



# Hot Topics in Neonatal Nursing

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[www.pearl.direct](http://www.pearl.direct)



## Disclosure

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RFR

Employer: Örebro University

Consulting: AbbVie

Office in professional organisations:  
Treasures & webmaster Swedish  
Paediatric Pain Society



KFC – Kangaroo Father Care

Courtesy of some pictures: Marsha Campbell-Yeo, KJS Anand, Ricardo Carbajal

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## Who is Mats Eriksson?

[mats.h.eriksson@oru.se](mailto:mats.h.eriksson@oru.se)

Neonatal nurse for 33 years  
(staff nurse, head nurse, IT-nurse, night-nurse...)

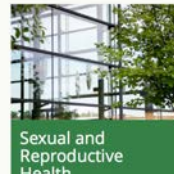
Still working clinically

PhD 2004

Associate Professor 2011

Professor 2016 – nursing science with special focus on paediatric nursing

FAMN - The child, the family, the caring system, the society



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## What are we going to talk about?

Where are the nurses?

Controversies and challenges

Networking



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## Where are the nurses?

Opening ceremony at European Academy of Paediatric Societies 2016

6 distinguished speakers



= 6 white male middle-aged physicians

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## What does a nurse look like?



Google

## Stereotypes in new Swedish TV-show



Wants to be a physician

Injects morphine in the locker room

Prostituting herself after hospital shift

Tries to smooth over arrogant physician behaviour

## What does a NICU-nurse look like?



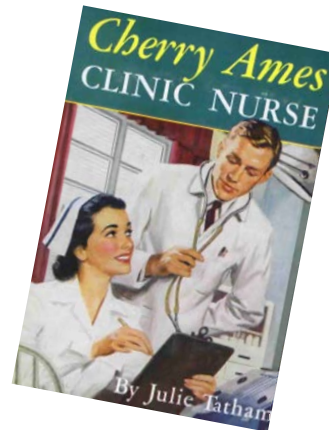
Google

No Baby Too Small For the HANDS of a NICU NURSE

nicu nurse

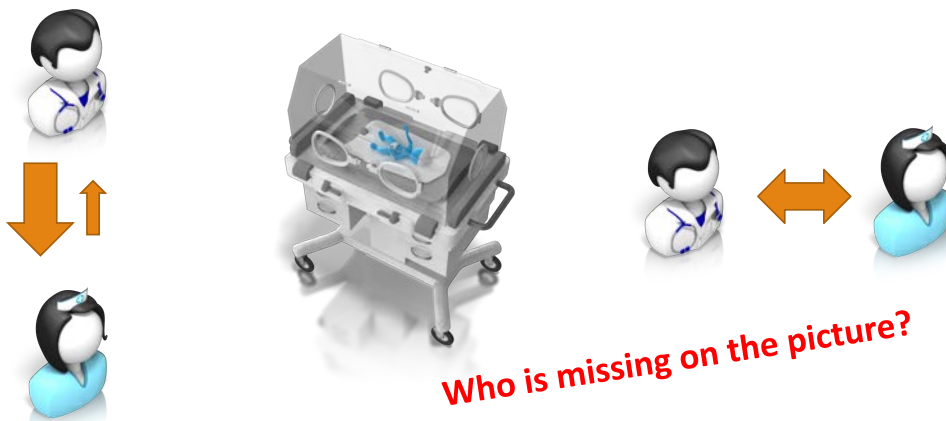
NICU NURSE TAKING CARE OF TINY LIVES

## And then comes the doctor



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## From hierarchy to teamwork – are we there yet?



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# Is nursing only a nurses' concern?



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# Development of neonatal intensive care



World Exhibit

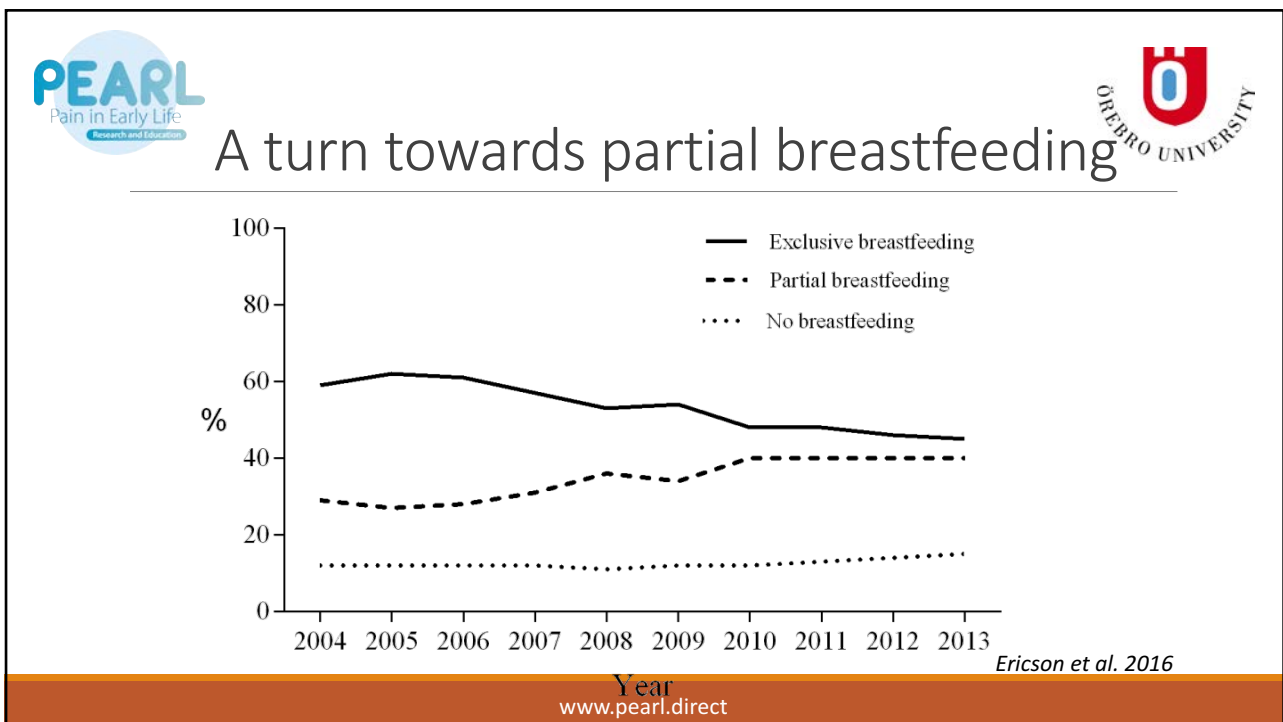
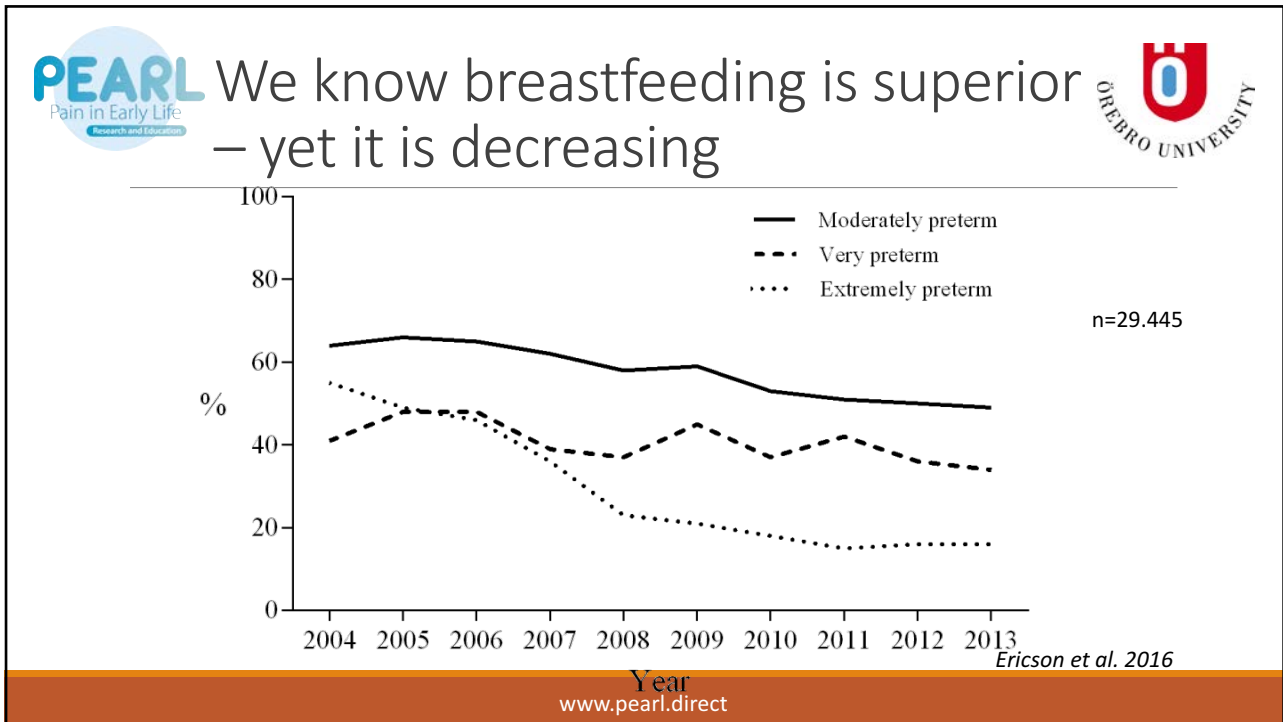
1933

1990 NIDCAP

2016: Family as incubator

2000 Kangaroo Mother Care

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## Controversy #1

KFC – Kangaroo Father Care vs. breastfeeding

The magical hour – early skin-to-skin contact

Colonization – immune system

Bonding & attachment

36 % mortality reduction in LBW-infants (Boundy et al. 2016)

## Is there a price to pay for equality?

Infants whose fathers did not take paternity leave during the infant's first year were significantly less likely to be breastfed at 2 ( $p < 0.001$ ), 4 ( $p < 0.001$ ), and 6 months ( $p < 0.001$ )

/Flacking et al. 2010





## Controversy #2

### Single patient / family rooms vs. breastfeeding



Open bay NICU design



Lactation room



Family room

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## 18 month follow-up

Kangaroo and maternal care predicted better Bayley Cognitive and Language scores

Infants with  $\geq 1$  symptom of autism were more likely to be in the open-bay low maternal involvement group vs the SFR high maternal involvement group

High maternal involvement is associated with improved 18-month neurodevelopmental outcome, especially in infants cared for in a SFR-NICU

/Lester et al. 2016

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## Controversy #3

Early home-going / home care vs. breastfeeding



*New nursing models imposes new challenges!*

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## Controversy #4

Fortification of breastmilk vs. breastfeeding

Testing of nutritional content of EBM > fortification

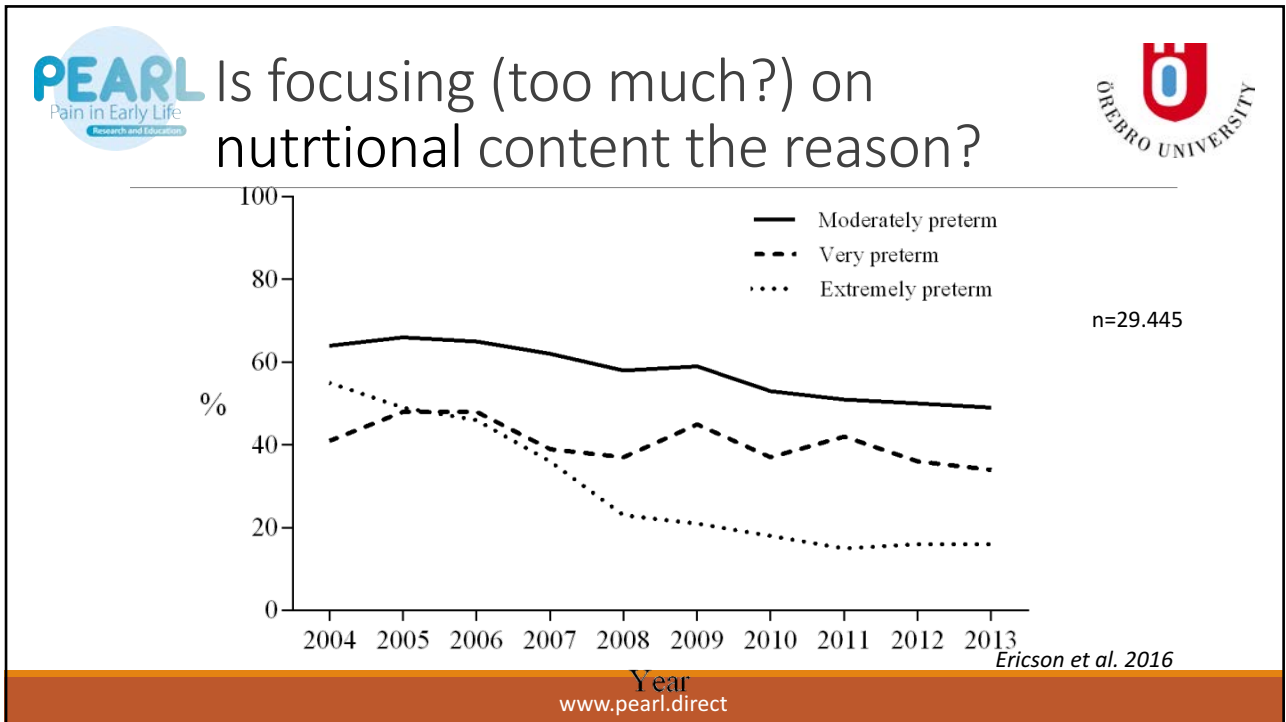
Focus on quality of milk rather than quality of contact



Alan Lucas



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# Procedural Pain and Brain Development in Premature Newborns

Susanne Brummelte, PhD,<sup>1,2</sup> Ruth E. Grunau, PhD,<sup>1,2</sup> Vann Chau, MD,<sup>1,2</sup>  
 Kenneth J. Poskitt, MDCM,<sup>1,2,3</sup> Rollin Brant, PhD,<sup>4</sup> Jillian Vinall, BA,<sup>1,2</sup> Ayala Gover, MD,<sup>1,2</sup>  
 Anne R. Synnes, MDCM,<sup>1,2</sup> and Steven P. Miller, MDCM,<sup>1,2</sup>



## Neonatal Pain-Related Stress Predicts Cortical Thickness at Age 7 Years in Children Born Very Preterm

Manon Ranger<sup>1,2</sup>, Cecil M. Y. Chau<sup>2,3</sup>, Amanmeet Garg<sup>4</sup>, Todd S. Woodward<sup>3,5</sup>, Mirza Faisal Beg<sup>4</sup>,  
 Bruce Bjornson<sup>1,2</sup>, Kenneth Poskitt<sup>2,6</sup>, Kevin Fitzpatrick<sup>2</sup>, Anne R. Synnes<sup>1,2,7</sup>, Steven P. Miller<sup>1,2,8</sup>,  
 Ruth E. Grunau<sup>1,2,7\*</sup>

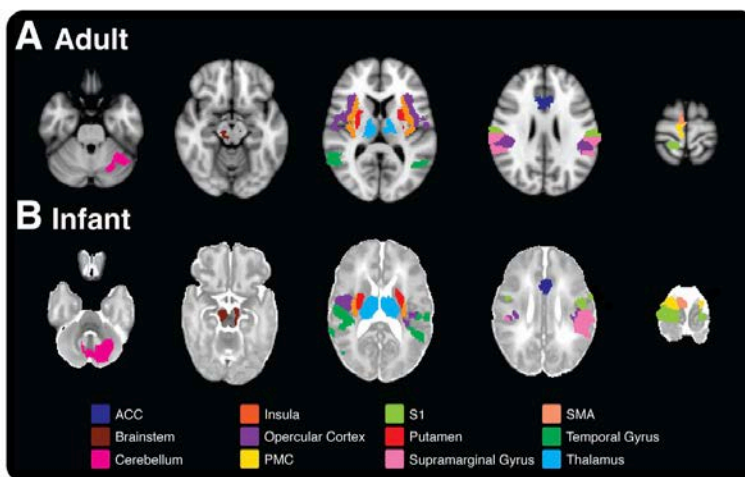
## Invasive Procedures in Preterm Children: Brain and Cognitive Development at School Age

**AUTHORS:** Jillian Vinall, BA,<sup>ab</sup> Steven P. Miller, MDCM,<sup>cd</sup>  
 Bruce H. Bjornson, MD,<sup>b,ce</sup> Kevin P.V. Fitzpatrick, MSc,<sup>b</sup>  
 Kenneth J. Poskitt, MDCM,<sup>b,c,f</sup> Rollin Brant, PhD,<sup>b,g</sup> Anne R.  
 Synnes, MDCM,<sup>b,ce</sup> Ivan L. Cepeda, MD,<sup>b</sup> and Ruth E.  
 Grunau, PhD<sup>a,b,c,e,h</sup>

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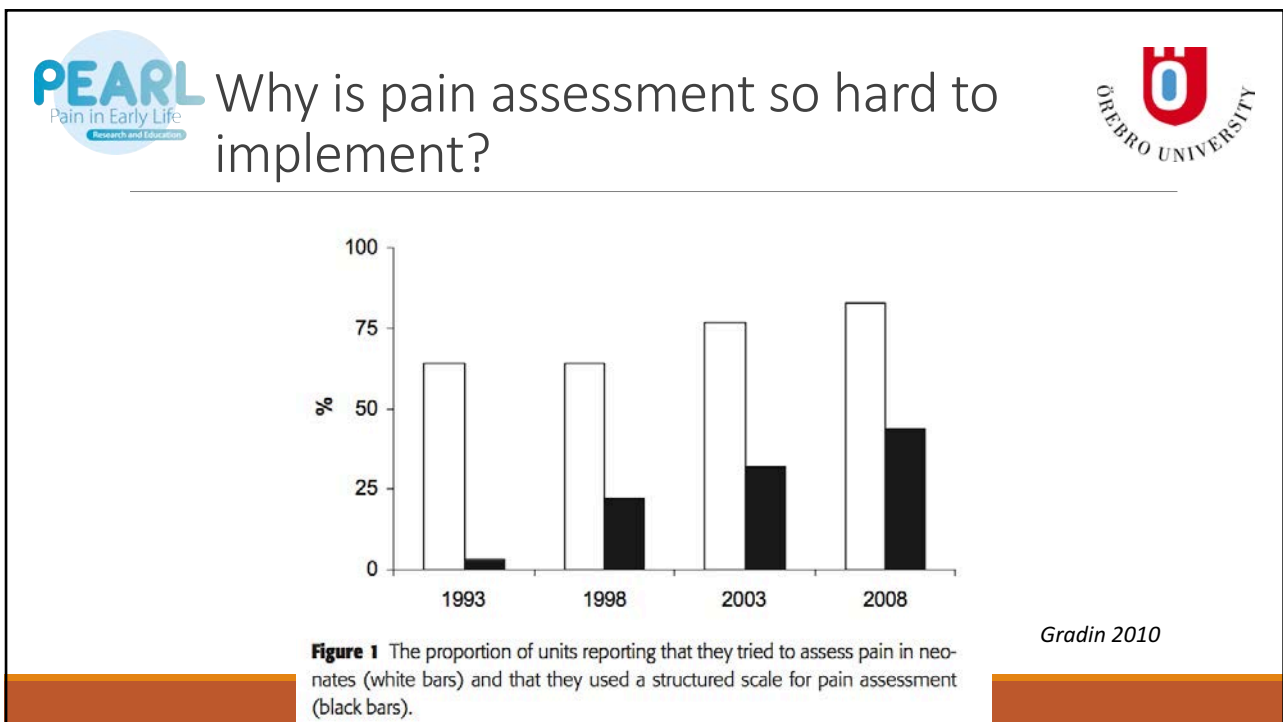
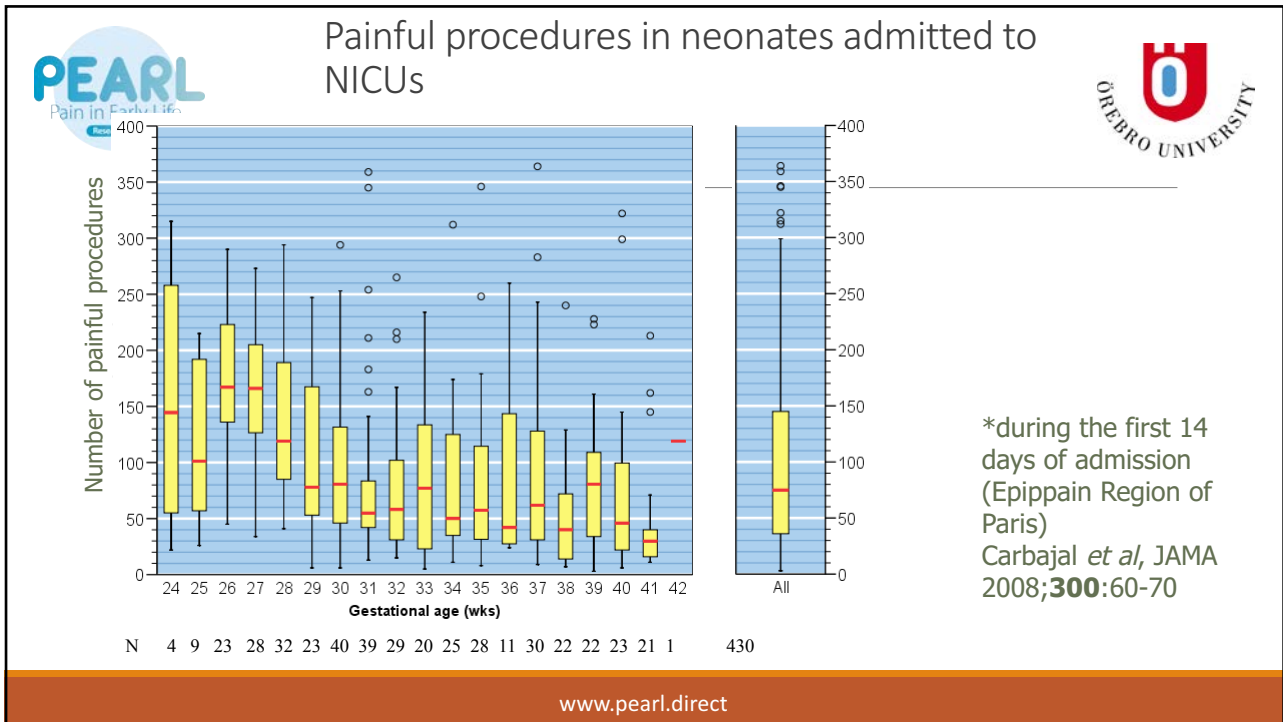


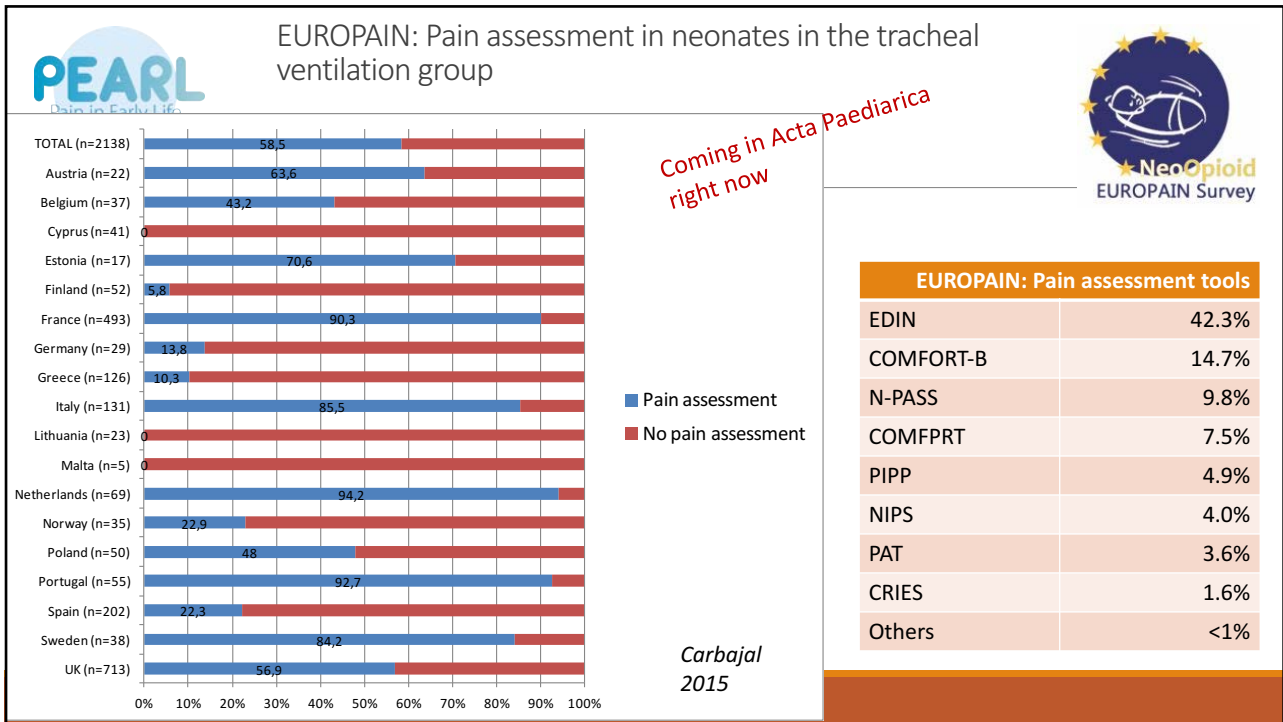
# Same pain experience as adults?



Goksan eLife 2015;4:e06356

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PEARL Pain in Early Life Research and Education

Finding the objective painometer – are we searching for the Holy Graal?

Heart Rate Variability – HRV

Galvanc Skin Response / Skin Conductance – GSR

Cerebral haemodynamics – Near Infrared Spectroscopy – NIRS

Cry acoustics – Sound spectrogram

Computerised facial movements

New and improved assessment scales

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## JACK, 24 W GA WAS EXPOSED TO:

- 118 days in the NICU
- 1152 procedures
- 528 hours of fentanyl exposure
- 852 exposures to 24% sucrose
- 2 general anesthesia
- 1960 hours of extreme lighting
- 2296 hours of excessive noise
- 2346 hours of maternal separation



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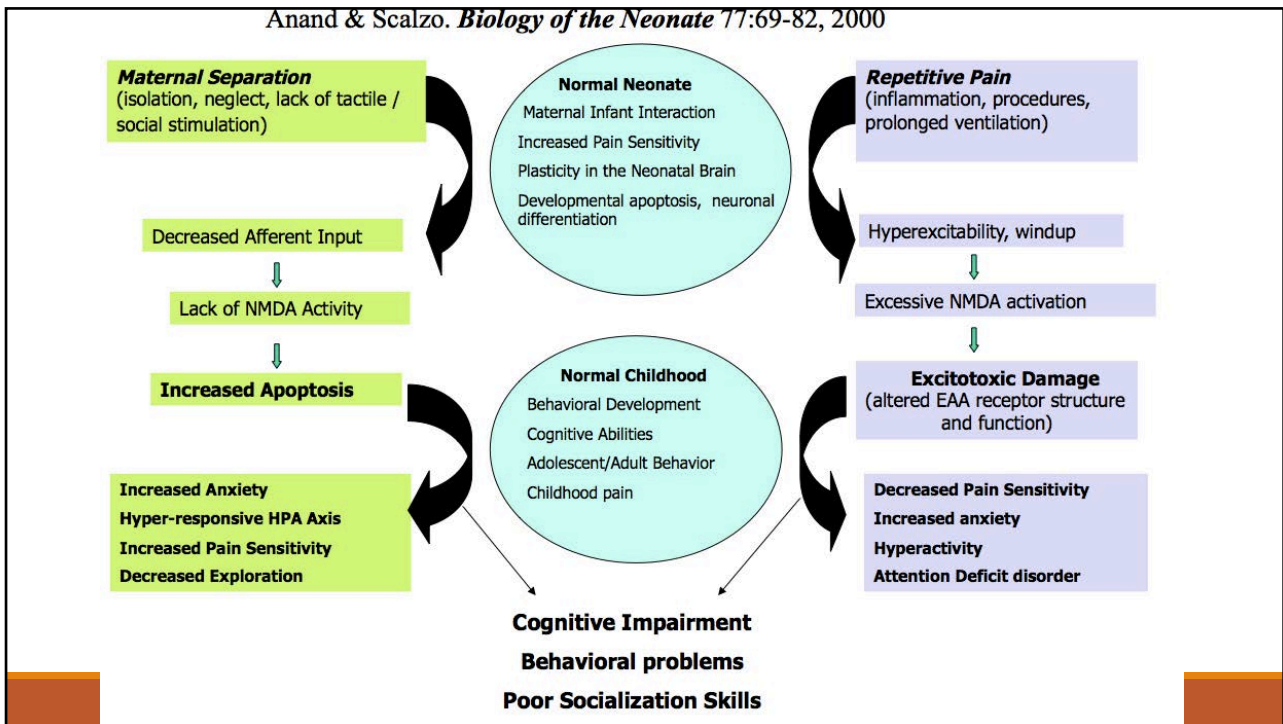
## Prolonged Maternal Separation



- Less mature motor development  
*Reynold 2013*
- Poorer ability to regulate stress  
*Vinall 2013*
- Higher reactivity *Jahromi 2004*
- Higher mortality *Ray 2012*



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**Skin-to-skin care for procedural pain in neonates**

Johnston C, Campbell-Yeo M, Fernandes A, Inglis D, Streiner D, Zee R

January 2014

36 Reviewed

19 Included Studies

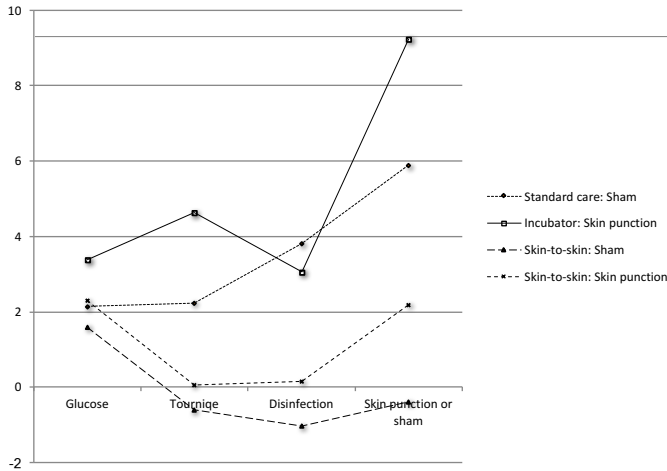
1544 Infants

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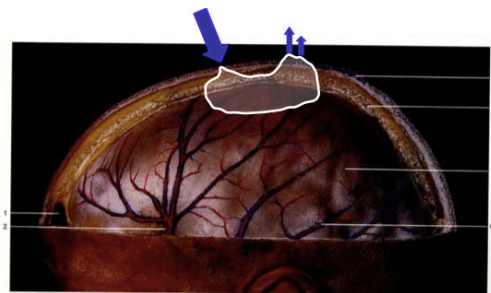


## Skin-to-skin contact for pain relief

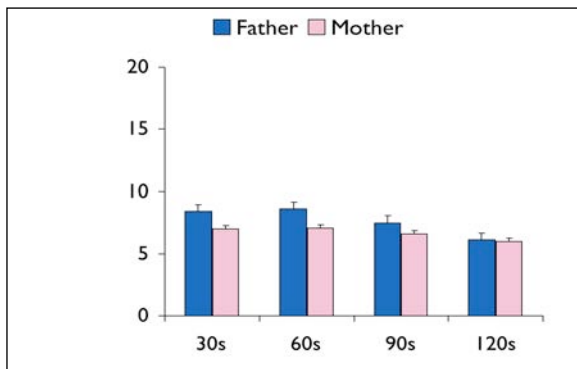


Olsson et al. 2015

Near Infrared Spectroscopy – changes in HbO2 on the contralateral side

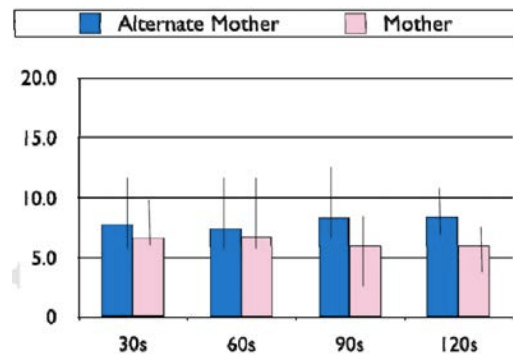


## Is mother best for SSC-pain relief?

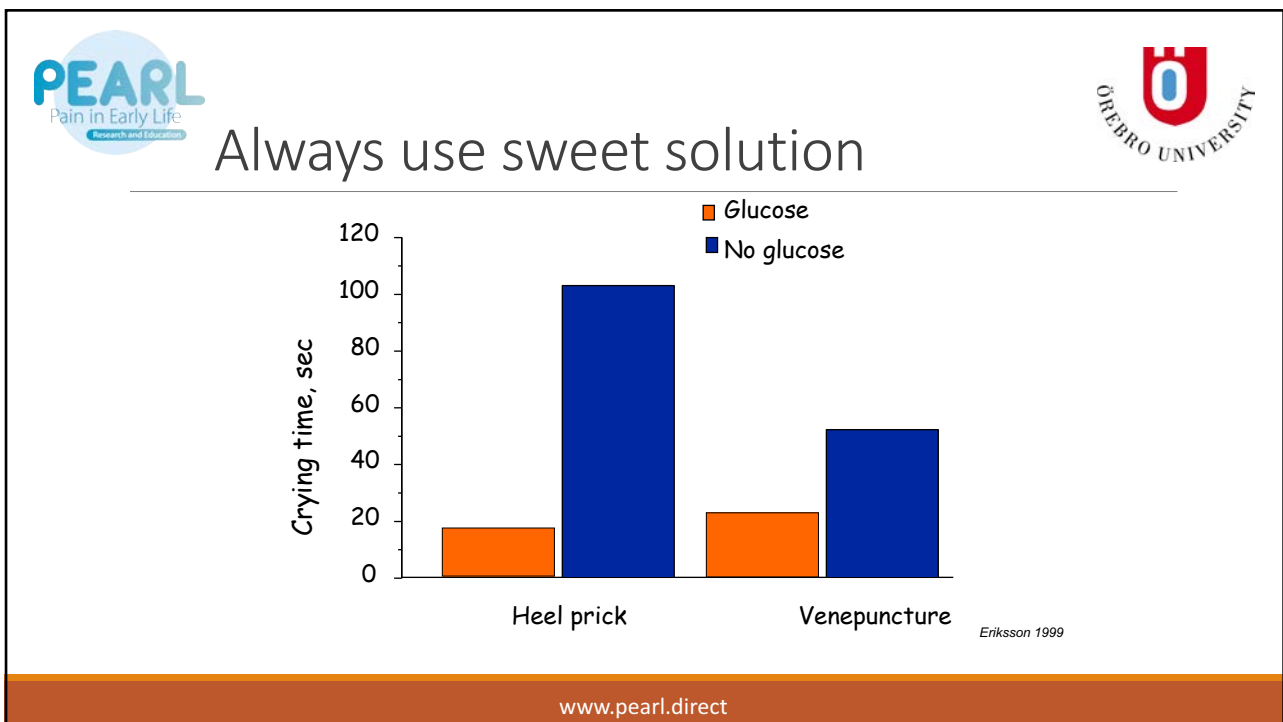
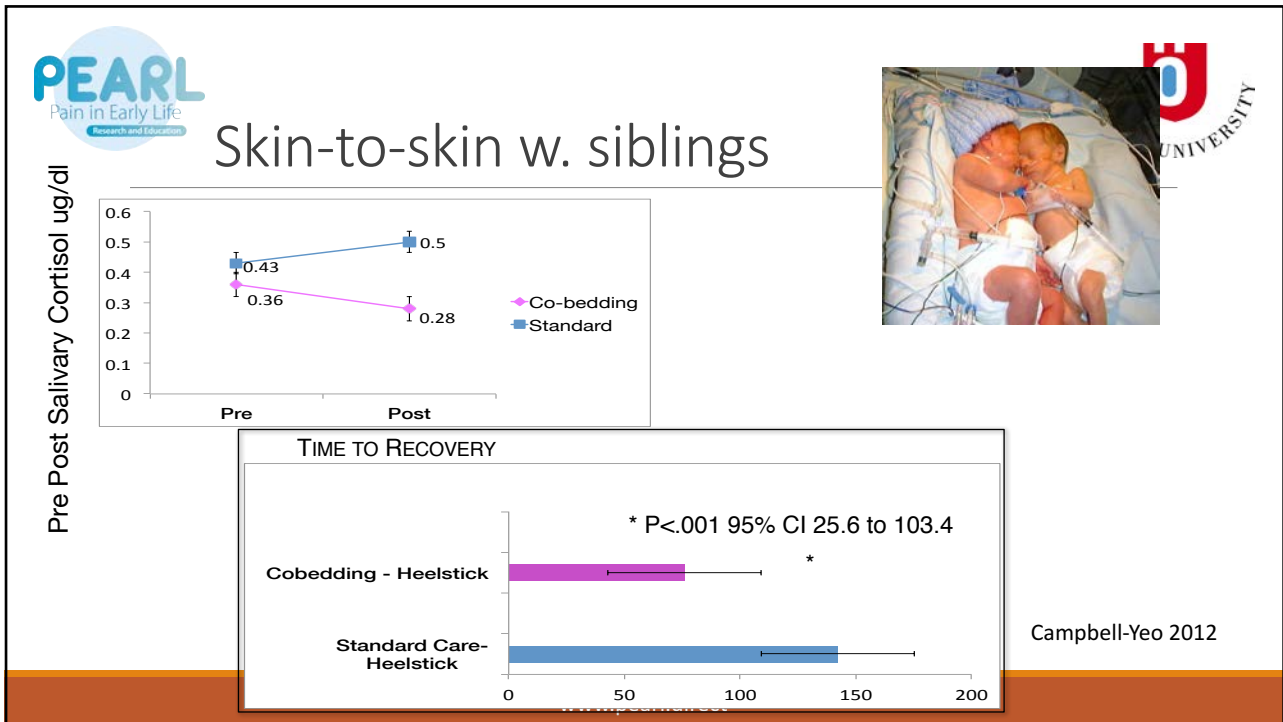


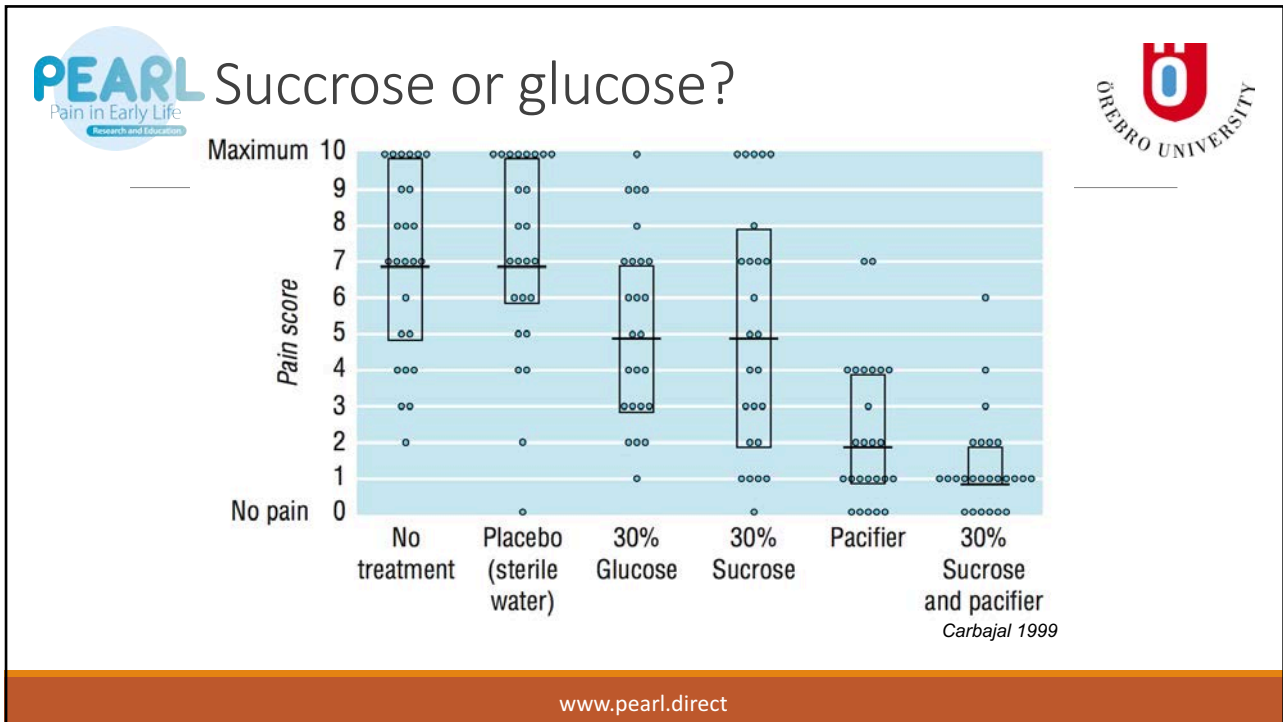
Johnston, 2011

Premature Infant Pain Profile



Johnston, 2012





**PEARL** Pain in Early Life  
Research and Education

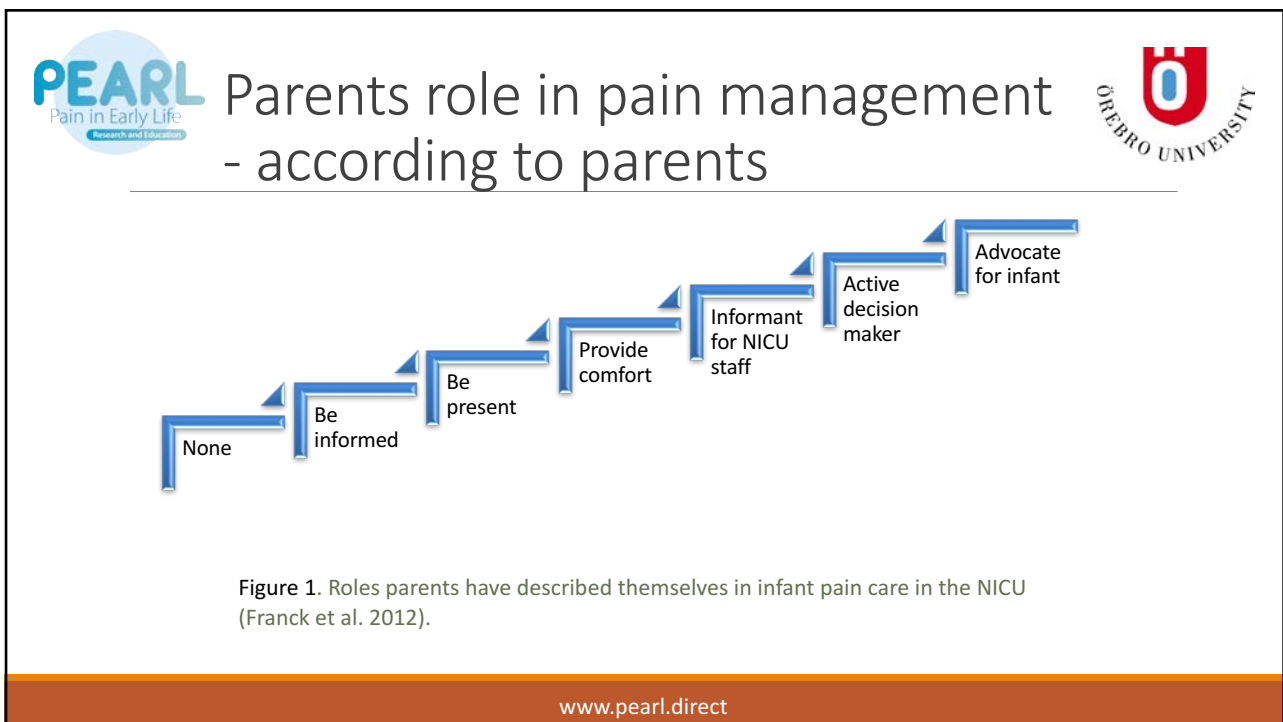
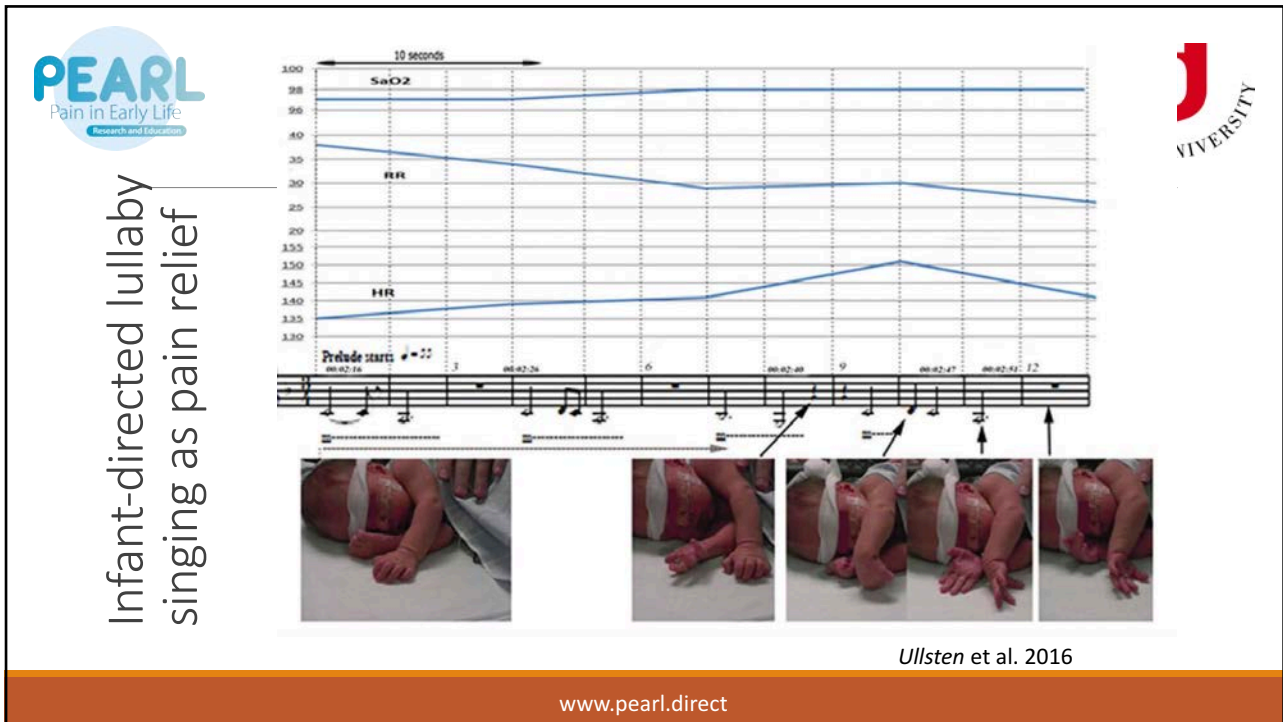
**ÖREBRO UNIVERSITY**

### Redefining PCA > Parent Controlled Analgesia

- Parents as primary caregivers – including pain management
- Communication instead of distraction

Photo: Ann-Cathrine Berg

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# Parents role in pain management - according to nurses



Nurses in Control	Nurses sharing some control with parents	Nurse-Parent Collaboration
<ul style="list-style-type: none"> <li>• Nurse advocating for the infant</li> <li>• Protecting parents from infant pain</li> <li>• Passive or absent parent</li> </ul>	<ul style="list-style-type: none"> <li>• Simultaneous benefits for infant, parent and nurse</li> <li>• Facilitating parental involvement</li> <li>• Supervised parent</li> </ul>	<ul style="list-style-type: none"> <li>• Infant's best interest is to be with the parents</li> <li>• Empowering parents</li> <li>• Partnership</li> </ul>

**Figure 1.** Three different ways nurses described working with parents in infant pain management.

*Axelín et al. 2015*

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## The power of a parent's touch

in reducing needle pain for your baby.

2nd in the Series!  
"It Doesn't Have to Hurt"

Watch the video at [pediatric-pain.ca/power-of-a-parents-touch](http://pediatric-pain.ca/power-of-a-parents-touch)



**Centre for Pediatric Pain Research**  
SCIENCE HELPING CHILDREN

**MOM-LINC LAB**  
Mechanisms, Outcomes, Mobilization of  
maternally-Led Interventions in Newborn Care

Dalhousie University  
IWK Health Centre  
Nova Scotia Health Research Foundation



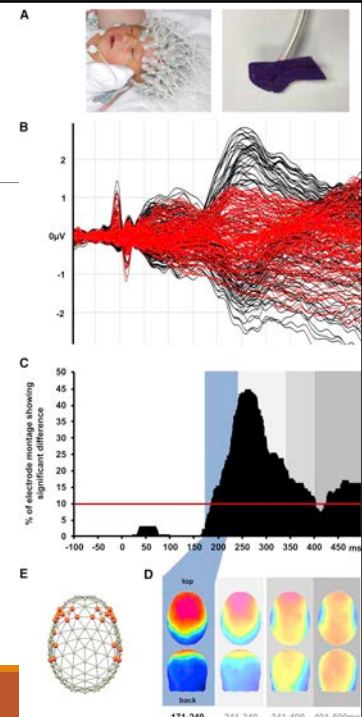


# Touching is good

Event-related potentials (ERP)

Premature infants have weaker response to light touch than full-term

But if they have had "supportive touch" -skin-to-skin-care and breastfeeding they responded more like the full-term infants



Current Biology DOI: (10.1016/j.cub.2017.02.036)

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# Controversy # 5



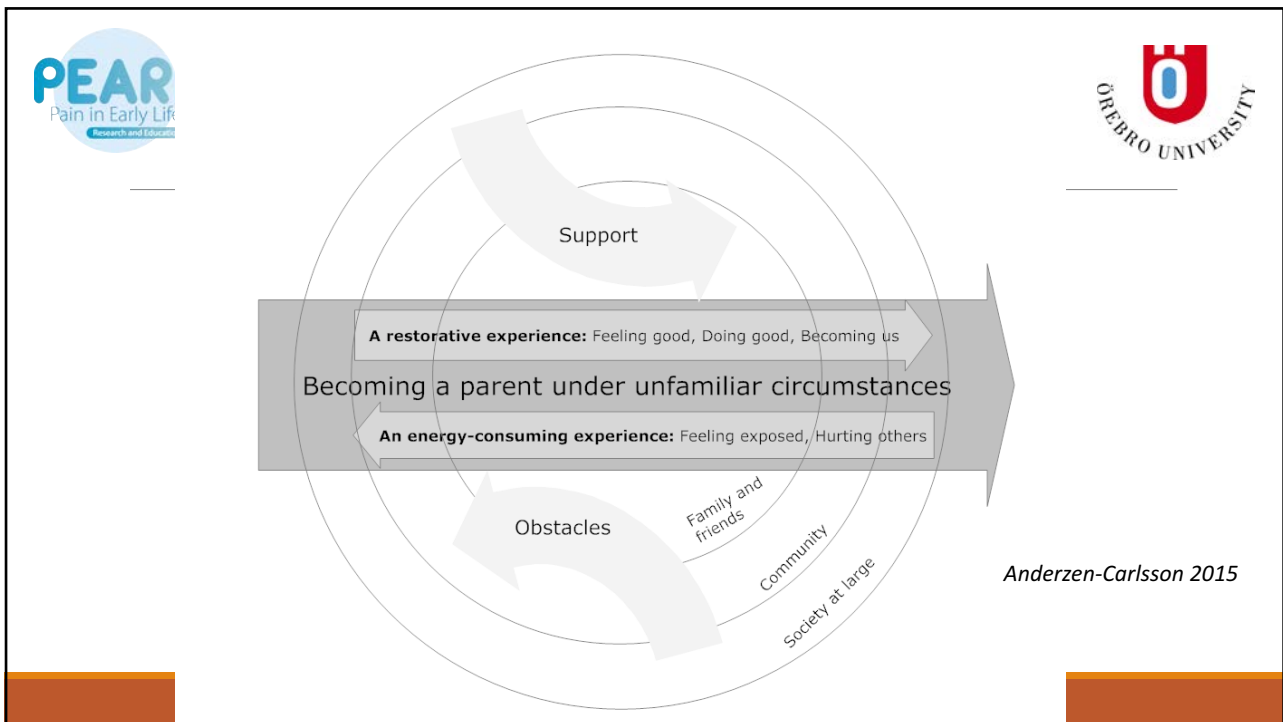
Is Skin-to-Skin contact / Kangaroo Mother Care always positive?



WHO guidelines

Fig.6 Father's turn for KMC

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The slide features the PEARL logo (Pain in Early Life Research and Education) on the top left and the espnice logo (European Society of Paediatric and Neonatal Intensive Care) on the top right. The main title is "Societies and networks". Below the title is a composite image: the left side shows a panoramic view of a historic city with red-tiled roofs and a large cathedral, while the right side shows a close-up of a newborn's feet with medical sensors attached. At the bottom, the text reads "28th Annual Meeting June 6-9 2017, Lisbon, Portugal". The website "www.pearl.direct" is displayed in an orange bar at the very bottom.

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Pain in Early Life  
Research and Education

# Societies and networks

**COINN**  
Council of International Neonatal Nurses

## COINN 2019 CONFERENCE

The 10th Council of International Neonatal Nurses Conference (COINN2019) will take place in Auckland, New Zealand, from May 5 to 8, 2019.



[www.pearl.direct](http://www.pearl.direct)

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Pain in Early Life  
Research and Education

# EFCNI – strong voice of parents

**ÖREBRO UNIVERSITY**



**EFCNI** european foundation for the care of newborn infants

About EFCNI | Pregnancy | Preterm Birth | Socks for Life | Policy & Action | Partners | Press | Search




**Treatment & Care**  
Ensure high-quality treatment and care for preterm and newborn infants and their families







# World Prematurity Day Nov. 17

## Socks for Life




1 baby in 10 is born premature. Worldwide.

powered by EFCUNI



# Building a six-language web-site



home for parents for professionals our research news & events

**PEARL**  
Pain in Early Life  
Research and Education


**PEARL - Pain in Early Life**  
We are dedicated to help children to a life without pain

Welcome in! Don't forget to check the news & events-page often!

**FOR PARENTS**  
See what you can do to help your child

**FOR PROFESSIONALS**  
Here you can find education material, training courses, useful links and downloads

**OUR RESEARCH**  
Read about the researchers in PEARL, and about our projects



For Parents

Our Research

Some ideas what you can do as a parent to help with your child's pain



- It doesn't have to hurt (Videos from Centre for Pediatric Pain Research)
- Be sweet to babies (Videos from Children's Hospital of Eastern Ontario)
- The power of a parent's touch (Video from Children's Health Center)

More videos:

- Reduce the pain of vaccinations in babies - from About Kids Health
- Reduce the pain of vaccination in children - from About Kids Health

Comforting Your Baby In Intensive Care (Download free textbook (book or pdf))

- Meðlimir í PEARL (fara á ensku síðuna)
- Samstarfsverkefni okkar
- Birtingar og kynningar (fara á ensku síðuna)

Take home message:

- To being a neonatal nurse is to being an equal part of a multiprofessional team
- Parents are the primary caregivers
- Do research – read research – use research

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