

Thinking Outside of the Box

Baby Friendly and Beyond

Minnesota Breastfeeding Coalition
May 19, 2016



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Picasso and Breastfeeding

Keeping It Simple

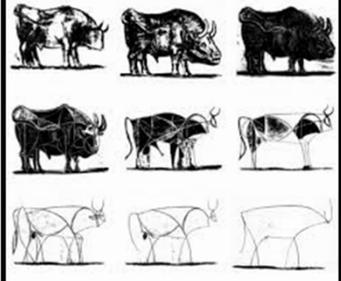
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I have no relevant financial relationships with the manufacturer(s) of any commercial product(s) and/or provider(s) of commercial services discussed.



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Outline

- ★ case for change
- Distilling the goal and objectives
 - A,B,C:
 - Attachment
 - Breastmilk production
 - Caloric/Nutritional parameters
 - Low-risk vs. At-risk dyads
- What is Needed?
 - Practice changes to reduce the risks
 - System changes: Prevention, Availability, Sustainability

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The Need for Change

- Complications related to insufficient milk production and suboptimal intake
 - Major causes for stopping earlier than planned, with a sharp drop off (up to 20%) in any breastfeeding before 1 month
 - Result in serious health and financial burdens. (hyperbilirubinemia, dehydration, hypernatremia)
 - Key reasons for delayed discharge and readmission (within 2 wks)
- What we do (or do not do) in the first 3 days (1st hour) influences the prevalence of insufficient milk production and suboptimal milk intake

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The Need for Change

- ↑ risk of early termination if < 39 wks
 - Breastfeeding rates: (40 wk) > (37-39 wk) > (< 30 wk) ≥ (34-36wk) 
 - Morbidity doubles for each gestational wk earlier than 38 wks
- The population early babies (< 39 wks) is steadily increasing due to demographic factors (obesity, advanced maternal age) and obstetrical practices (cesareans/inductions, multiples)
- Exclusive breastmilk feeding (key risk factor for hyperbilirubinemia and dehydration) is encouraged as a performance measure for hospitals, as we move forward with Baby-friendly practices.

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The Need for Change

- Breastfeeding management has become inordinately complicated and demanding for both mothers and staff, with an escalating use of pumps and gadgets.
- We lose our best advocates for breastfeeding when a mother feels overwhelmed and stops earlier than planned.
- Current practice relies on episodic, problem-oriented specialized care (lactation specialists) for only a restricted number of beneficiaries. A proactive approach to care for each and every dyads might reduce the number of less remedial, time consuming breastfeeding

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One goal with 3 objectives

GOAL:
To enable exclusive breastfeeding, while keeping infants safe by preventing feeding related complications

OBJECTIVES:
A, B, and C

- A. Attachment (effective latch and milk transfer)
- B. Breastmilk production stimulation
- C. Calories (normal and adequate intake)

Targets primary reasons for early discontinuation

- A. Attachment problems
- B. Breastmilk (mother doesn't make enough)
- C. Calories (baby doesn't take enough)

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Misconceptions about ABC
I used to think...

- (*Attachment*) The learning process starts at birth when the baby first looks for the breast
– WRONG!
- (*Breastmilk production*) Hormones control production
– WRONG!
- (*Calories*) Colostrum is nutritious.
– WRONG!

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The low-risk dyad

- What can we expect if:
 - The mother is healthy, motivated, educated
 - The baby is healthy and delivered at term
 - The hospital has staff trained in lactation support

★ attachment

- B. breastmilk production stimulation
- C. calories (normal and adequate intake)

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A: attachment
4 Key Points

1. FIRST HOUR

The longer the interval between birth and first feed, the greater the risk for dysfunctional attachment

Carberry AE. Breastfeeding Medicine 2013; Dewey KG. Pediatrics 2003

First hour breastfeeding is the practice most predictive of exclusive breastfeeding in the hospital after vaginal or c-section delivery.

Perrine et al, Pediatrics 2012 Jul;130(1):54-60.
Kacica, MA. Breastfeeding Medicine 2012 7(6) 409

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OBJECTIVE A: attachment

The olfactory continuity

Prenatal priming for first feed, the last step of the birth process

- Rooting, swallowing, sucking prenatally
- Amniotic fluid pheromones, unique to each mother (genetics/diet)
 - Stimulate nutritive behavior
 - Chemically similar in colostrum and Montgomery gland secretions

Doucet S et al. The secretion of areolar (Montgomery's) glands from lactating women elicits selective, unconditional responses in neonates. *LoS One*. 2009 Oct 23;4(10):e7579.

Guiraudie-Capraz G et al. Biochemical and chemical supports for a transnatal olfactory continuity through sow maternal fluids. *Chem Senses*. 2005 Mar;30(3):241-51.

Marlier L. Human newborns prefer human milk: conspecific milk odor is attractive without postnatal exposure. *Child Dev*. 2005 Jan-Feb;76(1):155-68.

Schaal B. Chemical and behavioral characterization of the rabbit mammary pheromone. *Nature*. 2003 Jul 3;424(6944):68-72.

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A: attachment

Key Points

2. Not always automatic Dewey KG. *Pediatrics* 2003
3. Improves with uninterrupted contact
4. Improvement is production dependent

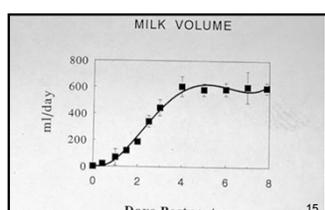
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B: breastmilk production: Key Points

1. Production is strongest determinant of duration and exclusivity of breastfeeding
 - Production within first 4 days predictive of future potential



Day 1 Day 3



MILK VOLUME

ml/day

Days Postpartum

15

B: breastmilk production: Key Points

2. Hormones set the stage: ↓ progesterone (placenta) precedes lactogenesis. Oxytocin release (let-down) enables episodic milk removal
3. Yet the early, frequent and effective removal of colostrum determines future production potential
4. **Early:** 1st hour colostrum removal strongest signal for future production, not hrs 2-6 or after

Time Sensitive!

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C: CALORIES for TERM INFANTS

- Colostrum, 80% of calories of mature milk or formula
- The AGA TERM newborn's fuel (glucose and ketones) comes mainly from endogenous sources (reserves), not from colostrum: *
 - Breakdown of starch (glycogenolysis)
 - Synthesis from amino acids (gluconeogenesis)
 - Breakdown of fatty acids (ketogenesis)
- Average weight loss is 6-7% Macdonald PD 2003, Bertini G 2015
- Needs small, reserves adequate → **Prioritize A, B**

Summary Points for Low Risk Dyads...as simple as **A B C**

- **A Attachment:**
 - First hour
 - Effective, "deep latch" may not happen right away
 - Improves with uninterrupted contact and ↑ production
- **B Breastmilk production stimulation**
 - Time sensitive, cornerstone of breastfeeding rates
- **C Calories (adequate intake)**
 - Needs are small, reserves adequate; prioritize A and B

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At-risk dyads

"Well babies" are not necessarily low-risk

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Who Is At-Risk?

Mothers at risk for insufficient production

- Maternal-infant separation (cesarean births) ★
- Breast surgery/anomalies
- Attachment issues (latch and milk transfer)

Infants at risk for insufficient caloric intake

- Infants with compromised reserves
 - late preterm infants ★
 - postmature infants
- Infants with increased demands
 - Infants of diabetic mothers, SGA infants
 - High bilirubin producers

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Why prioritizing A, B then C is problematic for the LPT infant, the “at-risk” poster child?

- LPT babies are immature in multiple ways. They cannot be expected to behave like term babies.
- Immature thermoregulation
- Immature glucose regulation → hypoglycemia
- Immature processing of bilirubin → jaundice
- Immature breastfeeding skills

“THE GREAT PRETENDERS”

→

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The LPT infant (34-<37 weeks)

26-28 wks

30-32 wks

34-36 wks

40-42 wks.

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Immature breastfeeding skills

- Passive, sleepy, “content to starve”
- Ineffective milk removal
 - Short sucking bursts
 - Long, frequent pauses
 - Unending feeds
- Anorexia, easy to confuse with satiety

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Reprioritize for LPT infants

1. Attachment

passive baby → ineffective milk transfer

2. Breastmilk production

insufficient colostrum removal → delayed lactogenesis, reduced production

3. Calories

high energy needs, suboptimal glucose generating pathways → under nutrition, excessive weight loss
 insufficient colostrum intake → increased deconjugation and reabsorption of bilirubin → hyperbilirubinemia

C,B,A instead of A,B,C

(attachment improvement is production dependent)

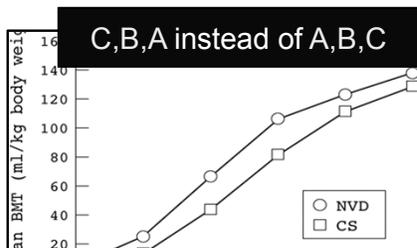
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Why Reprioritize for Cesarean births

- 1st hour feeds: 3.5% cesarean vs. 71.5% vaginal
Zanardo V, 2010
 - Less intake when colostrum most available (1st hrs.)
 - Less production stimulation → delayed lactogenesis
 - Greater weight loss evident by 6 hrs. with ≥10% weight loss in 25% cesarean vs. 10% vaginal births
Flaherman 2015, Preer GL, 2012; Fonseca MJ, 2014
- Formula by discharge 2X higher (25% vs. 11%) and lower early breastfeeding rates and at 7 days, 3 mo, and 6 mo. Prior E, 2012, Zanardo V, 2010
- Less milk transfer over first 6 days Evans KC, 2003

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Less breastmilk intake over the first 6 days in caesarean (CS) vs. vaginal (NVD) births

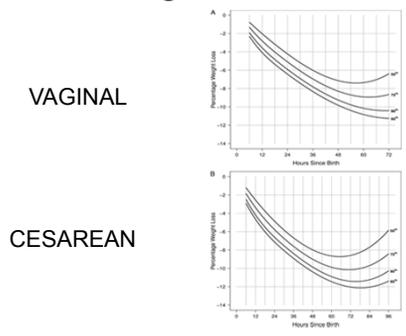


By day 6, only 20% of cesarean infants had regained birth weight compared with 40% of the vaginal births.

K C Evans et al. Arch Dis Child Fetal Neonatal Ed 2003;88:F380-F382

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Predictive weight loss differentials by 6 hours



Flaherman VJ. Pediatrics 2015

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PEDIATRICS

Complications become less remedial with time. What we may not hear about...

- Exhaustive and demoralizing remedial regimens

- Enormous sense of grief a mother deals with when breastfeeding fails

- Bad press

The Experience of Breastfeeding the LPT Infant A Qualitative Study. Kair LR. 2015 Breastfeeding Med 29

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What Is Needed?

- Given the prevalence of dyads at risk for *insufficient production and suboptimal intake*



- Given that no amount of skin-to-skin and unrestricted breastfeeding reduces these two problems when infants fail to access sufficient colostrum or stimulate an adequate supply

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What Is Needed?

- Given these time-sensitive problems may worsen by the hour
- Given that many mothers don't receive 1st hour help, especially cesarean birth mothers
- Given the appropriate encouragement for exclusive breastfeeding

“Perfect Storm” or perfect time for change in strategy?

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Practice changes:

1. First hour breastfeeding for all, including cesarean births

- N=565, military hospital in India
- Higher rates of exclusive breastfeeding than with usual hospital care at:
 - discharge (89.13% vs. 75.94%, p=0.004)
 - 2 weeks (85.51% vs. 53.38%, p<0.001)
 - 6 weeks (74.64% vs. 38.35%, p<0.001).
- This single intervention significantly improves rates of exclusive breast feeding.

Jesmin E, 2015

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Practice changes

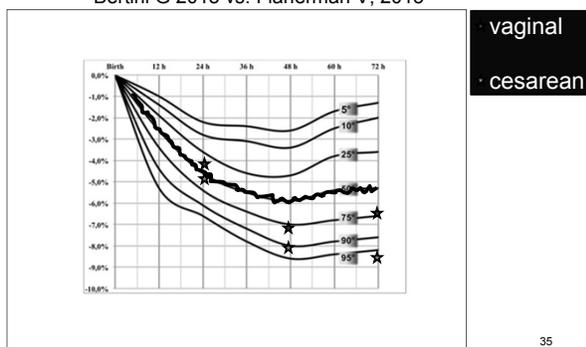
2. Low threshold for hand expressed colostrum feeds

Bertini G 2015

Flaherman VJ 2015

- | | |
|--|---|
| <ul style="list-style-type: none"> • 1760 “natural births” with 1st hr. feeds • Low threshold for hand-expressed spoon feeds • Weight loss 5.95% • Nadir at 44 hr. • Zero % with 10% weight loss (3.9% lost ~9%) | <ul style="list-style-type: none"> • 83,433 vaginal “routine care” • Rarely used hand expressed spoon feeds • Weight loss 7.1% • Nadir at 48-72 hr. • 10% with 10% weight loss |
|--|---|
- Weight by **6** hour predictive of subsequent 10% loss

Mean weight loss for term births, with or without spoon-fed colostrum
Bertini G 2015 vs. Flaherman V, 2015



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Practice changes

3. Prioritize CBA vs. ABC for at-risk dyads

C, Calories

- Insure 1st hr colostrum, at breast and/or by spoon
- Unrestricted breastfeeding plus liberally spoon feed colostrum to satiety

B, Breastmilk production

- Insure 1st hr colostrum removal
- Combine hand expression with breastfeeding

A, Attachment

- Insure 1st hr skin to skin and prn assistance with attachment. (avoid over-reliance on breast crawl)
- Improves with time, contact and robust production

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Practice changes

- 4. Teach mothers and partners about helping hands in the first hour
“A Mother’s Touch”
Prevent the “lost first hour syndrome”
“Body-feeding” not Breastfeeding

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First Hour Breastfeeding with “A Mother’s Touch” for every newborn mammal



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Video “A Mother’s Touch”

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Summary:

4 Practices changes to reduce risks

1. Make every first hour count in every scenario
2. Low threshold for hand-expressed spoon feeds
3. Prioritize CBA vs. ABC for at-risk dyads
4. Mother/partner helping hands in 1st hour

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System Changes

Cornerstones of an Optimal Care

- – Prevention vs. Problem oriented
 - Prevent sending home mothers who won't make enough and babies who won't get enough
- Available vs. Episodic
 - • 24/7 for all dyads vs. a restricted few beneficiaries
 - Begin 1st hour
- – Sustainable vs. Unsupportable (cost/time)
 - Options: Employ more LCs or maintain high level training of bedside staff 42

Think out of the box! ...a not yet validated proposal

1. AWHONN's Nursing for Women's Health 2013,17;478-488.
2. J Hum Lact. 2012 Feb;28(1):11-3
3. J Hum Lact 2013. 29: 635
4. Breastfeeding Medicine. 2014;9:180-183.
5. Breastfeeding Medicine, 2014: Vol. 9 (7);327-328
6. 2014 Sixth Annual Summit on Breastfeeding, Washington D.C.

A model to achieve:
preventative care for all vs. problem-oriented care for a limited number of beneficiaries 43

4 - Step Plan

1. Adopt a Baby-friendly breastfeeding hospital policy
2. Adopt a focused, streamlined curriculum with core competencies
 - Low risk: **ABC**
 - At-risk: **CBA** 44

4 - Step Plan

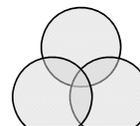
3. Train bedside staff:
- A**ttachment
 - B**reastmilk production (hand expression)
 - C**alories (nomograms for wt. and bili, spoon feed)
- Learning opportunities
- ✓ Delivery room (L.C. in L&D for staff training)
 - ✓ daily bedside responsibilities
 - ✓ shadowing L.C.
 - ✓ help in group (multi-cultural) maternity unit breastfeeding classes
 - ✓ mandatory written and practical demonstrations of core competencies ("See one, do one, teach one")

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4 - Step Plan

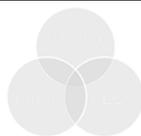
4. Introduce the ABC plan in Labor & Delivery. Follow up with daily, brief **bedside** rounds with three participants: the *mother*, her *nurse* and the *lactation specialist* with a focused agenda (with M.D. support)

(prioritize ABC for low risk; CBA for at-risk)



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Bedside Rounds



Focused Agenda:

- What skills require additional tutoring?
- How, where and who provides services?
- Frequent bedside help, group classes, mother-centric and production-centric teaching aids
- Same approach/language in all settings, beginning in the delivery room

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Could such a program....

- From the first minutes, offer effective, consistent, and available bedside care for each dyad?
- Reduce the need for pumping, bottle feeding, phototherapy, discharge delays, and re-admissions?
- Increase the impact of lactation consultants, breastfeeding rates, and staff and patient satisfaction?

What's the harm in trying?

What's the harm in not trying?

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SIX Take Home Points:

1. What we do (or do not do) in the first 3 days (first hour) influences the duration and exclusivity of breastfeeding.
2. Critical ingredient to long-term breastfeeding is adequate milk supply.
3. Frequent and effective removal of colostrum beginning in the 1st hour influences later production.
4. As demonstrated by VLBW infants, the process of attachment may be gradual and most dependent on a robust milk supply.

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SIX Take Home Points:

5. Early hand expression and spoon feeding in conjunction with breastfeeding may reduce
 - Insufficient production
 - Insufficient intake
 - The subsequent need to pump and bottle feed
6. For the at-risk infant, reframing management from A,B,C to C,B,A creates a more realistic, safe, unpressured plan to enable exclusive breastfeeding, the goal of breastfeeding management.

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Are there simple solutions?
 Maybe only what really matters the most, matters at all.

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Extra slides, prn

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PREVENTION

- Third day, 37 wk AGA infant, NSVD, scheduled for discharge.
- At 37 weeks (first week of term gestation) morbidity is twice that of 38 weeks
- Exclusively breastfed, primip mother says “going well”
- Consistent, skilled, bedside professional assessment?
- Weight down 10%, milk “not yet in”, bilirubin 15.0,
- Complications of insufficient milk intake/production
- Recommendations:
 - LC consult prior to discharge
 - mother rent a pump and use as much as possible
 - supplementation after each breastfeed.
 - Follow up with pediatrician the next day

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AVAILABLE vs. EPISODIC

93% of primiparous, educated mothers express early concerns re attachment and production. At 2 months, 23% stop vs. 3% of mothers w/o concerns.

Wagner EA, Pediatrics. 2013;132(4):865-875

•Can we provide 93% of mothers a lactation consultation? Episodic, specialized care restricts the number of beneficiaries, when the vast majority of mothers ask for and need timely care.

•Adding more LCs works! But is this sustainable?
Murphy L., Hum Lact 2014 (NICU QI re pumping)

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Sustainable vs. Unsupportable

... too costly, time-consuming, difficult?

- Breastfeeding support, before problems get too far downstream, can be simplified and relatively easy to teach and learn.
- Can we provide trained, available delivery room and bedside care, respecting the constraints of time, skills, and hospital resources?

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Why Spoons may be best?

Plastic spoons: no risk, no cost, non-medical, reusable, readily available, convenient for both collection and delivery of small volumes of colostrum. Not viewed as a “medical intervention”, requires minimal to no training of parents or staff, is safe, effective...and studied.

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Spoons/Cups

1) Effect of cup feeding and bottle feeding on breastfeeding in late preterm infants, a RCT: Yilman G J Hum Lact. 2014

cup-fed (n=254) or bottle-fed (n=268).

Cup-feeding significantly increased exclusive breastfeeding at discharge, 3 months and 6 months, with no adverse outcomes.

2) Spoon feeding results in early hospital discharge of low birth weight babies. Kumar A. J Perinatol. 2010

RCT infants ≥ 32 wks, compared tube vs. spoon feeding with outcome measures of weight, ease, safety

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Gentle, cue-based help with attachment

- Science supports:
 - 1st hr skin-to-skin
 - 1st hr feed
 - 1st hr milk expression
- No science behind avoidance of assistance with 1st latch.
- Term infants given 60 min with no assistance.
 - Roughly 75% complete (90% vaginal; 10% cesarean)
- Risks for the 25% who fail (A, B & C)
 - A (dysfunctional suckling)
 - B (insufficient production)
 - C (suboptimal intake)

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Can we keep it simple and prepare parents?

First Hour Breastfeeding
with
A Mother's Touch

Stanford Nursery website????

drjanemorton@gmail.com

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