



Secrets of Baby Behavior (Newborns)
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Overview for Today

- Infant Feeding Decisions in the Hospital
- Baby Behavior Basics and Newborn Behavior
 - Infant States
 - Cues and Crying
 - Sleep states
- Sharing Newborn Behavior Messages



In-Hospital Supplementation is Being Monitored

- Joint Commission
- CDC
- Surgeon General
- Baby Friendly
- Comparison websites
- CWA/UCD Report



Common Reasons for In-Hospital Supplementation

- Medical issues
- Early clinical challenges
- Maternal request
 - Cultural practice?




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Infant Feeding Decisions in the Hospital

Maternal Request for Supplementation of Healthy Breastfed Newborns


- 14 focus groups in English- and Spanish- speaking WIC participants (N=97)
- Study of maternal request for hospital formula for *healthy* breastfed infants



DaMota et al. JHL 2012

Maternal Request for Supplementation of Healthy Breastfed Newborns

- 3 Major Themes
 - Unrealistic expectations about newborns and parenting
 - Lack of preparation for breastfeeding
 - Formula seen as the “solution”



DaMota et al. JHL 2012

Parents’ Unrealistic Expectations


- “The Imagined Baby”
 - Parents’ prenatal construct of the baby
 - Will be in conflict with the real baby
- Parents and other caregivers have idealized the “quiet, full, sleeping” baby



Stern 1998; Heinig et al. 2006

Unrealistic Expectations about Newborns

- Newborns expected to be quiet
 - “Every time that I tried to breastfeed, he would have a tantrum, become really angry. So then I thought ‘Why? Why should I make him suffer?’”
 - “We started the formula on the 2nd day...since he never stopped crying.”



DaMota et al. JHL 2012

Unrealistic Expectations about Newborns

- Newborns expected to sleep
 - “I guess she wasn’t getting enough from me... they brought me the milk and after she ate, she slept.”
 - “She wouldn’t go to sleep but I knew she was still hungry, and then I would feed her a little bit [formula] and then she would go to sleep.”

DaMota et al. JHL 2012

Day 1: The “Good” Baby

- Heightened alert state in the first 2 hours, followed by longer periods of sleep (over next 24 hours)
- Parents will think:
 - What a “good” quiet, sleeping baby!
- And then...



Nugent 2007; DaMota et al. JHL 2012

Days 2 & 3: Everything Changes

- Reality sets in! There is a sudden change in the baby’s behavior
- Baby is expected to be quiet and sleeping, but now...SOMETHING IS WRONG!
- Parents ask for formula and the frantic baby falls asleep



Nugent 2007; DaMota et al. JHL 2012



Lack of Preparation for Breastfeeding

- Onset of Milk Production
 - The Perfect Latch
 - Frequency of Feeds

Lack of Preparation for Breastfeeding: Onset of Milk Production

- **Many mothers thought their milk would come in as their babies were born**
 - “She had a bottle because the milk wasn’t coming in right away.”
 - “They would also help show how to position him so that could breastfeed him but no milk would come out and no milk would come out so then I had to give him formula.”
 - “My milk didn’t come in for about 3 days...”

DaMota et al. JHL 2012

The Facts: Milk Onset

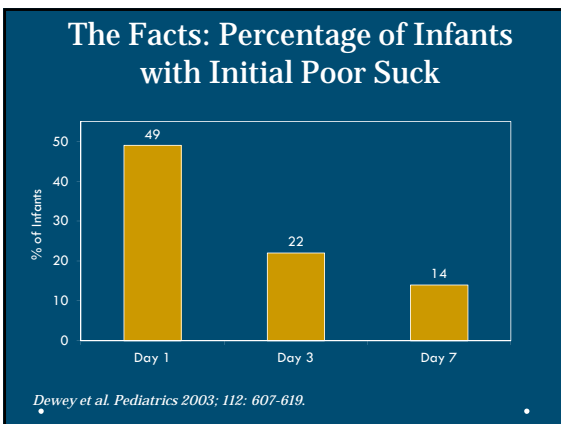
- 85% of mothers - milk comes in at 24-72 hours pp (bulk of additional 15% are *after* 72 hours)
 - First time moms’ milk comes in later (avg. 70 hrs pp) than moms who have BF before (avg. 56 hrs pp)

Dewey et al. Pediatrics 2003; 112: 607-619.

Lack of Preparation for Breastfeeding: The Perfect Latch


- **Mothers expected their infants to latch perfectly the first time they attempted to feed**
 - “He didn’t suck well, he rejected it right away.”
 - “I gave her formula, I would put her close but she would barely latch on. It was if she wanted everything to be easy and for everything to be fast. And I would say ‘I can’t do it either.’”

DaMota et al. JHL 2012



Lack of Preparation for Breastfeeding: Frequency of Feeds

- **Mothers had no idea how frequently newborns would need to be fed – expected them to need larger volumes**
 - “She was a big baby. She would wake up every 3 hours like clockwork wanting to be fed.”
 - “He was constantly eating like every 45 minutes to 1 hour, I just couldn’t sit there and feed him so I moved him to a bottle.”



DaMota et al. JHL 2012

The Facts: Early Breast Milk Volumes

- Day 1
 - 13 ± 6 g/kg (range 3 – 32 g/kg)
 - ~50 mL (1.8 oz) for a 3.6 kg newborn
- Day 3
 - 98 ± 47 g/kg (range 50 – 163 g/kg)
 - ~350 mL (12.5 oz) for a 3.6 kg newborn
- Day 5
 - 155 ± 29 g/kg (range 110 – 196 g/kg)
 - ~560 mL for a 3.6 kg (20 oz) newborn

Casey et al. *Am J Dis Child* 1986; 140: 933-936.


Formula as the Solution

- **Formula perceived as a “solution” to breastfeeding problems or challenging infant behavior**
 - “He wouldn’t stop crying so the nurse gave him a bottle. He latches fine to a bottle so I said ‘okay.’”
 - “I just wanted to give him formula because he was crying and always awake.”

DaMota et al. *JHL* 2012

Formula as the Solution

- “My boyfriend, he was worried about me not giving the baby enough, so he wanted me to give formula so he knew how much he was taking.”
- “It depends on your nurse, my nurse gave me a lot in my crib... and that helped, you know, with my c-section recovery.”



DaMota et al. *JHL* 2012

Coping with Stress

- If people believe there is a solution – **Problem Management**
 - ✦ Seek information
 - ✦ Identify solutions
 - ✦ Attempt and evaluate solutions

- If people don’t believe there is a solution – **Emotional Regulation**
 - ✦ Reinterpret goals
 - ✦ Disengage, detach
 - ✦ Denial of consequences
 - ✦ Anger, aggression

Glanz *J Occup Med* 1992; 34: 1071-8.

Infant Behavior Research

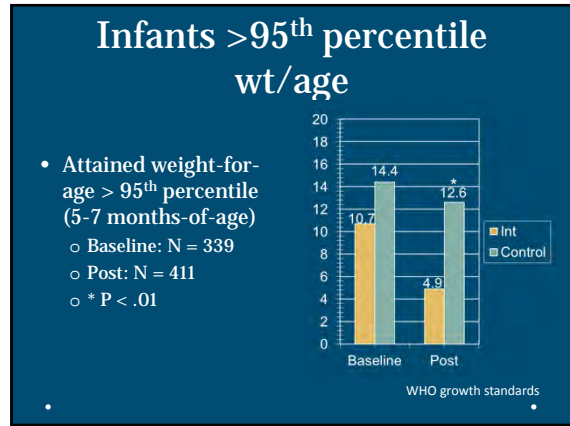
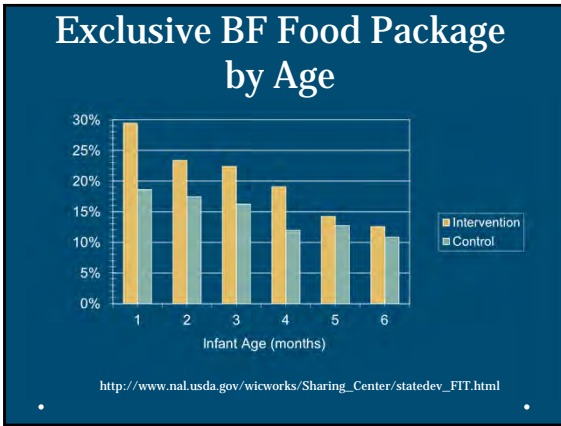
- Infant behavior has been explored and documented for more than 30 years
 - Brazelton, 1973
 - Barnard 1978, 1987, 1993
 - Infant-feeding outcomes have not been investigated
- Current education is excellent but complex and time consuming
- The UCD work is *translational*



USDA WIC Special Projects Grant

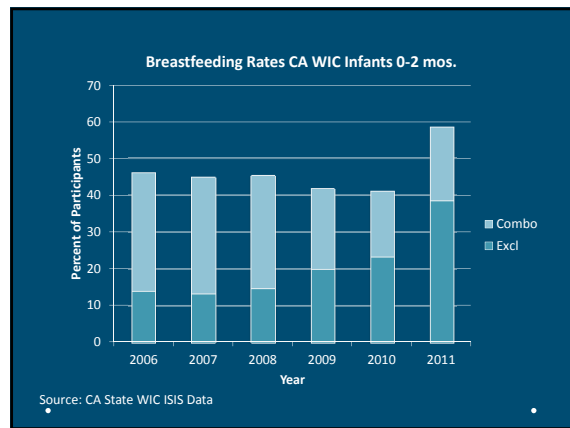
- 3-year quasi-randomized educational intervention (8 sites in CA)
 - 1 year intervention period
- Concept: Create a clinic environment supporting positive caregiver-infant interactions
 - Training, social marketing, handouts, classes, activities
 - Effort to create messaging that can be delivered quickly, effectively, and inoffensively

http://www.nal.usda.gov/wicworks/Sharing_Center/statedev_FIT.html



California Baby Behavior Campaign

- USDA WIC Special Projects Grant 2006-2009
- Statewide training in CA WIC 2010
- Roll out of statewide campaign 2011

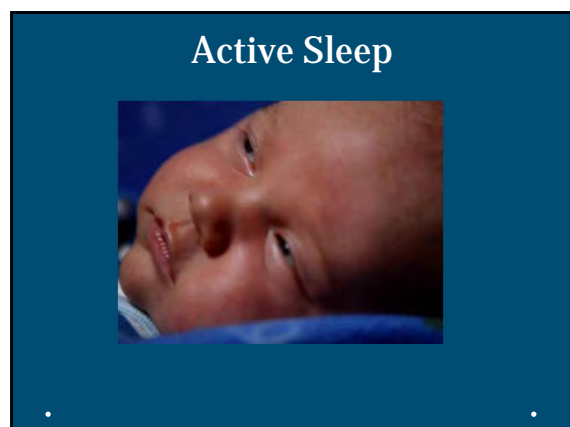
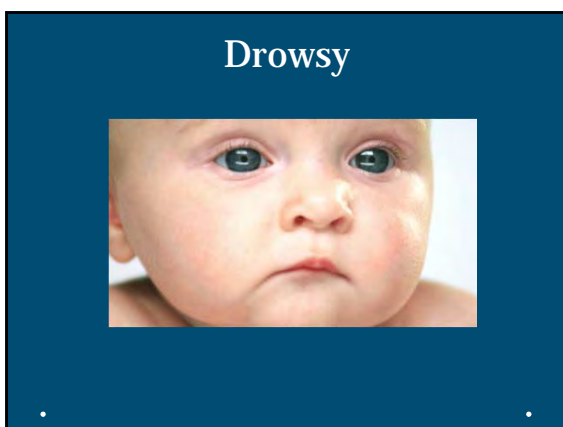
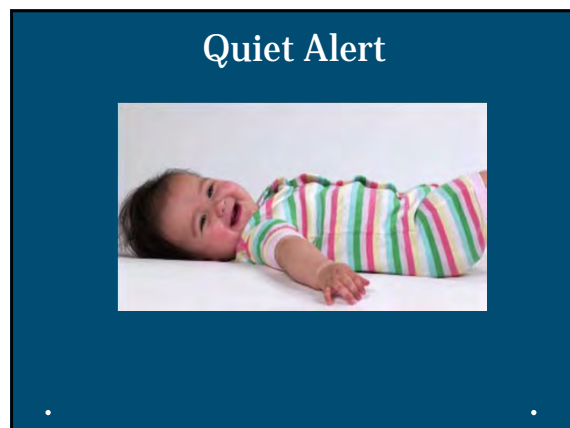
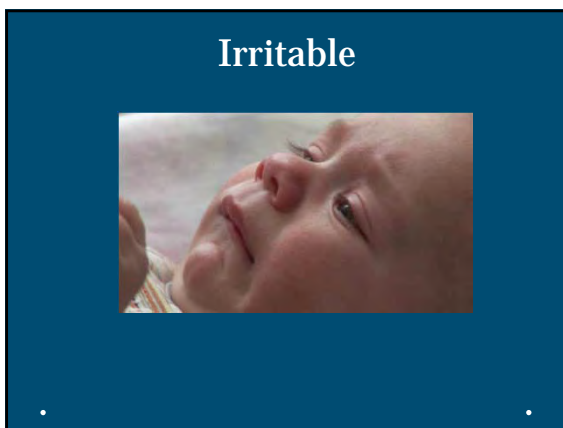
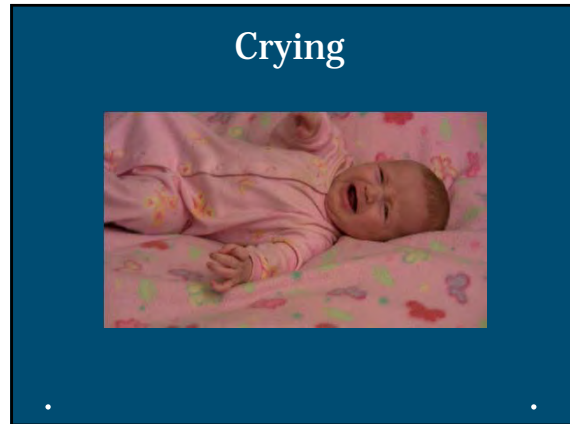


Baby Behavior Promotes Breastfeeding

- Baby Behavior is just another tool for BF promotion – does not address clinical issues
- Addresses perceived insufficient milk and promotes maternal confidence

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Baby Behavior Basics



Quiet Sleep



Caregiver Actions Influence State

Variety to Waken

- Different sights, sounds, motions stimulate babies
- Many newborns have difficulty staying alert
- May need to take several minutes for newborns to wake enough to feed

Repetition to Soothe

- First, address cause of distress
- Sustained repetitious movement, sounds, sensations calm babies
- May take several minutes to calm a baby who is very overstimulated

• NCAST Keys to Caregiving

Key Messages for Parents

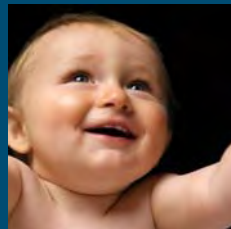
- Sleepy babies need lots of stimulation
- After addressing the reason for crying, using repetitive actions and sounds will calm crying babies
- Parents should be patient and listen for a change in the cry for a few minutes before trying something else



Baby Basics #2
Babies are driven to learn and socialize. They use cues to signal readiness.

Types of Infant Cues

- Young infants try to tell caregivers when they want to interact (**engagement cues**)
- Young infants try to tell caregivers when they need something to be different (**disengagement cues**)



• Kelly et al. Promoting First Relationships, NCAST Pub 2003

Engagement Cues



• Obvious


- Looking intently at faces
- Rooting
- Feeding sounds
- Smiling
- Smooth body movements

• Subtle

- Eyes open
- Face relaxed
- Feeding posture
- Raising head
- Following voices and faces

• Kelly et al. Promoting First Relationships, NCAST Pub 2003

Disengagement Cues





- **Obvious**
 - Turns away
 - Pushes, arches away
 - Crying
 - Choking, coughing
 - Extending fingers, stiff hand
 - Falling asleep
- **Subtle**
 - Looks away
 - Faster breathing
 - Yawning
 - Hand to ear
 - Grimace
 - Glazed look

Kelly et al. Promoting First Relationships, NCAST Pub 2003

Key Messages for Parents

- Cues are simplistic and **NOT** specific
 - Parents may need to “play detective” to figure out what their babies are trying to tell them
 - Babies get better at cues by practicing with responsive caregivers
- For most healthy term babies, feeding cues are obvious


Baby Basics #3

Crying is a vital “talent” used by infants to indicate distress.



Crying: Babies’ “Super Power”


- Crying affects the nervous system in most adults
 - Drives adult activity!
- Must be loud to rouse sleeping caregivers
- Prompt response to cues can reduce crying



Hiscock H. The Crying Baby. Australian Family Physician 2006; 35: 680-4.


Understanding Newborn Crying

- Healthy newborns cry
- Hungry babies use hunger cues
- Newborns may cry more often than older babies
 - Still learning cues
 - Cues are hard to read
 - Sensitive to stimulation




Calming Crying Babies

- Address the cause of distress – look for cues!
 - Not all crying babies are hungry
- Babies respond well to faces, touch, sucking
- Reduce varied stimulation
- Introduce repetitive, sustained stimulation (repetition to soothe)
 - Listen for changes in cry



Key Messages for Parents

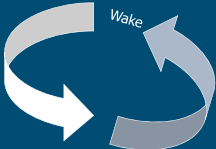
- Crying doesn't always mean hunger – look for hunger cues
- Respond to cues as much as possible – learn along the way
- Use repetition to soothe after cause is addressed




Baby Basics #4
Babies do not sleep like adults.

Infant Sleep Cycles

- Infant sleep cycles are 60 minutes long (adult cycles are 90 minutes long)
- Infants sleep 13-14 hours per day from 2-12 months – but not all at once!
- Initially, newborns will wake with each cycle (every 1-2 hours)



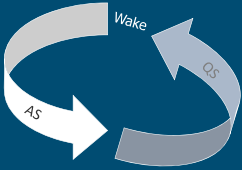
Peirano et al. J Pediatr 2003; 143: 70-9

Infant Sleep States

- **Active sleep (REM) is light sleep - important for brain development**
 - Babies dream and blood flow increases to the brain bringing nutrients to active brain cells
 - Images stimulate brain development
 - Easy to wake
- **Quiet sleep is deep sleep**
 - No dreaming
 - Little or no movement
 - Important for the brain to rest and recover
 - Growth hormones
 - Difficult to wake

Peirano et al. J Pediatr 2003; 143: 70-9


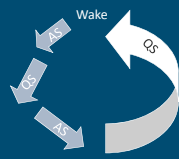
Newborn Sleep/Wake Cycle



Newborns start sleep in Active Sleep (AS) (dreaming for 20-30 mins) and move to Quiet Sleep (QS)

Infants in active sleep may wake up easily when put down, because active sleep is a light sleep

Sleep Changes As Babies Get Older


- Active sleep periods shorten
- Quiet sleep gets longer period at night
- Older babies fall asleep in deep sleep
- Babies link cycles and sleep longer stretches

Key Messages for Parents



- Dreaming/light sleep are good for baby's development and safety
- Newborns may wake when laid down while dreaming
- As they get older, babies sleep longer and more at night

The First 72 Hours



Cues – Crying – Sleep

Key Messages About Babies' First Days

- Babies and moms recover a few hours after birth and then the baby will wake and *demand* feeds
- Latching takes practice for both mom and baby – expect quick improvement
- Moms feel changes in breasts *after* discharge from hospital
- Babies and parents learn to communicate from birth



Simplify

- Parents are easily overwhelmed
- Identify cues/signs that the baby is already exhibiting
 - Every contact can be a "teaching moment"
- Promote and support *interaction*
- Newborn period likely to be misunderstood (provide warning on day 1)
- Consistent messaging is important

Baby Behavior Team

<p>UC Davis</p> <ul style="list-style-type: none"> • Jennifer Bañuelos • Jennifer Goldbronn • Luz Vera Becera • Karolina Gonzalez • Taryn Barrette • Kerri Moore • And many students 	<p>California WIC</p> <ul style="list-style-type: none"> • Jackie Kampp • Judy Sheldon • Karen Tabor • Valerie Haack • Erika Trainer • Holt Reeves • And state and local agency staff (workgroup)
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Thank you!!