EARLY SKIN-TO-SKIN CONTACT FOR MOTHERS AND THEIR HEALTHY NEWBORN INFANTS

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Gene C. Anderson
Nils Bergman
Nancy Medley

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Definition of Early SSC

- Naked newborn placed prone on the mother’s bare abdomen/chest at birth or soon thereafter
- Infant covered with a prewarmed blanket
- Head is covered with a dry cap to prevent heat loss
- Wet cap and blankets replaced with dry ones
Evolutionary Biology/ Human Ethology

- Study of the evolutionary development of biological “blueprints” for behaviors essential to survive in the natural environment

- Human infants are immature (atrical) at birth

- Close maternal/ infant contact enhances survival

- Composition of human breast milk requires frequent nursing
Innate Infant Behaviors in the First Hour Postbirth

- Infants placed skin-to-skin on their mother’s abdomen immediately postbirth
- Rest about 30 minutes
- Begin to make mouthing and lip smacking movements
- Crawl towards the nipple
- Open their mouths, attach to the nipple correctly & begin to suck

Elements of a Sensitive Period for Breastfeeding Initiation

► Birth - 2 hours postpartum

► Infant exhibits innate species-specific behaviors that follow a sequential pattern

► Heightened response to tactile, odor and thermal cues

► Disruption can cause behavioral disorganization

► Beyond sensitive period necessary physiology & behaviors more difficult to elicit
Hormonal Regulation

SSC and breastfeeding releases oxytocin – the love hormone

• Stimulates the “let down reflex”

• Causes uterine contractions

• Opposite of fight or flight response, helps mom relax
The Stress of Being Born

- Catecholamine surge in infants immediately after a vaginal birth

- High levels of norepinephrine cause a heightened sensitivity of the infant’s olfactory bulbs to odor cues

- These olfactory cues guide the infant to their mother’s nipple

- The infant exhibits innate species-specific behaviors that follow a sequential pattern to localize the nipple when placed in SSC
The Inhibited State of the Fetus

- "Mt Everest in utero"
- adapted to low $\text{PO}_2$
- weightless state

- mainly asleep
- inhibited breathing movements
- limited GI movements
- low sympathetic-adrenal tone
Norepinephrine Concentrations at Birth (Lagercrantz 1996)
Consequences of Separation

- Transitional newborn infants are physiologically vulnerable, especially if
  - Separated from their mothers postbirth
  - And allowed to cry and startle

- These behaviors are actually harmful

- Breastfed babies are at greatest risk
What is a systematic review?

A systematic review attempts to identify, appraise and synthesize all the empirical evidence that meets pre-specified eligibility criteria to answer a given research question. Researchers conducting systematic reviews use explicit methods aimed at minimizing bias, in order to produce more reliable findings that can be used to inform decision making.
The Cochrane process

Title
- Define question
- Competence of author team

Protocol
- PICO
- Plan search
- Describe methods
- Peer review
- Publish

Review
- Undertake search
- Screen results
- Identify included studies
- Risk of bias of included studies
- Extract and analyse data
- Write up and submit

Editorial process
- Peer review
- Revision
- Copy edit
- Publish

Updating
Types of Studies

Included:
► RCTs of immediate or early SSC compared to usual care
► Cluster RCTs

Excluded:
► Quasi-randomized trials or cross over trials
Planned Comparisons

1. Immediate or early SSC versus standard contact contact for healthy infants
2. Immediate or early SSC versus standard contact contact for healthy infants after cesarean birth
3. SSC versus standard contact by time of initiation
4. SSC versus standard contact by dose (length of contact time)

Photo: G. Anderson
**Participants**

** Included:

- Mothers and their healthy full term or late preterm newborn infants (34 to less than 37 completed weeks' gestation)
- Infants weighing more than 2500 g (some healthy late preterm infants weighed less and were not excluded)

** Excluded:

- Infants weighing less than or equal to 1500 g
- Infants admitted to the NICU
Intervention and Comparison

**Intervention:**

- Immediate SSC: The infant is placed prone SSC on the mother's bare abdomen or chest less than 10 minutes post birth.
- Early SSC: Begins anytime between 10 minutes and 24 hours post birth. The infant is naked (with or without a diaper and cap) and is placed prone on the mother's bare chest between the breasts.
- The mother and infant are in direct ventral-to-ventral SSC and the infant is kept dry and warm.

**Comparison:**

- Conditions are diverse: The swaddled or dressed infants are held in their mothers arms or with other family members.
- Infants placed in open cribs or under radiant warmers
- Infants placed in a cot in the mother's room or elsewhere without holding
Primary Outcomes

► Number of mothers BF 1-4 months postbirth
► BF duration
► Infant stabilization – (SCRIP Scores)
► Infant blood glucose levels
► Infant thermoregulation
Secondary Outcomes

- BF status/exclusivity
- Effective BF
- Breast engorgement
- Maternal breast temp.
- Infant weight changes
- Infant heart rate
- Infant respiratory rate
- Infant crying
- NICU admissions

- Hospital length of stay
- Maternal bonding/attachment
- Maternal sensitivity to infant cues
- Maternal anxiety
- Maternal parenting confidence
- Maternal pain post Cesarean birth
Methods

► We searched the Cochrane Pregnancy and Childbirth Group’s Trials Register by contacting their Information Specialist (17 December 2015).

► Two review authors independently assessed potential studies for inclusion and risk of bias for each study.

► Results are presented as a summary risk ratio with 95% confidence intervals for dichotomous data.

► The mean difference is presented for continuous outcomes if measured in the same way between trials. Standardized mean differences are reported for trials that measured the same outcome using different methods.

► For all outcomes, analyses are, as far as possible, on an intention-to-treat basis.
Description of Included Studies

- 46 trials with 3850 mother-infant dyads met the inclusion criteria (12 new RCTS + 34 previously reviewed).
- 38 trials with 3472 dyads were included in the analysis.
- 1 cluster RCT - randomized by pediatrician.
- 40 trials included only healthy full-term infants, 5 only healthy late preterm infants and 1 included both.
- 8 trials were conducted with healthy dyads after a cesarean birth.
- 18 of 38 trials began SSC immediately after birth. Delayed contact trials had considerable differences in timing.
- 23 of 38 trials offered infants 60 minutes or less of SSC.
C1: Exclusive breastfeeding at hospital discharge to 1 month postbirth

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
<th>Treatment</th>
<th>Control</th>
<th>Risk Ratio M-H, Random, 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anderson 2003</td>
<td>8/11</td>
<td>9/12</td>
<td>0.97 [0.60, 1.58]</td>
</tr>
<tr>
<td>Gouchon 2010</td>
<td>9/17</td>
<td>9/17</td>
<td>1.00 [0.53, 1.88]</td>
</tr>
<tr>
<td>Mahmood 2011</td>
<td>56/68</td>
<td>39/67</td>
<td>1.41 [1.12, 1.78]</td>
</tr>
<tr>
<td>Marin 2010 (1)</td>
<td>100/118</td>
<td>84/120</td>
<td>1.21 [1.05, 1.39]</td>
</tr>
<tr>
<td>Srivastava 2014</td>
<td>105/122</td>
<td>79/118</td>
<td>1.29 [1.11, 1.49]</td>
</tr>
<tr>
<td>Thukral 2012 (2)</td>
<td>19/20</td>
<td>8/21</td>
<td>2.49 [1.43, 4.34]</td>
</tr>
</tbody>
</table>

Total (95% CI) 356/355 100.0% 1.30 [1.12, 1.49]

Total events 297 228

Heterogeneity: Tau² = 0.01; Chi² = 8.87, df = 5 (P = 0.11); I² = 44%

Test for overall effect: Z = 3.56 (P = 0.0004)

Footnotes:
(1) Data not adjusted for cluster-like design. Sensitivity analysis investigating possible adjustments made no difference to the results of this...
(2) Time point 48 hours post birth.
C1: Exclusive breastfeeding 6 weeks to 6 months postbirth

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
<th>Treatment</th>
<th>Control</th>
<th>Risk Ratio M-H, Random, 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anderson 2003</td>
<td>2 (11)</td>
<td>1 (12)</td>
<td>2.18 (0.23, 20.84)</td>
</tr>
<tr>
<td>Gouchon 2010</td>
<td>8 (17)</td>
<td>5 (17)</td>
<td>1.60 (0.66, 3.91)</td>
</tr>
<tr>
<td>Nasehi 2012</td>
<td>45 (54)</td>
<td>42 (56)</td>
<td>1.11 (0.92, 1.35)</td>
</tr>
<tr>
<td>Nimbalkar 2014 (1)</td>
<td>27 (50)</td>
<td>20 (50)</td>
<td>1.35 (0.88, 2.07)</td>
</tr>
<tr>
<td>Srivastava 2014</td>
<td>104 (122)</td>
<td>75 (118)</td>
<td>1.34 (1.15, 1.57)</td>
</tr>
<tr>
<td>Thukral 2012 (2)</td>
<td>18 (20)</td>
<td>6 (21)</td>
<td>3.15 (1.58, 6.29)</td>
</tr>
<tr>
<td>Vaidya 2005</td>
<td>34 (44)</td>
<td>18 (48)</td>
<td>2.06 (1.38, 3.07)</td>
</tr>
</tbody>
</table>

Total (95% CI): 318 (100%) 322 1.50 (1.18, 1.90)

Total events: 238 167

Heterogeneity: Tau² = 0.05; Chi² = 15.92, df = 6 (P = 0.01); I² = 62%

Test for overall effect: Z = 3.34 (P = 0.0008)

Footnotes:
(1) 6 months
(2) Time point 6 weeks post birth
### C1: Breastfeeding 1 to 4 months postbirth

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
<th>Treatment Events</th>
<th>Treatment Total</th>
<th>Control Events</th>
<th>Control Total</th>
<th>Weight</th>
<th>Risk Ratio M-H, Random, 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sosa 1976a</td>
<td>22</td>
<td>30</td>
<td>27</td>
<td>30</td>
<td>13.7%</td>
<td>0.81 [0.64, 1.04]</td>
</tr>
<tr>
<td>Carlsson 1978</td>
<td>12</td>
<td>17</td>
<td>10</td>
<td>14</td>
<td>7.2%</td>
<td>0.99 [0.63, 1.55]</td>
</tr>
<tr>
<td>Carfoot 2005</td>
<td>42</td>
<td>97</td>
<td>40</td>
<td>100</td>
<td>10.5%</td>
<td>1.08 [0.78, 1.51]</td>
</tr>
<tr>
<td>Armbrust 2015 (1)</td>
<td>75</td>
<td>92</td>
<td>64</td>
<td>93</td>
<td>17.4%</td>
<td>1.18 [1.00, 1.40]</td>
</tr>
<tr>
<td>Carfoot 2004</td>
<td>7</td>
<td>14</td>
<td>5</td>
<td>12</td>
<td>2.6%</td>
<td>1.20 [0.51, 2.81]</td>
</tr>
<tr>
<td>Sosa 1976b</td>
<td>19</td>
<td>32</td>
<td>15</td>
<td>32</td>
<td>6.8%</td>
<td>1.27 [0.79, 2.02]</td>
</tr>
<tr>
<td>Vaidya 2005</td>
<td>42</td>
<td>44</td>
<td>36</td>
<td>48</td>
<td>17.0%</td>
<td>1.27 [1.07, 1.52]</td>
</tr>
<tr>
<td>Nolan 2009</td>
<td>16</td>
<td>20</td>
<td>8</td>
<td>15</td>
<td>5.8%</td>
<td>1.50 [0.89, 2.53]</td>
</tr>
<tr>
<td>Anderson 2003</td>
<td>7</td>
<td>11</td>
<td>5</td>
<td>12</td>
<td>2.9%</td>
<td>1.53 [0.68, 3.42]</td>
</tr>
<tr>
<td>Shiu 1997</td>
<td>19</td>
<td>28</td>
<td>12</td>
<td>28</td>
<td>6.3%</td>
<td>1.58 [0.96, 2.61]</td>
</tr>
<tr>
<td>Sosa 1976c</td>
<td>15</td>
<td>20</td>
<td>8</td>
<td>20</td>
<td>4.8%</td>
<td>1.88 [1.04, 3.39]</td>
</tr>
<tr>
<td>De Chateau 1977</td>
<td>12</td>
<td>21</td>
<td>5</td>
<td>19</td>
<td>2.7%</td>
<td>2.17 [0.94, 5.02]</td>
</tr>
<tr>
<td>Thomson 1979</td>
<td>9</td>
<td>15</td>
<td>3</td>
<td>15</td>
<td>1.7%</td>
<td>3.00 [1.01, 8.95]</td>
</tr>
<tr>
<td>Syfrett 1996</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>0.7%</td>
<td>3.00 [0.50, 17.95]</td>
</tr>
</tbody>
</table>

Total (95% CI): 445 / 442; 100.0% | 1.24 [1.07, 1.43]

Total events: 300 / 239

Heterogeneity: $\tau^2 = 0.02; \chi^2 = 22.17, \text{df} = 13 \ (P = 0.05); I^2 = 41\%$

Test for overall effect: $Z = 2.83 \ (P = 0.005)$

**Footnotes**

(1) We are unclear about the time point for collection of these data.
C1: Breastfeeding duration in days

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
<th>Experimental</th>
<th>Control</th>
<th>Mean Difference</th>
<th>Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Total</td>
<td>Mean</td>
</tr>
<tr>
<td>De Chateau 1977</td>
<td>175</td>
<td>135.08</td>
<td>21</td>
<td>103</td>
</tr>
<tr>
<td>Mizuno 2004</td>
<td>203.68</td>
<td>112.48</td>
<td>30</td>
<td>145.92</td>
</tr>
<tr>
<td>Shiau 1997</td>
<td>91.1</td>
<td>126.6</td>
<td>26</td>
<td>24.8</td>
</tr>
<tr>
<td>Sosa 1976b</td>
<td>159</td>
<td>123</td>
<td>34</td>
<td>109</td>
</tr>
<tr>
<td>Sosa 1976c</td>
<td>196</td>
<td>143</td>
<td>20</td>
<td>104</td>
</tr>
<tr>
<td>Syfrett 1996</td>
<td>111</td>
<td>81</td>
<td>3</td>
<td>45</td>
</tr>
</tbody>
</table>

Total (95% CI) 134 130 100.0% 63.73 [37.96, 89.50]

Heterogeneity. Tau² = 0.00; Chi² = 0.73, df = 5 (P = 0.96); P = 0%
Test for overall effect: Z = 4.85 (P < 0.000001)
C1: Success of the first breastfeeding

### Early Skin-to-Skin Contact for Mothers and Their Healthy Newborn Infants

#### Study or Subgroup

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
<th>Treatment</th>
<th>Control</th>
<th>Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Total</td>
</tr>
<tr>
<td>Beiranvand 2014</td>
<td>8.76</td>
<td>3.63</td>
<td>46</td>
</tr>
<tr>
<td>Gouchon 2010</td>
<td>9.2</td>
<td>3.8</td>
<td>17</td>
</tr>
<tr>
<td>Moore 2005</td>
<td>8.7</td>
<td>2.11</td>
<td>10</td>
</tr>
<tr>
<td>Srivastava 2014</td>
<td>9.55</td>
<td>1.14</td>
<td>122</td>
</tr>
</tbody>
</table>

**Total (95% CI)**

<table>
<thead>
<tr>
<th>Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>195</td>
</tr>
<tr>
<td>189</td>
</tr>
<tr>
<td>100.0%</td>
</tr>
<tr>
<td>2.28 [1.41, 3.15]</td>
</tr>
</tbody>
</table>

**Heterogeneity:** $\tau^2 = 0.33; \chi^2 = 5.05, df = 3 (P = 0.17); I^2 = 41\%$

**Test for overall effect:** $Z = 5.12 (P < 0.00001)$

#### Risk Ratio

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
<th>Treatment Events</th>
<th>Treatment Total</th>
<th>Control Events</th>
<th>Control Total</th>
<th>Weight</th>
<th>Risk Ratio M-H, Random, 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carfoot 2004</td>
<td>13</td>
<td>13</td>
<td>8</td>
<td>13</td>
<td>14.7%</td>
<td>1.59 [1.03, 2.45]</td>
</tr>
<tr>
<td>Carfoot 2005</td>
<td>89</td>
<td>98</td>
<td>82</td>
<td>99</td>
<td>27.1%</td>
<td>1.10 [0.98, 1.22]</td>
</tr>
<tr>
<td>Girish 2013 (1)</td>
<td>48</td>
<td>50</td>
<td>46</td>
<td>50</td>
<td>27.3%</td>
<td>1.04 [0.94, 1.15]</td>
</tr>
<tr>
<td>Khadivzadeh 2008</td>
<td>28</td>
<td>47</td>
<td>16</td>
<td>45</td>
<td>13.8%</td>
<td>1.68 [1.06, 2.66]</td>
</tr>
<tr>
<td>Mahmood 2011 (2)</td>
<td>47</td>
<td>80</td>
<td>26</td>
<td>80</td>
<td>17.1%</td>
<td>1.81 [1.25, 2.60]</td>
</tr>
</tbody>
</table>

**Total (95% CI)**

<table>
<thead>
<tr>
<th>Risk Ratio M-H, Random, 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>288</td>
</tr>
<tr>
<td>287</td>
</tr>
<tr>
<td>100.0%</td>
</tr>
<tr>
<td>1.32 [1.04, 1.67]</td>
</tr>
</tbody>
</table>

**Total events**

| 225 |
| 178 |

**Heterogeneity:** $\tau^2 = 0.05; \chi^2 = 26.79, df = 4 (P < 0.0001); I^2 = 85\%$

**Test for overall effect:** $Z = 2.29 (P = 0.02)$

---

**Footnotes**

(1) IBFAT > 10 on day 0.

(2) IBFAT 10 - 12.
# Infant Breastfeeding Assessment Tool

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Readiness to feed/</strong></td>
<td>Baby cannot be roused</td>
<td>Baby needs more vigorous stimulation to</td>
<td>Baby needs mild stimulation to start to</td>
<td>Baby starts to feed readily without effort</td>
</tr>
<tr>
<td><strong>Arousability</strong></td>
<td></td>
<td>rouse and start to feed</td>
<td>feed</td>
<td></td>
</tr>
<tr>
<td><strong>Rooting</strong></td>
<td>Baby does not try to root</td>
<td>Baby roots poorly, even with coaxing</td>
<td>Baby needs some coaxing, prompting or</td>
<td>The baby roots effectively at once</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>encouragement to root</td>
<td></td>
</tr>
<tr>
<td><strong>Fixing</strong></td>
<td>Baby did not feed</td>
<td>Baby takes over 10 minutes to start to</td>
<td>Baby takes 3-10 minutes to start to feed.</td>
<td>Baby starts to feed at once</td>
</tr>
<tr>
<td></td>
<td></td>
<td>feed</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sucking pattern</strong></td>
<td>Baby did not suck</td>
<td>Baby sucked poorly (weak sucking, some</td>
<td>Baby sucked fairly well (sucked on and off) but needed encouragement</td>
<td>Baby sucked well (demonstrating a recurrent burst-pause sucking pattern) on one or both breasts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>sucking efforts for short periods)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
C2: SSC versus standard contact after cesarean birth

- 8 RCTs were found with mothers and their infants after a cesarean birth.
- In all trials except 1 SSC began in the recovery room 50 min. post birth, duration ranged from 30 to 82 min.
- All trials except 1 were conducted on women receiving regional anesthesia (epidural or spinal).
- All mothers had primary planned, elective or repeat cesarean births.
- All infants were full-term.
- Data was very limited for all review outcomes from these RCTs.
- No evidence found for group differences in success of first breastfeeding (IBFAT score).
- No evidence found for group differences in exclusive breastfeeding (hospital discharge - 1 month or 6 weeks - 6 months).
- 2 small trials reported women receiving SSC were more likely to be breastfeeding between 1 and 4 months post birth.
C3: SSC versus standard contact by time of initiation

► Trials that initiated SSC less than 10 min. post birth were compared to trials beginning SSC at 10 min. or more post birth.

► No evidence of subgroup differences by time of initiation of SSC was found for breastfeeding 1 to 4 months post birth or duration of breastfeeding in days.
C4: SSC versus standard contact by dose (length of contact time)

- Trials that had 60 min. or less of SSC (low dose) were compared to trials with more than 60 min. of SSC (high dose).
- There was no evidence of subgroup differences according to high or low breastfeeding dose for any review primary outcome.
Risk of Bias Assessment

- Random sequence generation (selection bias)
  - Low risk of bias: 45%
  - Unclear risk of bias: 55%
  - High risk of bias: 0%

- Allocation concealment (selection bias)
  - Low risk of bias: 50%
  - Unclear risk of bias: 50%
  - High risk of bias: 0%

- Blinding of participants and personnel (performance bias)
  - Low risk of bias: 0%
  - Unclear risk of bias: 100%
  - High risk of bias: 0%

- Blinding of outcome assessment (detection bias)
  - Low risk of bias: 25%
  - Unclear risk of bias: 75%
  - High risk of bias: 0%

- Incomplete outcome data (attrition bias)
  - Low risk of bias: 50%
  - Unclear risk of bias: 50%
  - High risk of bias: 0%

- Selective reporting (reporting bias)
  - Low risk of bias: 25%
  - Unclear risk of bias: 75%
  - High risk of bias: 0%

- Other bias
  - Low risk of bias: 25%
  - Unclear risk of bias: 75%
  - High risk of bias: 0%
# Grade Summary of Findings Table

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Risk of usual care</th>
<th>Risk of SSC</th>
<th>Relative effect</th>
<th>No of studies participants</th>
<th>GRADE</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exclusive BF DC -1 month</td>
<td>642 per 1000</td>
<td>835 per 1000 (719 to 957)</td>
<td>RR 1.30 (1.12 - 1.49)</td>
<td>6 RCTs 711</td>
<td>⊕⊕⊕⊝ MODERATE</td>
<td></td>
</tr>
<tr>
<td>Exclusive BF 6 weeks -6 months</td>
<td>519 per 1000</td>
<td>778 per 1000 (612 to 985)</td>
<td>RR 1.50 (1.18 - 1.90)</td>
<td>7 RCTs 640</td>
<td>⊕⊕⊕⊝ MODERATE</td>
<td></td>
</tr>
<tr>
<td>BF 1-4 months postbirth</td>
<td>541 per 1000</td>
<td>670 per 1000 (597 to 773)</td>
<td>RR 1.24 (1.07 - 1.43)</td>
<td>14 RCTs 887</td>
<td>⊕⊕⊕⊝ MODERATE</td>
<td></td>
</tr>
<tr>
<td>Duration of BF (days)</td>
<td>Mean = 88 days</td>
<td>Mean = 63 (SD=38 - 89) days more</td>
<td></td>
<td>6 RCTs 264</td>
<td>⊕⊕⊝⊝ LOW</td>
<td>Sensitivity analysis – 1 trial excluded</td>
</tr>
</tbody>
</table>
Conclusions

Early SSC

► is an effective intervention to assist infants to BF successfully and to increase BF duration

► helps maintain infant temperature in the neutral thermal range

► promotes infant cardio-respiratory stability

► dramatically decreases infant crying
Implications for Clinicians

► Early SSC appears to have some clinical benefit - especially in regards to breastfeeding success

► The timing and duration of SSC may be critical – a minimum of a 2 hour dose beginning within a few minutes postbirth

► Infant temps will remain in safe range if the head is covered by a dry cap/ dry blanket across back

► Avoid gastric suctioning at birth & delay weighing & eye RX until after the 1\textsuperscript{st} BF
Birth SSC Protocol/Procedure

Place infant on warm blanket on mother’s abdomen

Dry and suction infant if medically indicated, remove wet blanket, 1-minute Apgar

Move infant to prone position on mother’s bare chest, ensuring infant’s face is visible, nares and mouth exposed, head facing one side, and mother and infant are chest to chest (Ludington-Hoe & Morgan, 2014).

Put dry cap on infant, assess infant on mother’s chest - vital signs, 5-minute Apgar, place ID bands.
Birth SSC Protocol/Procedure

- Cover mother and infant with dry blanket

- Monitor infant’s skin temp. every 15-30 min

- Remain available to assist the mother in holding her infant on her chest and reassessing

- Mother initiates BF during this time if she desires, is able, and if the infant exhibits hunger cues

- Can allow infant to move toward breast and latch spontaneously (Walters 2007)
SSC after Cesarean Birth (Hung 2011)

► Quality improvement project
► Survey barriers & solutions first
► ID staff champions
► Staffing – nursery nurse must be able to stay in OR with mom & baby
► ID infant eligibility criteria for SSC in the OR
► SSC rate within 90 min of Cesarean birth increased from 20% to 68%
► Results - higher LATCH scores, less supplementation with infant formula
SSC Procedure in the OR

(Hung 2011; Crenshaw 2012; Schorn, 2015)

- OR temp. should be set to 25° C
- Blue drape should be hung below mother’s breasts
- Dry & assess infant
- Untie mother’s arm, lower gown
- Place naked infant transversely across mother’s bare chest
- Cover with pre-warmed blankets and cap