servicio
neonatología
hospital 12 de Octubre

Breastfeeding and Kangaroo Mother Care

Carmen Pallás Alonso, Bogotá 2018

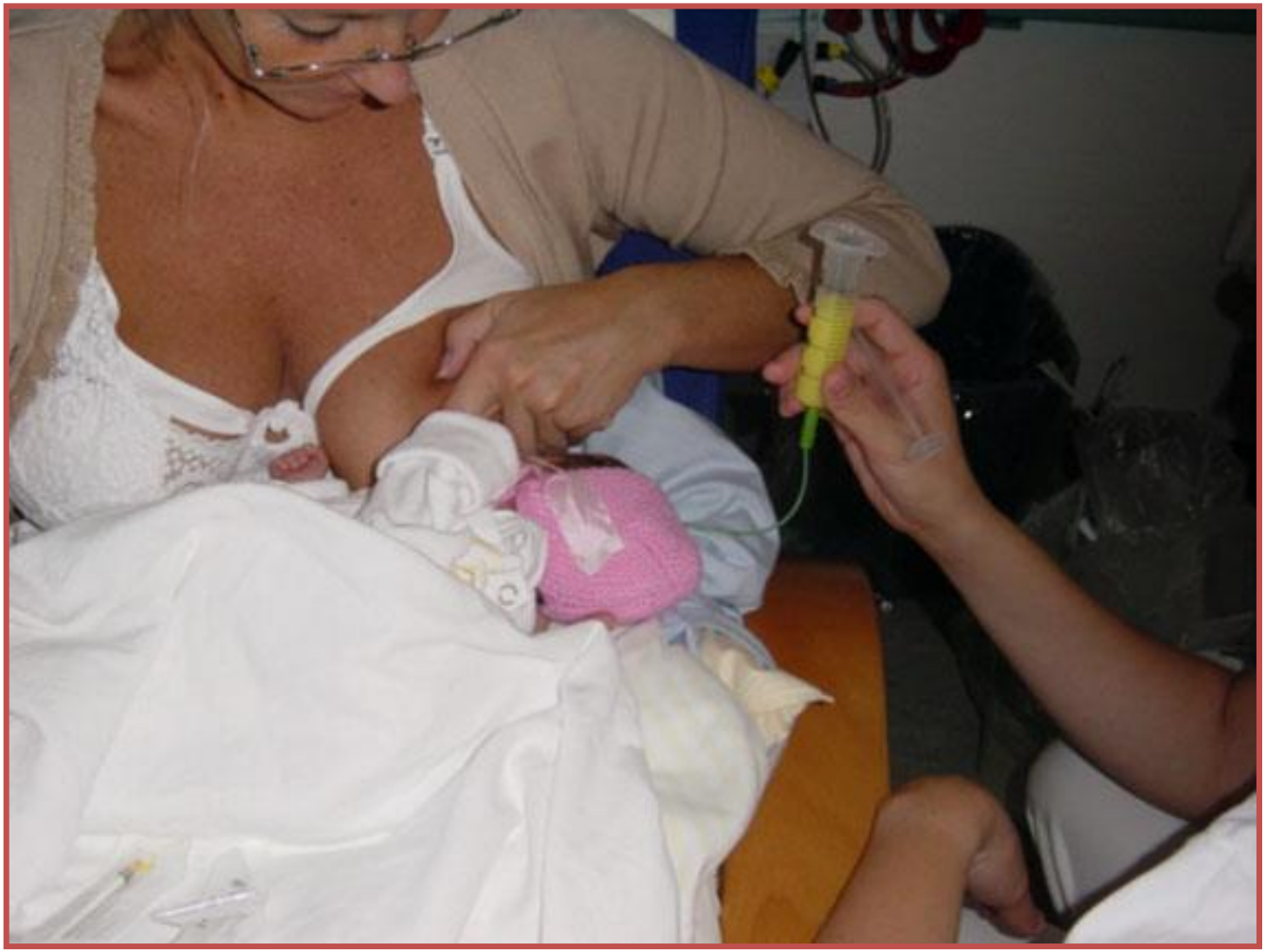
Two big differences:

Two big differences:

Two big differences:

Separation

"Doctors and nurses want your milk...but you can not be with your baby"



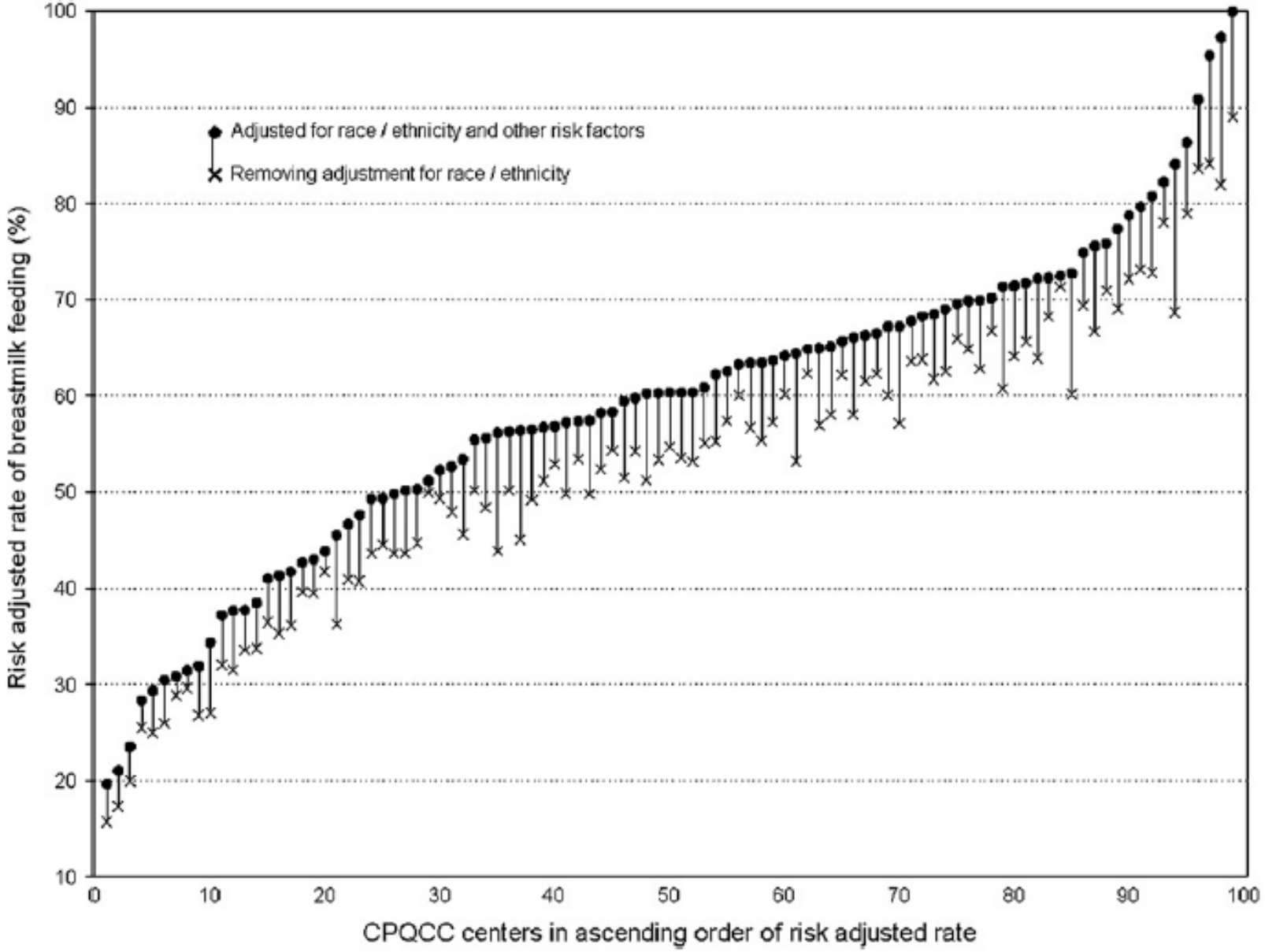
THE JOURNAL OF PEDIATRICS • www.jpeds.com

ORIGINAL ARTICLES

Factors Influencing Breast Milk versus Formula Feeding at Discharge for Very Low Birth Weight Infants in California

Henry Chong Lee, MD, MS and Jeffrey B. Gould, MD, MPH

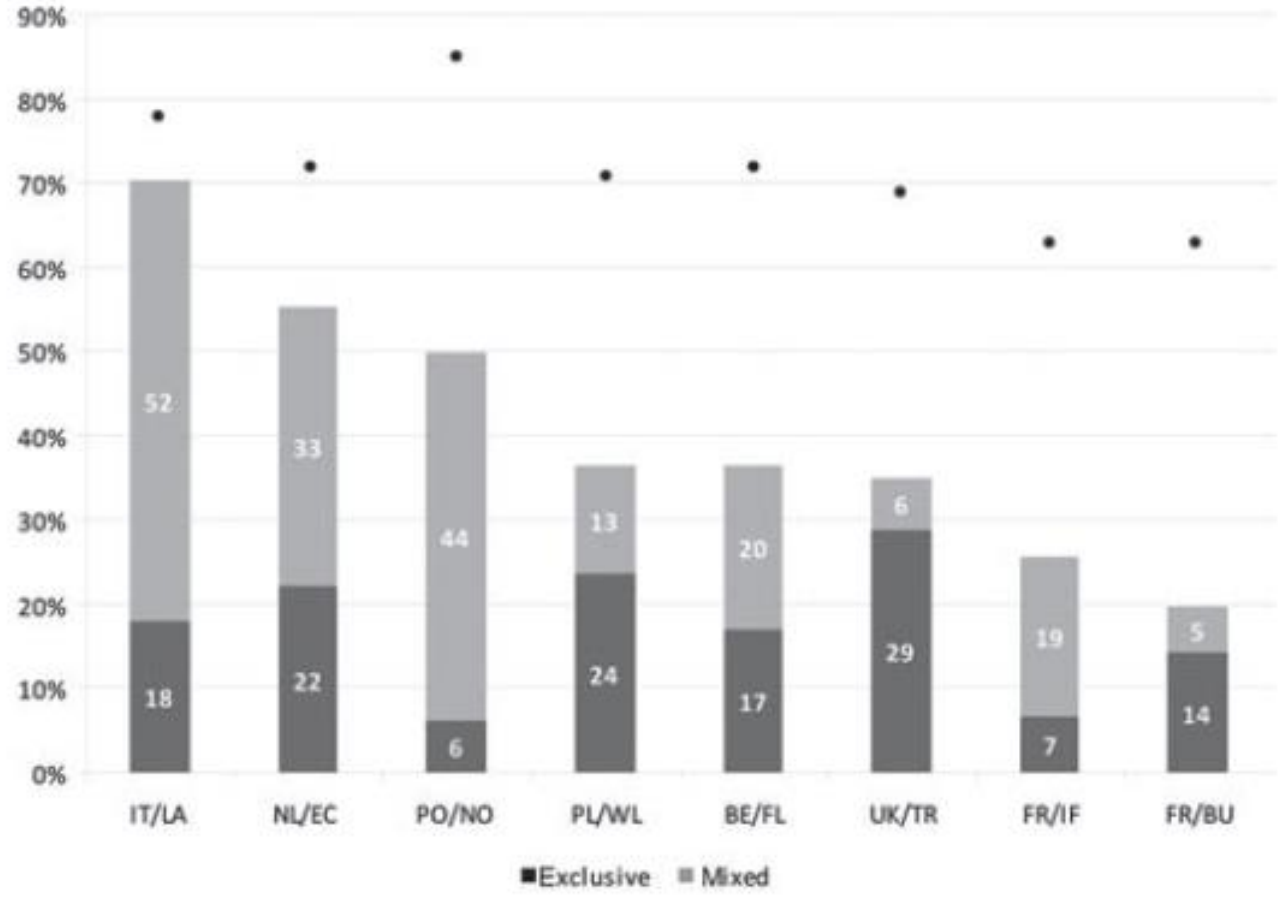
2009;155:657-62)


Adjusted for race / ethnicity and other risk factors
Removing adjustment for race / ethnicity
Risk adjusted rate of breastmilk feeding (%)
CPQCC centers in ascending order of risk adjusted rate
100
90
80
70
60
50
40
30
20
10
0
10
20
30
40
50
60
70
80
90
100

Variations in breastfeeding rates for very preterm infants between regions and neonatal units in Europe: results from the MOSAIC cohort

Mercedes Bonet,[1,2] Béatrice Blondel,[1,2] Rocco Agostino,[3] Evelyne Combier,[4] Rolf F Maier,[5] Marina Cuttini,[6] Babak Khoshnood,[1,2] Jennifer Zeitlin[1,2]; MOSAIC research group

Arch Dis Child Fetal Neonatal Ed 2011;**96**:F450–F452. doi:10.1136/adc.2009.179564



Bonet. M. Variations in breastfeeding rates for very preterm . Mosaic Study. ACDC 2010

Breastfeeding outcomes in European NICUs: impact of parental visiting policies

Marina Cuttini,[1] Ileana Croci,[1] Liis Toome,[2,3] Carina Rodrigues,[4] Emilija Wilson,[5] Mercedes Bonet,[6,7] Janusz Gadzinowski,[8] Domenico Di Lallo,[9] Lena Carolin Herich,[1] Jennifer Zeitlin,[6] on behalf of the EPICE Research Group

Arch Dis Child Fetal Neonatal Ed 2018;**0**:F1–F8. doi:10.1136/archdischild-2017-314723

Infants cared for in units with liberal parental policies were about twofold more likely to be discharged with exclusive maternal milk feeding and exclusive direct breastfeeding

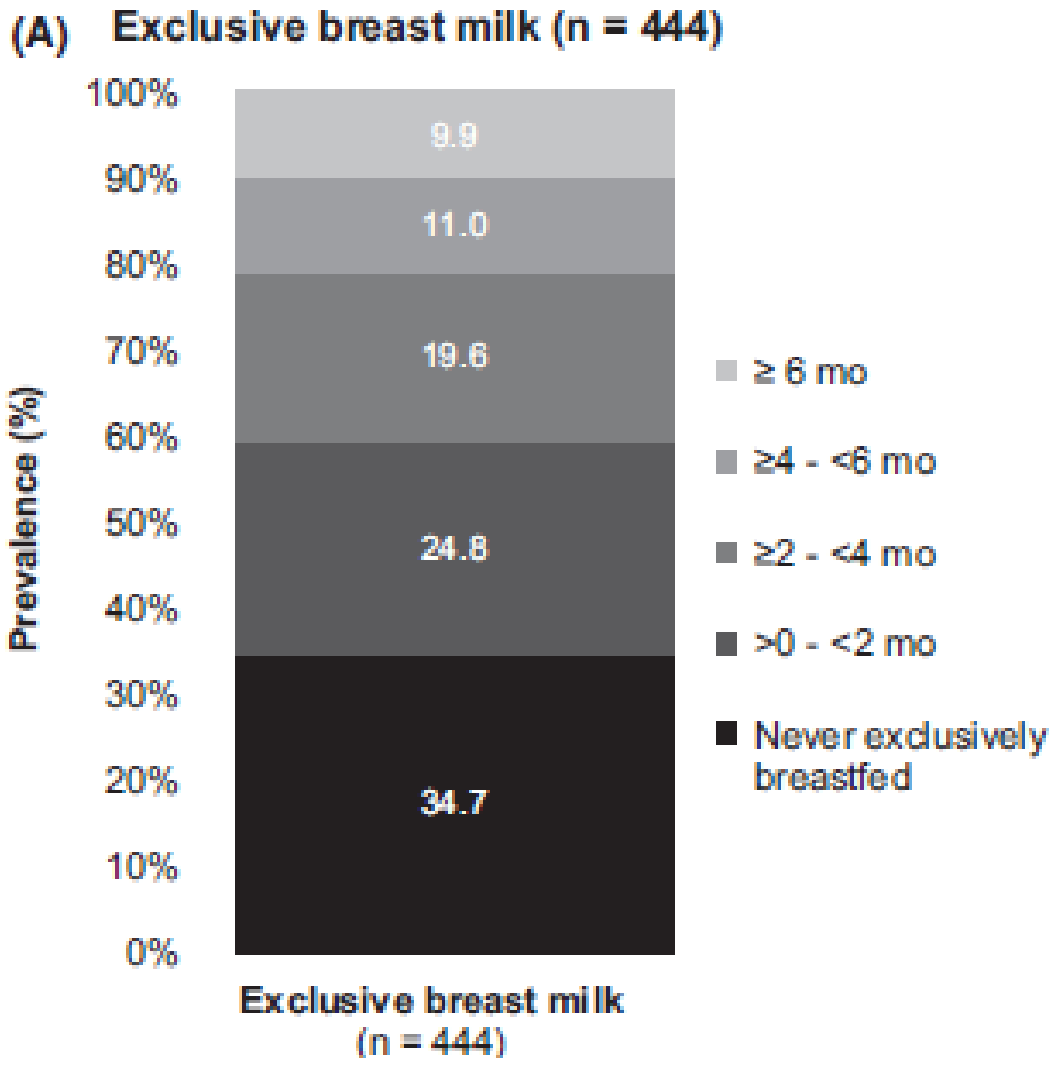
ORIGINAL ARTICLE

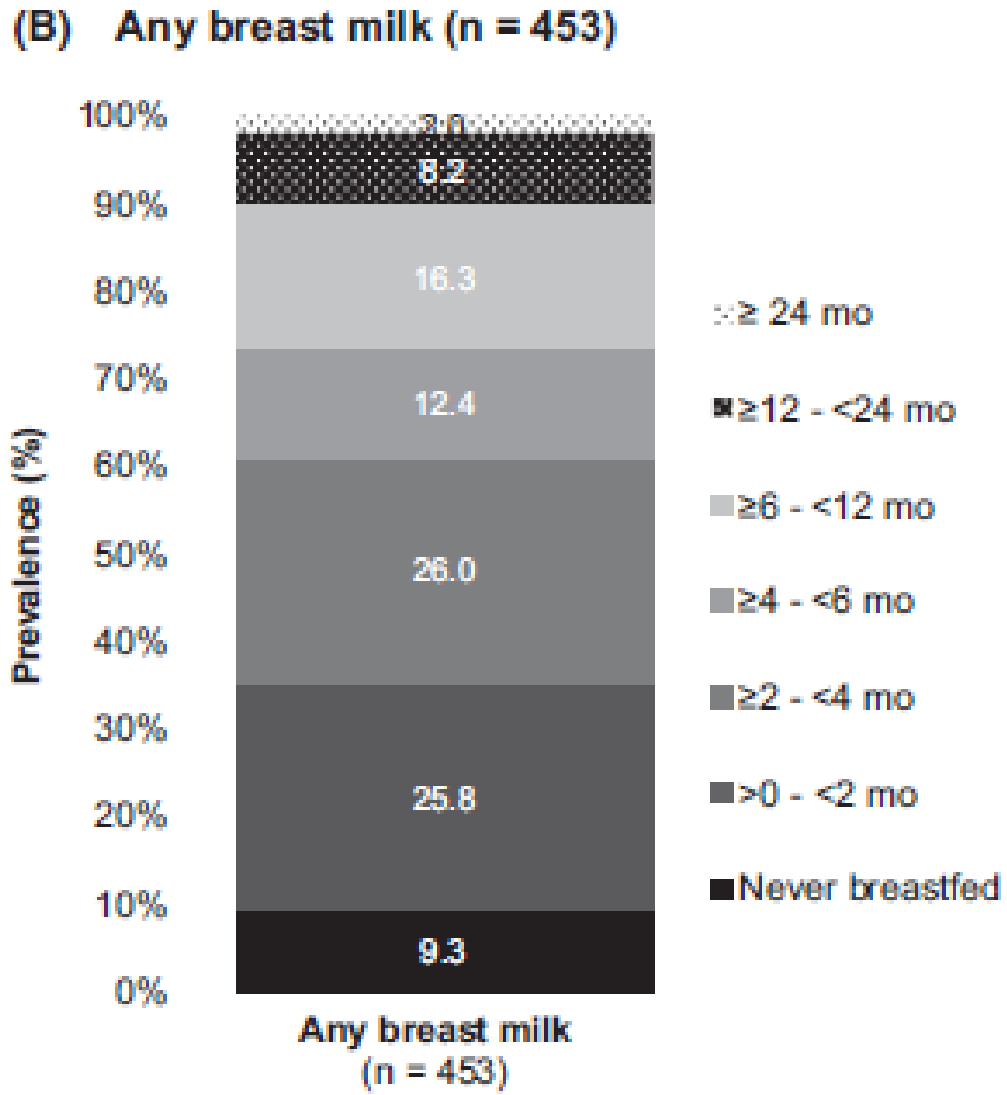
WILEY Paediatric and Perinatal Epidemiology

Prevalence and duration of breast milk feeding in very preterm infants: A 3-year follow-up study and a systematic literature review

Carina Rodrigues[1] | Raquel Teixeira[1] | Maria João Fonseca[1,2] | Jennifer Zeitlin[3] | Henrique Barros[1,2] | on behalf of the Portuguese EPICE (Effective Perinatal Intensive Care in Europe) Network*

Paediatr Perinat Epidemiol. 2018;32:237–246.


(A) Exclusive breast milk (n = 444)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Prevalence (%)
9.9
11.0
19.6
24.8
34.7
≥ 6 mo
≥4 - <6 mo
≥2 - <4 mo
>0 - <2 mo
Never exclusively breastfed
Exclusive breast milk
(n = 444)


(B) Any breast milk (n = 453)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Prevalence (%)
3.0
8.2
16.3
12.4
26.0
25.8
9.3
≥ 24 mo
≥12 - <24 mo
≥6 - <12 mo
≥4 - <6 mo
≥2 - <4 mo
>0 - <2 mo
Never breastfed
Any breast milk
(n = 453)

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ORIGINAL ARTICLES

Breastfeeding Trends Among Very Low Birth Weight, Low Birth Weight, and Normal Birth Weight Infants

Angela G. Campbell, MA, MPH, and Patricia Y. Miranda, MPH, PhD

(J Pediatr 2018;200:71-8).

THE JOURNAL OF PEDIATRICS • www.jpeds.com ORIGINAL ARTICLES

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Angela G. Campbell, MA, MPH, and Patricia Y. Miranda, MPH, PhD

(J Pediatr 2018;200:71-8).

	VLBW	LBW	NBW (>2500g)
Ever breastfeed **(2001)**	60%	58%	70%
Ever breastfeed **(2012)**	81%	73%	79%

PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Twenty-year Follow-up of Kangaroo Mother Care Versus Traditional Care

Nathalie Charpak, Rejean Tessier, Juan G. Ruiz, Jose Tiberio Hernandez, Felipe Uriza, Julieta Villegas, Line Nadeau, Catherine Mercier, Francoise Maheu, Jorge Marin, Darwin Cortes, Juan Miguel Gallego and Dario Maldonado

Pediatrics 2017;139;; originally published online December 12, 2016;
DOI: 10.1542/peds.2016-2063

Kangaroo position

Renfrew MJ. Breastfeeding promotion for infants in neonatal units: a systematic review and economic analysis. Health Technol Assess 2009; 13(40):1-iv.

Topic	Subgroups of intervention	No. of systematic reviews (SRs)	No. of studies in SRs (no of RCTs)	No. of extra primary studies (no of RCTs)	Total no. of primary studies (RCTs)
Increased mother and infant contact	Kangaroo care, skin-to-skin	3	9[a] (7)	3 (2)	12 (9)
Interim feeding methods and related interventions	Nasogastric tube, bottle, cup, nipple shields, pacifiers	3	6 (5)	0	6 (5)
Expressing breastmilk	Electric and pedal pumps, manual, frequency of expressing	1	4[b] (3)	2 (2)	6 (5)
Enhancing breastmilk production	Galactagogues, relaxation, therapeutic touch	2	3 (3)	4[b] (2)	7 (5)
Supporting optimal nutritional intake from breastmilk	Mothers' measures of creamatocrits, breastmilk intake weights, hindmilk feeds	0	0	3 (2)	3 (2)
Breastfeeding education and support	Peer or professional support, community or hospital based. Education for mothers	2	3 (2)	3 (1)	6 (3)
Staff training	Training or education of health professionals	0	0	2 (0)	2 (0)
Early hospital discharge with home support	Home visits and support including home gavage feeding	3	2[c] (2)	0	2 (2)
Organisation of care	Policy, protocol-based care, BFI or non-BFI standard(s)	1	2 (0)	2 (0)	4 (0)
TOTAL		5[d]	29 (22)	19 (9)	48 (31)

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Renfrew MJ. Breastfeeding promotion for infants in neonatal units: a systematic review and economic analysis. Health Technol Assess 2009; 13(40):1-iv.

Study or subgroup	Enhanced contact Events	Enhanced contact Total	Control Events	Control Total	Weight	Risk ratio M-H, fixed, 95% CI
Blaymore Bier, 1996[115]	19	21	11	20		1.65 (1.08–2.50)
Boo, 2007[141]	19	64	9	62		2.05 (1.00–4.17)
Charpak, 1997[107]	177	382	151	364		1.12 (0.95–1.31)

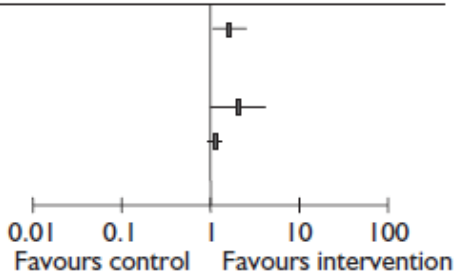

FIGURE 4 *Kangaroo mother care vs standard care: duration of any breastfeeding at hospital discharge or 40–41 weeks corrected age (ITT).*

Renfrew MJ. Breastfeeding promotion for infants in neonatal units: a systematic review and economic analysis. Health Technol Assess 2009; 13(40):1-iv.

Study or subgroup	Enhanced contact Events	Enhanced contact Total	Control Events	Control Total	Weight	Risk ratio M-H, fixed, 95% CI
Blaymore Bier, 1996[115]	10	21	2	20		4.76 (1.19–19.10)
Whitelaw, 1988[147]	17	31	9	32		1.95 (1.03–3.70)

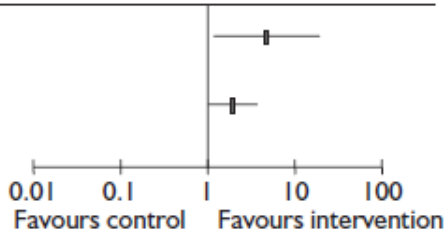

FIGURE 5 *Kangaroo skin-to-skin contact vs standard care: duration of any breastfeeding for prolonged periods (ITT).*

Renfrew MJ. Breastfeeding promotion for infants in neonatal units: a systematic review and economic analysis. Health Technol Assess 2009; 13(40):1-iv.

Conclusion

- Even short periods of skin-to-skin contact increase the duration of any breastfeeding up to 1 month after hospital discharge

Renfrew MJ. Breastfeeding promotion for infants in neonatal units: a systematic review and economic analysis. Health Technol Assess 2009; 13(40):1-iv.

Cochrane Library

Cochrane Database of Systematic Reviews

Kangaroo mother care to reduce morbidity and mortality in low birthweight infants (Review)

Conde-Agudelo A, Díaz-Rossello JL

Conde-Agudelo A, Díaz-Rossello JL.
Kangaroo mother care to reduce morbidity and mortality in low birthweight infants.
Cochrane Database of Systematic Reviews 2016, Issue 8. Art. No.: CD002771.
DOI: 10.1002/14651858.CD002771.pub4.

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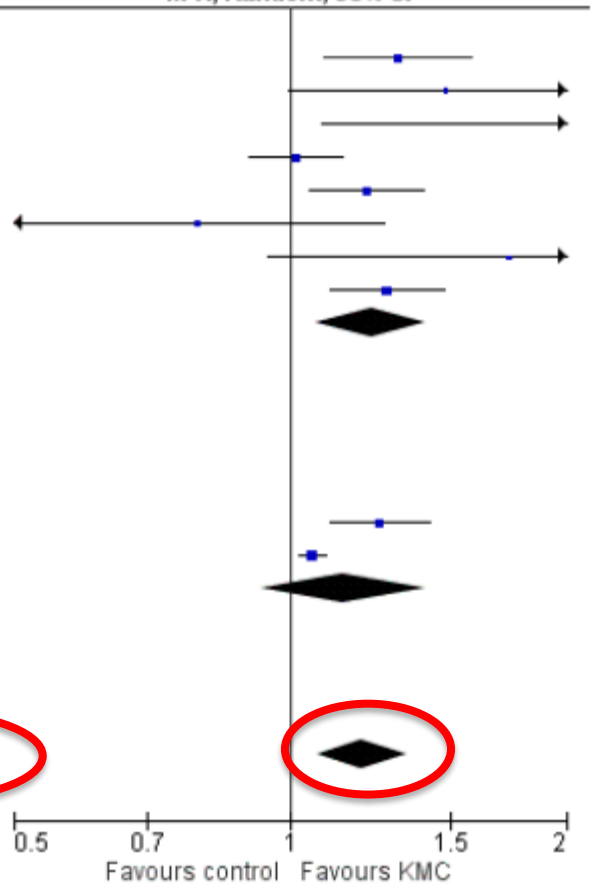
Figure 6. Forest plot of comparison: 1 Kangaroo mother care versus conventional neonatal care, outcome: 1.34 Any breastfeeding at discharge or at 40 to 41 weeks' postmenstrual age - stabilized infants.

Study or Subgroup	KMC Events	KMC Total	Control Events	Control Total	Weight	Risk Ratio M-H, Random, 95% CI
1.34.1 Intermittent						
Ali 2009	51	54	36	50	11.9%	1.31 [1.09, 1.58]
Blaymore Bier 1996	19	21	11	18	5.6%	1.48 [1.00, 2.19]
Boo 2007	18	56	9	62	2.2%	2.21 [1.08, 4.52]
Ghavane 2012	61	68	60	68	14.6%	1.02 [0.90, 1.14]
Kumbhojkar 2016	57	60	47	60	13.5%	1.21 [1.05, 1.40]
Roberts 2000	10	16	11	14	4.4%	0.80 [0.50, 1.27]
Rojas 2003	18	30	9	26	2.9%	1.73 [0.95, 3.17]
Suman 2008	89	91	46	60	13.6%	1.28 [1.11, 1.47]
Subtotal (95% CI)		**396**		**358**	**68.7%**	**1.23 [1.07, 1.41]**
Total events	323		229			
Heterogeneity: Tau² = 0.02; Chi² = 19.56, df = 7 (P = 0.007); I² = 64%						
Test for overall effect: Z = 2.88 (P = 0.004)						
1.34.2 Continuous						
Cattaneo 1998	128	146	93	133	14.2%	1.25 [1.10, 1.42]
Charpak 1997	336	343	296	320	17.0%	1.06 [1.02, 1.10]
Subtotal (95% CI)		**489**		**453**	**31.3%**	**1.14 [0.93, 1.40]**
Total events	464		389			
Heterogeneity: Tau² = 0.02; Chi² = 9.74, df = 1 (P = 0.002); I² = 90%						
Test for overall effect: Z = 1.29 (P = 0.20)						
Total (95% CI)		**885**		**811**	**100.0%**	**1.20 [1.07, 1.34]**
Total events	787		618			
Heterogeneity: Tau² = 0.02; Chi² = 43.99, df = 9 (P < 0.00001); I² = 80%						
Test for overall effect: Z = 3.13 (P = 0.002)						
Test for subgroup differences: Chi² = 0.30, df = 1 (P = 0.58), I² = 0%						



Hospital Universitario 12 de Octubre

REGULAR ARTICLE

Skin-to-skin contact is associated with earlier breastfeeding attainment in preterm infants

Paola Oras (paola.oras@kbh.uu.se)[1], Ylva Thernström Blomqvist[1], Kerstin Hedberg Nyqvist[1], Maria Gradin[2], Christine Rubertsson[1], Lena Hellström-Westas[1], Eva-Lotta Funkquist[1]

1.Department of Women's and Children's Health, Uppsala University, Uppsala, Sweden
2.Department of Paediatrics, Faculty of Medicine and Health, Örebro University, Örebro, Sweden

Acta Paediatrica. Published by John Wiley & Sons Ltd 2016 **105**, pp. 783–789

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Acta Paediatrica. Published by John Wiley & Sons Ltd 2016 **105**, pp. 783–789

Aim: This study investigated the effects of skin-to-skin contact on breastfeeding attainment, duration and infant growth in preterm infants, as this has not been sufficiently explored.

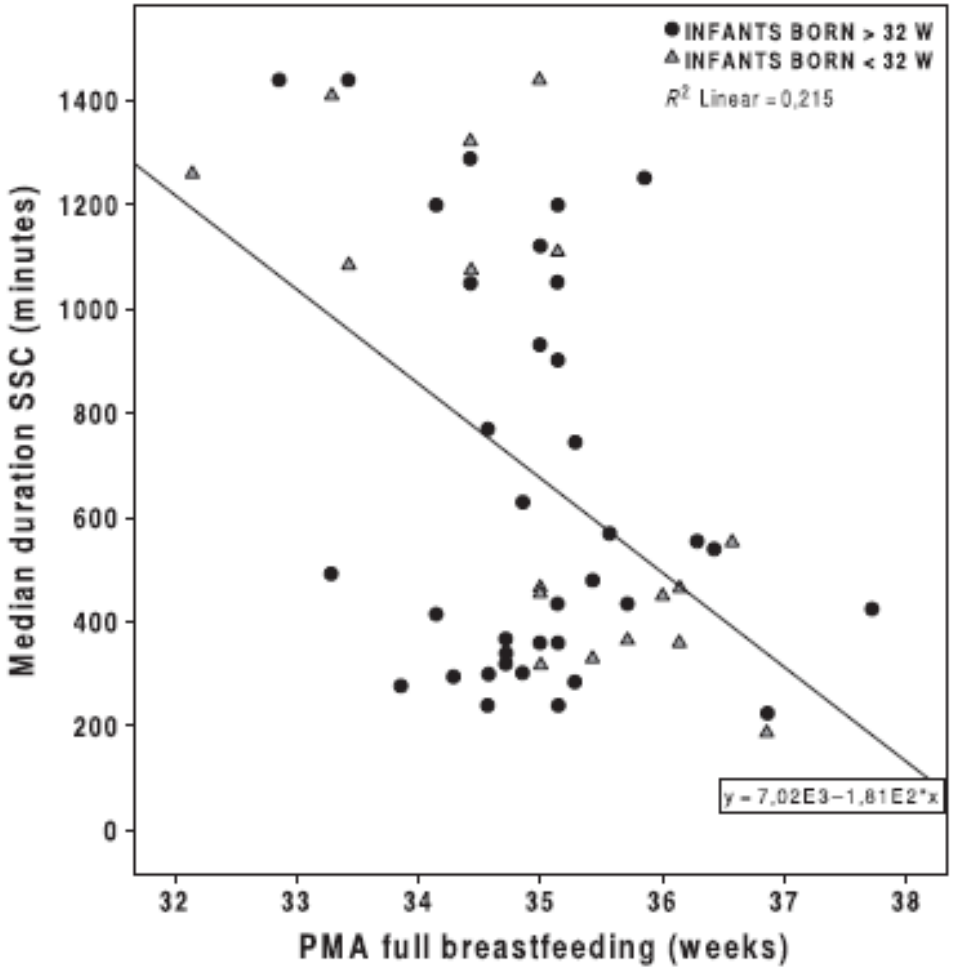

Figure 2 Correlation between the median daily duration of skin-to-skin contact (SSC) in the NICU in minutes and the infants' post menstrual age (PMA) in weeks at attainment of full breastfeeding, split by infants born before and after 32 gestational weeks.

Original Research

international lactation consultant association®

Journal of Human Lactation
1–7

DOI: 10.1177/0890334416685072
jhl.sagepub.com
SAGE

Randomized Controlled Trial on Effect of Intermittent Early Versus Late Kangaroo Mother Care on Human Milk Feeding in Low-Birth-Weight Neonates

Dhaarani Jayaraman, MD[1], Kanya Mukhopadhyay, MD, DM[1], Anil Kumar Bhalla, PhD[1], and Lakhbir Kaur Dhaliwal, MD[2]

Table 3. Feeding Characteristics During Hospital Stay and at Discharge.

Characteristic	Early KMC (n = 80) No. (%)	Late KMC (n = 80) No. (%)	p
Achieved exclusive human milk feeding	69 (86)	36 (45)	< .001*
Achieved breastfeeding	39 (49)	24 (30)	.021*
Type of milk (at discharge)			
Exclusive human milk	66 (83.5)	39 (50.6)	< .001*
Exclusive formula	1 (1.3)	0	
Mixed feeding	12 (15.2)	37 (49.4)	

*p < .05.

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*p < .05.

Necesidad de extracción

Journal of Human Lactation
http://jhl.sagepub.com/

Volume of Milk Obtained in Relation to Location and Circumstances of Expression in Mothers of Very Low Birth Weight Infants

Juliana Acuña-Muga, Noelia Ureta-Velasco, Javier de la Cruz-Bértolo, Rosa Ballesteros-López, Rocío Sánchez-Martínez, Eugenia Miranda-Casabona, Almudena Miguel-Trigoso, Lidia García-San José and Carmen Pallás-Alonso

J Hum Lact 2014 30: 41 originally published online 8 November 2013
DOI: 10.1177/0890334413509140

Milk Expression

Table 2. Volume (mL) of Breast Milk Expressions According to Location of Expression and Circumstances.[a]

Location and Circumstance of Expression	Unadjusted Estimate	Adjusted by Mother		Adjusted by Mother and Covariate	
	Mean (95% CI)	Mean (95% CI)	*P* Value	Mean (95% CI)	*P* Value
Far from the infant	106.3 (102.8-109.9)	97.2 (83.1-111.4)	Reference	97.4 (84.3-110.5)	Reference
Close to the infant	101.8 (97.8-105.9)	101.1 (86.9-115.3)	.045	101.2 (88.1-114.3)	.046
Far from the infant					
At home	107.6 (104.0-111.2)	98.0 (84.1-111.8)	Reference	98.4 (85.3-111.5)	Reference
In hospital, other room	74.8 (56.1-93.5)	87.3 (66.7-107.9)	.185	87.4 (67.3-107.4)	.17
In proximity to the infant					
Beside the incubator	99.4 (93.0-105.9)	96.9 (79.9-113.9)	Reference	96.7 (80.9-112.4)	Reference
KMC	104.2 (96.9-111.6)	108.0 (90.8-125.1)	.0030[b]	107.7 (91.8-123.5)	.0030[b]
After KMC	120.8 (111.1-130.5)	117.8 (98.0-137.6)	.0024[b]	117.7 (99.0-136.5)	.0024[b]
Kangaroo father care	96.2 (87.6-104.8)	103.0 (85.1-121.0)	.89[b]	102.6 (85.9-119.4)	.89[b]

Acuña Muga J, Ureta Velasco N et al. Journal Human Lactation. 2014; 30:41

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After KMC	120.8 (111.1-130.5)	117.8 (98.0-137.6)	.0024[b]	117.7 (99.0-136.5)	.0024[b]
Kangaroo father care	96.2 (87.6-104.8)	103.0 (85.1-121.0)	.89[b]	102.6 (85.9-119.4)	.89[b]

Acuña Muga J, Ureta Velasco N et al. Journal Human Lactation. 2014; 30:41

Milk Expression

Table 2. Volume (mL) of Breast Milk Expressions According to Location of Expression and Circumstances.[a]

Location and Circumstance of Expression	Unadjusted Estimate	Adjusted by Mother		Adjusted by Mother and Covariate	
	Mean (95% CI)	Mean (95% CI)	*P* Value	Mean (95% CI)	*P* Value
Far from the infant	106.3 (102.8-109.9)	97.2 (83.1-111.4)	Reference	97.4 (84.3-110.5)	Reference
Close to the infant	101.8 (97.8-105.9)	101.1 (86.9-115.3)	.045	101.2 (88.1-114.3)	.046
Far from the infant					
At home	107.6 (104.0-111.2)	98.0 (84.1-111.8)	Reference	98.4 (85.3-111.5)	Reference
In hospital, other room	74.8 (56.1-93.5)	87.3 (66.7-107.9)	.185	87.4 (67.3-107.4)	.17
In proximity to the infant					
Beside the incubator	99.4 (93.0-105.9)	96.9 (79.9-113.9)	Reference	96.7 (80.9-112.4)	Reference
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Recommendation

Expression, close to the baby, immediately after kangaroo mother care

RESEARCH Open Access

The economic benefits of increasing kangaroo skin-to-skin care and breastfeeding in neonatal units: analysis of a pragmatic intervention in clinical practice

Karin Lowson[1*], Clare Offer[2], Julie Watson[3], Bill McGuire[4] and Mary J Renfrew[5]

Lowson et al. International Breastfeeding Journal (2015) 10:11
DOI 10.1186/s13006-015-0035-8

For every L1 invested to increase Kangaroo care and breastfeeding rates, between L400 and L1300 of benefit was generated.

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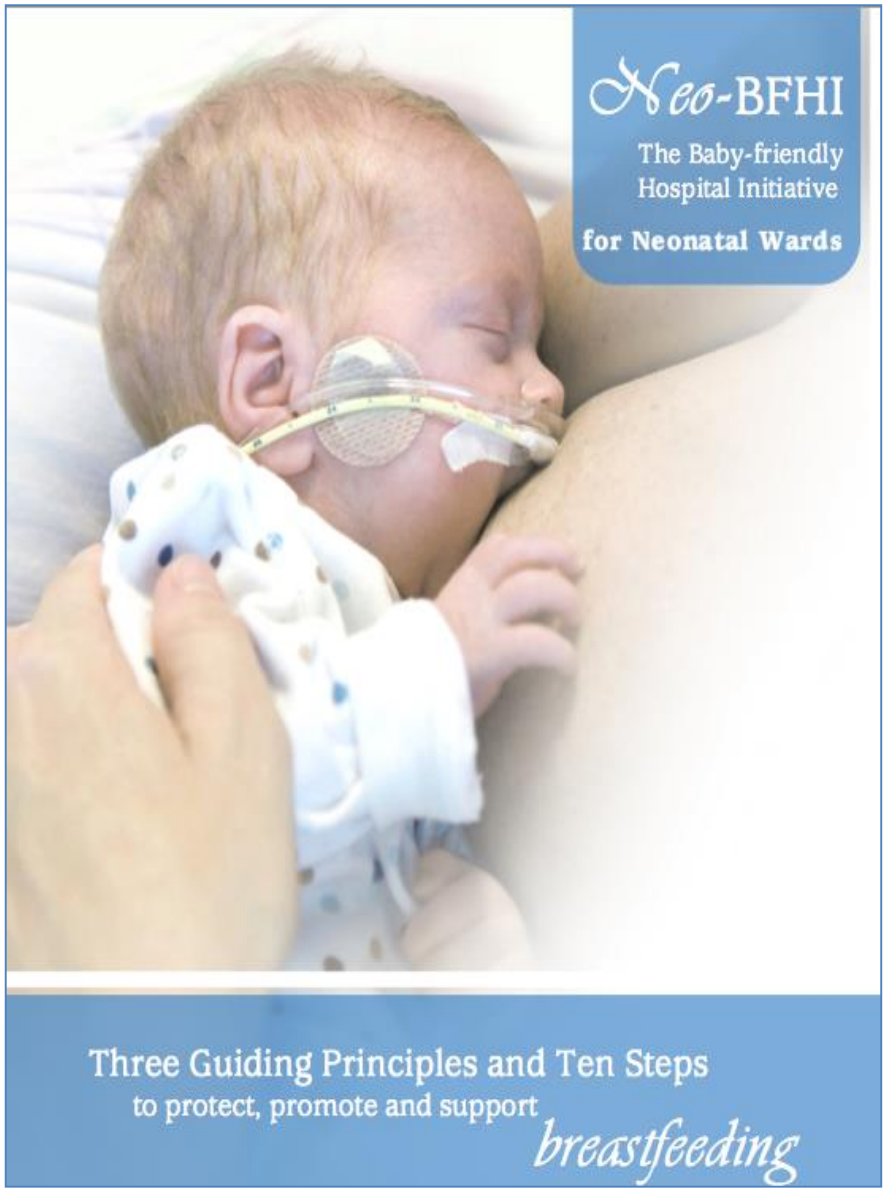
Health administration ??

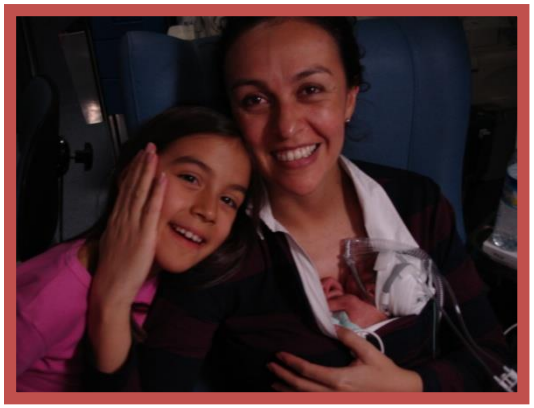
Kangaroo Mother Care

- Increases the duration and the rate of breastfeeding
- Infants are able to breastfeed at lower gestational age
- Increases the volumen of milk during the expression
- Economic benefits

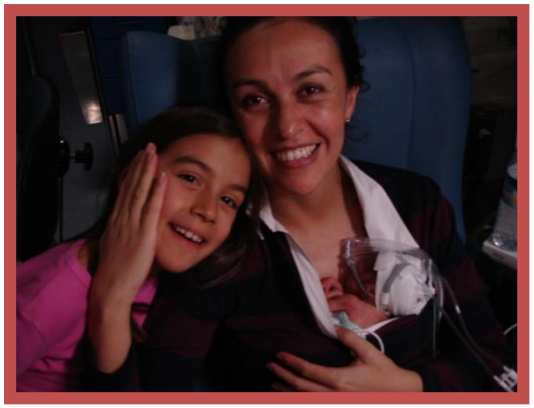


Hospital Universitario 12 de Octubre

Servicio de neonatología hospital 12 de Octubre



- To give a galactogogue
- To increase the time of Kangaroo Care
- To increase the number of expressions



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Original article

OPEN ACCESS

Breast feeding and intergenerational social mobility: what are the mechanisms?

A Sacker,[1] Y Kelly,[1] M Iacovou,[2] N Cable,[1] M Bartley[1]

Table 1 ORs and 95% CIs from multivariable logistic regression models of upward and downward social mobility in the 1958 and 1970 cohorts

	1958 cohort		1970 cohort	
	OR	95% CI	OR	95% CI
Upward mobility				
Breast fed	1.24	1.12 to 1.38	1.24	1.12 to 1.37
Female	0.65	0.50 to 0.84	0.80	0.62 to 1.03

Equity and social progress