



# What Do I Feed My Baby After Avocado, Banana & Sweet Potato?

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# Description

In this presentation attendees will learn how to support the progression of solid foods beyond the simple starter foods to include trickier textures, potentially allergenic protein foods and nutrient rich food choices that support infant growth and development.



# By the end of the presentation, you will have:

- Identify the limitations of remaining on simple starter foods with regards to iron intake, texture opportunities and helping baby achieve important feeding and developmental milestones
- Strategize to increase diet diversity for babies in the weaning period
- Implement practical suggestions for pushing baby's palate past the simple starter foods and doing so in a manner that is safe and developmentally appropriate



# Outline

1. What foods ARE babies currently eating?
2. What foods CAN or SHOULD babies eat?
3. How can we support parents & caregivers to push their baby's palate beyond the simple starter foods?





# Disclosures

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Katie Ferraro has the following disclosures to report:

- Her private practice The Fortified Family and Instagram @babyledweanteam account sells digital programs and materials related to baby-led weaning.

In the past 12 months she has received honoraria from the following food or food-related brands:

- a2 Milk, US Highbush Blueberry Council, California Olive Oil Council, Mushroom Council, National Cattlemen's Beef Association, Simple Mills, Smart and Final, Danone North America, The Wonderful Company, New Zealand Lamb, Healthy Height, Kabrita USA.

She receives affiliate income from:

- BapronBaby, Butcher Box, ezpz, Puffworks, Spice House, Stokke & Thrive Training Institute.



# KATIE FERRARO, MPH, RDN, CDE

The Fortified Family | @babyledweanteam



Prevention



PREGNANCY  
& newborn



THE WALL STREET JOURNAL

healthline

Women's Health

SHAPE

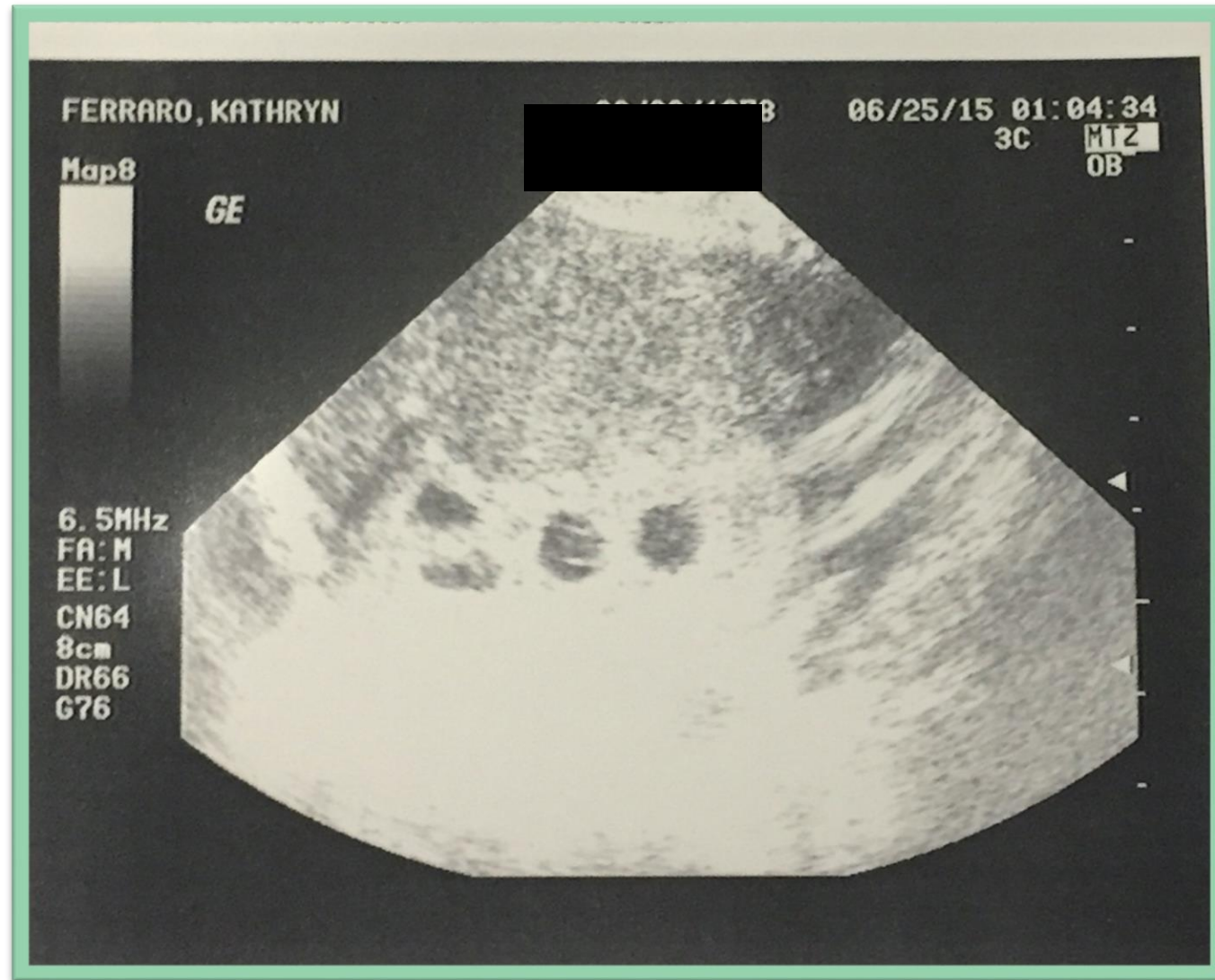
Today's Dietitian















eat ALL TAKE











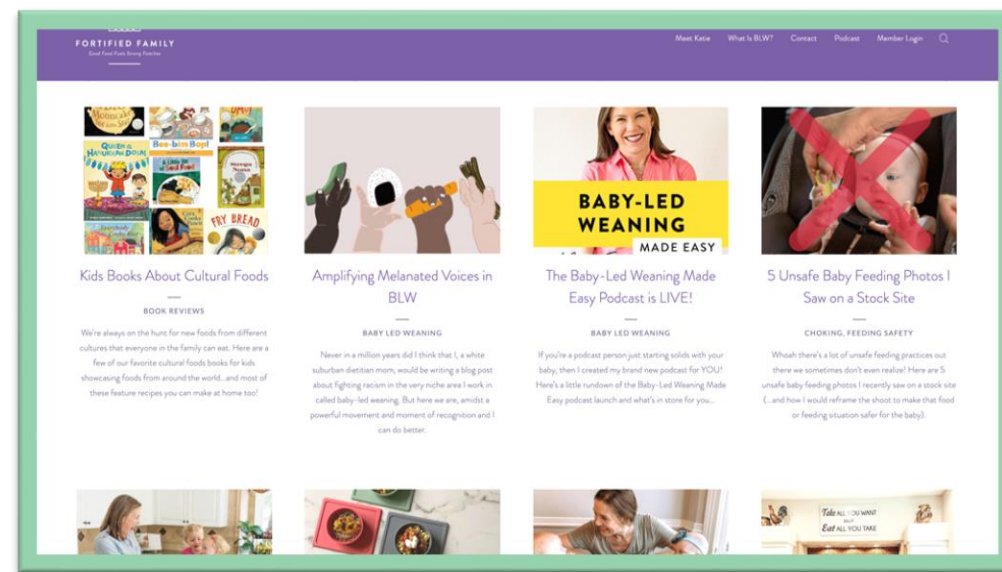
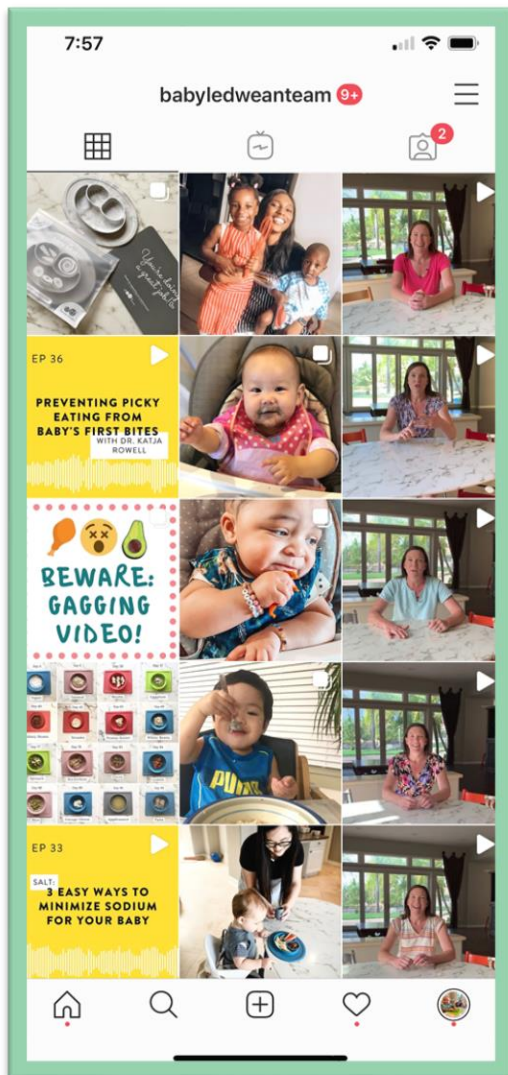




# 100 FIRST FOODS WITH BLW







# Parent-Led vs. Baby-Led Feeding

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## Parent-Led Feeding

- Traditional spoon-feeding
- Starts and stays with purees
- Ignores baby's autonomy
- Commences at 4-6 months
- Finite # of foods fed: avg 10-15 by 12m





# Parent-Led vs. Baby-Led Feeding

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## Baby-Led

- Baby-led weaning (BLW)
- Purees + other textures
- Supports baby's autonomy
- Commences at 6 months
- Infinite # of foods to feed: 100+ by 12m





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MOST PARENTS  
START SOLID FOODS  
TOO SOON...  
BEFORE 6 MONTHS



FORTIFIED FAMILY

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FORTIFIED FAMILY



FORTIFIED FAMILY



# WHY DOES THE 6- MONTH MARK MATTER?





# AAP

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Breastfeeding and/or formula as  
sole source of nutrition for the **first 6**  
**months**



FORTIFIED FAMILY

# WHO

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All infants should start receiving  
foods in addition to breast milk from  
6 months on



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...but don't  
some babies  
**need** to start  
solid foods  
**before 6**  
**months of**  
**age?**

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**BREASTMILK** AND/OR  
**FORMULA IS**  
SUFFICIENT TO MEET  
BABY'S NUTRITION  
NEEDS **FOR THE FIRST**  
**6 MONTHS OF LIFE**



FORTIFIED FAMILY

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# STARTING TOO

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Increases risk of:

SOON

- Weight gain & adiposity
- Food allergies & digestive disorders

Choking



FORTIFIED FAMILY

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# STARTING TOO

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**LATE** Delayed introduction of solid foods  
can negatively impact **food**  
**acceptance** later in childhood



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AMERICAN ACADEMY OF PEDIATRICS,





LOOK FOR  
SIGNS  
YOUR  
BABY IS  
**READY TO**



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# Readiness to Feed

Readiness to Feed<sup>1</sup>:

- 6 months (or 6m adjusted age if premature)
- Can sit relatively unassisted
- Interest in food, mouthing objects
- Recession of tongue thrust reflex



@babyledweanteam



1. Infant Food and Feeding. (2017). Retrieved July 16, 2020, from <https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/HALF-Implementation-Guide/Age-Specific-Content/Pages/Infant-Food-and-Feeding.aspx>

# What is Baby-Led Weaning?

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- Baby-led weaning is a practical, safe, hands-on approach to starting solid foods
- Also called baby-led feeding or a baby-led approach to feeding



@babyledweanteam



# What is Baby-Led Weaning

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- Baby-led weaning is an alternative to traditional spoon feeding (parent-led feeding)



@ollie.eats.world



# What is Baby-Led Weaning

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- ...a centuries-old, natural approach to letting babies self-feed



@sonamshresthaupadhyaya

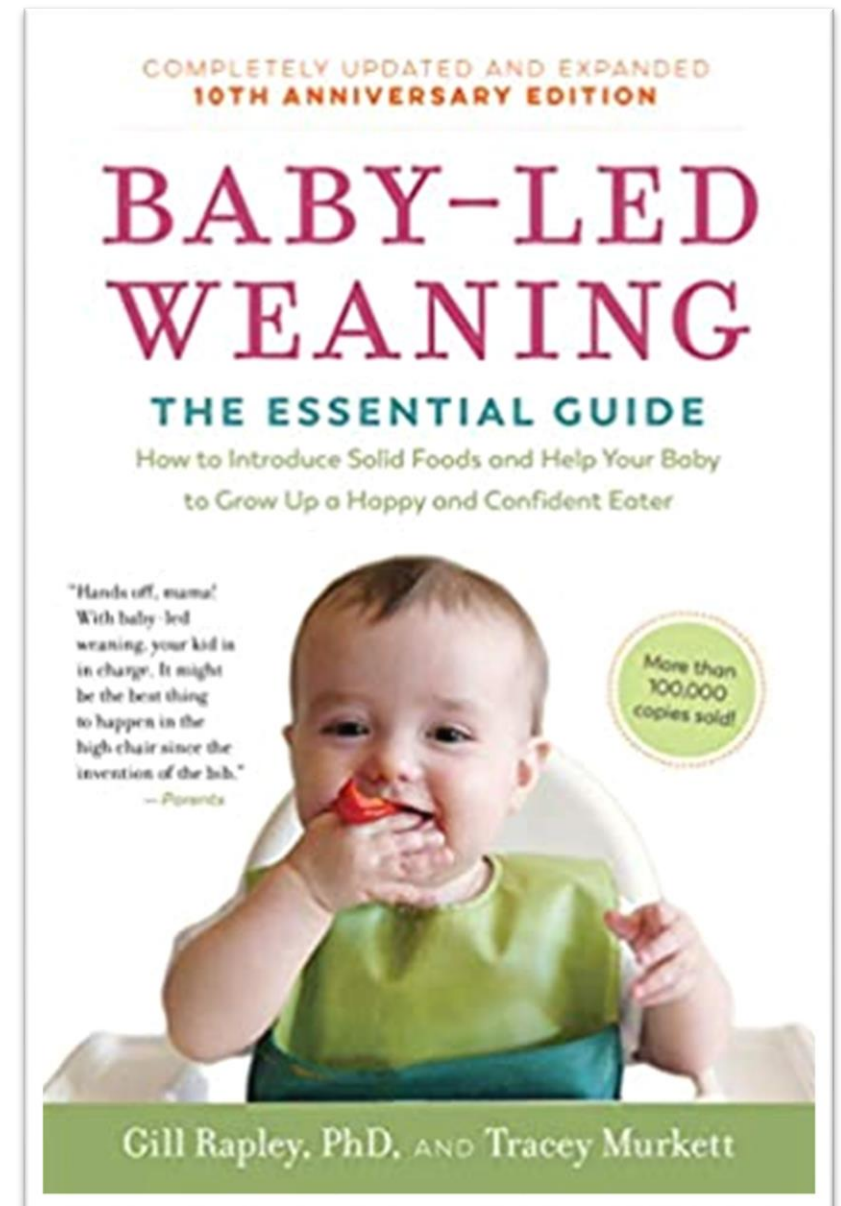




# What is Baby-Led Weaning

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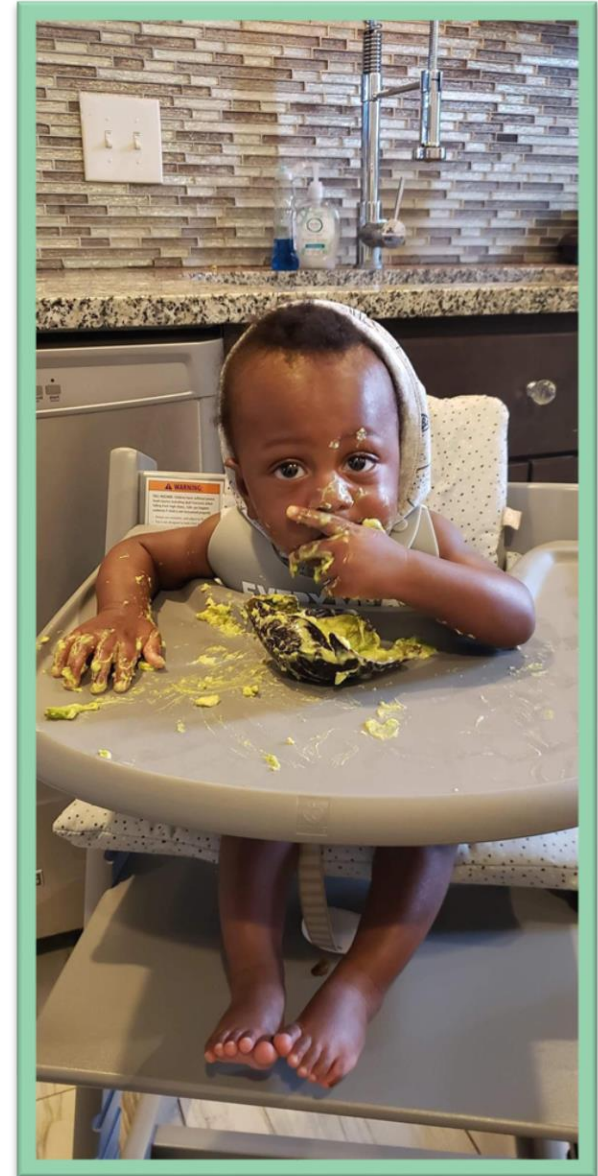
- ...a term coined by Gill Rapley, PhD, co-author of the Baby-Led Weaning: The Essential Guide book & champion of this self-feeding philosophy



# Baby-Led Weaning

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- ...addresses not just WHAT the baby eats, but also HOW the baby learns to eat



@atonofbryx



# BLW Babies are:

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- Not at higher risk of choking than traditionally spoon-fed babies<sup>2</sup>



@babyledweanteam



2. Brown, A. (2018). No difference in self-reported frequency of choking between infants introduced to solid foods using a baby-led weaning or traditional spoon-feeding approach. *Journal of Human Nutrition and Dietetics*, 31(4), 496-504.



# BLW Babies are:

- Not at higher risk of choking than traditionally spoon-fed babies
- Able to meet iron & overall nutrient needs<sup>3</sup>



@ryanne003



3. Cameron, SL et al (2015) Development and pilot testing of baby-led introduction to Solids - a version of baby-led weaning modified to address concerns about iron deficiency, growth faltering and choking. *BMC Pediatr.* 2015;15:99

# BLW Babies are:

- Not at higher risk of choking than traditionally spoon-fed babies
- Able to meet iron & overall nutrient needs
- Learning to recognize & respond to internal hunger & fullness cues<sup>4</sup>



@cass.ndrc



4. Rowan, H., Lee, M., & Brown, A. (2019). Differences in dietary composition between infants introduced to complementary foods using Baby-led weaning and traditional spoon feeding. *Journal of Human Nutrition and Dietetics*, 32(1), 11-20.

# BLW Babies are:

- Not at higher risk of choking than traditionally spoon-fed babies
- Able to meet iron & overall nutrient needs
- Learning to recognize & respond to internal hunger & fullness cues
- More likely to be independent eaters & less likely to be picky eaters<sup>5,6</sup>



@mrsporsha\_w

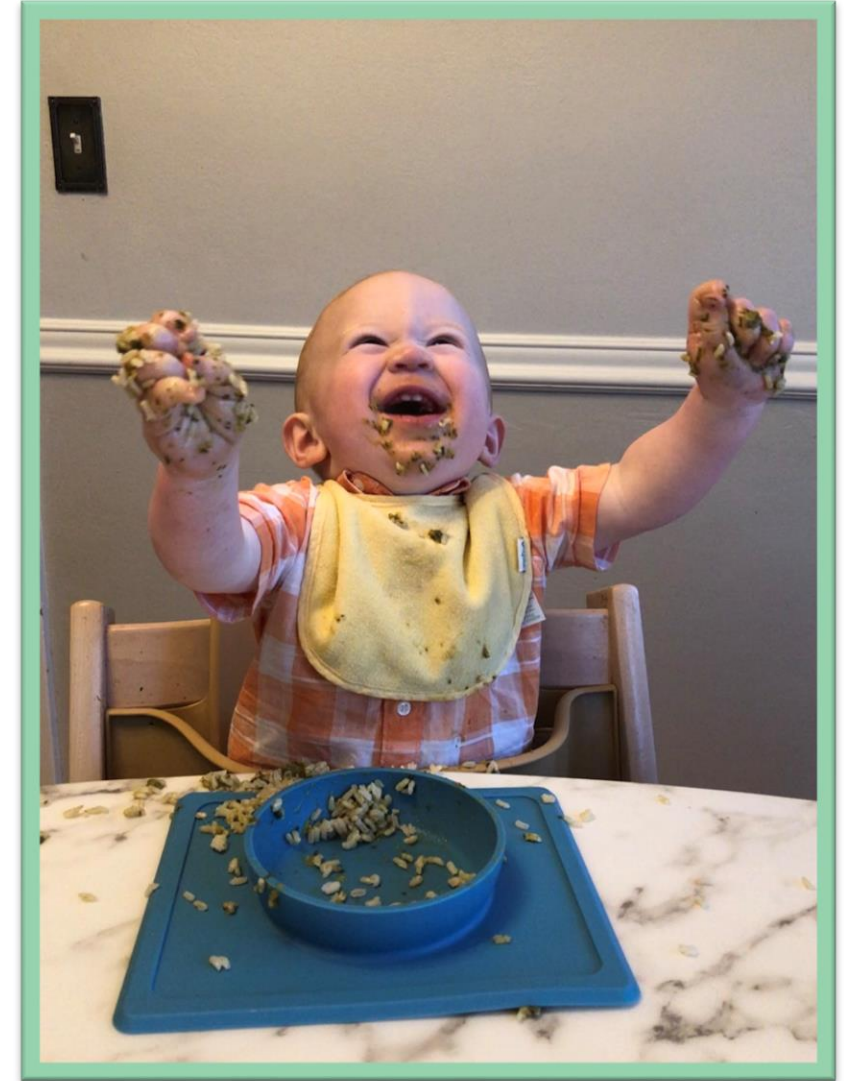


5. Morison, BJ et al (2018) Impact of a Modified Version of Baby-Led Weaning on Dietary Variety and Food Preferences in Infants. *Nutrients* 2018, 10, 1092

6. Townsend, E, Plitchford, NJ (2012). Baby knows best? The impact of weaning style on food preferences and body mass index in early childhood in a case-controlled sample. *BMJ open*

# BLW Babies are:

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- Learning to recognize & respond to internal hunger & fullness cues
- More likely to be independent eaters & less likely to be picky eaters
- Possibly at reduced risk of overweight and obesity<sup>6-9</sup>



6. Townsend, E, Pitchford, NJ (2012). Baby knows best? The impact of weaning style on food preferences and body mass index in early childhood in a case-controlled sample. *BMJ open*
7. Jones, S. W., Lee, M., & Brown, A. (2020). Spoonfeeding is associated with increased infant weight but only amongst formula-fed infants. *Maternal & Child Nutrition*, e12941.
8. Taylor, R.W., Williams, S.M., et al. (2017) Effect of a Baby-Led Approach to Complementary Feeding on Infant Growth and Overweight A Randomized Control Trial. *JAMA Pediatrics*
9. Morison, B., Taylor (2016) How different are baby-led weaning and conventional complementary feeding? A cross-sectional study of infants aged 6-8 months. *BMJ open*



# BLW Babies are:

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- Not at higher risk of choking than traditionally spoon-fed babies
- Able to meet iron & overall nutrient needs
- Learning to recognize & respond to internal hunger & fullness cues
- More likely to be independent eaters & less likely to be picky eaters
- Possibly at reduced risk of overweight and obesity
- Developing a healthy relationship with food



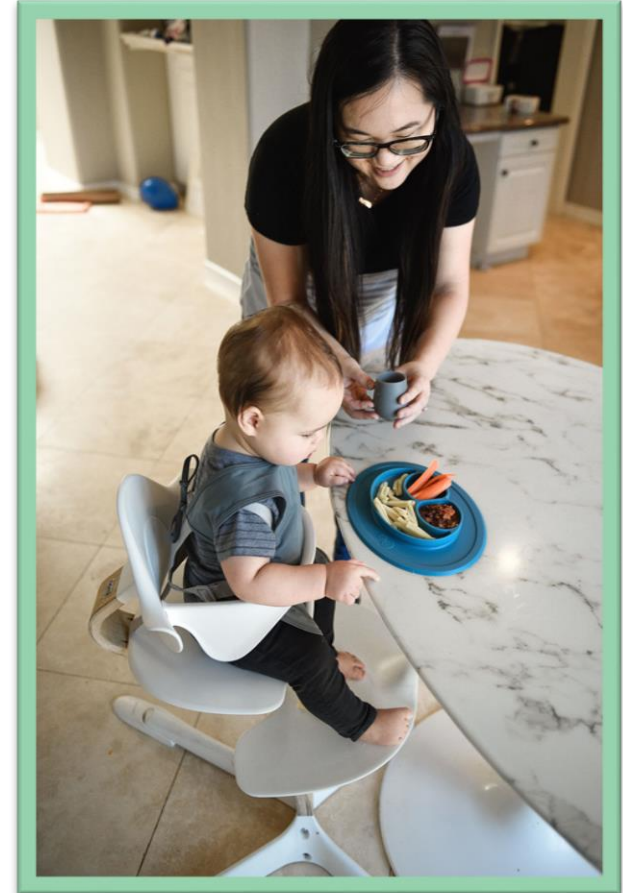
@jayna125



# BLW Parents & Caregivers

BLW parents & caregivers:

- Are engaged in responsive feeding with baby
- May have lower maternal anxiety & control during weaning<sup>10</sup>



@ollie.eats.world



10. Cameron SL, Taylor RW, Heath AL (2013). Parent-led or baby-led? Associations between complementary feeding practices and health-related behaviors in a survey of New Zealand families. *BMJ Open*. 2013;3:3003946

# BLW & sDOR (Satter)

- Satter's Division of Responsibility in Feeding<sup>11</sup>
- Parents are responsible for
  - What the baby eats
  - Where the baby eats
  - When the baby eats
- Baby is responsible for
  - How much the baby eats
  - ...or even if the baby eats



@mutantj0hn



11. Ellyn Satter Institute. (2015). *Ellyn Satter's Division of Responsibility in Feeding*. Retrieved July 10, 2020, from Ellyn Satter Institute: <https://www.ellynsatterinstitute.org/how-to-feed/the-division-of-responsibility-in-feeding/>

# 5-STEP FEEDING FRAMEWORK

Day	Category
Monday	Fruit
Tuesday	Vegetable
Wednesday	Starch
Thursday	Protein
Friday	Challenge Food





Don't you have  
to wait 3-5  
days between  
new foods to  
observe for  
**potential  
reaction?**

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A FOOD ALLERGY  
REACTION WILL OCCUR  
WITHIN MINUTES OR  
HOURS FOLLOWING  
INGESTION OF THE FOOD



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# 5-STEP FEEDING FRAMEWORK

Day	Category
Monday	Fruit
Tuesday	Vegetable
Wednesday	Starch
Thursday	Protein
Friday	Challenge Food



BLW Day 1

Avocado





BLW Day 2

Banana





BLW Day 3

Sweet Potato





BLW Day 4

Lamb





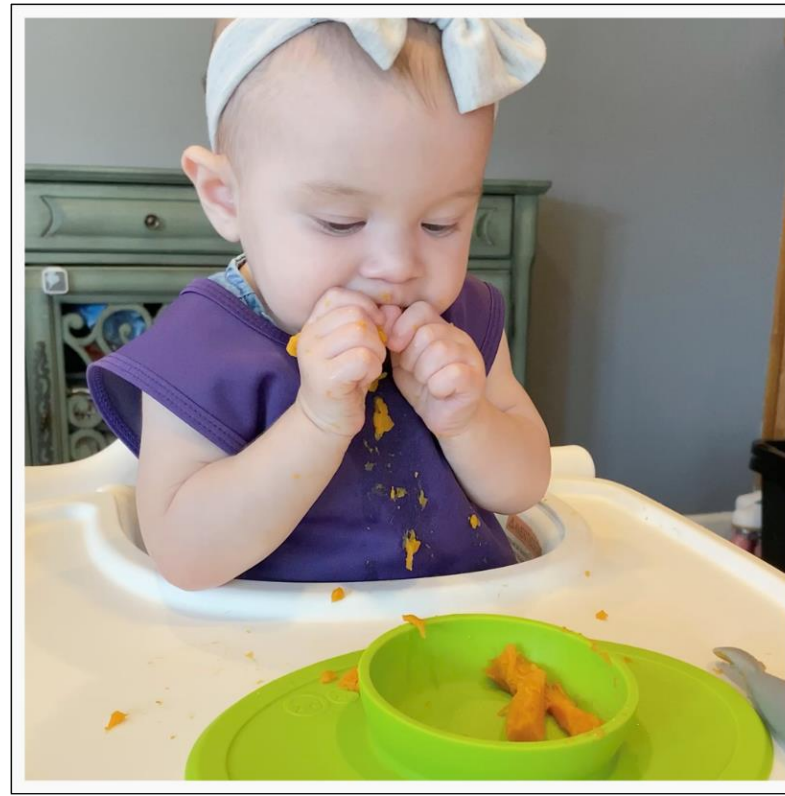
BLW Day 5

Yogurt





# ONLY 1 FOOD/DAY?



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# ONLY 1 FOOD/DAY?



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BLW Day 6

Apple





BLW Day 7

Pumpkin





BLW Day 8

Oatmeal







BLW Day 9

Pork





BLW Day 10

Peanut



# 1<sup>ST</sup> 10 DAYS OF BLW

Day	Category	Week 1	Week 2
Monday	Fruit	Avocado	Apple
Tuesday	Vegetable	Banana	Pumpkin
Wednesday	Starch	Sweet Potato	Oatmeal
Thursday	Protein	Lamb	Pork
Friday	Challenge Food	Yogurt	Peanut



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100 FOODS  
IN 6 MONTHS  
IS 5 NEW FOODS  
PER WEEK



FORTIFIED FAMILY

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# 5-STEP FEEDING FRAMEWORK

Day	Category
Monday	Fruit
Tuesday	Vegetable
Wednesday	Starch
Thursday	Protein
Friday	Challenge Food





# 100 FIRST FOODS WITH BLW



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“If you fail to  
plan...you plan  
to fail.”

*-Benjamin Franklin*



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# MAKE A **FEEEDING** **SCHEDULE** FOR YOUR FAMILY





# HOW OFTEN TO

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Food **1-2 times** per day at age 6-7 months  
**FEED**

Food **2-3 times** per day at age 8-9 months

Food **3 times** per day at age 10-12 months

Babies do not need snacks



# BLW: The Research

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- Choking
- Iron & overall nutrient intake
- Satiety responsiveness, weight control
- Family relationships, responsive feeding



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# Choking

Infants following a baby-led approach to feeding **that includes advice on minimizing choking risk** do not appear more likely to choke than infants following more traditional feeding practices<sup>12</sup>



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12. Fangupo, LJ, et al (2016). A Baby-Led Approach to Eating Solids and Risk of Choking. *Pediatrics* October 4, 2016 volume 138

# Choking

...however, the large number of children in both groups offered foods that pose a choking risk is concerning<sup>12</sup>



@jyoshna\_tungala



12. Fangupo, LJ, et al (2016). A Baby-Led Approach to Eating Solids and Risk of Choking. *Pediatrics* October 4, 2016 volume



# Gagging vs. Choking



BABY-LED WEANING

## Choking vs. Gagging

Choking	Gagging
<ul style="list-style-type: none"><li>• Is a potentially life-threatening situation</li><li>• Requires your intervention; take a CPR course before starting solids</li><li>• Baby will turn blue &amp; does not make noise while choking</li></ul>	<ul style="list-style-type: none"><li>• Is a natural &amp; necessary part of learning how to eat</li><li>• Does not require your intervention; baby can recover by himself</li><li>• Baby will turn red &amp; is audible while gagging</li></ul>

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# Choking

- Cameron (et al): Incidence of choking was not different between BLISS and BLW groups<sup>3</sup>
- Interview data shows BLISS infants significantly less likely to be offered high-choking risk foods compared to BLW at 6 & 8 months



3. Cameron, SL et al (2015) Development and pilot testing of baby-led introduction to Solids - a version of baby-led weaning modified to address concerns about iron deficiency, growth faltering and choking. *BMC Pediatr.* 2015;15:99

# Choking

- BLISS infants were significantly less likely to be offered high-choking-risk foods compared to the BLW
- Raw apples & grapes were the foods reported to have caused the choking<sup>3</sup>



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3. Cameron, SL et al (2015) Development and pilot testing of baby-led introduction to Solids - a version of baby-led weaning modified to address concerns about iron deficiency, growth faltering and choking. *BMC Pediatr.* 2015;15:99



# Choking

- Baby-led weaning was not associated with increased risk of choking
- The highest frequency of choking on finger foods occurred in those who were given finger foods the least often<sup>2</sup>



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2. Brown, A. (2018). No difference in self-reported frequency of choking between infants introduced to solid foods using a baby-led weaning or traditional spoon-feeding approach. *Journal of Human Nutrition and Dietetics*, 31(4), 496-504.



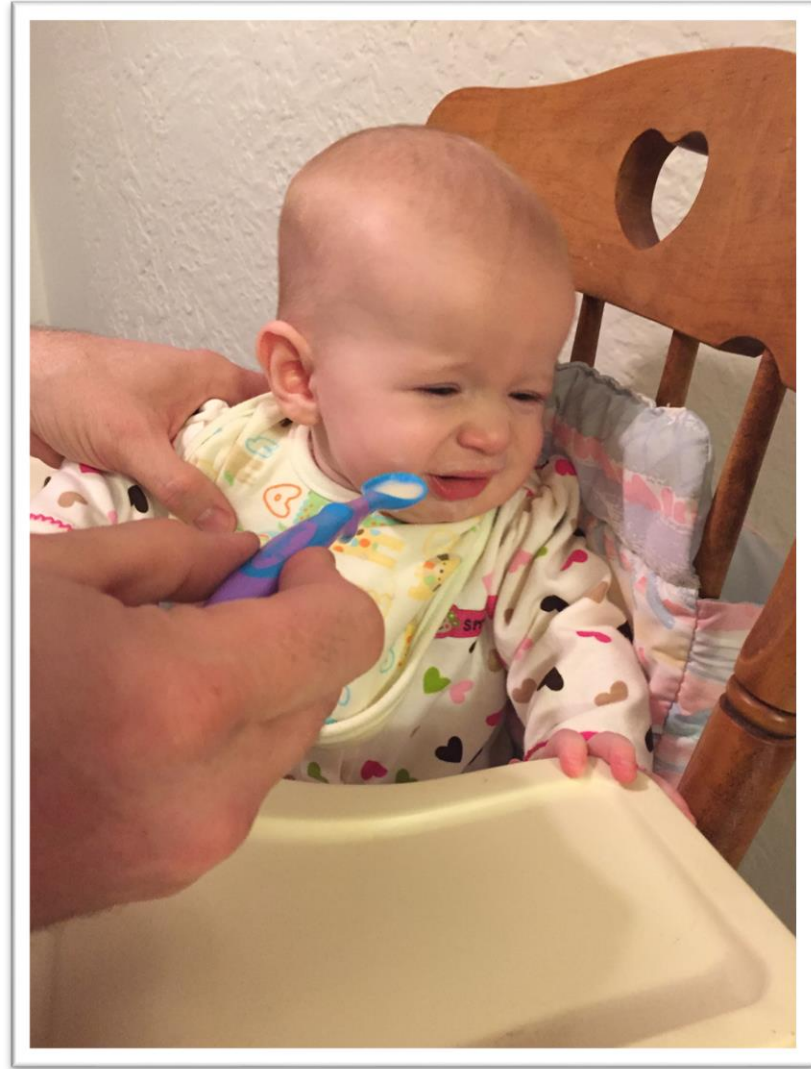
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# PUREES FOR A FEW

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**DAYS** are an important texture for babies to master...they're just **not** the **ONLY** texture that babies can eat!



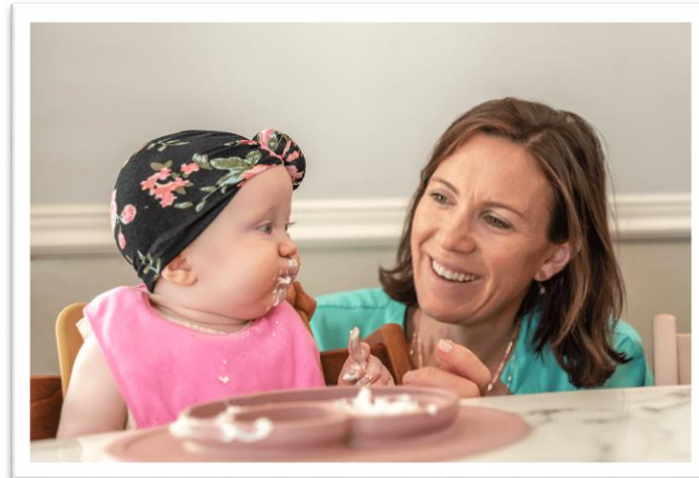
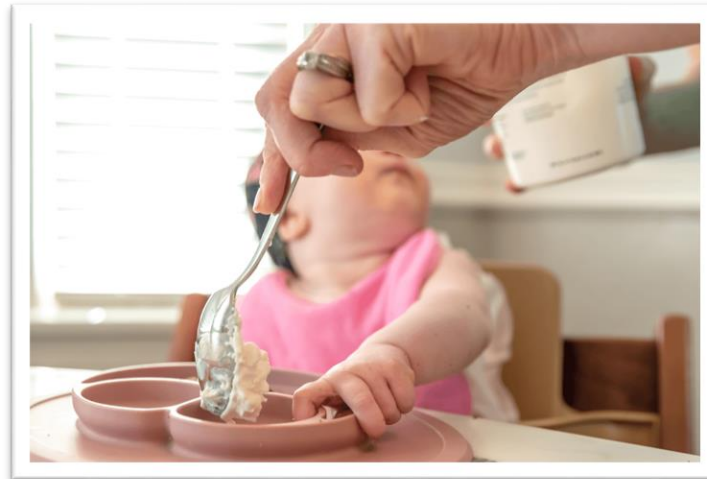


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# BLW & Purees:

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# Choking

- Choking is a serious concern for parents & caregivers
- Townsend: 93.5% baby-led group reported child had never experienced choking incident<sup>6</sup>
- Cameron (2013) 30% reported at least 1 choking episode; most commonly included whole foods<sup>10</sup>



@zo\_bear\_eats



6. Townsend, E, Plitchford, NJ (2012). Baby knows best? The impact of weaning style on food preferences and body mass index in early childhood in a case-controlled sample. *BMJ open*

10. Cameron SL, Taylor RW, Heath AL (2013). Parent-led or baby-led? Associations between complementary feeding practices and health-related behaviors in a survey of New Zealand families. *BMJ Open*. 2013;3:3003946



# Iron

- BLISS trial, moms randomized to own version of BLW or BLISS
- Compared to BLW group, BLISS group had a higher introduction of iron-containing foods in the first week of introduction of solid foods, and offered more portions of such food at 6 months (2.4 vs 0.8 portions per day)<sup>3</sup>



@fourtifiedfam



3. Cameron, SL et al (2015) Development and pilot testing of baby-led introduction to Solids - a version of baby-led weaning modified to address concerns about iron deficiency, growth faltering and choking. *BMC Pediatr.* 2015;15:99

# Iron

- A baby-led approach to complementary feeding does not appear to increase the risk of iron deficiency in infants when their parents are given advice to offer 'high-iron' foods with each meal<sup>13</sup>



@fourtifiedfam



13. Daniels, L., Taylor, R. W., Williams, S. M., Gibson, R. S., Fleming, E. A., Wheeler, B. J., ... & Heath, A. L. M. (2018). Impact of a modified version of baby-led weaning on iron intake and status: a randomised controlled trial. *BMJ open*, 8(6).

# Iron

- When parents following a baby-led approach to complementary feeding are given advice to offer infants 'high-iron' foods with every meal, their iron status is similar to control infants
- "This finding is important given health professionals' concerns that baby-led approaches to complementary feeding may increase the risk of iron deficiency."<sup>13</sup>



@fourtifiedfam



13. Daniels, L., Taylor, R. W., Williams, S. M., Gibson, R. S., Fleming, E. A., Wheeler, B. J., ... & Heath, A. L. M. (2018). Impact of a modified version of baby-led weaning on iron intake and status: a randomised controlled trial. *BMJ open*, 8(6).

# Overall Nutrient Intake

- BLISS: 3-day weighed food record
- No significant difference in overall macronutrient intake
- Excluding milk feeds, BLISS consumed more protein & fat (inclusion of protein rich food at every meal was encouraged)<sup>14</sup>



@ollie.eats.world



14. Daniels, L., Heath, A. L. M., Williams, S. M., Cameron, S. L., Fleming, E. A., Taylor, B. J., ... & Taylor, R. W. (2015). Baby-Led Introduction to Solids (BLISS) study: a randomised controlled trial of a baby-led approach to complementary feeding. *BMC pediatrics*, 15(1), 1-15.



# Overall Nutrient Intake

- Rowan compared strict BLW, loose BLW and traditional spoon-fed babies<sup>4</sup>
- Strict BLW more likely to be exposed to vegetables than traditionally weaned babies
- No significant differences in exposure to iron containing foods between weaning groups at any age



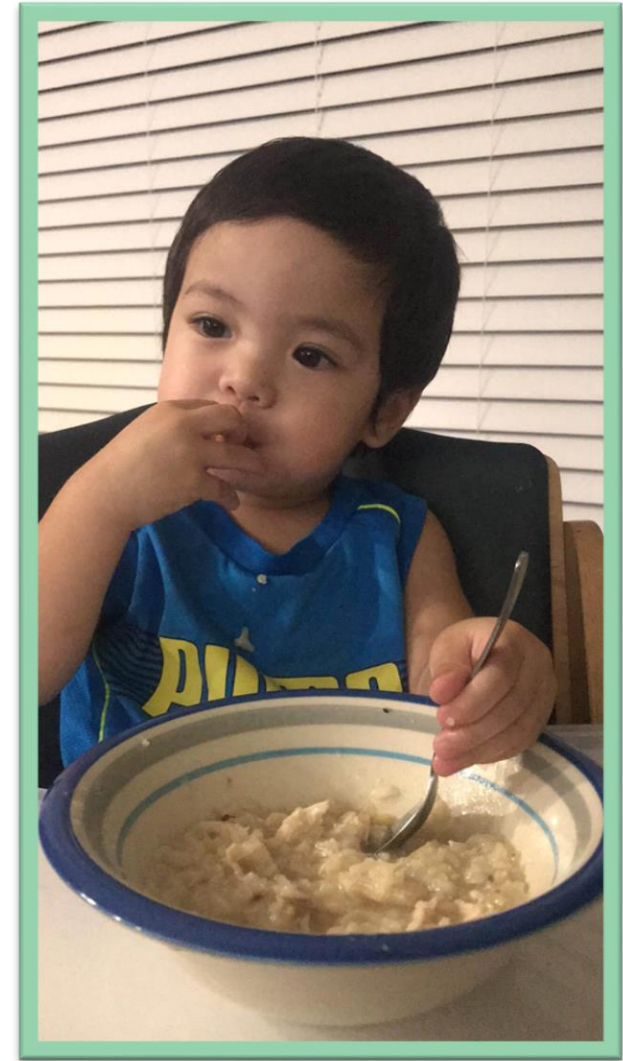
@bananabelle



4. Rowan, H., Lee, M., & Brown, A. (2019). Differences in dietary composition between infants introduced to complementary foods using Baby-led weaning and traditional spoon feeding. *Journal of Human Nutrition and Dietetics*, 32(1), 11-20.

# Energy Intake

- BLISS examined energy intake
- Comparison of intake at 7 months and 12 months found no significant difference in energy intake between the 2 groups<sup>9</sup>



@noura\_nourz



9. Morison, B., Taylor (2016) How different are baby-led weaning and conventional complementary feeding? A cross-sectional study of infants aged 6-8 months. BMJ open

# Satiety Responsiveness

- Brown - those who followed BL approach were significantly more likely to be rated at 18-24 months as less food responsive and more satiety responsive
- Suggests better appetite control
- Limitation: data based on self report<sup>15</sup>



@babyledweanteam



15. Brown, A., & Lee, M. (2015). Early influences on child satiety-responsiveness: the role of weaning style. *Pediatr Obes*, 10 (1), 57-66.

# Satiety Responsiveness

- Bahorski reviewed 40 articles examining association with self-efficacy: analyzed breastfeeding, infant feeding practices & infant weight gain
- Evidence regarding self-efficacy and association with infant feeding practices other than BF is sparse<sup>16</sup>



@vinnynkimby





# Satiety Responsiveness

- Cormack, Rowell et al (2020)<sup>17</sup>
- Basic Needs Theory: autonomy, relatedness, competence
- Infants regulate their energy intake through complex hunger & satiety cues
- When eating is directed by parents in relation to what & how much should be consumed, autonomy is compromised, and self-regulation is hampered



@babyledweanteam



17. Cormack, J., Rowell, K., & Postăvaru, G. I. (2020). Self-Determination Theory as a Theoretical Framework for a Responsive Approach to Child Feeding. *Journal of Nutrition Education and Behavior*.

# Weight Control

- Jones et al (2020) looks at how baby was milk fed too<sup>18</sup>
- If formula fed & spoon fed, more likely to be heavier than any other combo
- As long as baby has some way to self regulate (e.g. either breastfeeding or self-feeding) they don't gain too much weight
- ...but if control is taken away from them with both milk and solids, then it becomes an issue

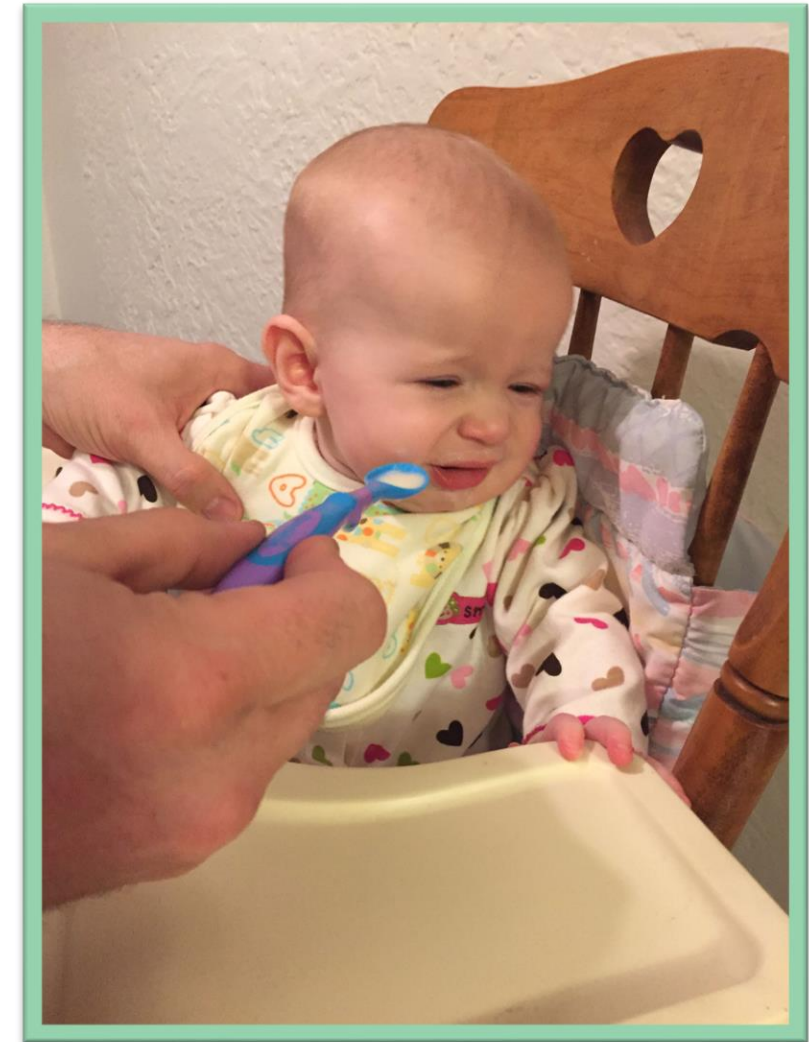


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18. Jones, S. W., Lee, M., & Brown, A. (2020). Spoonfeeding is associated with increased infant weight but only amongst formula-fed infants. *Maternal & Child Nutrition*, e12941.

# Family Relationships

- Controlling approaches to feeding & pressure to eat:
  - Makes avoidant feeding worse<sup>19</sup>
  - Invites conflict<sup>20</sup>
  - Reduces eating enjoyment<sup>21</sup>
  - Leads to increased eating in absence of hunger cues<sup>22</sup>



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19. Ventura, A. K., & Birch, L. L. (2008). Does parenting affect children's eating and weight status?. *International Journal of Behavioral Nutrition and Physical Activity*, 5(1), 1-12.
20. Fiese, B. H., Foley, K. P., & Spagnola, M. (2006). Routine and ritual elements in family mealtimes: Contexts for child well-being and family identity. *New directions for child and adolescent development*, 2006(111), 67-89.
21. Van der Horst, K. (2012). Overcoming picky eating. Eating enjoyment as a central aspect of children's eating behaviors. *Appetite*, 58(2), 567-574.
22. Birch, L. L., Fisher, J. O., & Davison, K. K. (2003). Learning to overeat: maternal use of restrictive feeding practices promotes girls' eating in the absence of hunger. *The American journal of clinical nutrition*, 78(2), 215-220.

# Responsive Feeding

RF entails parental acknowledgment of, and respect for, children's signals of hunger or satiety, followed by a response appropriate to their developmental stage<sup>17</sup>



@babyledweanteam



17. Cormack, J., Rowell, K., & Postăvaru, G. I. (2020). Self-Determination Theory as a Theoretical Framework for a Responsive Approach to Child Feeding.



# Pureed Beef for Pre-Loaded Spoons

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## INGREDIENTS:

- Cooked beef chunks or cooked ground beef, 8 oz
- Softly cooked, chopped carrot, 1
- Dried oregano, ¼ teaspoon
- Water, ¼-1 cup depending on desired consistency

## INSTRUCTIONS:

1. Blend beef, cooked carrot, and dried oregano until finely minced
2. Add in water ¼ cup at a time until the mixture meets the desired consistency (thin, thick, or chunky puree)
3. Puree can be served room temperature or warmed



# Ground Beef BLW Meatballs

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## INGREDIENTS:

- Ground beef, 1 lb
- Black pepper, ½ teaspoon
- Salt, ¼ teaspoon
- Garlic powder, ½ teaspoon
- Dried sage, ½ teaspoon
- Egg, 1

## INSTRUCTIONS:

1. Preheat oven to 350°F
2. Combine ingredients in a large mixing bowl being careful not to overwork the meat
3. Form 1 inch balls and press into patties. Place patties on lightly greased baking sheet
4. Bake in the oven for 20 minutes or until internal temperature reaches 160°F
5. Let cool and serve to baby



# Chuck Roast Baby-Style: Low and Slow

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## INGREDIENTS:

- Chuck roast, 3 lbs
- Olive oil, 1 tablespoon
- Onions, quartered, 2
- Carrots, chopped, 3
- Potatoes, cubed, 3
- Dried rosemary, 1 teaspoon
- Garlic powder, 1 teaspoon
- Salt, ½ teaspoon
- Black pepper, 1 teaspoon
- Low-sodium broth or water, 1 cup

## INSTRUCTIONS:

1. Brown the roast on all sides in a pan with the oil
2. Place vegetables and seasonings in the bottom of the slow cooker and stir to combine
3. Transfer roast to the slow cooker. Add broth or water to the pan the meat was browned in to scrape up brown bits. Pour liquid into the slow cooker.
4. Cover with lid and cook on low for 8-9 hours
5. Shred meat and let cool before serving to baby. Top with broth to ensure the meat is moist



@feedingtheklams



# Questions?



katie.ferraro@ucsf.edu  
IG: @babyledweanteam

