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XV Incontro della Rete Insieme per l'Allattamento "Allattamento fra Care e Scienza"

Biological Nurturing

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Trieste, 30 settembre 2021

Dott.....

Dichiarazione di conflitto d'interessi

Interessi delle Aziende Private del settore della salute, rilevanti per i contenuti della presentazione

Susan Colson

1 – Azionista o portatore/trice di interessi o componente o dipendente di Aziende Private del settore della salute	sì	**no**
2 – Consulente o componente di un panel scientifico di Aziende private del settore della salute	sì	**no**
3 – Relatore/trice pagato/a o autore/trice/editore/trice di articoli o documenti per Aziende Private del settore della salute	sì	**no**
4 – Pagamento di spese di viaggio, alloggio o iscrizione a convegni, conferenze o eventi da parte di Aziende private del settore della salute	sì	**no**
5 – Ricercatore/trice o responsabile scientifico/a in studi di Aziende private del settore della salute	sì	**no**
6 – Aderenza al Codice Internazionale sulla Commercializzazione dei Sostituti del Latte Materno	**sì**	no

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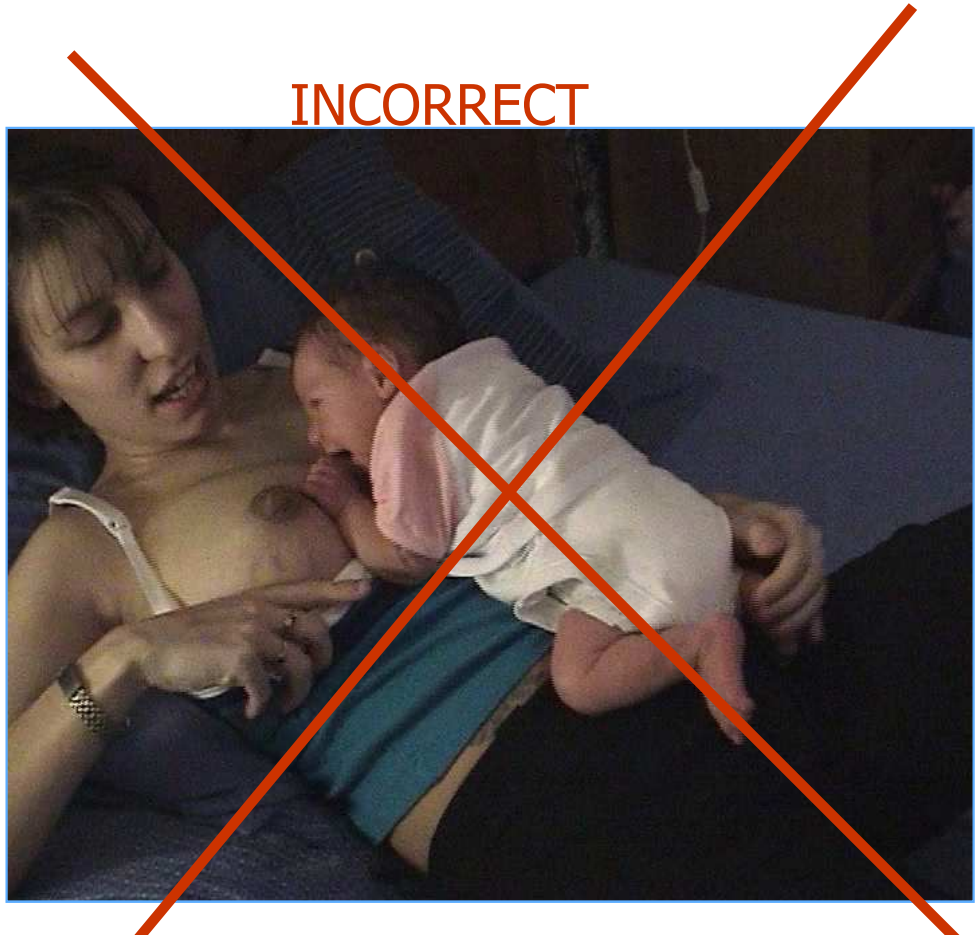
Dott……

Biological Nurturing: Laid-back breastfeeding (Colson, 2006):

A backlash to taught postures



Biological Nurturing
more than "the laid-back BF position"

Sore/Cracked Nipples

Milinco, Travan, Cattaneo et al. (2020) International Breastfeeding Journal 15:21
https://doi.org/10.1186/s13006-020-00261-4

Sore Nipples

	BN Group	
Hospital discharge	**28%** (25/90)	
1 week post hospital discharge	**17%** (15/89)	
One month	**20%** (18/89)	

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	Sore Nipples		Cracked nipples	
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Our objectives today

1. To understand how the 6 basic BN components interact to aid BF initiation

2. To examine those points of continuity (inherent within 5 of the 6 BN components) that may reduce further the incidence of sore, cracked nipples

What is biological nurturing?

For health care professionals:

Biological Nurturing is a structured method to observe BF behaviours

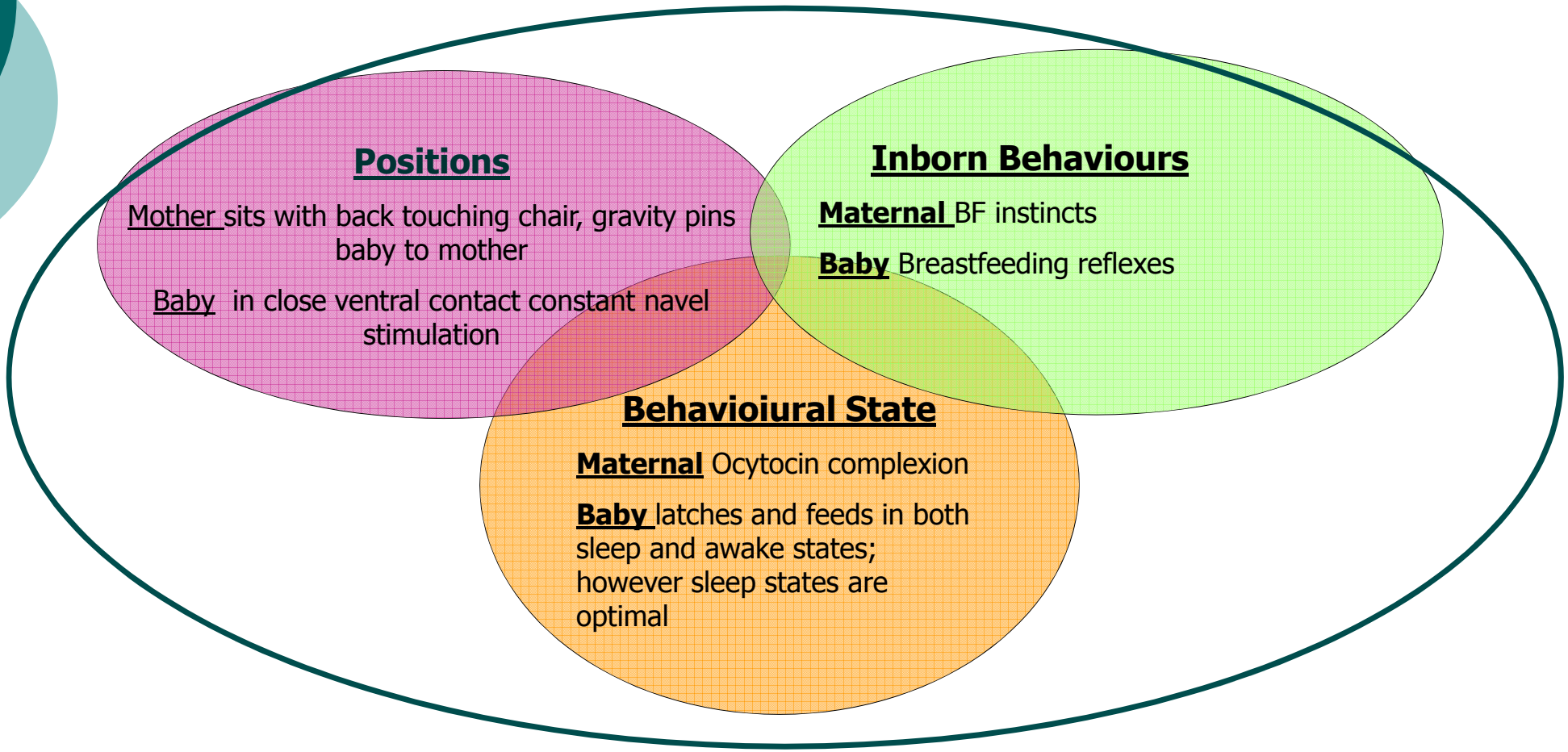
Mother-baby Positions

Mother-baby behavioural states

Mother-baby innate behaviours

The six components in the flesh

Observations of BN Components (Variables)



The Pelvic Rock

The physical shift from ischial sitting to sacral sitting may release nutation & counter-nutation releasing a burst of oxytocin (Colson & Greenfield 2010, 2019, 2021)

Biological nurturing – Instinctive BF for mothers

Nissen et al. (1996)

Practising BN maintains and releases the high oxytocin pulsatility associated with the expression of innate mothering & breastfeeding behaviours

Prenatal Maternal Veiling

Have you ever noticed?...

Pregnant mothers are instinctively in physical contact...

they have a tacit communication with their babies

BN is instinctual…
hands-free "veiling" for mothers

Postnatal Veiling

High oxytocin pulsatility depends upon:

- **Physical & emotional well-being**
- **Baby gazing/Eye-to-eye contact**
- **Hands free positions**

A protective environment

Innate, spontaneous movement & gestures

However, in traditional positions…

* **Many mothers crane their necks to gaze at their babies**

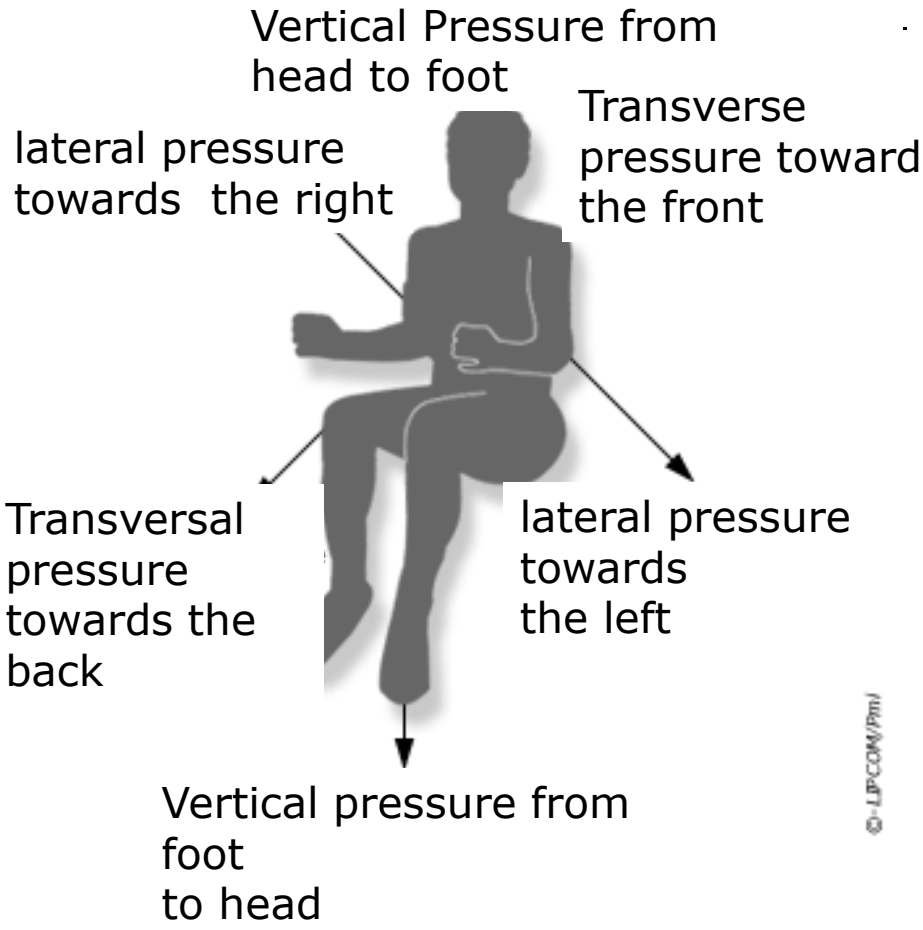
* **Their backs & necks often ache**

* **Some mothers are frustrated; others are embarrassed to be naked…**

* **Baby looks towards mother's body**

* **Mothers complain that they haven't got enough hands to BF**

*In traditional positions, **gravity** is often a **negative force***



In other words

In BN

Gravity pins the baby's body to the mother's. Baby's arms move towards the breast: like someone swimming the crawl.

In traditional positions

Gravity drags the baby down and away from the breast: like someone swimming the back stroke.

NOW LET'S EXAMINE BN THEORY

Theories of Continuity underpin BN

Five of the six BN components are caracterised by continuity from from fetus to neonate… from pregnancy to birth & into the puerperium

Today three golden nuggets of continuity from foetus to neonate

1. Continuity of habitat:

AFTER BIRTH, the mother's body continues to nourish & nurture her baby; the mammary gland takes over from the placenta when the baby is at the "right address"

2. Continuity of fluid, smooth movement:

Sucking & swallowing in bursts are observed from 13 gestational weeks; these are identical to BF in healthy term infants

3. Continuity of behavioural state

Sucking & swallowing in "indeterminant sleep" predominates both in fetal & neonatal life

Continuity of mammalian habitat

the mother's body: "uterus & lactational apparatus"

Stock Photos

Learning is not separable from a behaving body
(Alberts 1994)

Maintaining Continuity of Habitat

The right address

The fetus lies in the womb.

The newborn lies on top of the womb.

In both, the baby's navel is constantly stimulated

Continuity of fluid, smooth movement from fetus to neonate

"All movement observed in the fetus can also be observed after birth & there are no fetus-specific patterns."

"The fluent & complex character of fetal general movements create the impression of elegance & gracefulness."

Development of foetal motility
Ultrasound Observations Prechtl, Dutch neuro-pediatrician (1993)

In BN, the baby is always in continuous ventral contact

Why is continuous ventral contact so important?

Continuous ventral contact ensures:

Constant navel stimulation

Releases smooth 'to and fro'

general movements (GMs)

from the core to the branches

(Prechtl, 1993)

Navel radiation, a centering response which smooths these GMs

(Mustagova, 1989 ; Bainbridge, 1986)

*What are **general movements** & when can we first observe them so important ? (Prechtl, 1993)*

From 8 ½ gestational weeks we observe 'general movements'

Spontaneous, endogenous motion

- **Involve neck, trunk and limbs**
- **Frequent, variable temporal sequences**
- **Coordinated & patterned**

Many GMs are what I have identified as breastfeeding reflexes

Prechtl's List (1993)

From 8 ½ gestational weeks
General movements **(arm and leg cycling)**

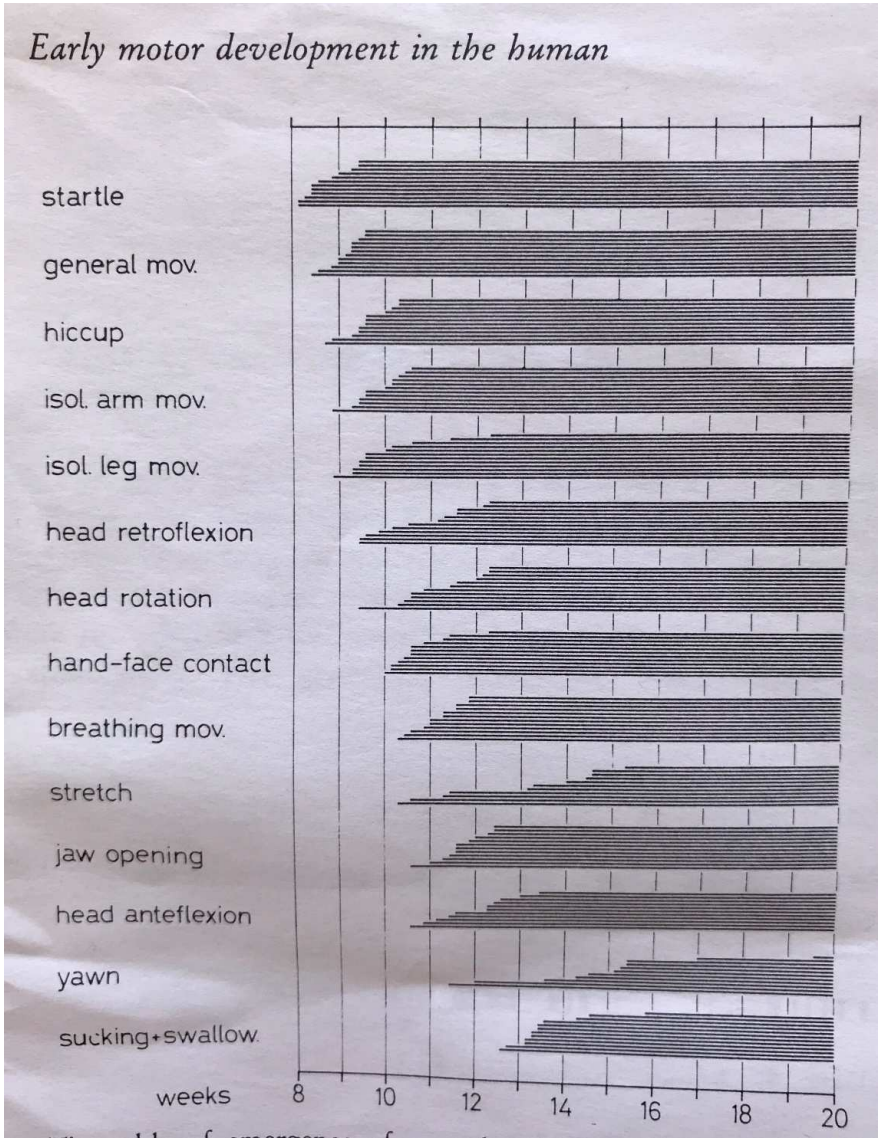
Head rotation **(return to the midline)**

Head retroflexion **(Woodpecker reflex)**

From 10 gestational weeks
Jaw opening **(chin jerk or Masseter reflex)**
Hand-face contact **(Hand to mouth contact)**

From 12 ½ gestational weeks
Sucking & swallowing **(Sucking, Swallowing)**

Colson (2006) BF reflexes are in aqua colour



Prechtl's (1993) Descriptions of General Movements (GMs)

"The young fetus changes position frequently in the uterus. Rhythmical alternating leg movements, **identical in form with the postnatal stepping movements** which produce a somersault over the head, if the feet of the fetus make proper contact with the uterine wall."

Continuity of co-ordinated sucking & swallowing


Heinz Prechtl

"At 13 weeks rhythmic sucking movements, often followed by swallowing, occur in bursts. The rate of these sucking movements is at 14 weeks already about the same as in full-term infants during breastfeeding." **Prechtl (1993:pp38-39)**

Let us highlight that at 13 gestational weeks, the foetus is in a constant state of dormancy

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SO NOW LET US DRAW SOME INITIAL CONCLUSIONS

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Dott……..

A primary objective during the first 48 hours

Maintain the suck/swallow fetal nourishment patterns

This will inevitably increase BF frequency

A second objective :

Maintain constant navel stimulation in close ventral contact where the baby's feet are supported

This inevitably smooths movement & the breastfeeding reflexes

This will inevitably increase BF frequency

A third objective :

Promote continuity of habitat which unleashes reciprocal learning due to close contact with “a behaving body”

Inevitably,
the mother’s behaviours teach the baby;
the baby’s behaviours teach the mother

These interactions are involuntary and release instinctive breastfeeding

Three golden nuggets of continuity

Continuity of habitat:

When the baby is at the right address, the mother's body continues to nourish and nurture with reciprocal effect

Continuity of movement:

Coordinated sucking & swallowing in bursts observed from 13 gestational weeks similar to the way a new-born breastfeeds

Continuity of fetal to neonatal behavioural state

"indeterminant sleep" predominates in both fetal & early neonatal life suggesting that during sleep, the new-born feeds optimally.

*Why would anyone place a sleeping baby to breast **during the day ?***

The Simple Answer:

Because in BN, they latch on and feed.

Continuity of behavioural state from fetus to neonate

What is Neonatal Behavioural State?

- **An observation (behavioural or EEG) of the baby's level of arousal**

- **"A group of physiological and behavioural characteristics that regularly recur together"**
  (Brazelton & Nugent 2011)

Six Newborn Behavioural States

(Wolff, 1959; Brazelton & Nugent, 2011; Barnard, 2002; Colson 2021)

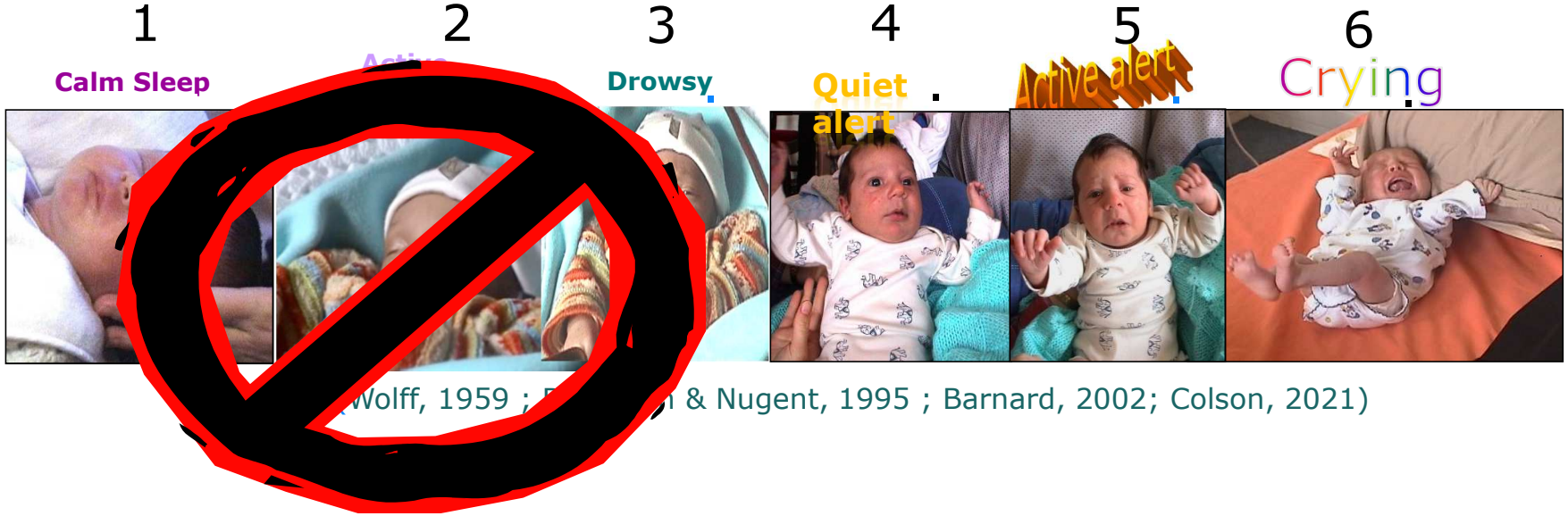
What you can see

- General movements
- Eye movements
- Facial movements
- Breathing Movements

What you can hear

- Vocalizations
- Breathing

Neonatal Behavioural States



Wolff, 1959 ; & Nugent, 1995 ; Barnard, 2002; Colson, 2021)

Traditionally, mothers have been told to WAIT until baby is in an early awake state (drowsy) or in a quiet alert state to BF as a sleeping baby will not feed.

This old school feeding advice often delays breastfeeding initiation

Colson 2019, 2021

Deep Sleep	Light REM Sleep	Drowsy	Quiet Alert
Any attempts to feed will be frustrating. Babies will be unresponsive. Wait to feed until baby transitions to a more responsive state. Do not attempt to feed.	Baby is not yet ready to feed even if he makes brief fussy or crying sounds. Baby is not alert enough to feed.	Wait to see if baby will return to sleep. Left alone and without stimuli, baby may go back to sleep. To wake baby up, give him something to suck as this may arouse him to a quiet alert state.	This is the ideal state to feed the baby providing much pleasure and positive feedback for mother. It is an excellent time to initiate BF before baby becomes fussy and agitated.

How long can a brand newborn baby maintain an awake & quiet alert state ?

- ***Prechtl defines behavioural state :*** the behavioural variables are stable for at least 3 minutes

- ***Brazelton & Nugent assess behavioural state changes*** every 15 seconds on day 3. During the evaluation, a baby can change state 15-20 times

Findings about fetal sleep

Nijhuis (1984); Nijhuis, Prechtl, Martin & Botts (1982)

The fetus is in a state of dormancy until around 28 gestational weeks

At 28/40 active or REM sleep differentiates but transitions are so rapid that researchers speak of

"indeterminant sleep"

At 36 gestation weeks, deep sleep is differentiated but indeterminant sleep continues to predominate

Indeterminant sleep also predominates in neonatal life

How many times does this 3-day old baby change sleep state ?

length of clip 2min 7sec

Differentiation of the Quiet Alert Awake State occurs late in pregnancy (around 36 weeks)

Nijhuis et al. (1982) ask:

Is the fetus ever in a defined awake state?

We just do not know for sure.

Nijhuis et coll. (1982) note that it is difficult to prove that the fetus is in a quiet alert state without an EEG

Newborn sleep states- 1st Weeks

Blackburn 2016 ; Tarullo 2011 ; Anders et al. 1995 ; Richardson et al. 1994)

The new-born baby sleeps about 16-18 hours in every 24 hours

50% is REM sleep

Indeterminant sleep continues to predominate

Newborn sleep states: First weeks

- **REM sleep important in brain development, early learning & memory**
- **Sleep states reduce the intensity & the amplitude of early reflex movements (or general movements)**

Interpretations: First days & weeks

Colson 2019

Mothers are frequently told …

Wait to BF until baby is in an 'early awake state' & shows signs of readiness.

Implications : that often means:

mothers have a 3-5 minute window to latch their awake neonate before the baby transitions into an agitated or crying state with those brusque flailing & writhing movements.

Furthermore,

The agitated /crying baby attempting to latch often transitions into a sleep state that suggests to the mother that the baby is too tired to breastfeed, is disinterested or doesn't like her milk.

Interpretations: First days & weeks

Colson 2019

Mothers are frequently advised to …

keep their babies in a cradle during the 3 hour intervals between feeds

The expectation is that the baby will sleep in the cradle and will be awake to BF

The Result : unrealistic maternal expectations Colson 2019

Babies placed in cradles often awaken after 5-10 minutes

a) Deep sleep function is immature at birth; baby rapidly transitions into an awake state

b) Especially when s(he) is not at the right address

Interpretations: First days & weeks

Colson 2019

When mothers keep their newborn babies in the cradle during feeding intervals whilst waiting for signs of BF readiness…

Then, breast contact time, milk transfer time & breast emptying is greatly reduced thus delaying BF initiation

Our mission:

Maintain continuity of indeterminant sleep from fetus to neonate

Suggest that mothers place their new-born babies at the right address during the day, when the baby is asleep. This optimises the coordination of sucking and swallowing with breathing and conditions the primary feeding reflexes sooner. It also smooths movement and reduces the incidence of sore nipples and other breast problems (Colson, 2019, 2021)

It is unlikely that these babies latched on in sleep states

Sore/Cracked Nipples

	Sore		Cracked	
	BN Group		BN Group	
Hospital discharge	**28%** (25/90)		**14%** (13/90)	
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Summary

Continuity: the theoretical heart of biological nurturing

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Immediate Clinical Applications

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Dott……..

Summary Slide

Apply the BN theory: Ensure

- **Continuity of habitat – keep the new-born at the right address**

  Continuity of high OT pulsatility – integral to the hormonal cocktail that makes BF instinctual for mothers

  Continuity of endogenous movement within foetal biorhythms – Maintain sucking & swallowing in bursts in neonatal sleep states during the day

  Continuity of fluid motricity– Use positions that go with gravity ensuring constant navel stimulation, foot support and reduced intensity and amplitude of expression

Breastfeeding is like kissing, you discover how to do it thru the hit and miss of the experience not through instructions

- Showing mothers how to BF & teaching them latching skills
- Standardising positions including "the BN laid-back posture"
- Telling mothers to wait until baby shows signs of awakening & readiness to BF
- Advising mothers to BF every 3 hours

  & to keep the baby in the cot during feeding intervals

Although these practices are standard, they reduce oxytocin pulsatility

- **Promoting st[illegible]ons including BN**
- **Telling [illegible]s to wait[illegible]aby shows signs [illegible]akening & [illegible] to BF**
- **Show[illegible]mothers h[illegible]o BF [illegible]aching th[illegible]atchin[illegible]s**
- **Advis[illegible]not[illegible]to BF eve[illegible]hours & to [illegible]e baby in[illegible]ot during feedin[illegible]**

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Recommendations

If we can't teach,
What should we be doing?

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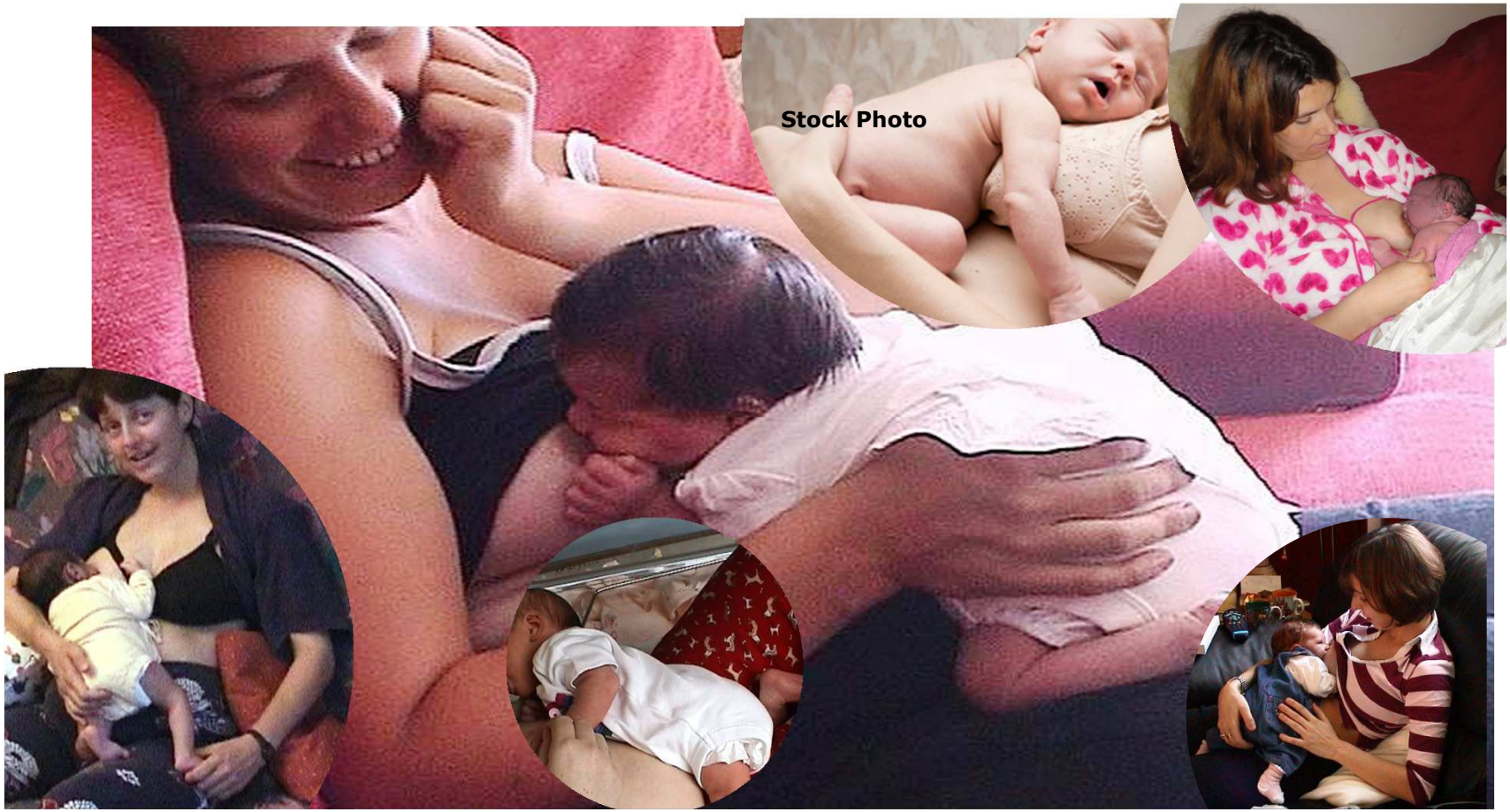
Dott……..

Suggest that (for the first 3 days) mothers keep their sleeping babies at the right address in BN positions during the day



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Don't manage BF, instead manage an environment conducive to high oxytocin pulsatility

- **Set the scene, dim the lights, ensure maternal mental/physical comfort in positions where gravity helps**
- **Ensure the sleeping baby is on mother's body, during the day, ensure hands-free BF, draw her attention to the baby, promote baby gazing, comfortable eye-to-eye contact, protect her privacy**
- **if baby does not latch, express colostrum directly into baby's mouth**
- **Inform and accompany mothers using the principles of the "helping relationship"**

Thank you for listening

Let's share Please contact me!

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We have 5 minutes for discussion & questions

What do you plan to do with this information?

How will this presentation influence your practice?

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