

Early skin-to-skin contact or standard care for preterm infants from 28 weeks of gestation



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The aim of the study

Investigate short and long term outcomes in preterm infants receiving skin-to-skin versus standard care after delivery

Early skin-to-skin contact for preterm infants at GA 28⁰-31⁶

- **Design:** A randomized controlled study comparing skin-to-skin and standard care.
 - Standard care includes transfer to neonatal intensive care unit (NICU) immediately after stabilization



Study group

- **Inclusion criteria:**
 - Preterm infants GA 28⁰ – 31⁶ weeks (vaginal or C-section)
 - >1000 gram
 - Medical stable
- **Exclusion criteria:**
 - Infants in need of intubation or major medical interventions
 - Severe congenital malformations
 - Mothers with severe preeclampsia and mothers who are unable to give consent

Primary outcome

Cognitive scores at two years corrected age

measured with Bayley Scales of Infant and Toddler Development, Third Edition (Bayley III)

The Bayley-III is a screening test that includes assessment of cognition, language, and gross and fine motor function



Secondary outcomes (1)

First two hours

- Adverse events:
 - Hypothermia (<36 °C)
 - Respiratory failure requiring acute intubation
 - Cardiopulmonary Resuscitation (CPR)

First 24 hours

- Physiological stability
 - Heart rate, respiratory rate, oxygen saturation, temperature, blood glucose

At discharge

- Maternal depression and anxiety (State-Trait Anxiety Inventory/STAI)

Secondary outcomes (2)

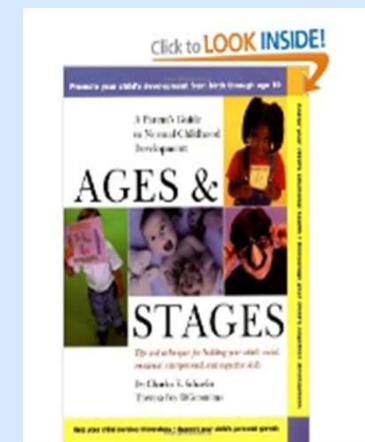
Three months corrected age

- Maternal anxiety (STAI)
- General Movement Assessment (GMA)
- The child's social and emotional competence (Ages & Stages Questionnaire (ASQ))

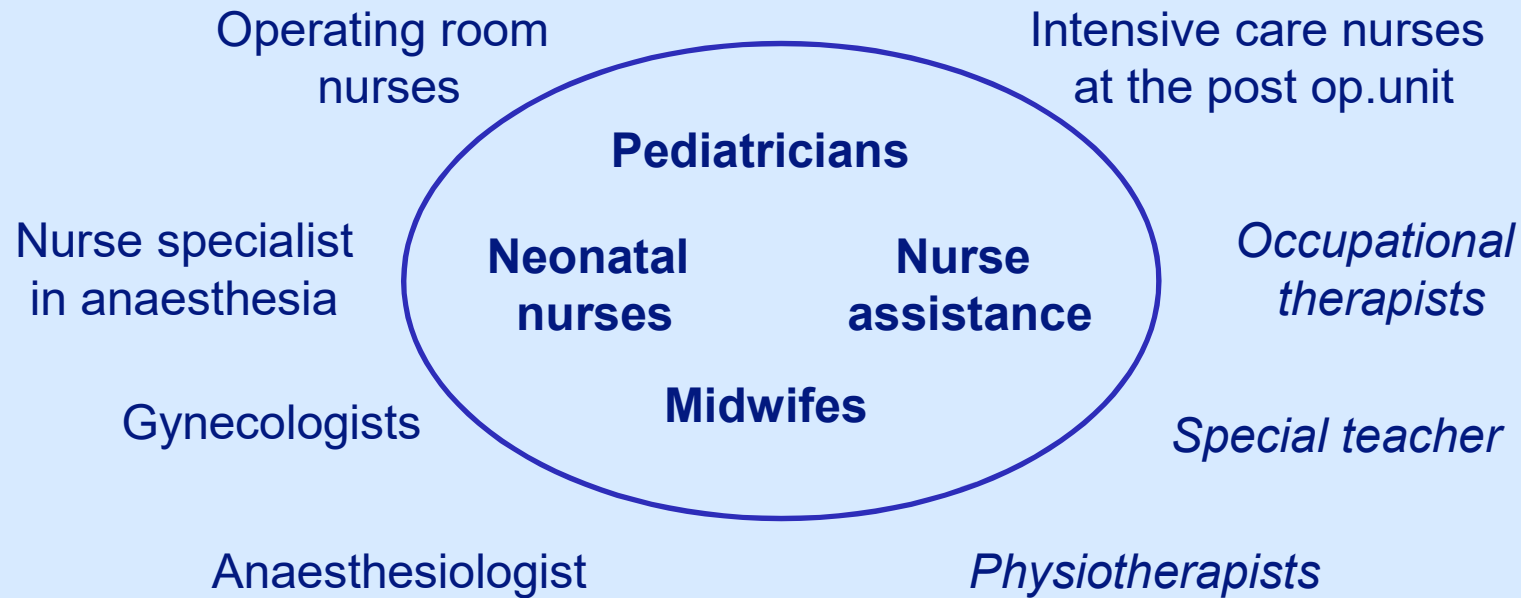


Two years corrected age

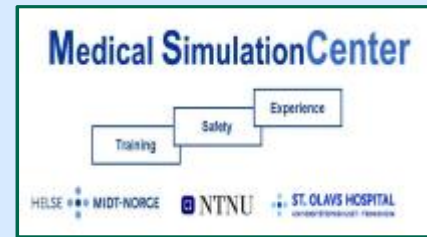
- Maternal anxiety (STAI)
- The child's social and emotional competence (ASQ)



Multi disciplinary cooperation



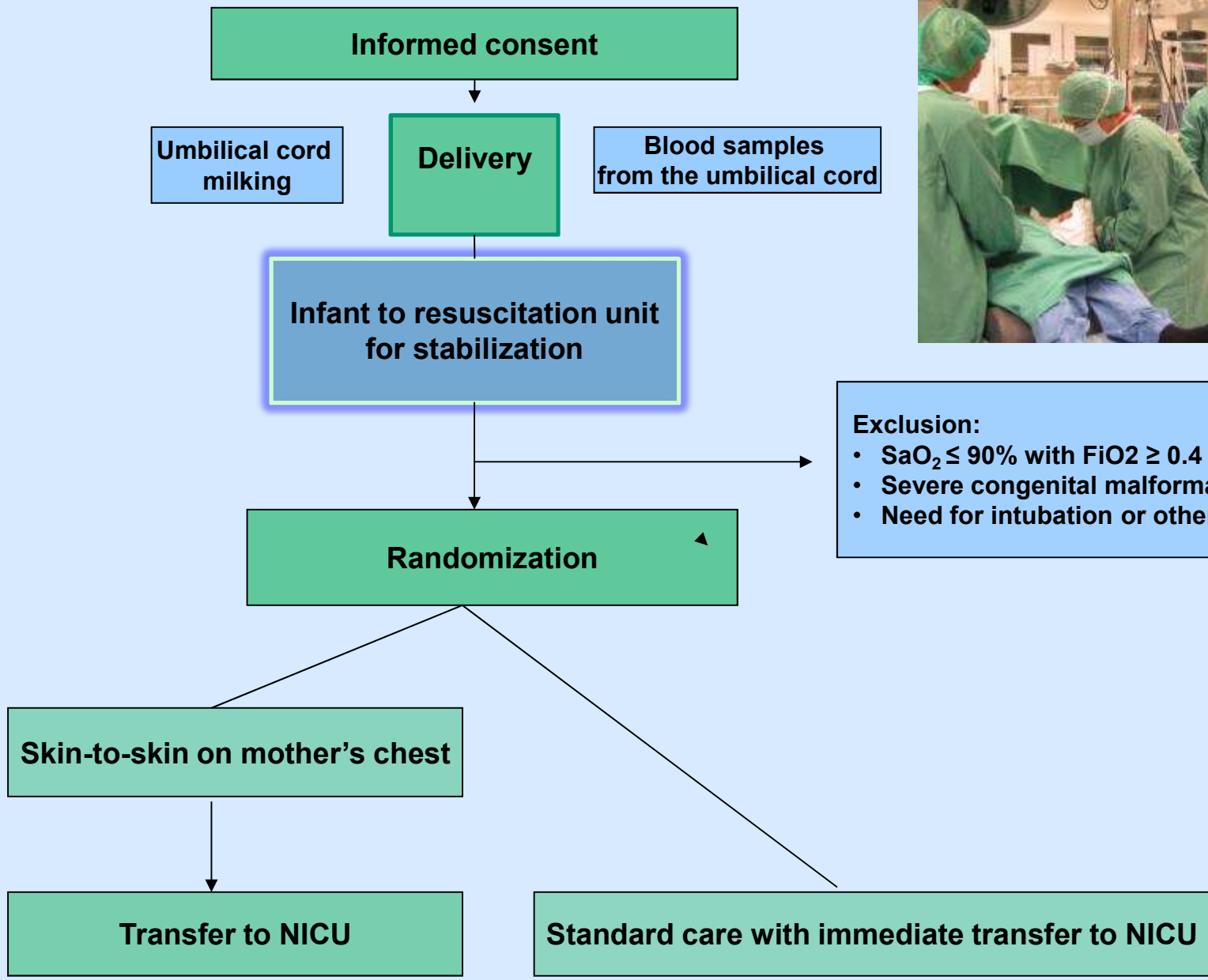
Medical Simulation Center



- To design a safe and feasible algorithm for early skin-to-skin contact
 - To provide training for personnel involved in the study
- To ensure appropriate evaluation and intervention in case of medical complications







Exclusion:

- $SaO_2 \leq 90\%$ with $FiO_2 \geq 0.4$ after 10 min
- Severe congenital malformations
- Need for intubation or other major interventions

Transfer from resuscitation unit to mother's chest



The first skin-to-skin contact between mother and child



Transfer to post-operative ward



Skin-to-skin in post-operative ward



Observations and interventions

Standard observations (heart rate, respiratory rate, oxygen saturation, blood pressure,)

CPAP

Colostrum
Tube feeding (donor breastmilk)
within 1 hour

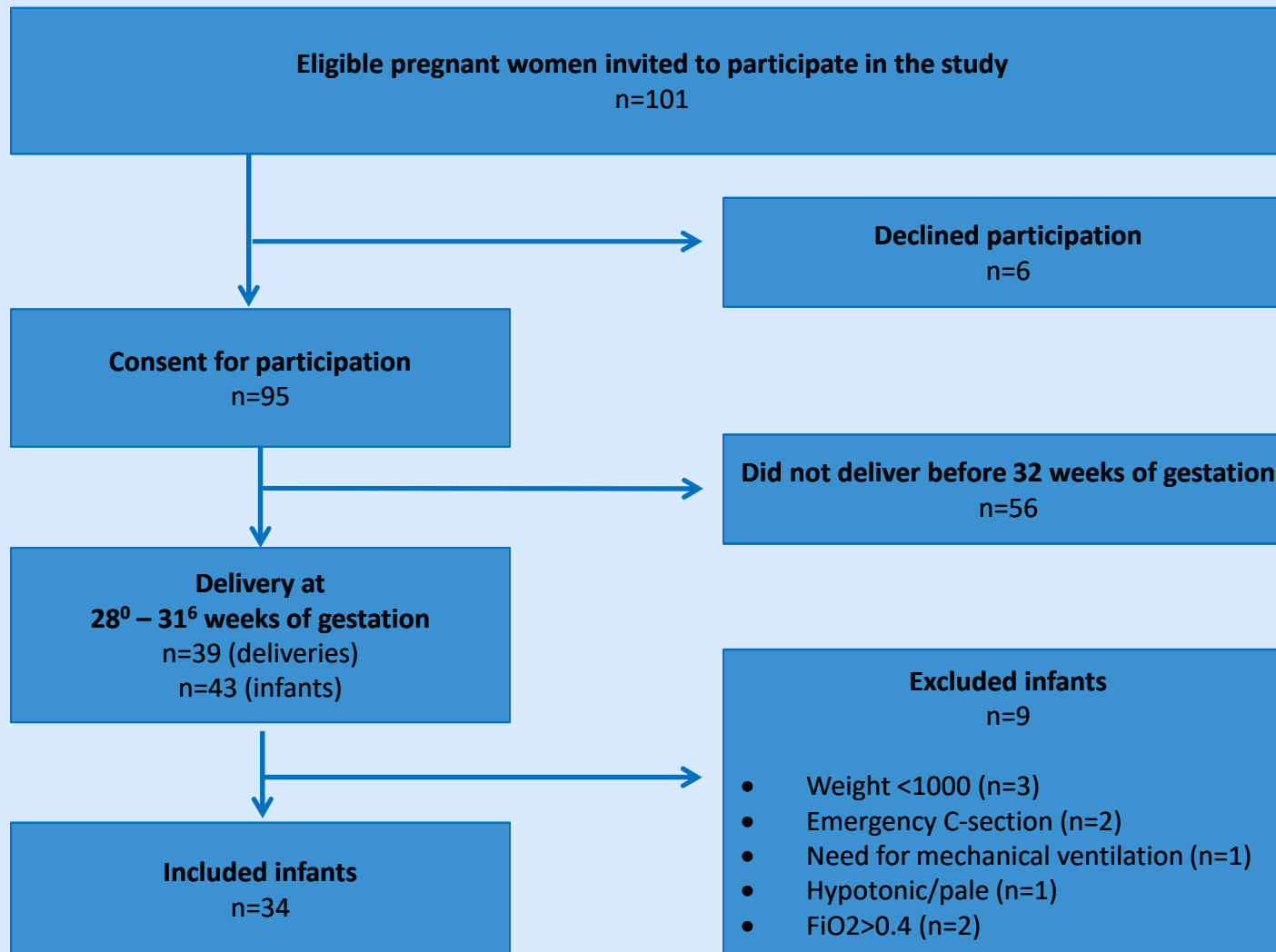
Intravenous glucose and amino acids



Body temperature

Consider caffeine and antibiotics

Included Infants



The first 34 included infants:

Vaginal delivery, n (%)	16 (47)
C-section, n (%)	18 (53)
Randomized to skin-to-skin care, n (%)	15 (44)
Gestational age (weeks), median (range)	30⁰ (28³-31⁶)
Birth weight (grams), median (range)	1420 (1035-2040)
Female, n (%)	18 (53)
Time skin-to-skin after delivery for SSC-group, minutes, median (range)	90 (45-120)
CPAP in DR, n (%)	26 (76)
Intravenous glucose and amino acids in delivery room, n (%)	26 (76)

Experiences

- No adverse events
- Impressed by enthusiastic neonatal nurses, pediatricians and midwives
- Difficult to archive enough children



Thank you for your attention



Physiological variables recorded from birth to 24 hours of life

Time after birth Observations	15 minutes	30 minutes	60 minutes	90 minutes	120 minutes	First 24 hours (hourly)	10 hours	12 hours	18 hours	24 hours
Heart rate	X	X	X	X	X	X				
Respiration rate	X	X	X	X	X	X				
Body temperature	X	X	X	X	X		X		X	
Blood glucose				X ¹	X ¹			X		X

x¹= the blood glucose is measured at either 90 or 120 minutes