Pacifiers and Breastfeeding

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American Academy of Pediatrics Policy Statement (*Pediatrics* 2005)

- AAP recommends use of pacifier throughout first year of life.
    - When infant placed for sleep – not to be reinserted after sleep
    - Not to be coated in sweet solution
    - Cleaned often and replaced regularly
    - For BF infants, pacifier to be introduced after 4 weeks of age when BF established.

- "evidence is insufficient to recommend BF as a strategy to reduce SIDS"

- "BF is beneficial and should be promoted"

Evidence reviewed by AAP

- Recommendations for pacifier use based on a meta-analysis by Hauck et al *Pediatrics 2005*

- Protective effect of pacifiers on incidence of SIDS

usual pacifier use

– summary odds ratio from 4 studies: 0.71 (0.59-0.85)

(Carpenter, L'Hoir, McGarvey, Mitchell)

used at last sleep

– summary odds ratio from 7 studies = 0.39 (0.31-0.50)

(Carpenter, Fleming, Hauck, L'Hoir, McGarvey, Mitchell, Tappin)

"Until now concerns about deliterious effects have largely prevented introduction of pacifiers as risk-reducing method"

- Breastfeeding duration
- dental malocclusions
- otitis media
- gastrointestinal infections

- Observational studies vs RCT

RCT 1
Pacifier use, early weaning and cry/fuss behaviour
Kramer et al 2001 *JAMA*

Intervention: counseling (n = 281) Quebec

Experimental Gp	Control Gp
Pacifier avoidance other ways to calm infant	No reference to pacifier avoidance

Results: <u>Reduced pacifier use in expt gp</u>

    Increased Avoidance (37% vs 16%) => 63% vs 84% use
    Decreased daily use (41% vs 56%)
    Decreased number daily insertions (0.8 vs 2.4/day at 4wks)

Outcome: No difference in weaning at 3 mths (RR,1; 95%CI,0.6-1.7

Limitation: not measure of avoidance *vs* pacifier use

Kramer et al 2001 *JAMA*

- When ignored randomisation there was a strong observational association between daily pacifier use and weaning at 3 mths
  - ever vs never (RR,1.3; 95%CI, 1.01-1.6)

Conclusion

- Pacifier use is marker of BF difficulties.

RCT 2
Effect of bottles, cups and dummies on breastfeeding in preterm infants Collins et al 2004 *BMJ*

Australia n= 319, Preterm infants (23-33 wks gestation)
Mother wanted to BF

cup no pacifier	bottle no pacifier
cup pacifier	bottle pacifier

Outcomes: Full / any BF at discharge, 3 & 6 mths
No difference according to dummy use for any outcomes

Cup feeding > liklihood full BF on discharge, incr hospital stay

Collins 2004 *BMJ*

Limitations:

Poor compliance (31% of no dummy gp had dummy)

Specific sample: preterm infants

Intervention prior to discharge only

RCT 3

RCT of pacifier use and bottle feeding or cup feeding and effect on BF. Howard et al 2003 *Pediatrics*

N = 700, USA, 36-42 wk gestation, BF & wished to use pacifier

cup early pacifier (2-5 d)	bottle early pacifier
cup late pacifier (>4wk)	bottle late pacifier

Good compliance to gp

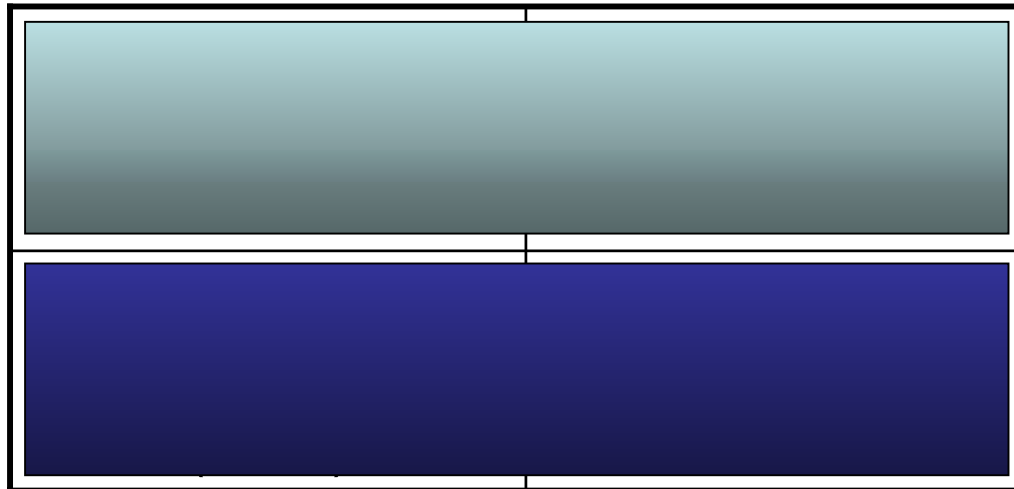Interviews up to 52 wks

Howard et al 2003 *Pediatrics*

<u>Results</u>

Pacifier vs no pacifier

    less exclusive BF at 4 wks 1.5 (1.0-2.0) p=.03

Introduction of pacifier in 1st week vs after 4 weeks

    decreased overall BF duration

<u>Results at 4 wks</u>

Pacifier

No pacifier

Howard et al 2003 *Pediatrics*

- Authors' conclusion: continue pacifier avoidance
- Points to note
  - no group with <u>no pacifier use after 4 weeks</u>.
  - can't report on <u>no pacifier</u> vs pacifier after 4 wks
  - 94% used pacifier by 6 weeks of age

Caution re interpretation: "Pacifier introduction after 1 month of age was not detrimental to BF duration" *p 721Hauck et al 2005*

cup early pacifier (2-5 d)	bottle early pacifier
cup late pacifier (>4wk)	bottle late pacifier

Predictors of Breastfeeding Duration: Evidence From a Cohort Study

Scott JA, Binns CW, Oddy WH and Graham HI

Aim

- to report the duration of breastfeeding among a population of Australian women
- to identify factors associated with the duration of
  - full breastfeeding to 6 months and
  - any breastfeeding to 12 months

Methods

- 2002-2003
- N=587 women (Perth)
- baseline questionnaire (before/soon after discharge)
- telephone interviews at 4, 10, 16, 22, 32, 40 , 52 weeks
- sociodemographic, biomedical, hospital-related and psychosocial factors associated with <u>initiation</u> and <u>duration</u> of BF
- Cox's proportional hazards model used to ID factors associated with risk for cessation of
  - full BF before 6 mths and
  - any BF before 12 mths

Definitions

- Full BF: breastmilk as main source of nourishment
  - With/without water, water based drinks, fruit juice or oral rehydration solution
  - No other liquids, breast milk substitutes or solids

- Any BF: fully BF or receiving both breast milk and a formula with/without solids

Results: Duration of Breastfeeding

TABLE 2 Women Who Were Breastfeeding in the PIFSII Compared With the PIFSI and National Health Survey Results

Any Breastfeeding[a]	PIFSII 2002–2003 (n = 587)	PIFSI 1992–1993 (n = 556)	NHS 1995[b] Perth	NHS 2001[c] Australia
At discharge	93.8 (91.9–95.7)	83.8 (80.7–86.9)	87.0 (83.7–90.3)	83.0
1 wk	89.6 (87.1–92.1)	80.7 (77.4–84.0)	NA	NA
1 mo	78.2 (74.9–81.5)	74.8 (71.1–78.4)	NA	NA
3 mo	62.1 (58.2–66.0)	60.9 (56.9–65.0)	69.0 (64.5–73.5)	
6 mo[d]	45.8 (41.8–49.8)	50.0 (45.8–54.1)	50.6 (46.1–55.1)	48.0
12 mo	19.2 (16.0–22.4)	NA	NA	23.0

Data are % (95% CI). NHS indicates National Health Survey; NA, not available.

Bivariate analysis
(survival analysis)

- Significantly less infants <u>fully BF</u> or experienced <u>any BF</u> at various time points
  - if mother<30yrs
  - if infants introduced to a pacifier at or before 4 wks
  - if mother smoked during pregnancy
  - if difficulties with BF < 4wks
  - If mother did not have a strongly favourable attitude toward BF*
  - If mother intended to discontinue BF <6 mths
  - If partner or own mother did not prefer BF

Mulitvatiate analysis
(Cox's proportional hazards model)

- factors shown to be independently associated with the risk for cessation of
  - any BF<12 mths
  - full BF< 6 mths

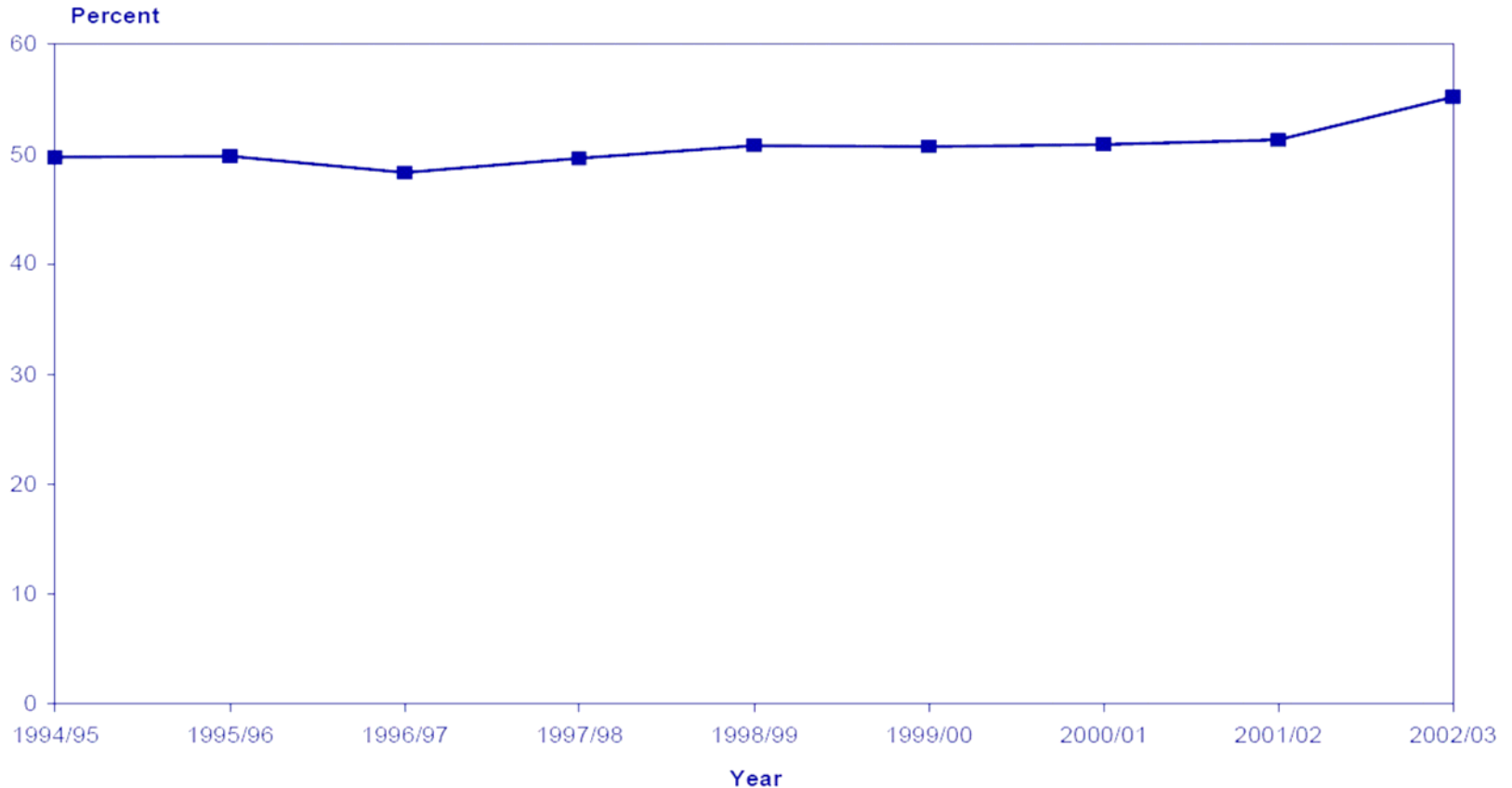| Variable[a]	Fully Breastfeeding to 6 mo		Any Breastfeeding to 12 mo	
	HR	95% CI	HR	95% CI
Maternal age, y				
<20	NS		0.57	0.23–1.41
20–29			1.55	1.21–1.98
≥30			1.00	
Age of infant when mother returned to work				
<6 mo	1.42	1.08–1.88	1.69	1.28–2.34
6–12 mo	1.63	1.18–2.25	1.50	1.07–2.09
Not working at 12 mo	1.00		1.00	
Breastfeeding problems at or before 4 wk				
Yes	1.75	1.35–2.23	1.64	1.29–2.10
No	1.00		1.00	
Age of infant when pacifier first introduced				
<4 wk	1.92	1.39–2.64	1.92	1.40–2.64
4–10 wk	1.85	1.06–3.22	1.97	1.13–3.46
>10 wk	1.47	0.79–2.73	1.61	0.86–3.00
Not using a pacifier at 12 mo	1.00		1.00	
Mother smoked during pregnancy				
Yes	1.32	1.02–1.71	1.35	1.05–1.73
No	1.00		1.00	
Mothers infant feeding attitude	0.97	0.96–0.99	0.96	0.94–0.98
Father's feeding preference[b]				
Prefers formula or ambivalent	1.00		NS	
Prefers breastfeeding	0.71	0.55–0.91		
Maternal grandmother's feeding preference[b]				
Prefers formula or ambivalent	NS		1.00	
Prefers breastfeeding			0.71	0.55–0.2
Planned pregnancy				
Yes	0.76	0.60–0.98	NS	
No (unintended or mistimed)	1.00			
−2 log likelihood (deviance)	2315.38, df = 10		2880.62, df = 11	

* Iowa infant feeding attitude scale

Conclusion (Scott 2006)

- Few women achieving recommended BF duration
- More guidance to prevent/manage BF problems
- Discouraged pacifier use < 10 weeks
- Improved maternity leave

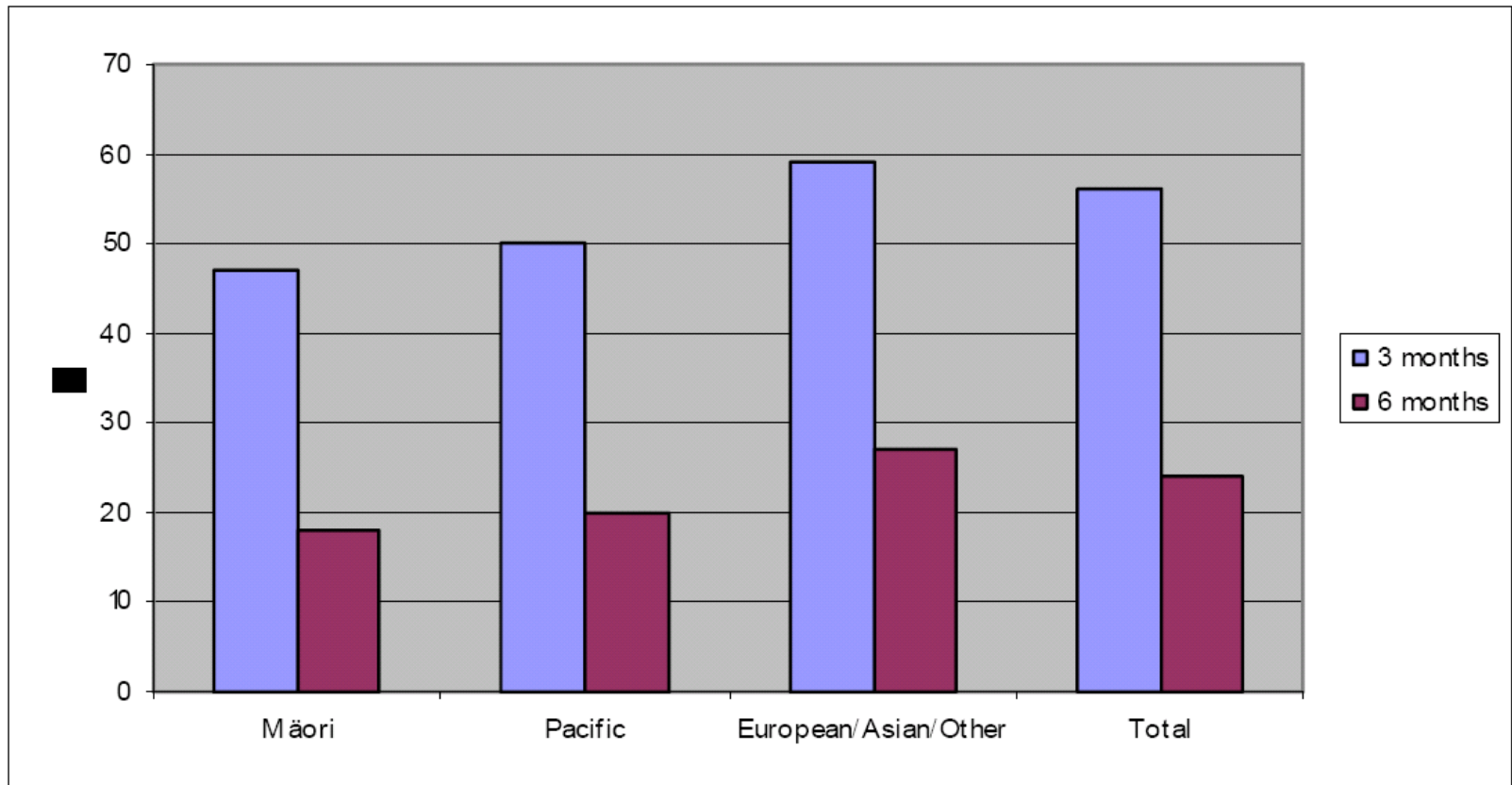# New Zealand Breastfeeding Data

Fig: **135**   Full breastfeeding at three months, 1994/95–2002/03*
The data relate to children receiving breast milk only, no infant formula or solids, at ages
10 weeks one day to 15 weeks.

New Zealand Breastfeeding Data

Fig: **137** Breastfeeding (exclusive & full) (by ethnicity), Jan 2004 to Dec 2004, percent*

Compare:Scott study, Australia, 12% fully BF at 6 mth

Discussion

- NZ and Australia (Perth sample) not meeting BF targets

- Median age full BF = 5 weeks (Scott 2006)
  - ? impact of pacifier introduction as BF decreasing

- Introduction of pacifier after 4 weeks based on RCT's
  - Kramer RCT:compared degrees of pacifier use after counselling
  - Collins RCT: preterm infants, poor compliance (33% used pacifier in w/o gp), in hospital intervention only
  - Howard RCT: no gp without pacifier after 4 wks

- ? Introduction of pacifier after 10 weeks (Scott 2006)

- Do we have evidence to conclude pacifiers do not impact on BF ?

Discussion

- Observational study:

Maternal motivation to breastfeeding key driver (Scott 2006)

- – If pacifier advocated, impact on maternal motivation?
- – particularly if BF problems in first 4 weeks?

- Is pacifier cause of decreased BF or marker for existing problems?

- Reasons for pacifier introduction –"cultural norm" or due to difficulties

- Do benefits outway the risks?
  - – Don't know
  - – Compared to introduction of supine sleep position?
    - • Mechanism unknown