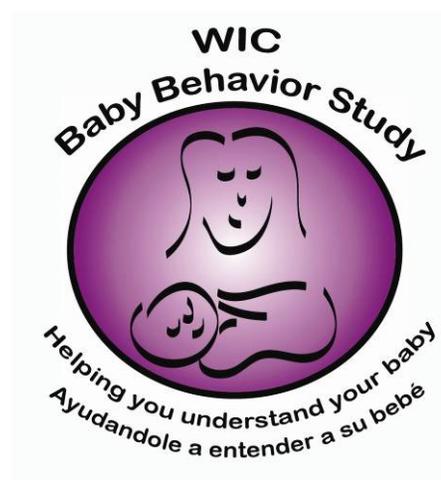


# New Tools to Reduce Overfeeding:

## The FitWIC Baby Behavior Study

M. Jane Heinig, PhD, IBCLC  
Jackie Kampp, MSN, RN, PHN  
Jennifer Bañuelos, MAS  
Jennifer Goldbronn, RD  
Colleen O'Loughlin  
Kerri Moore  
Luz Elvia Vera Becerra, MS  
Department of Nutrition  
UC Davis Human Lactation Center



## Training 2:



Infant Sleep & Crying

# From last time...

- We wondered why caregivers who intend to follow infant feeding guidelines (breastfeeding, delayed solids, etc) change their minds
- Caregivers in our studies thought their infants were not getting enough to eat
  - Infant crying and waking seen as hunger
  - Parents feel out of control and stressed
- We started talking about normal infant behavior
  - Infant states and cues

# Homework Review



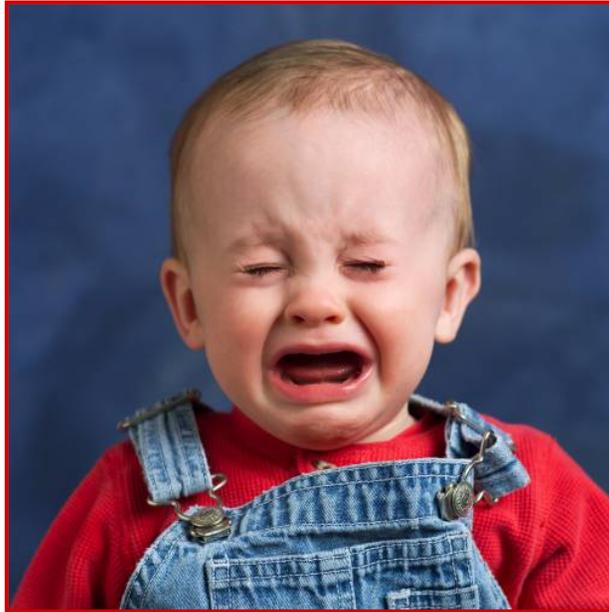
- Who would like to share an experience they had observing babies in the last month since our last training?
  - Did you see infant cues?
  - Did you see infant states?
  - Did you talk to parents about Baby Behavior?

# Warm Up: Handprints

- Each of you have a copy of a baby's handprint.
- On each finger of the hand, write one thing that might cause a baby to cry.
  - Example: baby needs a diaper change
- Who would like to share their hand with the group?



# Part One



Infant Crying

# “Normal” Crying

- Crying makes adults want to help (important for survival)
- ALL infants cry
  - Crying begins in first hours of life, and on average, peaks at 2.6 hours per day at 6 wks
  - Crying decreases over the next 10 weeks, much better by 12-16 wks
- Responding early to cues will reduce crying



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

# Is There a “Hungry Cry”?

- Babies cry whenever they are uncomfortable or unhappy
- How can caregivers tell when a crying baby is hungry?
- Hungry babies *might* cry but they will ALSO bring their hands to their face, clench their hands, flex their arms and legs, root, make sucking motions and noises
- All these behaviors together help us know when a baby is hungry

# Caregivers can help crying babies (who have been fed) by:

- Letting babies suck on their hands
- Showing babies their face
- Speaking softly over and over (repetition)
- Holding, rocking, stroking the baby over and over (repetition)
- Babies will take longer to calm down if they are very young or very upset

# Persistent Crying: Definition

- Persistent crying is sometimes called “colic”
  - Colic doesn't have a consistent definition
  - Colic is supposed to be crying for 3 hours a day, more than 3 days per week, for more than 3 weeks
- “Persistent crying” refers to daily inconsolable crying
  - Only 25-30% of persistent criers have problems with digestion - obvious signs



# Persistent Crying: Good News and Bad News

- The good news

- 95% of persistent criers are healthy and thriving
- Persistent crying (just like all newborn crying) improves by the time the baby is 12-16 weeks old



- The bad news

- It can take 12-16 weeks before the persistent crier settles down
- Persistent crying is associated with maternal depression and child abuse

# Persistent Crying: Reasons

- Physiological immaturity
- Infant can't self-soothe or regulate states
- Infant can't provide readable cues
- Infant illness, injury, or GI problems
  - Crying with signs of illness or a big change in behavior should be investigated by the doctor



\*Sometimes parents need referral for professional help

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

# Your Turn



**BABY BEHAVIOR DETECTIVE!**

Why are these babies crying?

# Be a Baby Behavior DETECTIVE!

- Baby Tanya is 3 weeks old
- 10-15 minutes after nearly all feedings she becomes fussy, arches her back, and stiffens her hands and legs



# Be a Baby Behavior DETECTIVE!

- Baby Marcus is 3 months old
- During his sister's 4<sup>th</sup> birthday party, Marcus shuts his eyes, stiffens his body, and cries loudly



# Be a Baby Behavior DETECTIVE!

- Baby Luz is 5 months old
- Every evening from 6 to 8pm, Luz becomes quite fussy, she closes her eyes, tightens her face, and cries unless she is constantly held and rocked



# Be a Baby Behavior DETECTIVE!

- Baby Joe is 1 month old
- Baby Joe falls asleep after each feeding
- However, when put down on his back to sleep, he repeatedly wakes and fusses until he is fed again



# Be a Baby Behavior DETECTIVE!

- Baby Elena is 6 weeks old
- Despite being fed an hour ago, Baby Elena begins to cry, she draws her fists toward her chin and her legs toward her body, she moves her head from side to side



# Part 2: Infant Sleep

- Caregivers in our studies thought their infants were not getting enough to eat
  - Infant crying and waking seen as hunger
- We talked about normal infant crying, and how babies cry for many reasons, not just because they are hungry
- Now let's talk about normal infant sleep and why parents think babies wake at night only because of hunger

# Part Two



## Sleep Patterns in the Newborn



# Your Turn

How many times do parents *think* that babies wake up...

At 2 mo? \_\_\_\_\_

At 4 mo? \_\_\_\_\_

At 6 mo? \_\_\_\_\_

# What Parents Said

- What parents *really think* about their babies waking at night:

At 2 mo: 0-20 times per night

At 4 mo: 0-6 times per night

At 6 mo: 0-6 times per night

# Average Night Waking

- Average waking at night is:
  - 2-3 times by 2 mo
  - 2 times by 4 mo
  - 1 time at 6 mo
- Too much waking is stressful and should be investigated (before infants are switched from breastfeeding to formula)
- Babies may wake too often when sick, uncomfortable, or because of a change in routine
- *Limited* waking is OK



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

# Reasons for Excessive Waking

- Physiologic immaturity
- Ineffective feeding
- Illness or injury
- TV in room (or other intermittent stimulation)
- Caffeine or meds
- Change in routine
- May need to refer

# Infant Sleep States

- Active sleep (REM) is considered to be important for brain development

- Babies dream and blood flows to the brain bringing nutrients to active brain cells
- Images stimulate brain function



- Quiet sleep is deep sleep

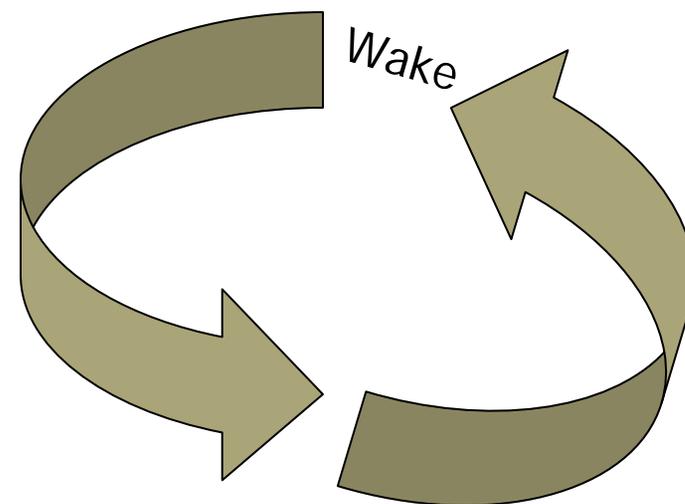
- No dreaming
- Little or no movement
- Important for the brain to rest

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

❖ Infants “cycle” through active sleep, quiet sleep, and waking.

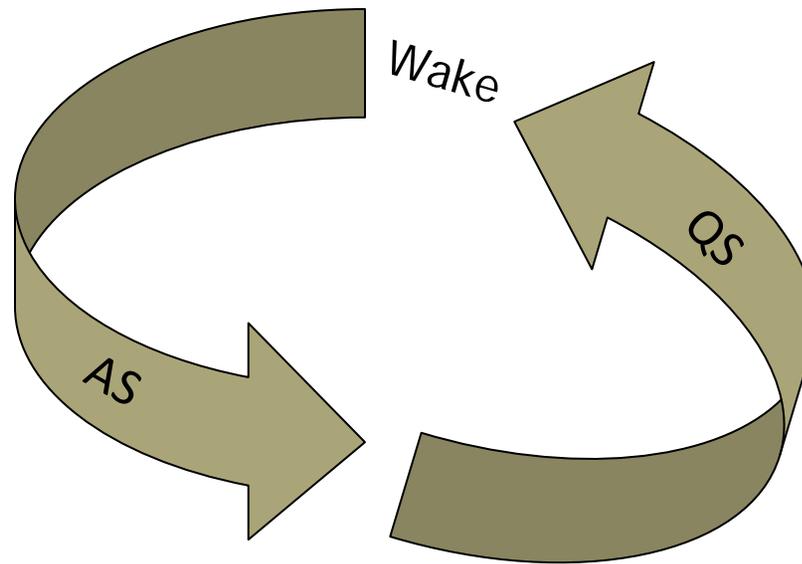
# Infant Sleep Cycles

- 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

# Newborn Sleep/Wake Cycle



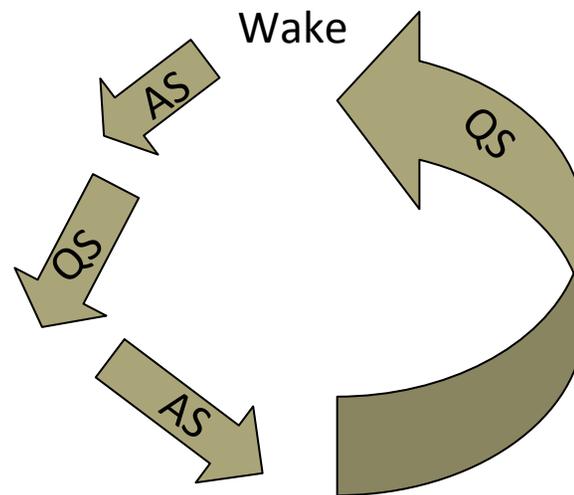
Newborns spend equal time in active and quiet sleep (in 50-60 minute cycles)

Newborns start sleep in Active Sleep (AS) (dreaming for 20-30 mins) and move to Quiet Sleep (QS); Adults start sleeping in quiet sleep, then they start active sleep later

Infants in active sleep wake up easily when put down, because active sleep is a light sleep; When they are in quiet sleep, they are harder to wake up

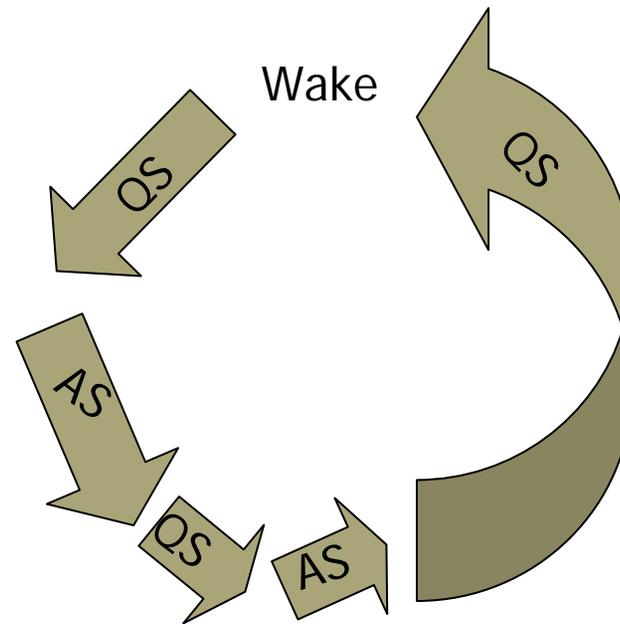


# 2-Month-Old Infant Sleep/Wake Cycle



At 2-3 mo, infants begin with shorter periods of Active Sleep (AS) then move into Quiet Sleep (QS); they start to have longer quiet sleep periods at night

# 4+ Month-Old Infant Sleep/Wake Cycle



By the time babies are 3-4 months, they have more regular sleep patterns that are more like their parents. Around the same time, they start to fall asleep in quiet sleep just like adults do. Parents think the babies “sleep a lot better” around 4 months

# Infant Sleep Patterns

- As infants get older, they can link cycles together:
  - $\leq 2$  mo (links 2 cycles: 2 hrs)
  - 3- 4 mo (links 4 cycles: 4 hrs)
  - $\geq 6$  mo (links several cycles: 6-8 hrs)
- So, infants will sleep longer and will not be as easy to wake as they get older



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

# Why Active Sleep and Night Waking are Good

- Active sleep is important to brain development
- Waking may be essential to survival—needs must be met for breathing, feeding, warmth
- Breastfeeding mothers' hormonal cycles are interrupted by night feeds, not having periods may lower risk for hormone-related cancers
- Therefore, active sleep and waking at night are beneficial for mothers and young babies

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

# Infant Feeding and Sleep

- Breastfed infants do wake more than formula-fed infants
  - Breastfed infants have more active sleep (more likely to wake up)
  - Babies digest breast milk more quickly than formula – this is best for their development and growth
- Formula-feeding moms can promote active sleep by putting babies “back to sleep” or using pacifiers

Horne et al. Ped Resp Rev 2004; 5: 190-8.

# Sleep States...



## Active sleep

- Dreaming and rapid-eye movements
- Body and face twitches
- Blood and nutrients to brain
- Newborns fall asleep this way
- Easy to wake

## Quiet sleep

- Important for complete rest
- Very little movement
- Harder to wake
- Infants who are 4-months-old or older fall asleep this way



## Case Studies

# Your Turn

In your clinic groups:

- Break into pairs
- Each pair will receive a case study with a question to answer
- Using either the infant crying or sleep handout, come up with a short 30-second “speech” to answer your participant’s question.
- Practice your “speech” in front of your clinic groups
- Each group will pick one pair to share their “speech” with the big group, and we will time you!



# Your Turn!

Pair  
and  
Share

What is one thing you learned in this training that you think you will use in the next 2-4 weeks?



# Homework Challenge!

# Coming Up Next Month...

- How to talk to parents about their babies' behavior without offending them
- Physical activity for infants
- Quick & easy ways to share Baby Behavior messages while counseling



What are your questions about infant sleep or crying?