDOW:

Transforming Nutrition in the First 1,000 Days

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Disclosures

**Marina Chaparro, RDN, CDCES,
MPH**

**Conflicts of interest:
NDC Ambassador**

National Dairy Council paid for my travel



"Leticia: You Have Gestational Diabetes...."



"Will my baby be OK"

"Drink atole with nopales to lower your BG"

"Avoid tortillas because they have too much sugars"

"Don't drink dairy because it causes inflammation"

"Rice is unhealthy"

"Have a plant-milk instead"

This is Leticia's daughter, Emilia...

In the first 1,000 days—from conception to age two—emilia's brain will grow faster than at any other time in her life. The foods she tastes, the nutrients she receives, and the love shared at the table during these early moments will shape her health, her learning, and her future for years to come.



The Irreplaceable Window

THIS IS A WINDOW WE CANNOT GET BACK.

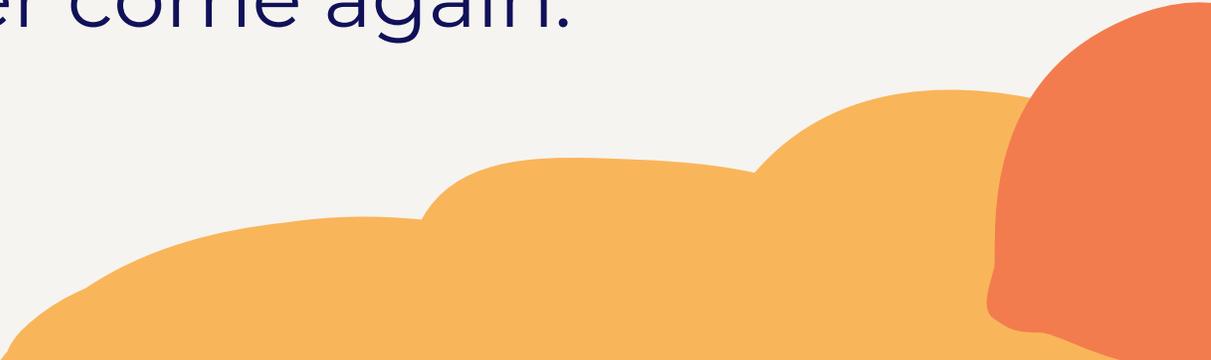
The first 1,000 days—starting even before birth—are a once-in-a-lifetime window to shape the health and potential of Latino children.

A red speech bubble with a white outline and a tail pointing towards the bottom left. Inside the bubble, the text "Imagine if.." is written in white, bold, sans-serif font.

Imagine if..

If we bring science, culture, and connection together, we can change not just outcomes, but generations.

And what we do now, as providers, matters—because this window will never come again.

A series of overlapping, rounded orange shapes at the bottom right of the page, resembling a stylized horizon or a decorative graphic element.

**“I WAS TOLD TO
AVOID TORTILLAS,
FRUIT, AND MILK AT
NIGHT FOR BETTER
DIABETES
CONTROL”**



The Irreplaceable Window

Agenda

CURRENT STATE OF FAMILIES

Maternal Health
& Kids' Health Status
What's the problem?

THE 1000 DAY WINDOW

Nutrients of concern,
where to obtain
them and why it
matters

TRADITION VS. TRUTH

Lo que nos dijeron
"What we were told"
Understanding cultural
feeding practices of
Latinx Moms

MAKING AN IMPACT

Putting it all together
Providing Meaningful
Nutrition Education in a
Culturally Relevant Way

**MATERNAL & KIDS
NUTRITION STATUS**

**By 2050, one-third OF
ALL BABIES born
in the U.S. Will be of
Hispanic descent.**

Before we help, we first need to understand.

Source: Richard Fry and Jeffrey S. Passel. "Latino Children: A Majority Are U.S.-Born of Immigrants." Washington, D.C.: Pew Hispanic Center (May 2009).



Current Status

- Latinos are more likely to be food insecure compared to whites & more likely to live in poverty, directly impacting health.

- Higher risk of preclampsia, gestational diabetes, yet have the same infant mortality rate as whites: Hispanic Paradox

- In 2023, Hispanic mothers were 1.4 times more likely to receive late/no prenatal care.
- Higher inequalities: Language, care systemic barriers

- Less likely to receive SNAP & other food assistance.
- Mexican-American children have a greater risk of obesity & more prone to suffer from diet-related health conditions.

The Challenges



- ✿ **The first 1000 days are crucial for overall health. Also, a time when feeding practices, healthy habits & taste develop.**
- ✿ **Too much information (TikTok), who to trust?**
- ✿ **Lack of inclusive care & recommendations. Are we giving the right messages?**
- ✿ **Myths and misperceptions: starting solids, dairy myths and other cultural practices among Hispanics**
- ✿ **Cultural disconnect: Not everybody eats the same way
Health \neq Chicken & kale, brown rice**

Cultural Disconnect

HOW WE VIEW HEALTHY
EATING IN THE US



WHAT COULD BE



The real question...

 **Am I a good parent?**

Expectation vs. Reality





The 1000-day Window

Why it matters?

"The time from birth until a child's second birthday is a critically important period for proper growth and development."

According to the 2020-2025 Dietary Guidelines for Americans,

Nutrition has a unique role in each phase of the first 1000 days



The First 1000 Days

Why it matters?

- Maternal and prenatal nutrition in the first 1000 days of life are critical factors in a child's neurodevelopment and lifelong mental health
- Infant's brain doubles by 1 year and reaches around 80% growth by age 2
- Babies need more calories and more nutrients yet intake is very little
- Important to prioritize every bite & focus on nutrient-dense foods

Centers for Disease Control and Prevention. National diabetes fact sheet, United States, 2003. Centers for Disease Control and Prevention; Atlanta (GA): 2004.)

Pfund, María Cecilia. CHCI Policy Brief. Food Insecurity and Food Waste: We are Feeding Landfills Instead of Hungry People. Congressional Hispanic Caucus Institute. March 2019.

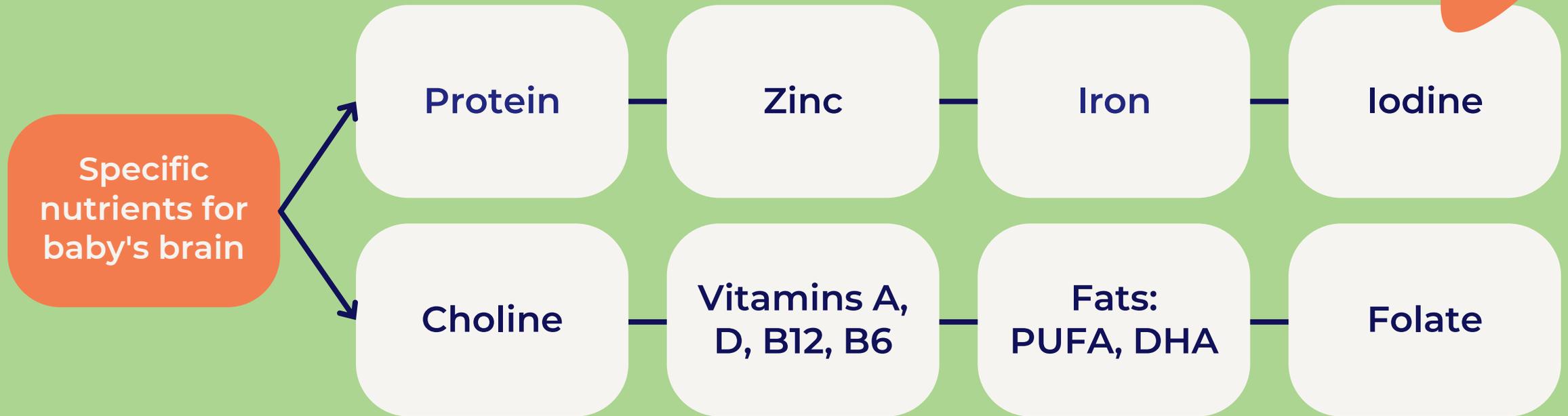
INSIGHTS & THE SCIENCE

Research shows that taste preferences begin forming as early as 18 months. During the “taste window” between 4 and 7 months, infants are especially receptive to new flavors and textures — requiring fewer exposures than older children to build acceptance.

1. Grimm KA, Kim SA, Yaroch AL, Scanlon KS. Fruit and vegetable intake during infancy and early childhood. *Pediatrics*. 2014 Sep;134 Suppl 1(Suppl 1):S63-9. doi: 10.1542/peds.2014-0646K. PMID: 25183758; PMCID: PMC4258845.

2. Yes, Kids Can Learn to Love Veggies. Partnership for Healthier America. <https://www.ahealthieramerica.org/veggies-early-often-28>

Baby's Brain needs...

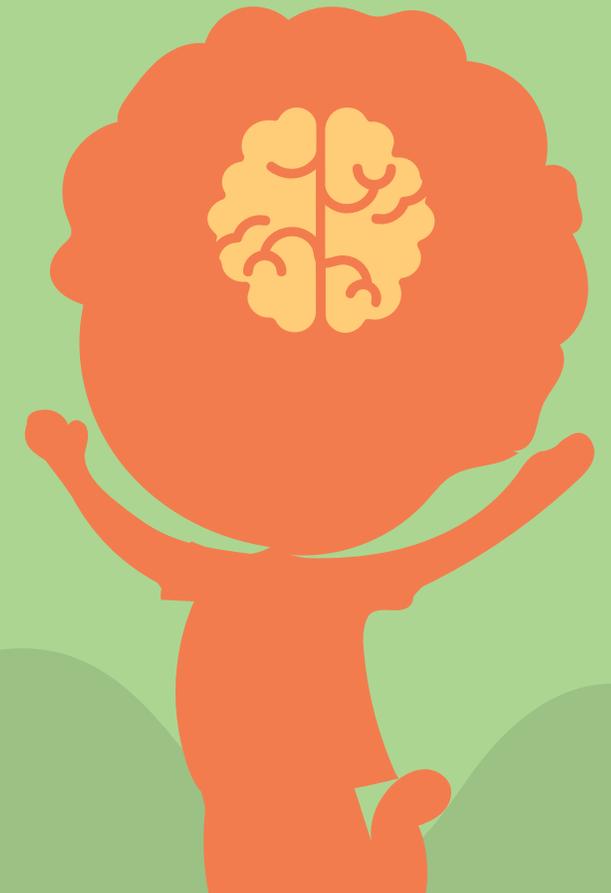
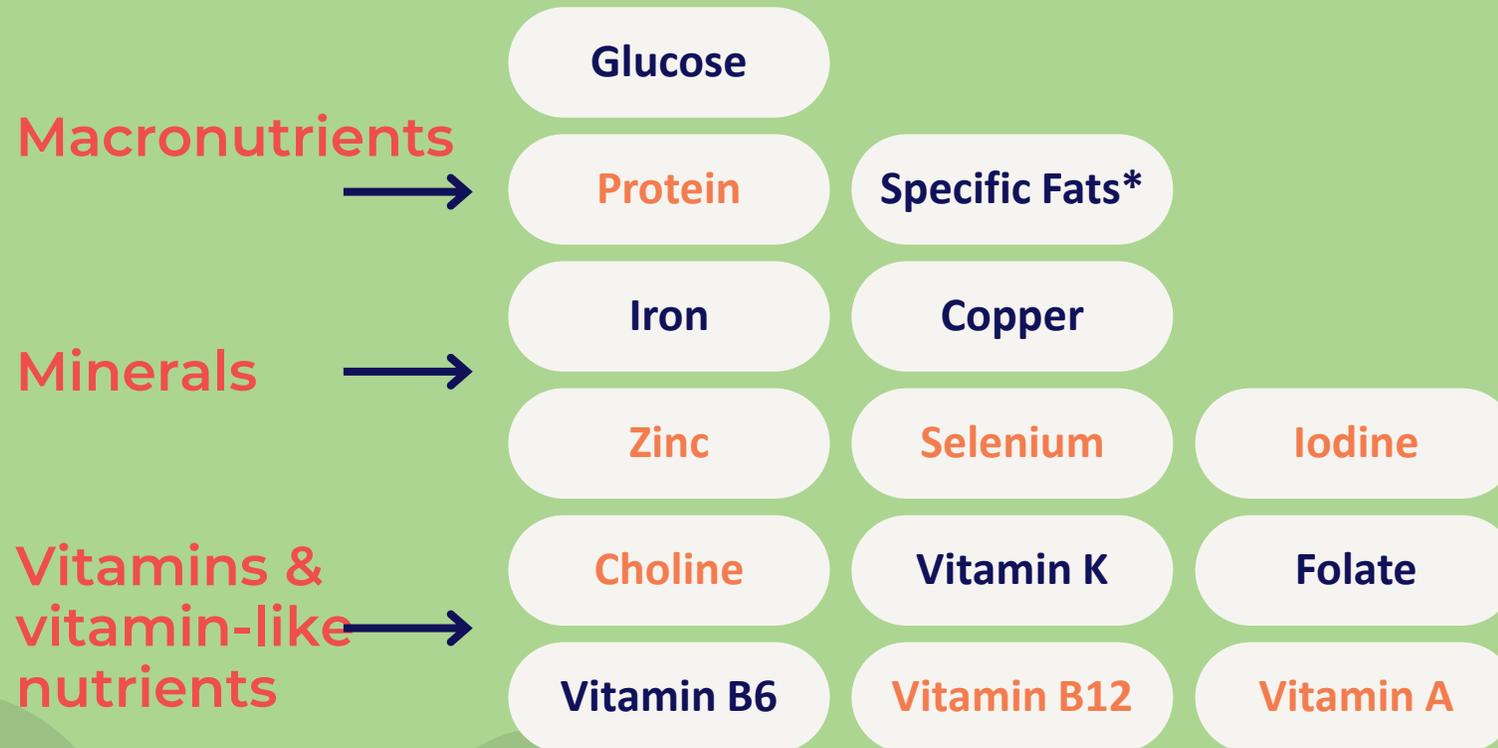


Therefore, timing of nutrients deficiencies can have long-term impacts

Nutrient	Age	Critical Period	Potential Impact
Protein	Fetus	3rd trimester	IQ at age 7
	Child	6m - 10y	Cognition
LC- PUFAs	Fetus - Infant	3rd trimester - 2m	Development at 18, neural processing
Iron	Fetus	3rd trimester	IQ at age 7
	Infant & toddler	6m - 24m	Recognition, memory
Zinc	Fetus	Pregnancy	Novelty preference
Iodine	Fetus	1st trimester	Mental deficit
	Fetus	3rd trimester	Verbal IQ, reaction time

Dairy foods offer 7 of the 14 nutrients important for early cognitive development

Dairy's building blocks for early brain development



*Long-chain polyunsaturated fatty acids

Schwarzenberg SJ, Georgieff Mk, AAP COMMITTEE ON NUTRITION. *Pediatrics*. 2018;141(2):e20173716

Georgieff MK, Brunette KE, Tran PV. *Dev Psychopathol*. 2015;27(2):411-423

USDA, ARS. FoodData Central, 2019. fdc.nal.usda.gov

Milk's nutrition profile is tough to match:

Practical, nutritious & affordable

- 13 essential nutrients in milk
- Brain-supporting nutrients for baby
- Practical
- Versatile
- Easy to digest (nausea & pregnancy)



= 20¢ per serving

Schwarzenberg SJ, Georgieff MK, AAP COMMITTEE ON NUTRITION. Pediatrics. 2018;141(2):e20173716
Based on U.S average price of unflavored, private label milk, 1 gal. [Source: IRI Total US - Multi Outlet
+Conv 202, YTD ending 10-4-20]

*FDA's Daily Value (DV) for potassium of 4700 mg is based on a 2005 DRI recommendation. In 2019, NASEM updated DRI to 3400mg. Based on the 2019 DRI, a serving of mil provides 10% of the DRI. FDA rule-making is needed to update this value por de purpose of food labeling

Key Message To Parents

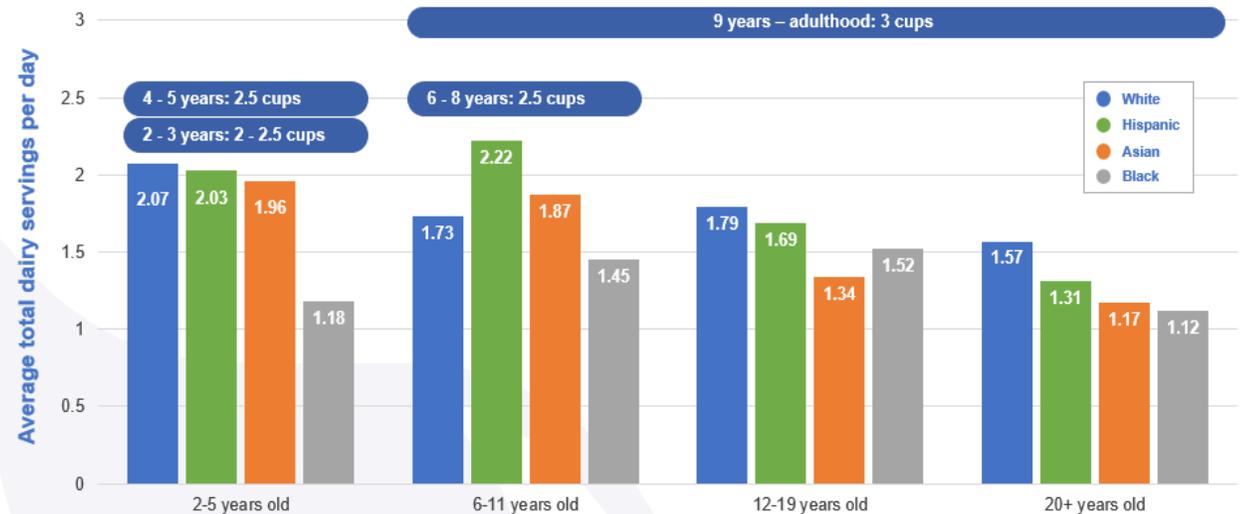
“Your baby’s brain doubles by age 1 and reaches 80% growth by age 2. What you do now has the power to fuel their future and unlock their full potential.”

INSIGHTS & THE SCIENCE

Hispanics already love dairy!

- Still not getting the recommended intakes.
- Harder to convince someone that doesn't dairy.
- Hispanics have a high affinity and nostalgia for dairy.
- Finding ways of maximizing it!

The Dairy Gap Starts at an Early Age



Q&A

When working with women of childbearing age, do you typically think about iodine?

How many of you were told to take a prenatal vitamin with iodine?

a Yes

b Not really

Iodine: The New Folic Acid

**Iodine deficiency is
the most preventable
cause of intellectual
disability in the world.**

Source: Centers for Disease Control. [Second Nutrition Report Factsheet. Iodine Levels in Young Women Border on Insufficiency](#). April 2012.

INSIGHTS & THE SCIENCE

The diet of pregnant or breastfeeding women may not contain enough iodine to meet the RDA

US and European guidelines recommend supplemental iodine for this population

Women who are planning to get pregnant or are pregnant or breastfeeding should supplement their diet with a daily oral supplement that contains 150 ug of iodine



Q&A

**Most Processed Foods Contain
Iodized Salt**

a

True

b

False

Q&A

**Most Processed Foods Contain
Iodized Salt**

a

True

b

False

Iodine:

The new folate & why it matters

The Problem



Iodine needs go up (50%) during pregnancy & lactation

Vegan, non-dairy, non-seafood diets

The diet of pregnant /breastfeeding women may not contain enough iodine to meet the RDA

About half of the prenatal supplements don't have iodine

Rise of non-iodized salts

Lack of awareness

1. National Institutes of Health. Office of Dietary Supplements. Iodine Factsheet for Health Professionals.

<https://ods.od.nih.gov/factsheets/IodineHealthProfessiona>.

2. USDA, FNS. WIC Eligibility and Coverage Rates – 2018.

Iodine

 Iodine recommendations increase ~50% during pregnancy and lactation

 Iodine is an essential micronutrient needed to make thyroid hormones. Important for

- metabolism,
- proper brain development
- bone development during pregnancy/infancy.

 Mother's diet is key: The amount of iodine in breast milk is a direct reflection of the mother's iodine nutrition.

Age	ug/day
0-6months (AI)	110
7-12 months (AI)	130
1-8 years	90
9-13 years	120
>13 years	150
Pregnancy	220
Lactation	290

Where to Obtain Iodine?

Seafood, dairy foods and eggs offer natural sources of iodine



Cod
105% DV



Cow's Milk
59% DV



Egg
17% DV

What Foods Provide Iodine?^{viii}

FOOD	SERVING SIZE	MICROGRAMS PER SERVING	PERCENT DAILY VALUE (DV)*
Cod, baked	3 ounces	158	105%
Low-fat milk (1%)	1 cup	88	59%
Yogurt, Greek, plain, fat-free	6 ounces	87	58%
Iodized table salt	¼ tsp	76	51%
Fish sticks	3 sticks	58	39%
Cottage cheese (reduced fat)	½ cup	39	26%
Pasta, cooked in iodized salt	1 cup	38	25%
Swiss cheese	3 slices**	36	24%
Crab, canned and cooked	3 ounces	32	21%
Egg, hardboiled	1 egg	26	17%
American cheese	3 slices**	18	12%
Cheddar cheese	3 slices**	15	10%
Shrimp, pre-cooked	3 ounces	13	9%
Salmon, baked	3 ounces	14	9%
Soy beverage	1 cup	1.5	1%
Almond beverage	1 cup	<1	1%
Non-iodized sea salt	¼ tsp	<1	1%

*The DV for iodine is 150 mcg for healthy adults and children over 4.

**Cracker sized slice of cheese

Takeaways

The 1000 days window
& Key Nutrients

- * The first 1000 days are critical for the brain, but also the development of taste preferences & eating habits
- * Dairy provides 7 of the 14 key nutrients for cognitive development.
- * Taste, versatility, and cost matter!
- * Iodine is the new folic acid, yet most people don't know!
- * Iodine needs double in pregnancy & lactation- Commonly found in eggs, seafood, and dairy!

"But,
I'm Latin!"



Tradition vs Fact

Lo que nos dijeron "What we were told"

Understanding cultural feeding
practices of Latinx Moms



Feeding practices & beliefs

Socio-economic

Cultural norms

Family influence

Health beliefs

Access (ex. easier access to formula)

Understanding socio-cultural feeding practices

Latin X Mothers

"Chunky baby
= healthy
baby"

El niño
gordito

Early solid
introduction

Food is Love

Lactose
intolerance
= no milk

Importance
of family
Family advice
and role of
abuela

Feeding to
soothe

Permissive
feeding

Use of
toddler milks



INSIGHTS & THE SCIENCE

Latino parents less likely to view their kids as overweight

Research indicates that Latina mothers often incorrectly perceive their children to be at appropriate weight levels when they are at higher weights.

Chunky baby = Healthy baby

- Higher rates of overweight or "larger kids" in the Hispanic population.
- Latina mothers often incorrectly perceive their children to be at appropriate weight levels when they are at higher weights.
- Similarly, [Myers and Vargas \(2000\)](#) found that 36% of 200 parents of primarily Latino overweight children participating in a WIC program did not recognize excess weight in their children aged 2–5 years.
- Multi-factorial causes of weight status: access, income, health beliefs.



"Mujer con Curvas"



Cultural perceptions of diet & body weight

Cultural perceptions of body weight

- Mom's perception of weight affects child feeding practices.
- Being "gordito"= a healthy baby. Acculturation and socioeconomic status influence weight. Mexicans living in the US are more likely to gain weight due to a "westernized diet." However, the association between acculturation and body size shows inconsistent findings.
- Mexican women are less likely to view themselves as "overweight" than Mexican American women and are less likely to have been told/screened to be overweight/obese.

Carter-Pokras O, Zambrana RE, Yankelovich G, Estrada M, Castillo-Salgado C, Ortega AN. Health status of Mexican-origin persons: do proxy measures of acculturation advance our understanding of health disparities? *J Immigr Minor Health*. 2008;10(6):475-488.

Guendelman, S., Ritterman-Weintraub, M.L., Fernald, L.C. and Kaufer-Horwitz, M. (2011), Weight Perceptions Among Overweight and Obese Women: A US-Mexico Binational Perspective. *Obesity*, 19: 2440-2443. <https://doi.org/10.1038/oby.2011.194>

**"Food is a
form of love
for Hispanics"**



Feeding to Soothe

- In a 2020 small qualitative study, Latinx moms with children under 2yrs focus group identified the "feeding to soothe" theme: Feeding kids in response to crying or an effort to prevent it.
- Difficult to break a pattern and "just let them cry"-Emotional component
- Adding cereal to milk was believed to help them sleep longer
- Permissive feeding practices: Loose meal structure, feeding when a child requests food, especially at night
- Lack of re-introduction of previously rejected foods

“Many parents believe that if infants refused a particular food more than once or twice, they would consider that the infant did not like the food and would no longer continue to offer it.”

Q&A

Which first food is most common for Hispanics to start solids?

- a Bananas
- b Soups
- a Beans
- b Rice

Q&A

Which first food is most common for Hispanics to start solids?

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Starting Solids-

Research Insight: First Foods Among Hispanics

- Latinos tend to start solid introduction earlier.
- Soups made from chicken/beef broth-puree with cooked veggies (carrots, potatoes, yams)
- Tend to perceive homemade as better
- Baby Cereals + veggies perceived to be good options (WIC education)
- Beef is introduced 13-15 months: Some parents believe meat and beans can be hard to digest.
Better to use broths!



Kuo AA, Inkelas M, Slusser WM, Maidenberg M, Halfon N. Introduction of solid food to young infants. *Matern Child Health J.* 2011 Nov;15(8):1185-94. doi: 10.1007/s10995-010-0669-5. PMID: 20842523; PMCID: PMC3195680.

Beck AL, Hoefft KS, Takayama JI, Barker JC. Beliefs and practices regarding solid food introduction among Latino parents in Northern California. *Appetite.* 2018 Jan 1;120:381-387. doi: 10.1016/j.appet.2017.09.023Epub 2017 Sep 23. PMID: 28951238; PMCID: PMC5784836.

NCBA Early Years Survey Results; August 2020.

Toddler Milk

- Latinos perceived it as healthy.
- A 2020 study in Public Health Nutrition showed Latinos at higher risk for purchasing Toddler milk.
- Toddler milk (i.e. nutrient-fortified milk marketed for children 12–36 months old) usually with added sugars.
- About half of parents (51 %) had previously purchased toddler milk and few (11 %) perceived toddler milk as unhealthy.



Lactose Intolerance ≠ Dairy Free



Lactose-free milk is real dairy milk just without the lactose.



Supports lactose digestion. Live active cultures. Role in immunity & gut health



Queso Fresco- Minimal lactose & widely used in many Latin American dishes

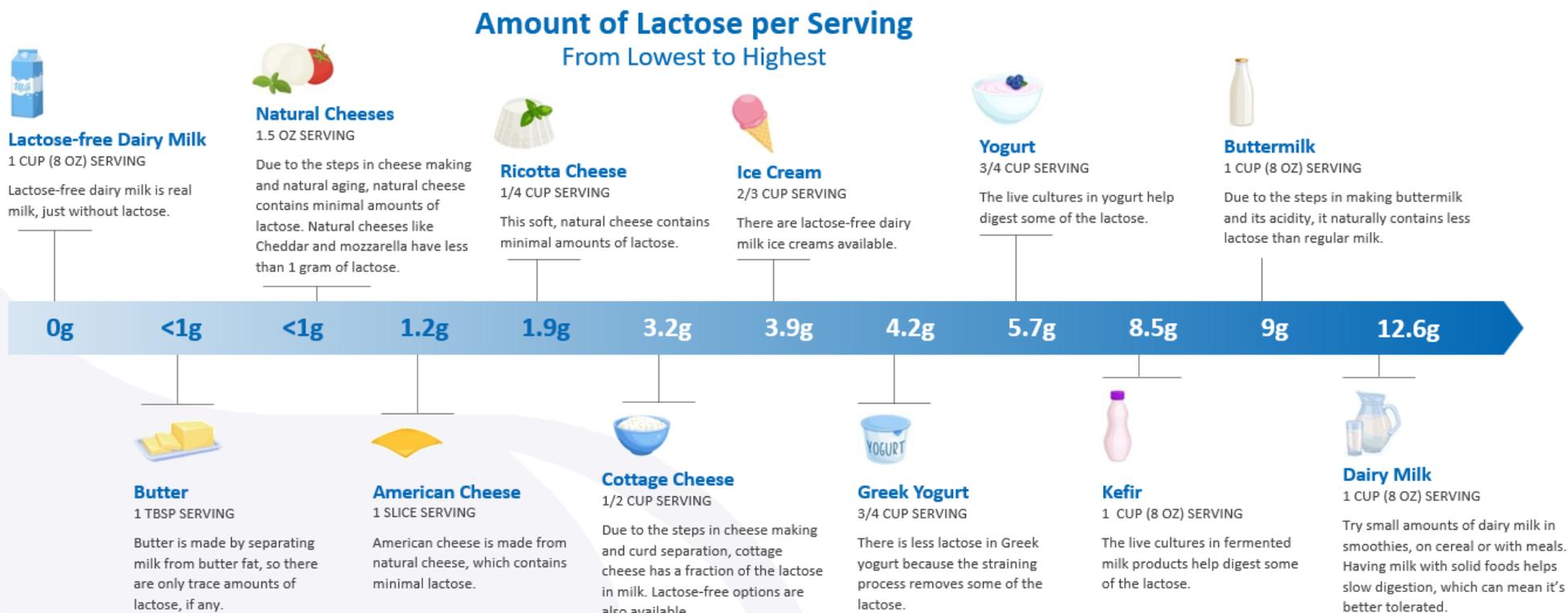


Hard cheeses (e.g., Cheddar, Swiss, Colby, etc.) contain very little lactose.

Varying amounts of Lactose in dairy

LI doesn't have to mean "no dairy"

Education around lactose content can help people with LI enjoy dairy foods with confidence



1. USDA, ARS. [FoodData Central](#), 2019.

2. Bailey et al. [J Natl Med Assoc](#). 2013;105(2):112-27.

3. Facioni et al. [J Transl Med](#). 2020;18:260.

4. Di Costanzo M, Canani R. [Ann Nutr Metab](#). 2018;73(Suppl4):30-37.

5. FSANZ. [Food Details](#): Ricotta Cheese.

Lactose content based on the Reference Amount Customarily Consumed (RACC) and data from [FoodData Central](#) (accessed October 2022). Ricotta lactose content based on [Facioni MS et al. 2020](#), [Di Costanzo M et al. 2020](#) and [Food Standards Australia New Zealand](#).

Abuelas Advice

Advice from Latino family members is often inconsistent with science-based recommendations. But in an attempt to show **RESPECT** and keep the relationship **harmonious**, Latinx mothers will follow what family members say. **Family dynamics play a significant role!**



Takeaways

Cultural Feeding Practices

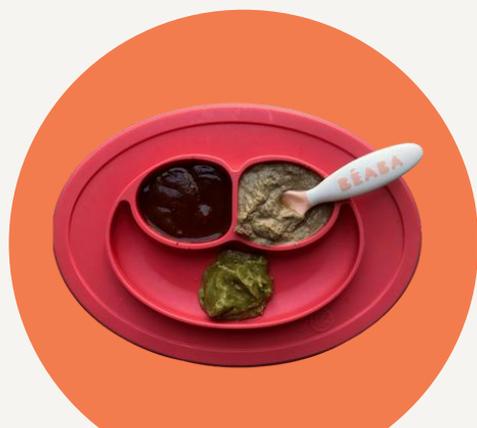
- * Maternal feeding practices are also impacted by cultural views of body weight
- * Food is a form of love among Hispanics
- * Permissive feeding practices, lack of schedule and overfeeding at night
- * Myths to dispel: Toddler milk, cereal in bottle, lactose intolerant
- * Family dynamics play a big role: Respect

Making an Impact

Delivering Meaningful, Culturally Relevant Nutrition Guidance to Every Client



How to optimize nutrition in early years: First foods-Toddlers



First foods



Breakfast



Lunch/Dinner



Snacks

Infant First Foods



- Prioritize essential nutrients, including iron, choline, zinc, fats.
- Beef/Pork: High-quality protein and a good source of choline and zinc; offers key nutrients like heme iron, B6, B12 — key nutrients for brain development
- Beans and lentils — a cultural staple: Good plant-based source, high in fiber, excellent source of iron and B vitamins
- High nutrient density: Avocado, meat, yams, fats
- Yes, on Full-fat yogurt as a first food! Great way to add texture, variety, and nutrition — (fats, probiotics, vitamin D, calcium)
- Educate on safety and modification with a focus on FAMILY meals. One meal for all with modifications.





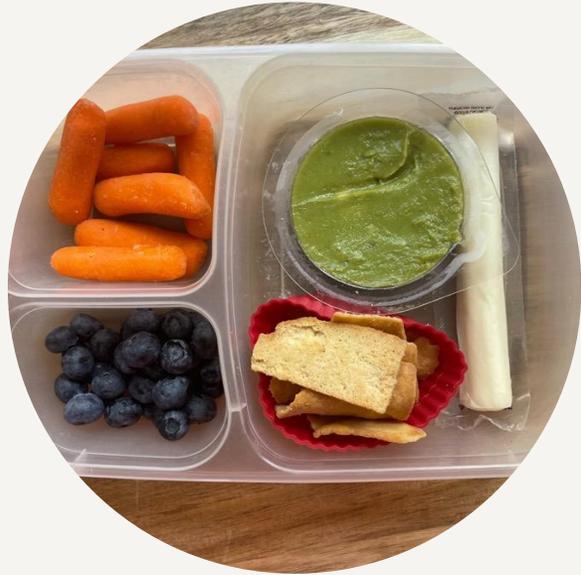
Breakfast

- Hot cereal "maizena" or oatmeal with milk adding nutrition "sprinklers" linaza (flax)/chia
- Hot cakes "Pancakes" with full-fat yogurt, fruit (banana) nuts.
- Arepa with egg/cheese + fruit
- Energy bites, can add peanut butter, nuts, flax seeds
- Batidos or smoothies: Great opportunity to include fruit + yogurt
 - Can use frozen fruit to help food waste and minimize cost

Lunch & Dinner

- Adding nutrition to traditional foods
 - Quesadilla with mushrooms & cheese
 - Quesadilla with spinach
- Rice with beans- Arroz con frijoles (conгри)
- "Arroz con chicharos"- Good source of plant protein. Affordable/frozen and quick to make
- Emphasize & Teach balanced plate





Snacks

- Fruits and veggies in all forms: Dry, frozen & canned! Great opportunity to bust the myth
- Frozen fruit-Equal nutrition, harvested at peak times
- Paletas de mango-Frozen fruit popsicles with Greek yogurt & and chia
- Frozen yogurt pops or yogurt bark with leftover yogurt
- Chips with guacamole (a great source of fats)
- String cheese + fruit

ONE-day meal ideas for pregnancy: ON THE GO

Iodine ~292mcg



Breakfast

131mcg

Overnight oats with Greek yogurt, 2% milk fruit & chia seeds



Snack

16mcg

Cheese stick + high fiber granola bar



Lunch

56mcg

Leftover pasta with iodized salt, mozzarella cheese, kiwi & energy ball



Snack

~5mcg

Trail mix with fruit, nuts and dark chocolate



Dinner

84mcg

Instapot carnitas tacos with cheese & salsa & rice & beans.

ONE-day meal ideas for pregnancy: NAUSEA

Iodine ~280mcg



Breakfast

87mcg

Mango kefir smoothie with whole wheat toast



Snack

40mcg

Cottage cheese on top of melba toast



Lunch

63mcg

Egg sandwich on whole wheat bagel and apple



Snack

87mcg

Whole grain cereal + milk and banana



Dinner

~15mcg

Black Bean & Cheese quesadilla

How to enhance nutrition in cultural Latin dishes

Goal is to to MODIFY and add nutrition to culturally relevant foods

- * Focus on adding, not eliminating!

- * Simple messages: El plato balanceado, include 3-4 groups

- * Adding "nutrition boosters": flax seeds, yogurt, whole grains, avocado, etc.

- * Include native fruits/veggies

- * Reading nutrition labels

- * Educate on adapting family meals

Culturally Curious

How to Communicate Effectively &
Provide Meaningful Education to
Clients



**"We never truly are
culturally competent:
we are always
learning."**



Who To Trust?

**Maternal
Grandmothers**

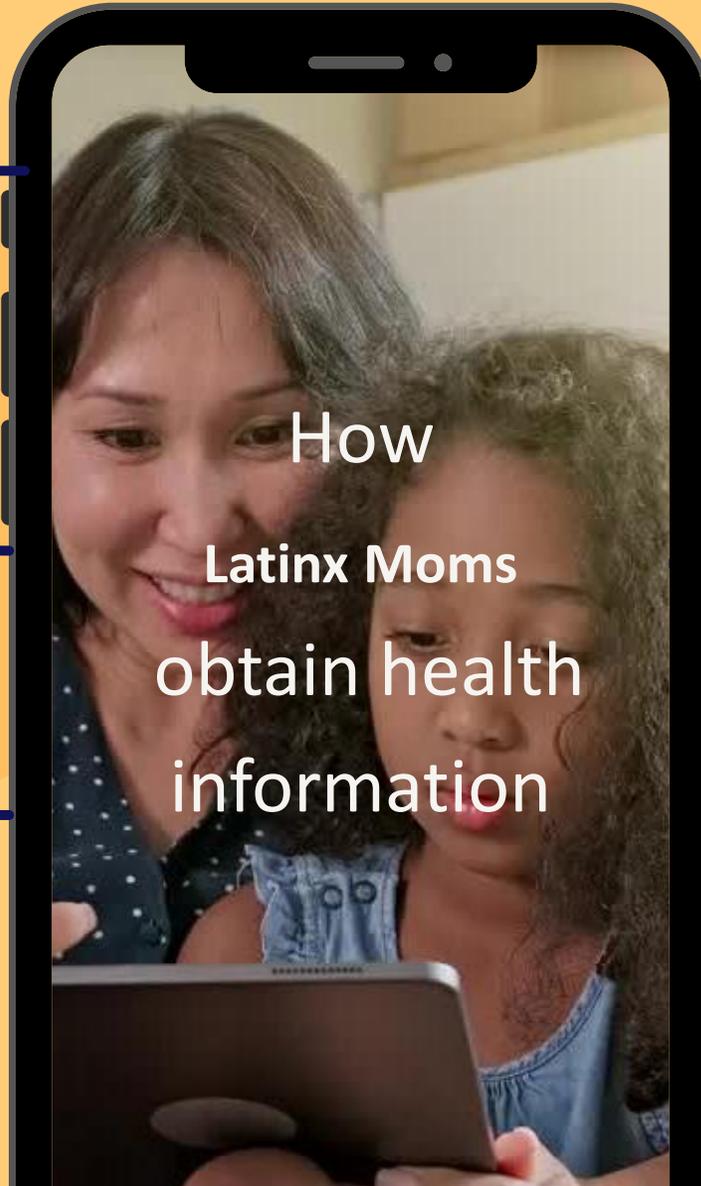
**Friends &
co-workers**

Internet

**Health
Professional/
Doctor**

**Other Family
members**

TV



How
Latinx Moms
obtain health
information

The frequency with which participants obtained information(solicited or unsolicited) from each source %

Maternal Grandmothers
27.5%

Friends & co-workers
30%

Internet
32.5%

Health Professional/ Doctor
25%

Other Family members
25%

TV
17.5%



How
Latinx Moms
obtain health
information



✿ Maternal Grandmother very important in the first year of life

✿ Afterward, in pre-school, health information was obtained from health professionals

✿ Latina moms typically obtained information through interpersonal communication, television and magazines

✿ Latinos have reported high trust in information from health professionals and mixed findings in information from family and friends

Davis RE, Cole SM, McKenney-Shubert SJ, Jones SJ, Peterson KE. An Exploration of How Mexican American WIC Mothers Obtain Information About Behaviors Associated With Childhood Obesity Risk. *J Nutr Educ Behav.* 2017 Mar;49(3):187-195.e1. doi: 10.1016/j.jneb.2016.10.002. Epub 2016 Nov 18. PMID: 27876321; PMCID: PMC5346458.

Things to consider...

* Do they trust you?

* Is there access to a supermarket?
Food deserts?

* Where do they get information? TV,
internet, doctor, friend, neighbor?

* How can you give them relevant information
that will actually help them / How to convey
the right message in the right way?

* Meet them where they are

Questions I Can Ask...

 What have you heard about...(milk, tortillas, carbs, sugar...)

 Where do you and your kids eat?

 What happens if your child does not like a food?

 How do you persuade your child to eat a new food?

 If I had a magic wand and could help you with one thing, what would it be today?

Messages that resonate

Pregnancy &
Breastfeeding

- ✿ During pregnancy, moms are more focused on the development of their baby vs themselves.
- ✿ Messages related to brain development are the top performing for this cohort.

6months-1 year

- ✿ Parenting young children can be overwhelming, messages that make parents feel they're doing a good job are best
- ✿ Statements that connect to the child's current life stage resonate (learn new words, explore)

1-2 yrs.

- ✿ Parents are stressed and tired. Simple = easy!
- ✿ Including the word "maximize" makes parents feel empowered that they're making the right choice.



How to provide meaningful education to clients



✿ Be curious and ask open-ended questions. How do you feel about...

✿ Before giving recommendations, understand how and why they eat!

✿ Cultural Humility- It's OK not to know. Refer if needed.

✿ Meet them where they are: How do you think I can help you today? What are the issues that are most concerning to you?

✿ Make sure all the team is on the same page. May open up with another provider.

Our job as providers

- Help parents navigate through these stages- **CONFIDENT!**
- Closing nutrition gaps & optimize first 1000-day nutrition!
- **PROVIDE** evidence-based recommendations that embrace culture!
- Resolve misperceptions
- Provide solutions that don't sacrifice culture!
- **MAKE IT WORK FOR THEM.**



“Next time we see another “Leticia”



Yes! your baby will be strong and healthy, lets focus on what you can ADD!

“What does Abuela think of XXXX”

"Tell me what your eating"

"Let’s talk about Iodine and ways you can include it”

"Where did you see that? What do you think about...X?"

“Dairy provides 7 of 13 key nutrients, especially for baby’s brain”

This 1,000-day window doesn't wait.

**It's our chance to act—to listen, to teach,
to honor culture, and to empower
families.**

Because what we do now doesn't just feed a
child—it shapes generations.



Questions

