



Enhancing Health Outcomes: The Role of Dairy Food Intake Among Black Americans During Pregnancy and Early Life Stages

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- M.S. in Nutritional Sciences, Public Health Certificate, WSU, 2012
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Things to know:

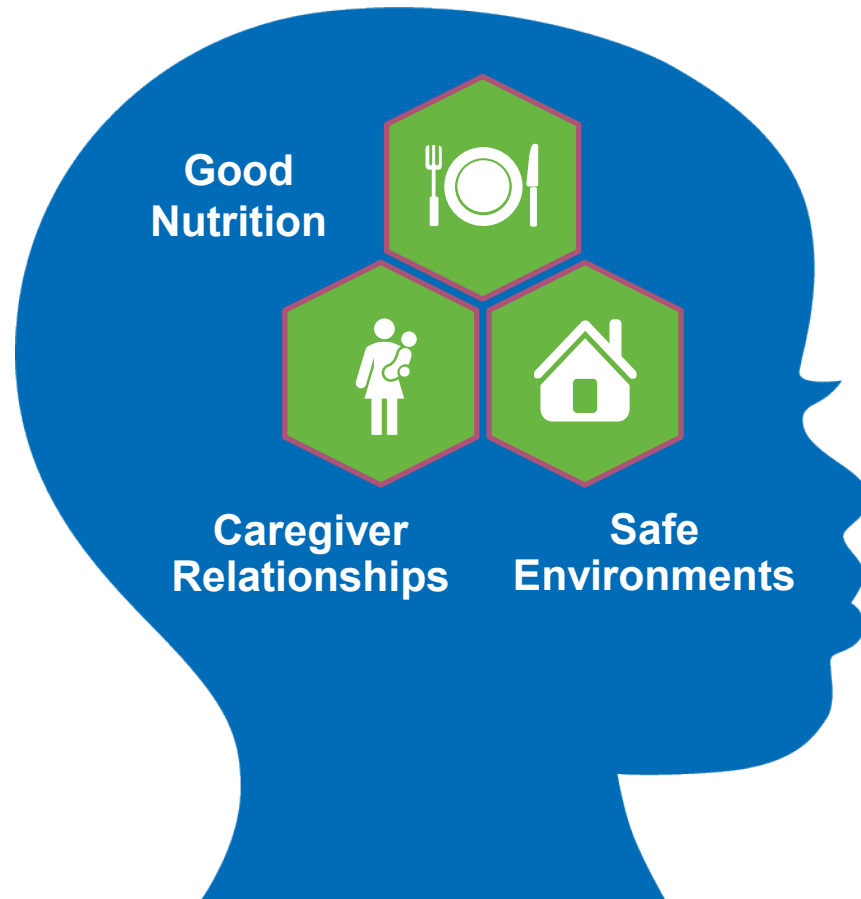
- Michigander, daughter, 10 nephews, walk on trails, and travel

Nourishing the First 1,000 Days



Preconception to Baby's 2nd Birthday

Setting the Stage for a Lifetime of Benefits

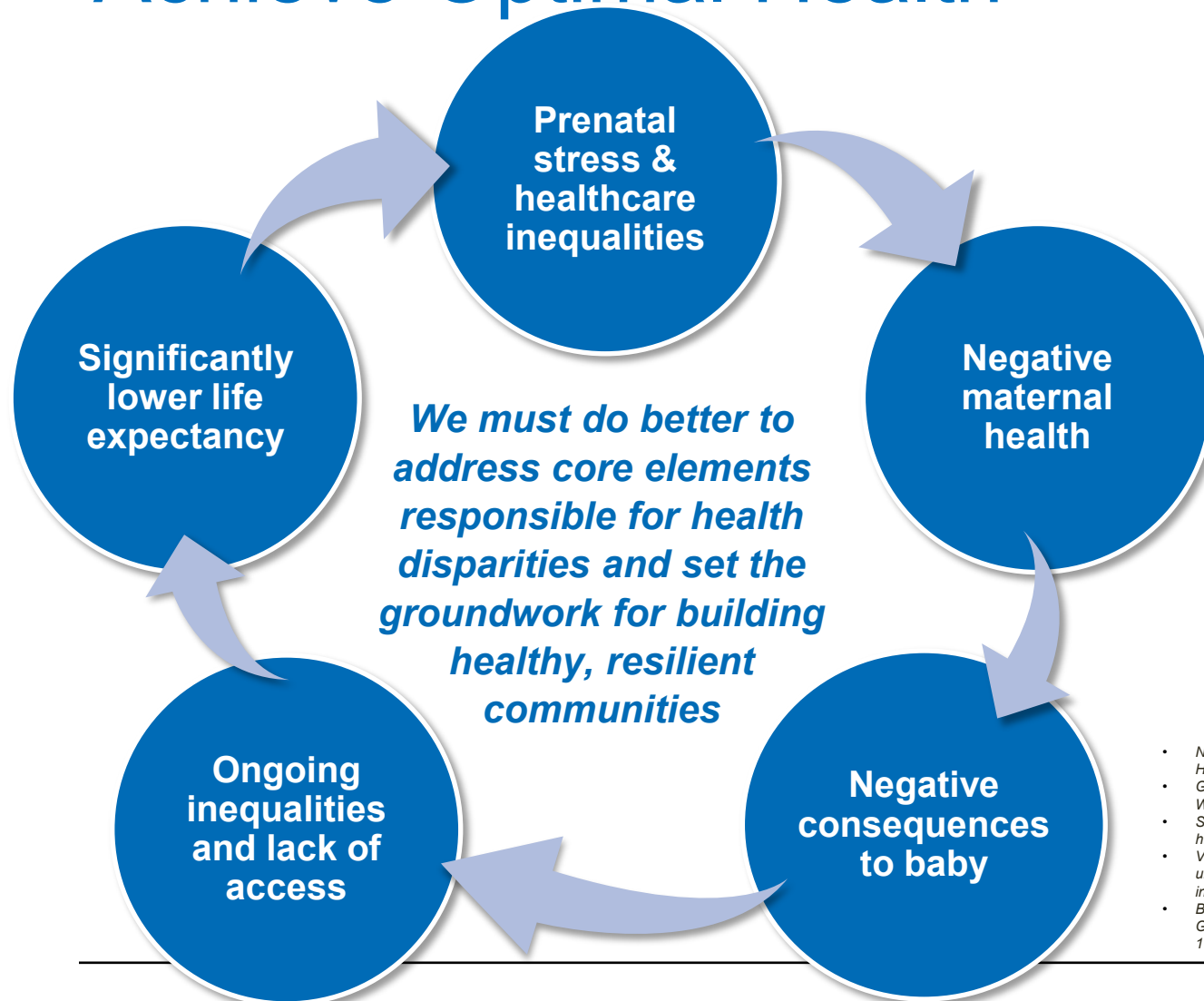


“When one or more of these components are absent, there can be negative effects on a child’s physical, social, emotional and cognitive development”

Everyone Deserves a Fair Chance to Achieve Optimal Health



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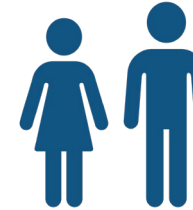


*“If we really want to change the trajectory of health inequities and social justice issues, we need to start investing more in the **first 1000 days of life.**”*

Rafael Pérez-Escamilla, PhD,
Maternal-child health researcher,
Yale School of Public Health

- Noonan AS, Velasco-Mondragon HE, Wagner FA. Improving the health of African Americans in the USA: an overdue opportunity for social justice. *Public Health Rev.* 2016;37:12.
- Groth SW, Stewart PA, Ossip DJ, Block RC, Wixom N, Fernandez ID. Micronutrient Intake Is Inadequate for a Sample of Pregnant African-American Women. *J Acad Nutr Diet.* 2017;117(4):589-598
- Sullivan Barger, Theresa. How the 'First 1,000 Days' Could Shape Your Baby's Future. *Discover Magazine.* 2021 Aug 18 <https://www.discovermagazine.com/health/how-the-first-1-000-days-could-shape-your-babys-future>
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Nutrition Can Help Address Health Inequities Among Black Americans



Pregnancy, Fetal Development & Lactation	Infants, Toddlers & Young Children (Birth to 4 years)	Children & Adolescents (5 to 17 years)	Adults (18-59 years)	Older Adults (60+ years)
Higher pre-term birth and infant mortality rates	Food insecurity, poor nutrition and higher childhood obesity rates	Continued food insecurity and both under-and over-nutrition	Higher rates of obesity and diet-related chronic disease	Worse health outcomes and higher mortality rates

Dairy foods provide an affordable, accessible source of nutrition that can help support a lifetime of well-being for Black Americans who continue to face disproportionate health and nutrition challenges

Gaps and Opportunities to Improve Health Inequities During the First 1,000 Days



The Black Maternal Mortality Crisis

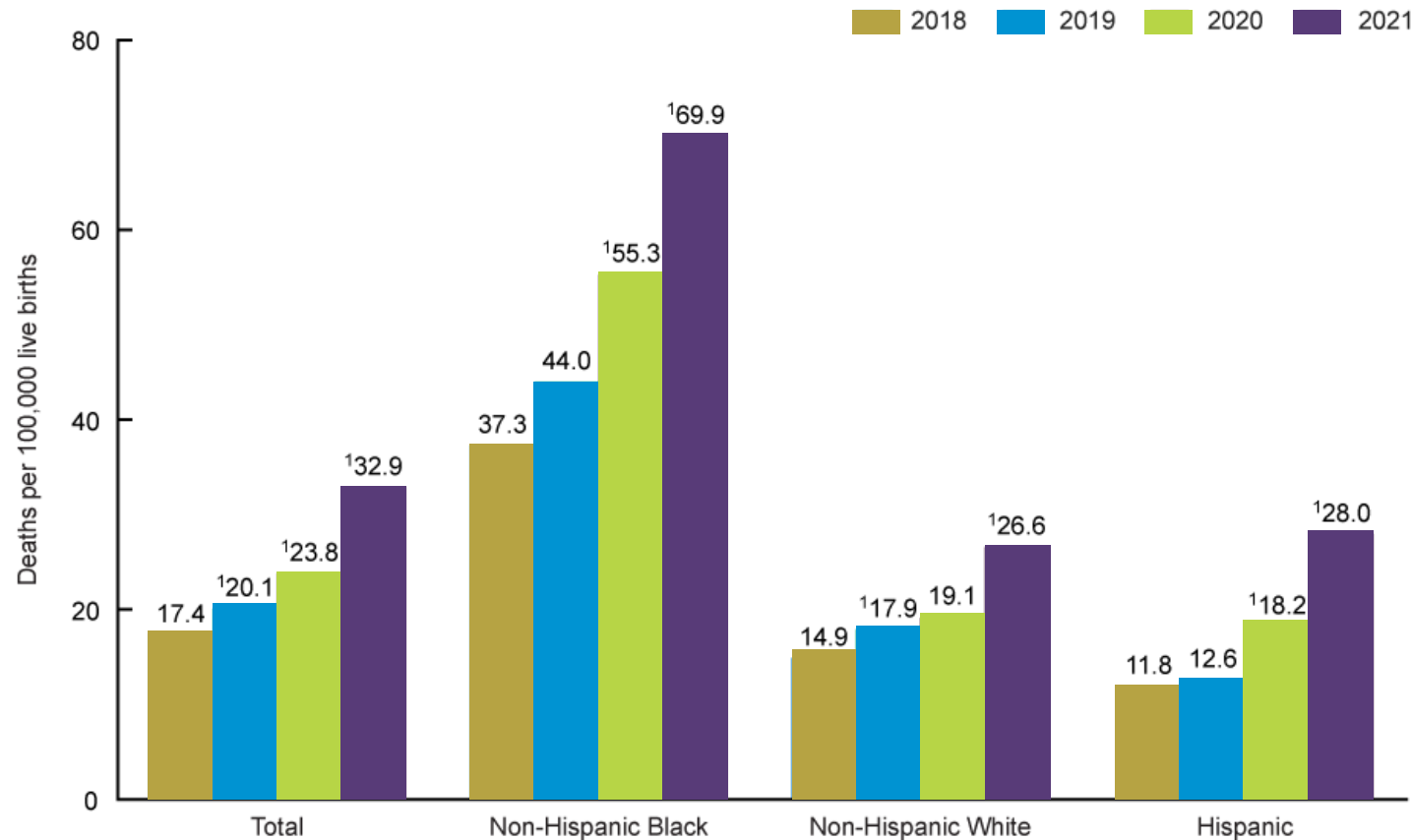


- Black women have the highest proportion of Severe Maternal Mortality (SMM) across entire pregnancy intervals but with a **70% greater risk** right before childbirth compared to during and after birth.¹
- One study with Black and Latina women emphasized themes of **“poor continuity of care, communication gaps, and a perceived lack of attentiveness to participants’ physical and emotional needs led to substantial concern and disappointment in care”**.²
- Factors contributing to this disparity include structural racism, implicit bias, quality health care, underlying chronic conditions, social determinants of health.³

Opportunity to Improve: Inequities in Maternal Health Outcomes



Maternal mortality rates: United States, 2018–2021¹



- In 2021, there were 1,205 deaths related to maternal causes in the United States compared with 861 in 2020 and 754 in 2019.¹
- In 2021, the maternal mortality rate for Black pregnancies was 69.9 deaths per 100,000 live births, 2.6 times the rate for white pregnancies.¹

¹Statistically significant increase from previous year ($p < 0.05$).

NOTE: Race groups are single race.

SOURCE: National Center for Health Statistics. National Vital Statistics System. Mortality.

Opportunity to Improve: Inequities in Birth Outcomes



~15%

of Black American
infants are born
preterm in the U.S.

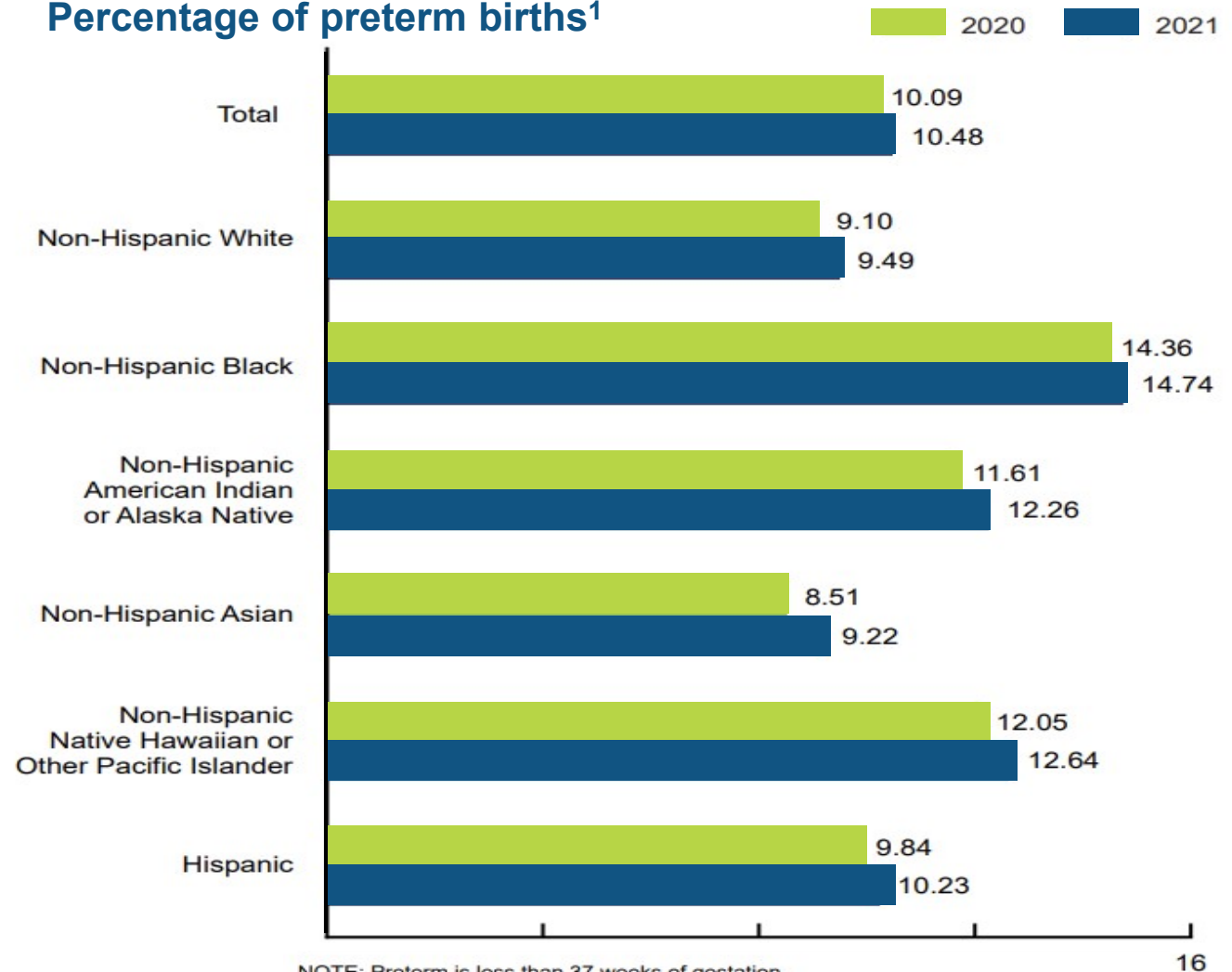
(compared to 10% for
the general US population)^{1,2}

20.4%

prevalence of
childhood obesity in
Black children

compared to 14.7% in
white children³

Percentage of preterm births¹



NOTE: Preterm is less than 37 weeks of gestation.

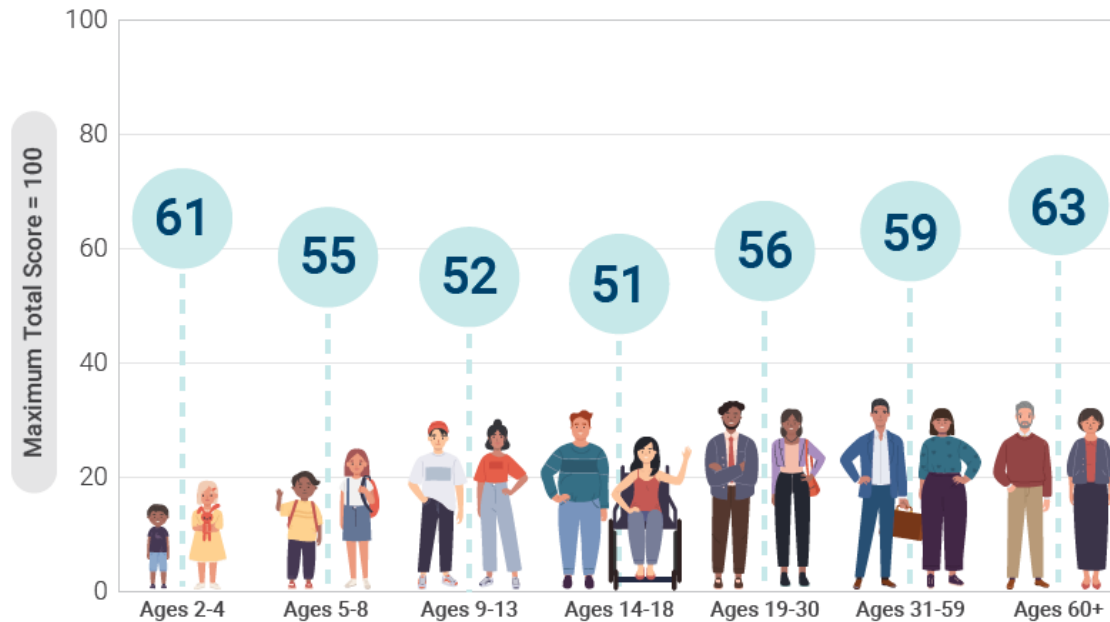
SOURCE: National Center for Health Statistics, National Vital Statistics System, Natality.

Everyone Deserves the Opportunity to Reach their Full Potential



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



NOTE: HEI-2015 total scores are out of 100 possible points. A score of 100 indicates that recommendations on average were met or exceeded. A higher total score indicates a higher quality diet.

Data Source: Analysis of What We Eat in America, NHANES 2015-2016, ages 2 and older, day 1 dietary intake data, weighted.

Percentage of Americans **not** meeting recommendations



98% whole grains



90% vegetables



90% dairy foods

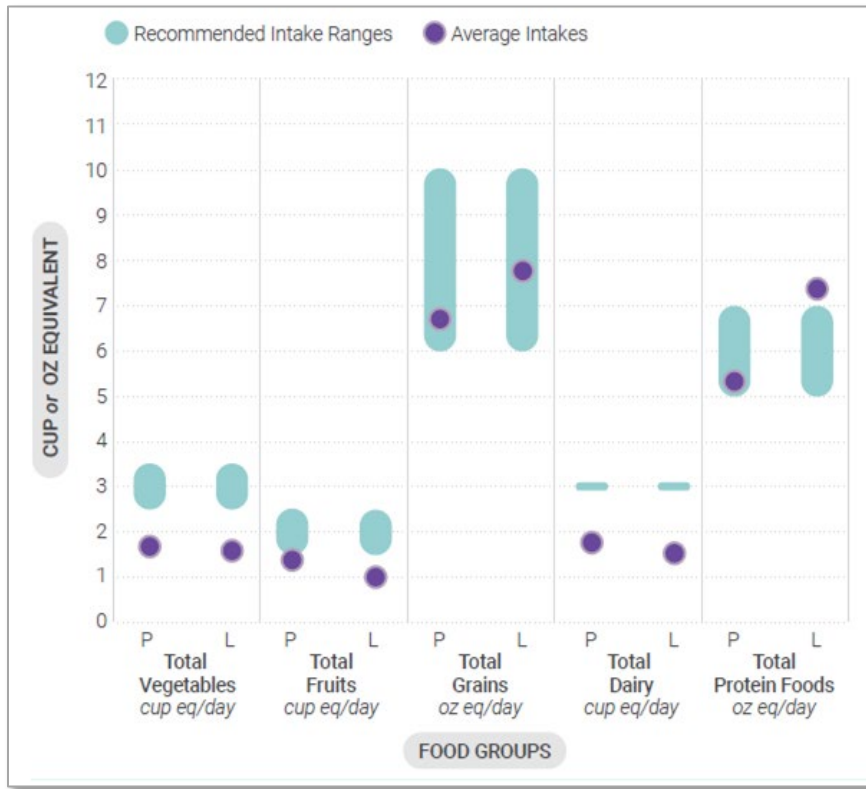


80% fruit

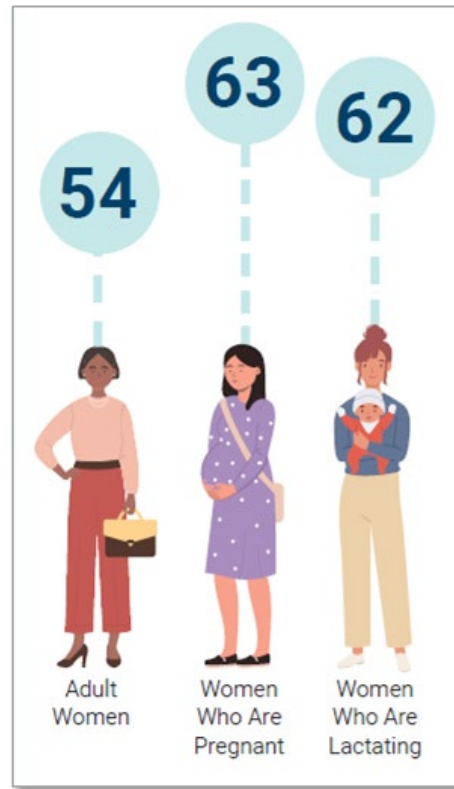
Pregnancy is an Ideal Time to Encourage Health Behavior Change

Current Intakes: People Who are Pregnant or Lactating¹

Average Daily Food Group Intakes Compared to Recommended Intake Ranges



Healthy Eating Index Score
(on a scale of 0-100)

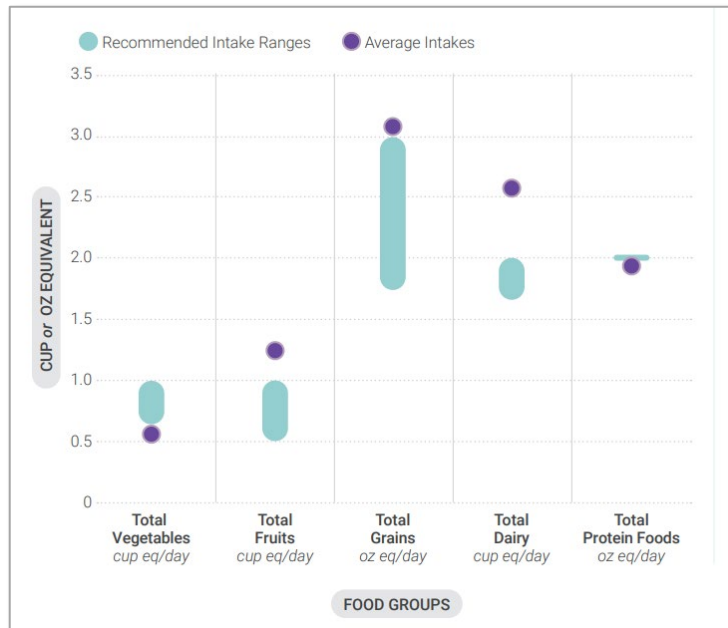


- Increased HEI scores, but still not optimal¹
- Pregnancy may motivate adoption of healthy lifestyle behaviors^{2,3}
- Pregnancy and infancy are milestones that can benefit from nutrition improvements^{2,3}

Boosting Nutrition in the First 1,000 Days Contributes to Lifelong Health

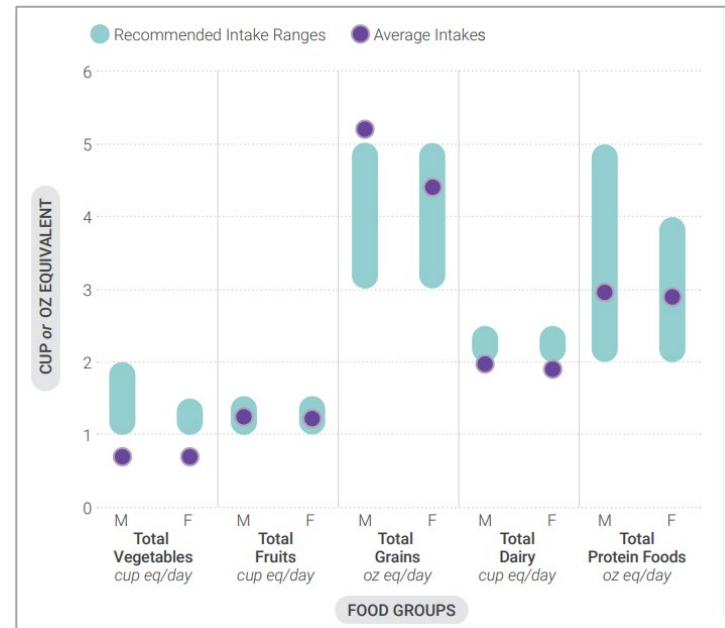
Current Intakes: Ages 12 – 24 Months

Average Daily Food Group Intakes Compared to Recommended Intake Ranges

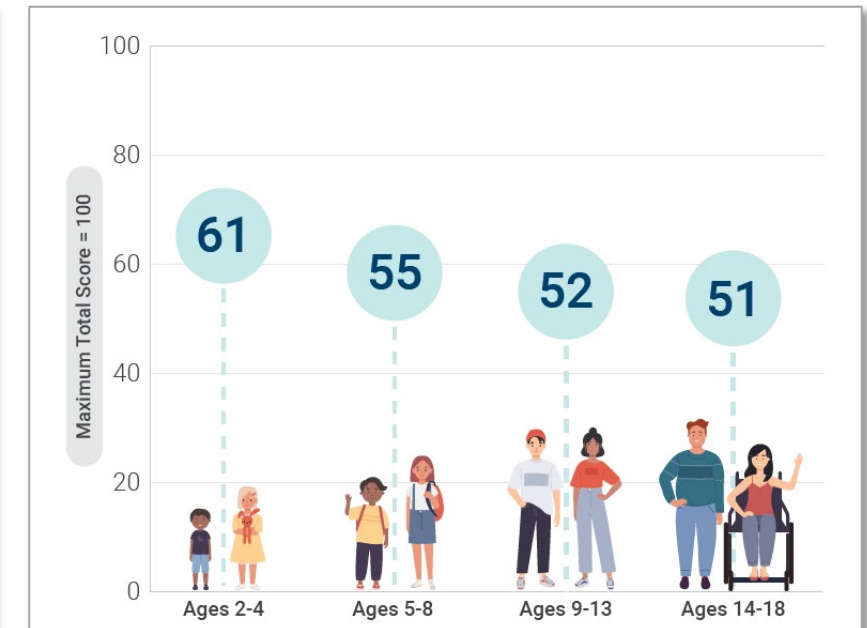


Ages 2 – 4 Years

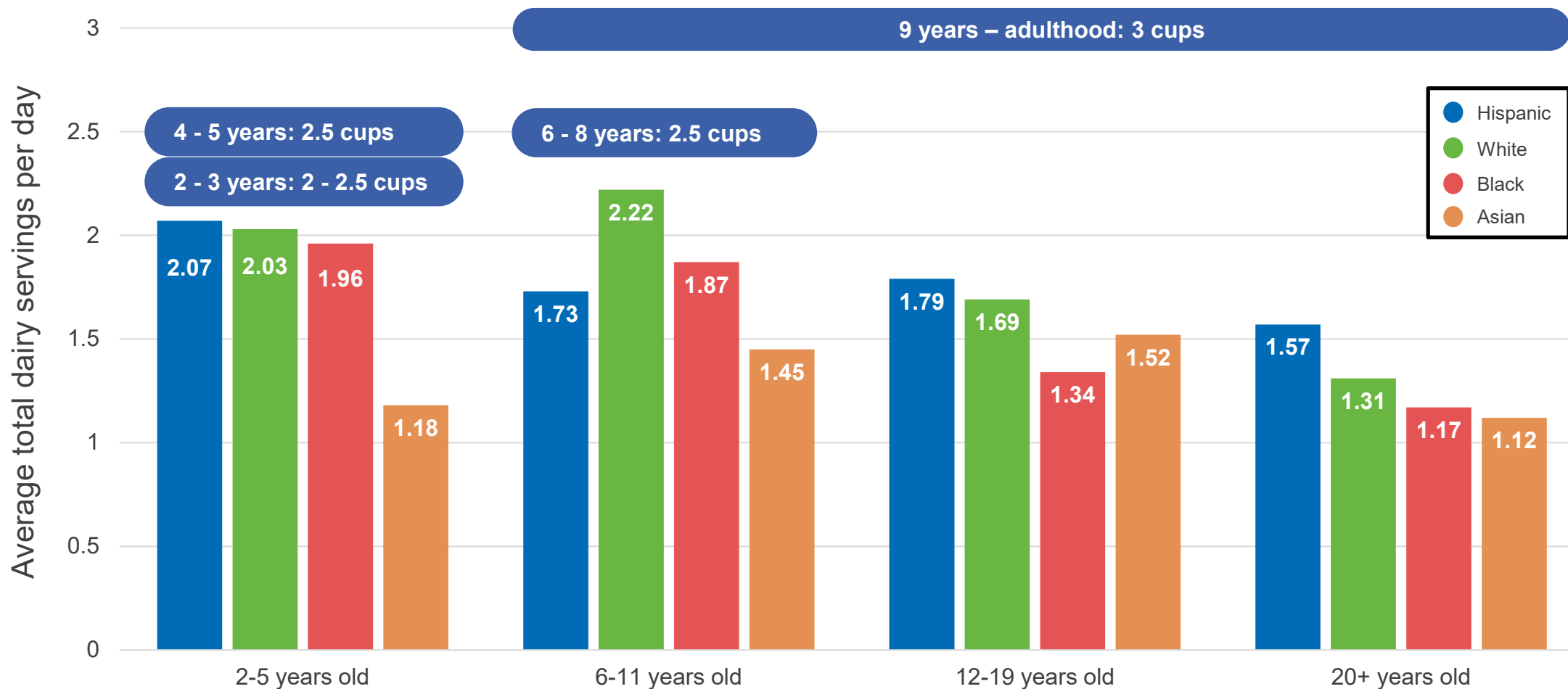
Average Daily Food Group Intakes Compared to Recommended Intake Ranges



Healthy Eating Index Scores Across Childhood and Adolescence



Improving Consumption of Dairy Foods Can Help Improve Health Outcomes



National Medical Association (NMA) Recommends Dairy Foods for Generational Health of Black Americans

Journal of the NMA Supplement:

The Role of Dairy Food Intake for Improving Health Among Black Americans Across the Life Continuum



A review of dairy food intake for improving health for black women in the US during pregnancy, fetal development, and lactation

Yolanda Lawson, Kevin S. Comerford, Edith P. Mitchell

A review of dairy food intake for improving health among black children and adolescents in the US

Yolanda Lawson, Priscilla Mposi, Michal Young, Kevin Comerford, Edith Mitchell

Healthy eating patterns are linked with benefits throughout life.



Pregnancy & Lactation

Favorable health for pregnancy and lactation supporting fetal development and birth outcomes



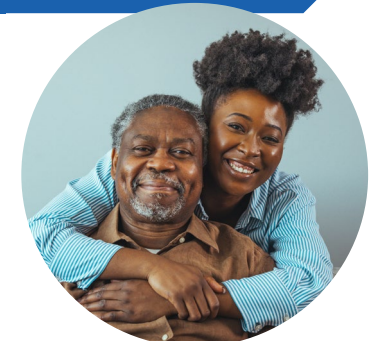
Birth – 4 Years

Favorable neurocognitive development and improved immunity



Children & Adolescents

Lower adiposity and appropriate bone mass development



Adults, Including Older Adults

Lower risk of mortality and chronic disease and favorable markers of health (e.g., bone)



- U.S. Department of Agriculture and U.S. Department of Health and Human Services. *Dietary Guidelines for Americans, 2020-2025. 9th Edition. December 2020. Available at DietaryGuidelines.gov*

- *Journal of the National Medical Association, Volume 116, Issue 2, Part 2 Pages 209-316 (April 2024)* April 10th & 11th, 2025

Benefits of Dairy Foods during the first 1000 days



Nutrition Has a Unique Role Starting in Pregnancy and Throughout the First 1,000 Days



1000 days

Pregnancy



Diet, weight gain and lifestyle habits during pregnancy are 3 significant factors that shape a child's future health

Infancy



Breastmilk supplies a unique variety of nutrients

Toddlerhood



Nutrients fuel growth and appropriate weight gain

Breastfeeding practices (three months of any and exclusive breastfeeding) were associated with lower BMIz among children regardless of maternal pre-pregnancy BMI category in this ECHO Pediatric Cohort study. *Shipp et al. Pediatrics. 2024*

Meeting Recommended Daily Dairy Servings is Linked to Many Benefits



Higher vitamin D status during pregnancy and lactation is linked to:^{1,2}



Reduced risk of preterm birth



Reduced risk of low birth weight



Reduced risk of small gestational age births

Meeting childhood dairy recommendations may help to:³⁻⁶



Lower risk of childhood overweight and obesity



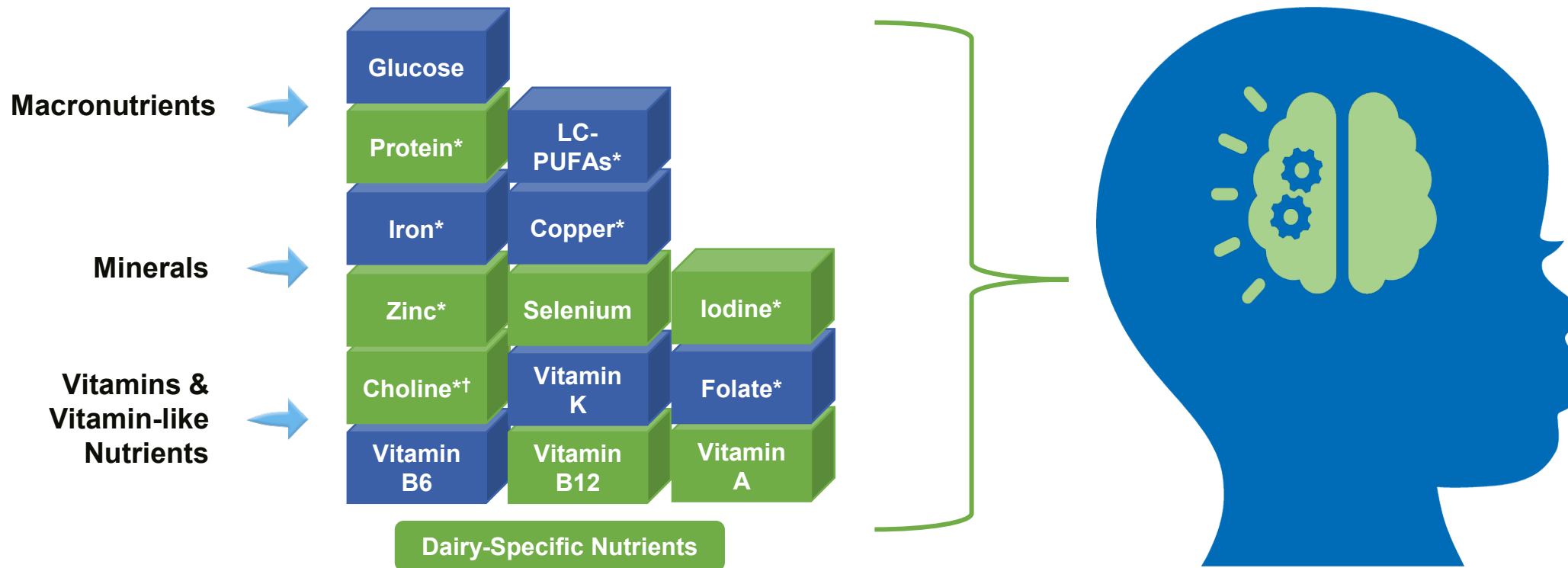
Increase bone mineral content



Support linear growth

Dairy Foods Provide 7 of 14 Brain-Building Nutrients Recommended by the American Academy of Pediatrics

AAP's 14 Building Blocks for Early Brain Development



* Demonstrate a critical or sensitive period during development

† One glass of milk provides ~8% DV choline

- Schwarzenberg SJ, Georgieff MK, AAP COMMITTEE ON NUTRITION. *Pediatrics*. 2018;141(2):e20173716. (Note, this statement was reaffirmed October 2023)
- Georgieff MK, Brunette KE, Tran PV. *Dev Psychopathol*. 2015;27(2):411-423.

Pregnancy to Breastfeeding: Pivotal Period to Nourish Baby's Brain Development



Dairy's Critical Cognitive Bundle



Vitamin B12 helps prevent deficiency that can lead to permanent neurological damage¹



Choline* can help replenish stores during pregnancy to support the healthy growth and development of baby's brain and spinal cord²



Iodine helps prevent irreversible neurocognitive defects and lower IQ in children²⁻⁴

*One serving of milk provides 8% of the Daily Value for choline

>50%

*Increase in
iodine needs
during
pregnancy³*

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

The World Health
Organization



The Nutrients in Dairy Foods Help Support Growth and Development



Protein helps build muscle



Calcium, vitamin D and phosphorus help build strong bones and teeth



B vitamins (**B12** and **riboflavin**) help turn food into fuel



Iodine linked to cognitive function in childhood

Dairy Foods Contribute to Bone Mass Development During Early Childhood & Beyond



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The habits children build early in life can literally make or break their bones as they age

- The most **rapid period of bone growth** occurs between birth to two years old and around puberty
- Dairy foods are associated with **improved bone health** and **reduced fracture risk**
- **Dairy foods provide more bone-building nutrients than any other food group**
 - **Calcium, vitamin D, magnesium, phosphorus** and **zinc** are essential for bone maintenance and density



Educational Strategies for Including Dairy in the First 1,000 Days of Life



NMA's Evidence-Based Recommendations



Pregnancy, Fetal Development & Lactation

Eat **3 servings** of dairy foods every day to help improve nutrition status and reduce health inequities and mortality rates

Infants, Toddlers & Young Children (Birth to 4 years)

Breastfeeding is recommended as the primary source of nutrition for the first 6 months of life, and as complementary nutrition up to 2 years and beyond

Children & Adolescents (5 to 17 years)

Eat **2.5 - 3 servings** of dairy foods every day* to support proper bone development, bone mass and bone density in children and adolescents

*2.5 servings of dairy per day are recommended for 5- to 8-year-olds and 3 servings per day for 9- to 17-year-olds

Adults (18-59 years)

Eat **3 servings** of dairy per day to increase dairy nutrients and reduce risk of chronic disease

Older Adults (60+ years)

Incorporate fermented dairy foods into a healthy nutrition pattern; use dairy-based beverages to help meet hydration and nutritional needs

Complementary Foods Including Cheese and Yogurt Can Be Introduced At Six Months

0-6 Months

Breast milk or iron-fortified formula, exclusively



6-12 Months

In addition to breast milk or iron-fortified formula, offer a wide variety of vegetables, fruits, meats or other proteins, fortified grains, yogurt and cheese



12 Months and Beyond

Introduce whole milk at baby's first birthday and continue offering a wide variety of foods and textures



Food Insecurity and Food Apartheid in Black American Communities: Impact on Dairy Intake and Nutrient Deficiency



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- Black Americans experience Food Insecurity and often may reside in Food Apartheids:
- Food insecurity for Black Americans 2x rate as national average (21.7% vs 10.5% respectively)¹
- Impacts dairy intake → 1.2 servings per day resulting in inadequate intake of multiple vitamins and minerals.



1. Chandran, M., & Schulman, K. A. Racial disparities in healthcare and health. *Health Services Research*. 2022

2. Stray Dog Institute. Reframing Food Access Disparities as Food Apartheid. 2022. Accessed at <https://straydoginstitute.org/food-apartheid/>

3. Kutner M. et al. *The health literacy of America's adults: Results from the 2003 National Assessment of Adult Literacy*. National Center for Education Statistics. 2006

4. Goodman M. S. et al. Self-reported segregation experience throughout the life course and its association with adequate health literacy. *Health & Place*. 2012.

Milk's Unique Nutrient Package is Affordable

Dairy foods are some of the **most accessible and affordable sources of essential nutrients.**



Better Together:

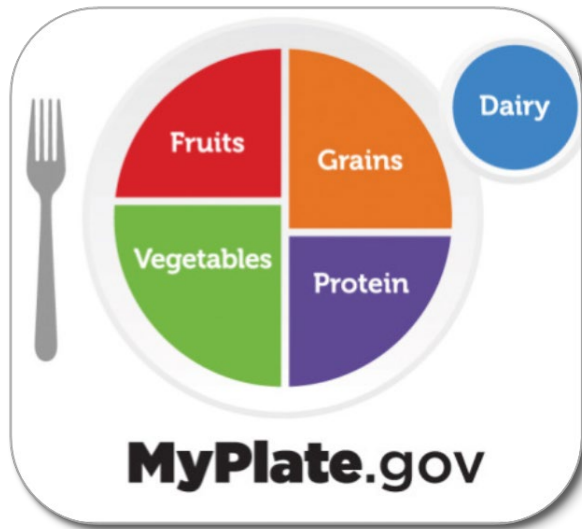
Dairy foods and produce make an **affordable meal combination** – and can provide key nutrition for people on a tight food budget.



Help Moms Personalize their Plates to Meet Daily Nutritional Recommendations

1

Use the Dietary Guidelines approach with a balanced, healthy eating pattern



2

Make it an “and” – plant *and* animal foods



3

Personalize to meet cultural, taste, health and benefit needs



Integrating Culturally Relevant Foods to Support Nutrition in the First 1,000 Days

- Smoothies
- Quiche
- Shrimp and Cheesy Grits
- Mashed potatoes
- Cornbread
- Macaroni & Cheese
- Lasagna
- Air Fryer Buttermilk Chicken
- Sauces or Roux



Getting the Recommended 3 Servings of Dairy Each Day Can Be Easy and Delicious



Good News! Lactose-free Dairy Options!

There are a variety of lactose-free dairy milks and lactose-free and lower-lactose dairy foods available.

- Lactose-free dairy milk is real dairy milk with the lactose removed
- Most hard, natural cheeses contain minimal lactose
- Yogurt contains live and active cultures that help digest lactose
- Greek and Icelandic yogurts contain live and active cultures that help digest lactose and also have less lactose due to the straining process

Tried-and-True Tips Can Help with Lactose Digestion



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Try It

Opt for lactose-free dairy milk products



Stir It

Mix milk with other foods to help slow lactose digestion



Slice It

Choose natural cheeses (e.g., Cheddar, Swiss)



Shred It

Top dishes with natural cheese



Spoon It

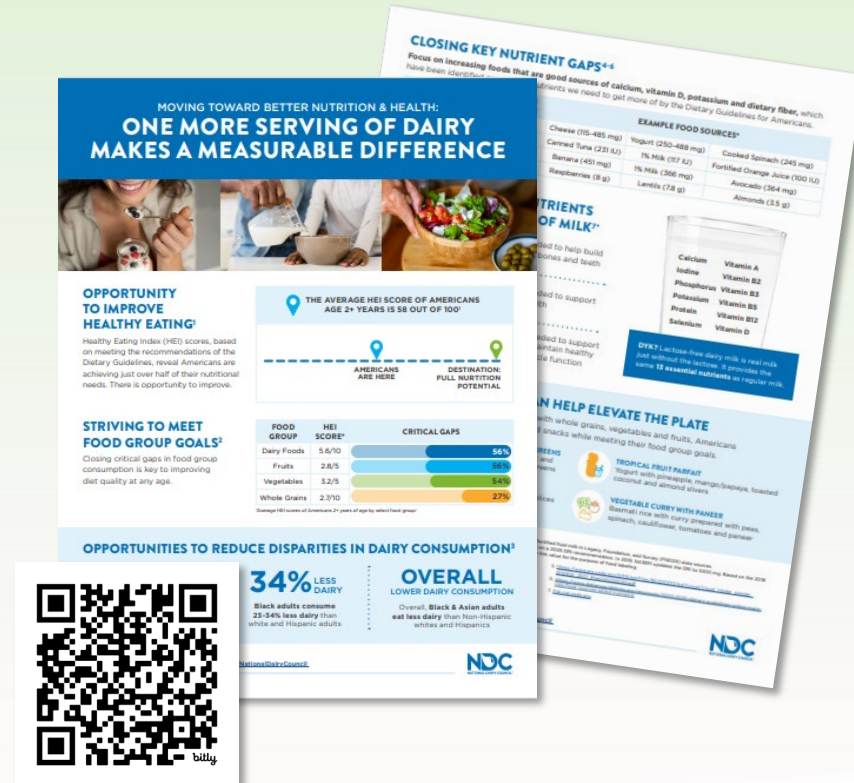
Yogurt's live and active cultures help digest lactose



Sip It

Start small and introduce dairy slowly

There Are Resources to Support Educational Efforts



MOVING TOWARD BETTER NUTRITION & HEALTH: ONE MORE SERVING OF DAIRY MAKES A MEASURABLE DIFFERENCE

Healthy Eating Index (HEI) scores, based on meeting the recommendations of the Dietary Guidelines, reveal Americans are achieving just over half of their nutritional needs. There is opportunity to improve.

THE AVERAGE HEI SCORE OF AMERICANS AGE 2+ YEARS IS 58 OUT OF 100*

AMERICANS ARE HERE: 58
FULL NUTRITION POTENTIAL: 100

STRIVING TO MEET FOOD GROUP GOALS*

Closing critical gaps in food group consumption is key to improving diet quality at any age.

FOOD GROUP	HEI SCORE*	CRITICAL GAPS
Dairy Foods	5.6/10	56%
Fruits	2.8/5	56%
Vegetables	3.2/5	64%
Whole Grains	2.3/10	23%

*Source: HEI scores of individuals 2+ years of age by select food group

OPPORTUNITIES TO REDUCE DISPARITIES IN DAIRY CONSUMPTION*

34% LESS DAIRY
Black adults consume 33-34% less dairy than white and Hispanic adults

OVERALL LOWER DAIRY CONSUMPTION
Overall, Black & Asian adults eat less dairy than Non-Hispanic whites and Hispanics

EXAMPLE FOOD SOURCES*

Cheese (115-485 mg)	Yogurt (250-485 mg)	Cooked Spinach (245 mg)
Canned Tuna (231 IU)	1% Milk (107 IU)	Fortified Orange Juice (100 IU)
Banana (451 mg)	1% Milk (356 mg)	Avocado (36.4 mg)
Raspberries (18 g)	Lentils (78 g)	Almonds (3.5 g)

TRYENTS OF MILK**

Calcium, Vitamin A, Iodine, Vitamin B2, Phosphorus, Vitamin B12, Protein, Vitamin D2, Selenium

DIET? Lactose-free dairy milk is real milk and without the lactose, it removes the same 18 essential nutrients in regular milk.

HOW TO HELP ELEVATE THE PLATE

When whole grains, vegetables and fruits, Americans eat snacks while meeting their food group goals.

TROPICAL FRUIT PARFAIT
Yogurt with pineapple, mango/dragonfruit, toasted coconut and almond slices

VEGETABLE CURRY WITH PANCAKE
Roasted rice with curry prepared with peas, spinach, cauliflower, tomatoes and paneer

QR CODE



Dairy Throughout the Lifespan

NDC NATIONAL DAIRY COUNCIL

Infants 6-11 Months:
Building the foundation for healthy eating.
At about 6 months, infants should be introduced to nutrient-rich, developmentally appropriate foods to complement human milk or infant formula feeding to ensure adequate nutrition and encourage acceptance of a wide variety of nutritious foods.^{1,2} Cheese and yogurt offer a range of diverse tastes and textures, which can help support development of future healthy eating habits.³

Toddlers 12-23 Months:
Supporting growth and development.
After their first birthday, as babies transition from human milk or infant formula to solid foods, whole milk and other dairy foods are sources of essential nutrients.⁴

Infant Feeding Women:
Supporting growth and development.
Infant feeding women need higher amounts of some nutrients during pregnancy and may help prevent vitamin B12 deficiency and may help protect against neurodegenerative diseases.^{5,6} Infants born to women with vitamin B12 deficiency may have lower cognitive function.⁷ Infants born to women with vitamin B12 deficiency may have lower cognitive function.⁸ Infants born to women with vitamin B12 deficiency may have lower cognitive function.⁹

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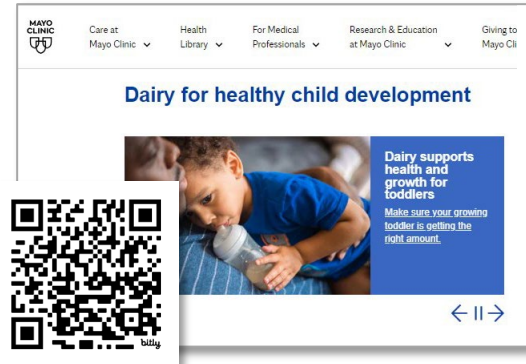
For more resources, visit www.usdairy.com

There Are Tools to Help



Dietitian and health professionals can help:

- Dispel common myths
- Provide strategies to improve diets
- Personalize recommendations



Mayo Clinic Parenting Hub provides tips for:

- Ensuring good nutrition in pregnancy
- Developing healthy eating habits in young, picky eaters
- Understanding the importance of bone- and brain-building nutrients



WIC participation can result in:

- Improved birth outcomes
- Better child cognitive development
- Better diets for pregnant women and children



Social support systems can help:

- Foster communities
- Validate and solve challenges
- Promote mental well-being

Key takeaways

1. Adequate nutrition during the first 1,000 days is vital for pregnancy and optimal growth and development for infants (e.g., brains, bones and bodies)
2. Critical points (pregnancy and childhood) to encourage Healthy Eating patterns that include dairy foods
3. Adding Dairy foods provide a unique and affordable nutrient package



Questions

Recipes



Fried Cod with Jerk Remoulade



Ingredients for Remoulade

- 2 cups full fat plain Greek yogurt
- 2 tablespoons apple cider vinegar
- 1/4 cup honey mustard
- 1 tablespoon sweet paprika
- 1 to 2 teaspoons wet jerk seasoning
- 1 teaspoon prepared horseradish
- 1 teaspoon pickle juice (sweet)
- 1 large clove garlic, minced and smashed
- salt to taste

Ingredients for Dredge

- 4 pounds Cod filets
- 1 1/2 cups flour
- 1 teaspoon freshly cracked pepper
- 1 teaspoon salt
- 1 teaspoon Old Bay seasoning
- 1/2 teaspoon paprika
- 3 cups oil for frying

Ingredients for Batter

- 2 cups flour
- 1/2 cup corn flour
- 2 teaspoons baking powder
- 2 1/2 cups light beer, very cold

Air Fryer Buttermilk Fried Chicken



Ingredients

- 2 pounds bone-in chicken thighs, with skin
- 2 cups buttermilk
- 2 eggs
- 1 teaspoon salt
- 1/2 teaspoon black pepper
- 2 cups all-purpose flour
- 1 tablespoon garlic powder
- 1 teaspoon paprika
- 1 teaspoon onion powder
- 1 teaspoon salt
- 1/2 teaspoon black pepper
- Olive oil- or canola oil-based cooking spray

Additional Slides



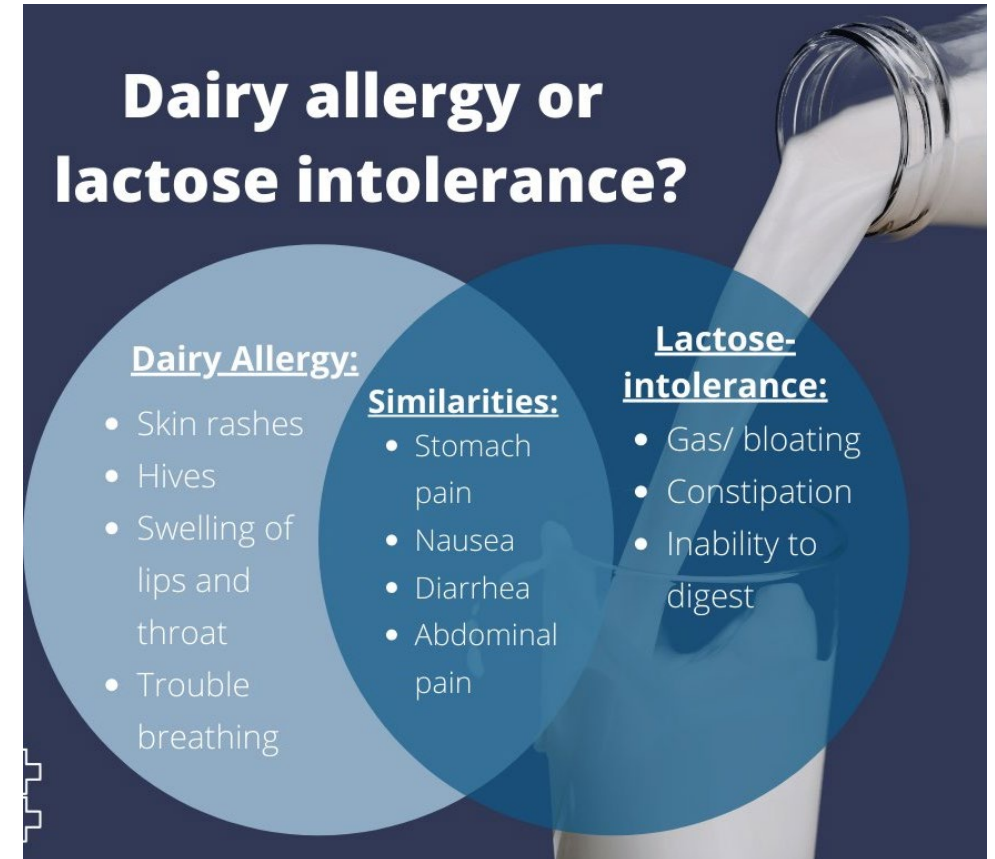
Determining Dairy Allergy vs Lactose Intolerance in infants

Infants fed human milk (breast or bottle) or formula fed may show symptoms due to not tolerating the food proteins.

Symptoms will often present within two hours of feeding.

- Food allergies may be IgE mediated and non-IgE mediated
- Lactose Intolerance
- Celiac or Crohn's disease

Infant or toddlers that are having symptoms after eating foods, **see doctor for accurate diagnosis.**



Addressing Limitations & Gaps



Future Efforts Must...

1

Continue to examine systemic inequities and barriers that contribute to health and nutrition concerns

2

Focus on actions to improve diversity and inclusion in research, as noted in the recent White House Conference on Hunger, Health & Nutrition

3

Prioritize meeting national dairy intake recommendations (3 servings/day for adults/older adults) to help close nutrient gaps, improve diet quality and reduce health inequities

Additional Considerations

Continue to ensure and protect food and nutrition assistance programs (e.g., Supplemental Nutrition Assistance Program (SNAP), and Women, Infants and Children (WIC))

Encouraging reallocation of funding to address food access and insecurity in low-income communities centering and empowering those affected communities to be voices and change agents.²

Culturally tailored education centered around shopping tips to improve uptake of important and beneficial nutrients (e.g., Dairy)