

TOOLS FOR FAMILY WORK IN THE NEONATAL  
INTENSIVE CARE UNIT:  
An Orientation Guide for Parents

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<p>Description</p> <p>The neonatal intensive care unit is a highly technological environment where the role of parents differs from traditional parenting. Parents are separated from their newborns and often experience emotional strain and lack of control. Lack of sufficient orientation can further isolate parents from their infants affecting negatively both the early attachment and future parenting. Thus parental presence and physical contact during the hospital care should be promoted throughout the hospital stay. Sufficient orientation and family centered nursing encourages parental motivation to participate in the infant care, increases treatment safety, treatment results and overall family wellbeing.</p> <p>The aim of the thesis was to create an orientation guide for the parents in the Central Finland's Central hospital's neonatal intensive care unit (NICU). The easily adaptable and understandable guide was intended for parents whose children are currently admitted to the ward. The purpose of the guide was to educate and encourage parents to participate actively and safely in the care of their infants while supporting the early attachment, autonomy, self-determination and independency of parents in the NICU environment.</p> <p>The thesis was a functional study that simultaneously produced an orientation guide for parents in the Neonatal Intensive Care Unit of KSSHP and a written report used as a theoretical framework for the orientation guide. Through literature research a vast amount of information was processed and selected to best present the current evidence-based research done in the field of family centered nursing, neonatal intensive care nursing and orientation as a tool. It highlights the importance of family centered nursing, parental education and parental involvement in the care process of the infant in the NICU environment.</p>		
<p>Keywords (<a href="#">subjects</a>) Family Centered Nursing, Neonatal Intensive Care Nursing, NICU, Parental Orientation, Functional Study, Literature Search</p>		
<p>Miscellaneous Appendix 1: The orientation guide for parents</p>		

## **CONTENT**

<b>1</b>	<b>INTRODUCTION .....</b>	<b>1</b>
<b>2</b>	<b>NEONATAL INTENSIVE CARE NURSING .....</b>	<b>2</b>
2.1	Neonatal Intensive Care .....	3
2.2	Monitoring in the neonatal intensive care unit .....	5
	Thermal stability management .....	6
	Fluid and electrolyte balance management .....	7
	Nutrition management .....	7
	Breastfeeding.....	8
	Respiratory disorder management .....	9
2.3	Pain management .....	10
	Medication.....	11
	Kangaroo care .....	11
	Facilitated tucking by parents .....	12
<b>3</b>	<b>FAMILY CENTERED NURSING .....</b>	<b>13</b>
3.1	Developmentally Focused Nursing Care .....	16
3.2	KSSHHP Neonatal Intensive Care Unit .....	17
<b>4</b>	<b>ORIENTATION AS A TOOL .....</b>	<b>18</b>
<b>5</b>	<b>AIM AND PURPOSE OF THE THESIS.....</b>	<b>20</b>
<b>6</b>	<b>METHODS AND IMPLEMENTATION .....</b>	<b>21</b>
6.1	Study method.....	21
6.2	Literature Search and Criteria .....	22
6.3	Production of the Guide .....	23
<b>7</b>	<b>DISCUSSION .....</b>	<b>25</b>
7.1	Discussion of the process and product .....	25
7.2	Product reliability.....	28
7.3	Research ethics .....	29
7.4	Conclusion and Recommendations for future studies .....	30
	<b>REFERENCES: .....</b>	<b>32</b>
	<b>APPENDIX 1. The Orientation Guide.....</b>	<b>36</b>

**TABLE OF FIGURES**

**Figure 1 The Neonatal integrative developmental care model ..... 4**

# 1 INTRODUCTION

The aim of this thesis was to create an orientation guide for the parents in the Central Finland's Central hospital's neonatal intensive care unit (NICU). The orientation guide was made in collaboration with the Central hospital and the neonatal intensive care unit. The easily adaptable and understandable guide is intended for parents whose children are currently admitted to the ward. The purpose of the guide is to educate and encourage parents to participate actively and safely in the care of their infants. Active participation supports the important early attachment between parents and their infants. Thus the orientation guide serves as an important tool that enhances the autonomy, self-determination and independency of parents in the NICU environment. Additionally it promotes the important role of parents as natural caregivers regardless of the technical environment.

The neonatal intensive care unit is a highly technological environment where the small and sick infants are treated and cared for (Altimier & Phillips 2013). The role of parents in the NICU environment is different from traditional parenting and somewhat peripheral to the care process, as the staff provides the specialized care that the infant requires and families have to cope with parenting their infants from afar (Bracht, O'Leary, Lee & O'Brien 2013). Parents separated from their newborns often experience emotional strain, feel like outsiders and experience lack of control (Nyqvist, Häggkvist, Hansen, Kylberg, Frandsen, Maastrup, Ezeonodo, Hannula, & Haiek 2013). Still parental presence and physical contact during the hospital care is highly important for the future development of the infant and it should be encouraged throughout the hospital stay (Lehtonen 2009). Family-centered nursing is professional support for the child and his/her parents via a process of empowering and negotiation, and a set of inclusion and involvement (Mikkelsen & Frederik 2011). In family-centered nursing families are seen as the natural caregivers for the infant and parental involvement and decision-making is supported (McGrath 2013).

Entering the neonatal intensive care unit for the first time can be overwhelming for parents and processing new information while experiencing a traumatic life situation can be very difficult (Lee & O'Brien 2014). Without proper education and guidance

parents can feel a sense of powerlessness and intimidated by the situation. Lack of orientation can further isolate parents from their infants impacting both the early attachment and future parenting. (Bracht et al. 2013.) Through sufficient orientation, however, parental motivation to participate in the infants care, treatment safety, treatment results and overall family wellbeing can be positively affected (Penttinen and Mäntynen 2009). Bracht et al. (2013) conclude that parent education is absolutely necessary to enable parents to become familiar in their infants' care, and only through parental involvement family centered care can it be fully incorporated. Sufficient orientation can effect positively on the motivation and family wellbeing, but also has a high correlation on patient safety and treatment results.

The orientation guide can be seen as an important tool for the parents facing a new dramatic life situation with a baby in neonatal intensive care. It offers a practical, easy to read, visually presented guide of the ward and helps in the transition to the wards daily routines. It provides understanding of the ward as a whole, from the big picture to small details. It also helps the extended family to understand the realities of baby's current situation and what the parents are dealing with. This thesis is a tool for guidance in medical and technical knowledge in the neonatal intensive care unit. The orientation guide demonstrates with pictures the basic everyday functions, basic practices and machinery of the neonatal intensive care unit of KSSH.

## **2 NEONATAL INTENSIVE CARE NURSING**

According to Finnish health and welfare services (THL 2014a) 4,2 percentage of all births in Finland in 2012 were preterm, 0,8 percent infants with a very low birth weight. After one year of birth 90,8 percent of these infants were still alive. (THL, 2014a.) Internationally, the World Health Organization (WHO 2013) estimates that the rate of preterm births ranges from 5 percent to 18 percent of infants being born across 184 countries. Over 60 percent of the preterm births occur in Africa and South Asia.

Preterm birth is commonly defined as a birth that occurs after 22 weeks gestation and before the completion of 37 menstrual weeks of gestation regardless of birth weight. Additionally premature infants can be categorized according to the birth weight: Low birth weight (LBW) <2500g, very low birth weight (VLBW) <1500g and extremely low birth weight (ELBW) <1000g. These commonly used margins are however not scientific but merely historical. Thus, infants born at 36-38 weeks of gestation may also experience neonatal and even lifetime morbidity related to immaturity of one or more organs. (Gabbe, Niebyl, Galan, Jauniaux, Landon, Simpson & Driscoll 2012.)

Premature birth can occur due to several uncontrollable reasons both related either to the health of the mother or the infant. These reasons can be for example structural issues with the infant, inheritance, placement of placenta or mother's illness. (Dufva & Ruuska 2011.) Premature infants are not, however only infants needing intensive care. Complications in birth, infections, cardiac- and circulatory problems, problems in breathing, developmental issues, issues with the central nervous system, haematological issues and neurological disorders can all require intensive care for the infant. (Arasola et al. 2004.)

## **2.1 Neonatal Intensive Care**

A neonatal intensive care unit is an intensive care unit that is specialized in the care of ill or premature newborn infants with the capability of intensive care for newborn infants at all times. Its personnel and equipment are fully designed to help small infants from resuscitation to phototherapy and feeding. (HUS 2014.) With better technical equipment and thus better understanding on the conditions of a fetus and a newborn baby, neonatal intensive care is constantly increasing (Altimier & Phillips 2013). Boxwell (2010) outlines that the need of intensive care is increasing, as the childbirths are getting continuously more premature. Also newborns are the most vulnerable patients and therefore specialized expertise is required in the neonatal intensive care.

The neonatal intensive care unit environment is a place of extraordinary growth and development. As the uterus no longer protects the infant, the physiological and neuroprotective needs are dramatically different. (Altimier 2011.) This transition from the uterus to the life supporting intensive care should be simultaneously both efficient and gentle (Dufva & Ruuska 2011). Altimier and Phillips (2013) highlight seven distinct integrative developmental neuroprotective practices that should be utilized in neonatal care to support the normal development of an infant: the healing environment, safeguarding sleep, optimizing nutrition, minimizing stress and pain, positioning and handling, protecting skin, and partnering with families (see figure 1). As the infant's body is still underdeveloped, it is highly sensitive to any outside stimulus and every touch and interaction affects the brain development of the infants. (Altimier, Kenner & Damus 2015). Without the protection of the maternal womb, prematurely born infants are exposed to negative sensory inputs that can alter the normal brain development (Altimier & Phillips 2013). Thus light, temperature, sound, smell and touch stimulus should be adjusted accordingly and limited to minimum whenever possible. Overall, all care in the neonatal intensive care unit aims to minimizing the potential stress to the infant.

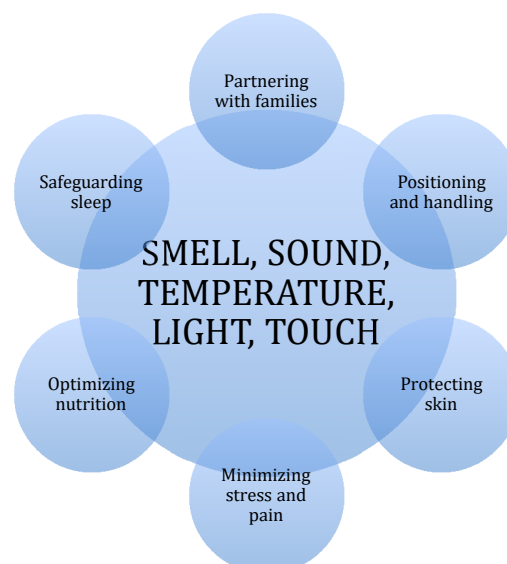


Figure 1 The Neonatal integrative developmental care model adapted from Altimier and Phillips (2013) courtesy of Phillips Mother and Child Care.



The neonatal integrative developmental care model includes creating a healing environment that controls stress and pain while providing a soothing approach that involves the whole family in the infants care and development (Altimier, Kenner & Dammus 2015). By following the seven neuroprotective practices the optimal physical, cognitive and emotional development of an infant can be supported. Through the healing environment physical environment of space, privacy and safety, and the sensory environment of temperature, smell, sound, light and touch are set to minimal to provide a gentle suppression, supportive boundaries and flexed positions to help stimulate a womb like conditions for the preterm infant. Partnering with families will allow families to participate in the care of the infant, hence supporting the crucial early attachment and emotional stability of parents and their babies. (Altimier & Phillips 2013.)

## **2.2 Monitoring in the neonatal intensive care unit**

The medical and professional care of infants in neonatal intensive care unit consists of numerous different components, which are all vital to the survival and development of infant. In the neonatal intensive care unit the basic vital signs of breathing, circulation, body temperature, nutrition and pain of an infant are supported and monitored closely to detect any early signs of problems. (Dufva & Ruuska 2011.) Fellman, Luukkainen and Asikainen (2013) outline: monitoring in the neonatal unit should be as gentle as possible and any unnecessary or useless monitoring should be avoided. Additionally only equipment designed for neonatal purposes specifically should be used. Finally monitoring should be organised to support family centered nursing (for example during kangaroo treatment) and monitoring should never negatively affect the well-being of the infant. Thus the benefits always need to outweigh the costs. (Fellman et al. 2013.)

The intensive care situation of a newborn baby is much more delicate compared to adults and even the smallest details can cause a life lasting effects. To insure a safe and healthy life for the infant, it is important to know the different procedures and equipment. The overall professional care of a patient in neonatal intensive care unit

includes know-how on thermal stability management, fluid and electrolyte balance, nutrition, medication, respiratory disorder management, cardiovascular disorder management, brain injury care, hematological disorder management, pain management, resuscitation, transportation, diagnostic and therapeutic procedures and infection control. (Boxwell 2010.)

### **Thermal stability management**

Providing a neutral thermal environment where the infant is neither gaining nor losing heat is a major goal for neonatal care (Altimier and Phillips 2013). Thermal stability management is highly important when an infant does not have a fully established and functional thermal production. Hence the lack of thermal stability management can severely compromise other important body systems. Reasons behind the risk of hypothermia relate also to the limited capabilities to produce heat by shivering. Heat loss can be reduced by external and internal insulation. Internal insulation consists of layer of subcutaneous fat, which starts to develop in the 26 to 29 weeks of gestation. External insulation can be provided in many different ways, such as clothing and still air boundaries. Heat loss is basically controlling the outside setting to control conduction, convection, radiation and evaporation. (Boxwell 2010.)

In the neonatal intensive care unit, thermal conditions must be stable for the infant. Radiant warmers are a good way for limiting the heat loss because of easy access and rapid responsiveness. Still, metabolic rates are higher due to increased evaporative and convective losses. Infants with low gestational weeks also need humidity and shielding. Incubators provide an enclosed space. Modern incubators provide protection from noise, and they are double-walled to reduce heat loss by radiation. Temperature can be set to automatically monitor infants' temperature by skin servo or by adjusting the air temperature manually. Other factors that must be considered related to thermal balance are humidity, skin condition and state of development, thermal status during transport from delivery room to NICU and between hospitals, and phototherapy affecting thermal conditions. (Boxwell 2010.)

## **Fluid and electrolyte balance management**

For physiological stability, water and electrolytes are essential. This balance can be impaired due to different reasons, such as immaturity, lack of function, underlying sickness such as hypoxia or sepsis. (Boxwell 2010.) Preterm birth has a great effect on the body water composition, 90% of body weight being water at 23 weeks gestational age and 80-85% at 25 to 30 weeks (O'Brien & Walker 2013). Imbalance of fluid and electrolytes for a newborn infant, if not detected early, can lead to significant morbidity. Development of kidneys starts as early as five weeks' gestational age and continues throughout the pregnancy up until weeks 34-36. Urine production begins in glomerular filtration, and glomerular filtration rate (GFR) an important tool of managing the fluid balance and health of the infant. (Boxwell 2010.)

Preterm infants fluid intake can be calculated using the infants' weight. Intake is usually 120-150ml/kg per 24 hours. It is usually started with less, 60ml/kg per 24 hours (in well humidified environment), until the postnatal diuresis starts. Urine output is also carefully monitored. Using accurate body weight, fluid balance can be assessed. Urine output narrates of water balance, but also renal perfusions. (Boxwell 2012.) Fluid intake calculations should take all sources of fluid into account, including intravenous crystalloids, parental nutrition, drug infusions, fluid boluses and milk (O'Brien & Walker 2013). Weighed nappies are the simplest way of monitoring the amount of urine output (Boxwell 2010).

## **Nutrition management**

Managing the nutrition of a sick and/or preterm infant is a challenging, but an essential job for a nurse in the neonatal intensive care unit. Nutritional needs vary individually according to weeks of gestation, postnatal age, and growth restriction degree. Additionally, accompanying diseases and individual needs of the infant must be taken into account. For sick and premature infants the energy requirements and metabolic rate are higher and to support their growth it is necessary to meet the energy and nutritional needs. (Boxwell 2010.)

A small infant in the neonatal intensive care unit is often still unable to breastfeed due to limited skill to control breathing and sucking rhythm (Dufva & Ruuska 2011). Additionally oral feeding requires skills, such as gastric emptying and intestinal motility, salivation, secretion of multiple digestive enzymes, absorption abilities and mucosal protection that are not developed with small infants (Boxwell 2010).

Thus, parenteral (intravenous) nutrition is often used to support enteral feeding (feeding through the gastrointestinal tract) or in difficult cases to compensate it completely (Boxwell 2010). The nutritional goal when using parenteral nutrition is to transfer to breast milk as soon as possible (Aransola, Reen, Vepsäläinen & Yli-Huumo 2004). In the neonatal intensive care units either donated or mothers own breast milk is used. Gastrointestinal tract develops to be prepared to oral feeding by 20 weeks' gestation, but due to a disease such as infection, shock or hypoxia, or prematurity the development of gastric emptying and intestinal peristalsis can be delayed, resulting in impaired digestion and absorption. For preterm infants it is important to use the GI-tract as much as possible to ensure the development of the GI-tract and learning the skills necessary for later feeding. (Boxwell 2010.)

Nutritional goals can be simply followed by monitoring the growth of an infant. These growth measurements include the weight, length and circumference of head. Following growth is important as appropriate pattern of growth affects thermal management, infection control, and cognitive function of the infant later on. Energy is needed to maintain certain metabolic rate, meaning thermoregulation, respiration, cardiac function and cellular activity. (Boxwell 2010.)

### **Breastfeeding**

Breastfeeding in the neonatal intensive care unit settings presents significant physical, emotional and logistical challenges. Still breast milk is optimal nutrition for the growth and development of the infant and exclusive breastfeeding provides immunological support particularly significant for hospitalized ill and premature infants. (Benoit & Semenic 2014.) Thus, breastfeeding should be actively supported and encouraged in the neonatal intensive care unit environment.

Often in the NICU environment mothers are, however, physically separated from their infants. Additionally the infants prematurity can affect the nutritive sucking capacity, making breastfeeding currently impossible. Thus, interventions are needed to enable mothers to breastfeed on a later time when breastfeeding becomes physically possible for the infant. Successful establishment of lactation can be achieved using milk expression by hand or by pump. (Nyqvist et al. 2013.)

One of the major challenges in the neonatal intensive care unit is maintaining/guaranteeing the uninterrupted normal breastfeeding pattern where the infant feeds directly from the breast. Only in medically justified reasons or if mother decides not to express milk, something other than breast milk should be given. Also for the initiation of nutritive sucking at the breast the infant's stability should be the only weighing factor. (Nyqvist et al. 2013.)

### **Respiratory disorder management**

Respiratory disorders are the most common reason to admitting an infant to NICU (Boxwell 2010). Lungs have to be developed sufficiently in the utero, as their handle the gas exchange of a newborn and are vital for the survival after delivery. The underdevelopment of lungs is one of the greatest challenges of preterm infants. (Dufta & Ruuksa 2011.) Preterm infants have a great risk of developing respiratory distress syndrome (RDS). It is caused mainly of immaturity of the lungs, and risks of developing it for infants born in 24 gestational weeks are as high as 80%, 28 gestational weeks born infants have RDS-risk of 70%. (Boxwell 2010.)

The level of respiratory disorder management varies from ventilators to breathing frequency monitoring, oxygen saturation and transcutaneous oxygen carbon dioxide measurements depending on the level of maturity of the infants' lungs. If the newborn cannot breath independently ventilators are used as long as the infant is strong enough to breath on their own. (Dufta & Ruuska 2011.)

## 2.3 Pain management

Pain management for neonates has gone through major changes in attitude. Also the perception on neonatal pain has changed within the past few years and caution is called in the use of analgesics for neonatal babies (Fellman et al. 2013). Through groundbreaking research both pain and its consequences are now better recognized and treated. Still, pain often goes over or undertreated due to difficulties to choose the right tools to recognize the pain. (Boxwell 2010.) Pain can also be caused by several different reasons. Prematurity of an infant, a specific sickness, medical procedures and examinations, a mere touching and medication can all be causes of infants' pain (Aransola et al. 2004).

Recognizing pain in newborn and preterm infants can be difficult. Physiological responses can be connected for example to heart rate, blood pressure, respiratory rate, oxygenation and palm sweating. Behavioral responses can be seen with infants born as early as 28 weeks' gestation. (Johnston, Filion, Campbell-Yeo, Goulet, Bell, McNaughton, Byron, Aita, Finley & Walker 2007.) These responses can remain elevated while the physiological responses often wear off as the pain disappears. Pain assessment should be considered a routine assessment procedure in everyday nursing interventions. (Boxwell 2010.) There are many validated methods to assess pain such as the Neonatal Infant Pain Scale (NIPS), the Premature Infant Pain Profile (PIIP) and Behavioural Indicators of infant pain scale (BIIP) but none of them are widely accepted or superior to one another (Fellman et al. 2013). Therefore there is a need to validate the existing tools more than inventing new ones (Anand 2007).

Pain releases stress hormones, which can result in longer hospitalization affecting negatively to wound healing, infections and exacerbate injury. Early pain experience directly impacts the later pain behavior. (Boxwell 2010.) Limiting extra stimulus in the neonatal intensive care unit can also be seen as part of the overall pain management. Additionally to medical pain treatment positioning and handling and gentle touch can be used to treat pain. (Aransola et al. 2004.)

## **Medication**

Neonates are a unique group to medicate. Their renal and hepatic functions are greatly different related to adults and even older children. Neonates have also a limited ability to absorb enterally, especially when sick. The toxicity levels due to medication must be kept at minimum, and the safe administration and monitoring of the effects is an important task for a nurse. When considering the effects of a medicine, there are numerous points to take into account including the route of administration, gastric emptying and pH, chemical properties of the medicine that influence the distribution, clearance meaning mainly metabolism in liver and excretion by the kidney. With neonates, these physical functions are immature and can be therefore different. (Boxwell 2010.)

## **Kangaroo care**

Infants treated in the neonatal intensive care unit are exposed to different stress factors everyday and are often separated from their parents. This separation can be seen as a major stressor for both the mother and infant. However, this stress can be decreased by maternal contact between the parent and the infant. When infants have stayed together with their mothers in the NICU environment a correlation between mother's and infant's cortisol levels at discharge from NICU can be found. Thus, in order to decrease the stress of an infant, parents need to be present and stay close. (Mörelus, Örténstrand, Theodorsson & Frostell 2014.)

Additionally kangaroo care or skin-to-skin contact should be promoted and encouraged (Finlayson, Dixon, Smith, Dykes & Flacking 2014). Axelin (2010) also outlines: kangaroo care, offering skin-to-skin contact for the infant, is the most studied and effective single intervention improving the development of preterm infants with parent's closeness. While involving parents to participate in the care, having skin-to-skin contact with the infant also humanizes the NICU experience (Davanzo, Brovedani, Travan, Kennedy, Crocetta, Sanesi, Strajn & De Cunto. 2013).

Kangaroo Care (also referred as Kangaroo Mother Care) is not a new phenomenon. First introduced in 1983 due to a shortage of incubators, continued research and clinical practice has demonstrated kangaroo care to be an effective and beneficial method of care both for the mother and infant. (Davanzo et al. 2013.) Kangaroo care is an intervention that uses skin-to-skin contact and frequent and exclusive or near-exclusive breastfeeding. The core concepts of kangaroo care being warmth, breast milk and love. (Nyqvist et al. 2013.)

In skin-to-skin contact the infant lies closely on the parent's bare chest in an upright position (Mörelus et al. 2014). Skin-to-skin care promotes many beneficial physiological conditions for the infant. These include more stable thermoregulation, cardiorespiratory stabilisation, higher oxygen saturation, fewer signs of stress, more organised sleep-wake cycle and decrease pain reactions. (Chiu & Anderson 2009.) For mothers skin-to-skin care can reduce stress, decrease postpartum depression, and encourage nurturing and breastfeeding (Mörelus et al. 2014). Additionally skin-to-skin care positively impacts maternal sensitivity, affectionate behaviors and bonding (Gooding, Cooper, Blaine, Franck, Howse & Berns 2011). Thus, skin-to-skin contact allows parents to get to know their infants and to develop strong positive feelings towards them. This can also encourage emotional healing and adaptation in the NICU environment. (Chiu & Anderson 2009.)

In order for the kangaroo care to be successful parents need to be present, fully informed and both physically and psychologically ready for active participation. There is no predetermined gestational age when an infant is ready for kangaroo care and the decision to practice it bases on the infants' stability. Hence, sometimes the infant's clinical condition and organisation of care can exclude the option of kangaroo care. (Davanzo et al. 2013.)

### **Facilitated tucking by parents**

The quality of infant care and better infant pain management in the neonatal intensive care unit can be achieved by active parental involvement. Allowing parents to



also participate in pain management through facilitated tucking by parents (FTP) unnecessary separation between parents and infants is prevented and families can feel more united during their stay in the NICU. (Axelin 2010.)

In facilitated tucking the parent holds the infant in the side-lying, flexed fetal-type position. Hands should be placed lightly yet firmly over the infant while any stroking should be avoided. For an infant stroking can actually be very irritating and too stimulating as their neurological system is not yet organised. This position supports the infant's body and increases the infant's ability to cope with pain. Combined with skin contact this postural support may also result in synergistic effect of pain control. (Axelin 2010.)

According to Gitto, Pellergrino, Manfreda, Aversa, Trimarchi, Barberi and Reiter (2011) facilitated tucking can significantly reduce the pulse rate and the crying time of an infant during painful procedures. However, with oxygen saturation facilitated tucking shows no effects (Gitto et al. 2011). During the facilitated tucking the parent's hands must be warm and the hold needs to be firm throughout the painful procedure. It will take few minutes for the infant to adapt and relax under the new stimulus from the hands; hence facilitated tucking should be applied at least two minutes before the painful stimulus. (Axelin 2010.)

### **3 FAMILY CENTERED NURSING**

For parents the neonatal intensive care unit is a highly stressful place. While being physically separated from their infant, parents often feel overwhelmed and unable to fully participate in their child's care. (Lee & O'Brien 2014.) McGrath (2013) states: "Parents and families often enter the unfamiliar chaotic environment of neonatal intensive care unit for the first time exhausted, bewildered, and emotionally drained."

Family centered nursing is defined as a philosophy of care where the essential role of family for children is recognized and respected (McGrawth 2013). McGrawth (2013)

outlines that it is not possible to provide efficient health care for the infant in the neonatal intensive care unit without partnering with the parents and family in every aspect of the care. Family-centered nursing is professional support for the child and the parents via a process of empowering and negotiation set inclusion and involvement. It is characterized by a relationship with health care professionals and the family, where both parties engage to share responsibility for the benefit of the child and his/her health care. (Mikkelsen & Frederik 2011.)

Family centered nursing begins from the best interest of the child. Families are seen as the natural caregivers and constant support for the child. Families' decision making is emphasized and encouraged, however families do not need to take on the medical culture of the institution. (McGrath 2013.) Family-centered care highlights that optimal health outcomes are achieved in collaboration with the family when parents play an active role in providing emotional, social and developmental support for the infant. In the neonatal intensive care unit, family centered care reallocates from the disease to the patient in the context of his/her family. (Gooding et al. 2011.)

Family-centered nursing in neonatal intensive care is a holistic concept that consists of so much more than just the patient's evaluation, care and treatment. As the actual patient in neonatal intensive care is a small infant who is either sick, preterm or in most cases both, the parents and siblings must be taken into considerations as a vital part of the nursing interventions. With a baby in the neonatal intensive care unit, parents will experience a wide range of feelings, such as fear, weakness, anger, shock and denial. These feelings combined with the reality that the newborn is attached to life support machines, feeding and following the vital signs, the physical closeness is difficult or sometimes impossible to achieve. Thus, the early attachment and the bond vital for the future well-being of the infant between the child and his/her parents is at danger. (Juffer, Bakermans-Kranenburg & van Lizendoorn 2007.)

McGrath (2013) states "from the child's perspective, family centered care is safe and familiar; the infant is first and foremost a member of a family and care that is individualized to the family and is thus also individualized to the infant. When the framework of family centered care is the foundation for caregiving, the family is visible, available, and supportive of their infant's needs because they are a collaborator and

integral aspect of every decision that affects their child". Family centered care is utilized throughout the whole care process.

Family-centered care is a complex issue for nurses. According to Boxwell (2010) it is a concept that is constantly evolving with rapidly changing parenting styles and parental expectations. When a baby is born, family has to cope with great changes in their lives including the whole new rhythm of life, routines and organization of time, which might result in stress. This stress is generally temporary. However, when a baby is born in a more difficult situation and is admitted to intensive care or diagnosed with a chronic illness, the stress can become conspicuous and interfere with the development of the mother-child relationship. (Femie et al. 2007.) In a situation where the newborn is in intensive care, it is the nurse's job to offer support and care also for the family. Enabling the parents to care for, take responsibility for, and gain knowledge about their sick and preterm infant is the very essence of family support. (Boxwell 2010).

Lehtonen (2009) outlines that parental presence and physical contact during the hospital care is highly important for the future development of the infant. The time after birth is described as a unique and sensitive period for the development of emotional bond between a mother and a child. This should be recognized and physically supported by creating possibilities for interactions with the infant. For example, offering family rooms and promoting skin-to-skin contact when safe for the child. (Lehtonen 2009.) Family centered care helps families to cope with the situation-associated anxiety. Parents who feel they are properly involved in the care process of the infant have higher confidence and competence in their participation. Additionally, parents ability to make care and treatment decisions is stronger. (Cockcroft 2011.)

A family centered nursing extends beyond parents and siblings. Cockcroft (2011) highlights that parent with children in the neonatal intensive care unit need to have a support network. This both reduces maternal depression as well as creates greater parental competence. Thus, a family centered visiting policy that allow extended family visits should be allowed. Parents should be able to decide whose support they need in the ward and with who they want to share their baby with. (Cockcroft 2011.)

### 3.1 Developmentally Focused Nursing Care

Developmentally focused nursing care is a perspective that takes into consideration the future development of the infant (Boxwell 2010). It is defined as a broad category of interventions designed to minimize any stress caused for the infant and the family in the NICU environment (Barbosa 2013). As intensive care sometimes requires radical actions for treatment some harm can be caused simultaneously and in this sensitive state some actions can cause difficulties in other developmental areas if used frequently (Boxwell 2010). In developmentally focused nursing care each infant's individual capacities guide the nursing interventions that are developmentally supportive, family centered, sensitive, evidence-based and collaborative. This can be done through variety of general environmental, behavioral and care strategies. (Barbosa 2013.) The neonatal integrative developmental care model includes creating a healing environment that controls stress and pain while providing a soothing approach that involves the whole family in the infants care and development (Altimier, Kenner & Damus 2015). Through neuroprotective practices the optimal physical, cognitive and emotional development of an infant can be supported (Altimier & Phillips 2013). Developmentally focused nursing care is a perspective that should always be present while considering any measures of nursing interventions (Boxwell 2010).

According to Reid and Freer (cited in Boxwell 2010) there are at least four different guidelines to developmentally focused nursing. These are: interventions that counteract sensory overload or deprivation, meaning that nursing process includes notifications of reducing stress and/ or promoting positive sensory experiences, interventions which aim to help the parents to resolve the emotional crisis of preterm birth and promote maternal-infant attachment, interventions that help parents to be more sensitive and responsive to their infant's behavior and improve social interactions, practical care-giving or confidence and interventions aimed at infants and families with diagnosed developmental delay or chronic illness.

In developmentally focused nursing care a multidisciplinary team assures the quality care for the infants and their families in the NICU environment (Barbosa 2013). Multidisciplinary team has a key role in optimizing care for clients. Thus, team approach

in health care enables both better integration of services and more effective support for the infants and their families. (Wilkes, Cioffi, Cummings, Warne & Harrison 2012.) Trough family-centered care parents are included to this team as the key members, most important in their infant's care. This role of parents as primary caregivers needs to be continuously reaffirmed by health care professionals in the NICU environment. (McGrath 2013.) The professional working in the multidisciplinary team in neonatal intensive care environment can be divided into the medical staff including nurses, physicians and dietitians, and to the developmental staff including developmental specialists, physical therapists, occupational therapist, psychologist, speech therapists and social workers (Barbosa 2013). For the multidisciplinary team to work efficiently each member of the team needs to have a clear role in the care process, respected with the others (Wilkes et al. 2012). While each team varies according to the individual needs of the infant, physician and nurses are always present in multidisciplinary teams of NICU (Barbosa 2013).

### **3.2 KSSHHP Neonatal Intensive Care Unit**

Neonatal intensive care unit is a care unit with the capability of intensive care for newborn infants at all times. Its personnel and equipment are fully designed to help small infants from resuscitation to phototherapy and feeding. (HUS 2014.) The neonatal intensive care unit of Finland Health Care Districts (KSSHHP) Central Hospital treats infants that are premature or in otherwise in need of intensive care. In 2013 the most common reasons for neonatal intensive care in KSSHHP neonatal unit were different problems with respiratory and circulatory systems, the common perinatal infections, prematurity or low birth weight of an infant. Whenever possible very premature deliveries are mainly done in the Kuopio University Hospital (KYS). In single fetus pregnancies deliveries before the 30 weeks of gestation and in twin pregnancies deliveries before the 32 weeks of gestation are send to KYS. (KSSHHP 2014a)

The ward aims to implement family centered nursing and individualistic client oriented care. Parents are empowered and included to the care process from the begin-

ning. The ward has one family room and a lounge area. Parents and siblings are welcome to visit unlimitedly. Other family members are also welcomed to visit, keeping in mind the safety and respect of other patients and families. (KSSHP.)

The ward staff consists of the head of department, two specializing physicians, department secretary, 17 nurses, 5 children's nurses, an instrument technician and 3 supply technicians. The multidisciplinary collaboration is done with nutritional planner, social workers, physiotherapists, occupational therapist, psychologist, speech therapist and occupational therapist. (KSSHP 2014b.)

## **4 ORIENTATION AS A TOOL**

The existing research on parental orientation in health care settings is very limited. Even though majority of the academic research in the field is done regarding work orientation it can be viewed sufficient also for this topic. Parents entering the neonatal intensive care unit for the first time can be viewed as new employees taking on a new "job" taking care of their newborn infant. Penttinen and Mäntynen (2009) define orientation as all the procedures that educate the new comer (employee or parent) about the new environment and community mission statement, stakeholders, tasks and expectations. Sufficient orientation can effect positively on the motivation, safety, treatment results and family well being.

According to Penttinen and Mäntynen (2009) good orientation builds a foundation to natural everyday functioning and co-operation. It empowers people by providing hands-on knowledge, increases safety and well being and encourages involvement. Trough proper orientation people know what is expected from them and how to participate in an adequate way. The aim of orientation is to familiarize parents to a new task in a new environment including the machinery, methods and goals of treatment (Lepistö 2004).

Outlining Lepistö's (2004) view on the benefits of orientation, adapted to the family-nurse relationship, the benefits of orientation can be seen as decreased uncertainty and anxiety to the new life situation while encouraging adaptation to the new challenging environment. Additionally good orientation will increase the parents ability to participate in the care process while improving the parent-child relationship and increasing the positive parental attitude towards care and caretakers. Finally proper orientation minimizes the risk of accidents and mistakes.

Hence in the neonatal intensive care unit orientation can be also viewed as an important part of patient safety (Lepistö 2004). Finnish National Institute for Health and Welfare (THL 2014b) defines patient safety as the right treatment at the right time in a right way with minimal harm caused for the patient. This follows closely the philosophy of developmentally focused nursing care. Patient safety consists of the safety of patient care, safety of medical treatment and safety of medical equipment used in the care process. The culture of patient safety should be systematically promoted and followed in the care unit. (THL 2014b.)

The neonatal intensive care unit can be a very stressful environment not just for the infant but also for the parents. The stress of parents is usually triggered by the high-tech environment, the appearance of a fragile newborn and the loss of parental role faced in the NICU environment. Additionally parents often feel powerless when dealing with multiple treatment options and medical interventions with uncertain outcomes. (De Rouck & Leys 2009.) Thus parents need information to reduce the emotional impact and help the adjustment to the NICU environment. Additionally proper orientation also positively affects the safety and overall treatment results. In the NICU environment patient safety is highly important and can be achieved through simple hygiene procedures. Educating parents about patient safety through sufficient hand hygiene and other hygienic procedures is highly important.

Bracht et al. (2013) conclude that parent education is absolutely necessary to enable parents to become familiar in their infants' care, and only through parental involvement family centered care can be fully incorporated. De Rouck and Leys (2009) continue that parents desire information in order to feel engaged in the care of their in-

fant. They state that knowledge supports both the adaptation to the new environment and coping process of the stressful situation (De Rouck & Leys 2009). Additionally educating parents about the NICU environment, their infant's condition, and relevant procedures helps facilitate parent's active participation in the care process. Parents feel education materials on NICU environment and experience reduce stress and increase parental confidence. (Gooding et al. 2011.)

The orientation guide should be considered as a supplementary material providing support for the interactions between the staff and family. In order for it to be efficient, an orientation guide should be relatively tight packaged of easily adaptable information. (Lehtonen 2011.) Hence, for the orientation guide to be efficient it should be clear and easily understandable. It should also only contain the newest relevant information that is needed. Parents entering the neonatal intensive care unit are often overwhelmed by the situation. Both the hospital environment as well as the uncertain life situation can be scary and in that situation processing huge amounts of difficult information is not possible. Therefore the orientation guide needs to be simple and easy to read. (Lehtonen 2011.)

## **5 AIM AND PURPOSE OF THE THESIS**

The aim of this thesis was to create an orientation guide for the Central Finland's Central hospital's neonatal intensive care unit (NICU). Entering the neonatal intensive care unit for the first time can be overwhelming for parents and processing new information while experiencing a traumatic life situation can be very difficult. With the help of this orientation guide parental autonomy, self-determination and independence in the NICU environment can be promoted as the guide educates parents and encourages them to actively participate in the care and treatment of their infants. Hence the purpose of this thesis was to create an orientation guide that would encourage parents in the care of their infants while promoting the important parental role and early attachment regarding the technical environment.



The orientation guide provides an easily adaptable and understandable tool for the parents to use in the neonatal intensive care unit. The orientation guide will assist new parents to adapt all the new information and ease the overwhelming situation. It offers a practical, easy to read, visually presented guide of the ward and helps in the transition to the wards daily routines. The orientation guide was made in collaboration with the Central hospital and the neonatal intensive care unit. The orientation guide was requested by the staff in the intensive care unit and therefore meets an existing need. For the orientation guide to complete its aim the following questions were considered:

- What do parents want to know regarding the medical care of their child?
- What are the ways parents can participate in the care of their children?
- What are the limitations and regulations of the ward

## **6 METHODS AND IMPLEMENTATION**

### **6.1 Study method**

This thesis is a functional study that aims to produce a practical orientation guide for parents. A functional study aims to combine practicality together with the latest evidence based theory by producing a functional product for example a written product (brochure, orientation guide, etc.) or an activity that bases on both the written report on the researched subject as well as the description of the process and results of the functional study. Functional studies can be work-place oriented studies that combine practicality and previous research to produce a written material. (Vilkka 2010, Vilkka & Airaksinen 2003.)

Functional studies can be usually divided into two sections (JAMK 2013). In this process, the first section consist of the thesis which outlines the phenomenon's behind the studied subject and the theoretical framework used in this study. Additionally it

describes the process of the orientation guide production. The second section also includes the final product, the orientation guide created for the neonatal intensive care unit of Central Finland's central hospital.

Furthermore this thesis could be viewed as a project as it includes the process of producing a written manual for a customer, Central Finland's central hospital NICU and has a clear beginning and ending. The process of this thesis project includes the phases of planning, creating and implementation of an orientation guide. Additionally this project has a recognizable need outlined by the customer. (Kettunen 2009.) As the old orientation guide of KSSHHP NICU is old and outdated it cannot be used any longer. Thus, a new orientation guide with current information is needed.

## **6.2 Literature Search and Criteria**

Nursing research is a way to identify new information, develop professional education and practice, and use resources efficiently (Potter & Perry 2011). The literature chosen both for the theoretical background of this thesis and the final parental orientation guide consists on the existing research on family centered nursing and neonatal intensive care nursing. This literature is collected through a literature search. O'Gorman et al. (2013) outline that a literature search is considered as a means of searching the literature for some studies or information. While literature search is not as systematic as literature review, it is still a valid method for information search. Reliability of the search can be guaranteed by limiting the searched literature and by using reliable sources. (O'Gorman et al. 2013.) In this thesis literature search method was chosen to find specific information needed for the orientation guide and it focuses on the most recent evidence based, peer reviewed articles. Thus, information is limited to fit the outlines of this functional thesis.

In this thesis the Nelli-portal was used to search relevant, reliable and trustworthy scientific articles. The specific article databases used were for example Elsevier, Academic Search Elite (EBSCO), ProQuest Central and Springer Link. The search terms that were used, were for example "Neonatal intensive care", "Neonatal intensive

care nursing”, “NICU nursing”, “Family centered care”, “family centered nursing”, “kangaroo care”, “breastfeeding”, “Facilitated tucking” and “Orientation”. Articles used for the literature review of this paper were all peer reviewed and published in revised academic journals to ensure the credibility and reliability of the research. Overall in this thesis 49 different sources were used. Out of these 29 were peer reviewed articles, 12 were books and 8 were websites. In order to avoid any old or updated information source material of the theoretical framework was limited to publications published after 2004. Only one reference older than this was used to describe the theoretical background of functional research as it could be argued that this information is still current and up to date.

In addition to articles, books and e-books from Ebraby service were used. Also, information was gathered from sources such as the World Health Organisation, Health and Welfare services of Finland, Duodecim medical portal, JAMK student material and material provided by the local hospital district KSSHP. All of these sources can be considered as reliable resources. Finally few previous theses were used to support the theoretical framework but mainly original sources were searched to guarantee the correct referencing.

### **6.3 Production of the Guide**

The purpose of this thesis was to create an orientation guide for the Central Finland’s Central hospital’s neonatal intensive care unit (NICU). The idea was initiated by the ward as their existing orientation guide was getting old and needed to be replaced. It was further requested by the Neonatal Intensive Care Unit staff that the orientation guide would remain in a written manual form that could be easily handed out to parents and visitors and therefore no other forms were considered.

Throughout the thesis project collaboration was done with the central hospital and the neonatal intensive care unit outlining the content of the orientation guide. While the old orientation guide worked as a starting outline, the content was refreshed and brought up to date as requested by the staff in the neonatal intensive care unit. In

the recent years family centered nursing and developmentally focused nursing care have increased their importance in the nursing care in the NICU environment tremendously. Parental involvement is much more encouraged and supported today and therefore the focus of the new orientation guide lies strongly in these two subjects. The information gathered into the new orientation guide is current evidence based knowledge on family centered nursing, developmentally focused nursing and knowledge how orientation can be used to support parental involvement. The aim all along was to create an easily adaptable and understandable guide for parents entering the neonatal intensive care unit for the first time.

The content of the orientation guide follows the outlines of the theoretical background of this thesis with more specific focus on the KSSHHP's ward's specific details, values and functions. A good orientation guide has a clear appearance and structure with easily understandable sentences. The titles and subtitles are informative about the content of the following text. (Hyvärinen 2005.) The content of the orientation guide consists of brief introduction to the NICU unit, its values and daily routines, patient safety, nurse-patient relationship, early attachment, feeding and intensive care nursing. These topics are presented in a brief and easily approachable manner to ease the adaptation of the new information.

The work process of the thesis and orientation guide started in spring 2014. After the staff of neonatal intensive care unit suggested the topic, the form of execution for the orientation guide was discussed and selected. Originally alternative and innovative forms of orientation guides were discussed, however due to KSSHHP's guidelines and request from the staff written manual orientation guide was the only possible option. Once the topic and form of the guide was set, the theoretical background and orientation guide was simultaneously gathered together and the content was outlined. In the content outline both the current theoretical information and the requests of the NICU staff were considered. Throughout the process the content stayed the same with some minor changes done in the way with the guidance of the ward staff.

According to Hatva (2008) the visual appearance of the guide is determined by the actual practical use of the guide. The content should be supported with the layout

and visual style. Pictures can be used to support the written content and conception. The visual style (color schema, layout and text) of the orientation guide was designed to suit existing materials and the outlines of the KSSH. For the orientation guide photos of the most important machinery of the ward were included to support the written content.

The orientation guide was sent to a final proofreading and accepted in March 2016. The final product, the orientation guide for the parents entering the neonatal intensive care unit of Central Finland's central hospital can be found in whole in the Appendix 1.

## **7 DISCUSSION**

### **7.1 Discussion of the process and product**

The neonatal intensive care unit is a technological environment where the smallest patients are treated and cared for (Altimier & Phillips 2013). The role of parents in the NICU differs from the traditional parenting and parents who are physically separated from their newborns often experience strong emotions, fears and lack of control (Bracht et al. 2013, Nyqvist et al. 2013). Still parental presence and physical contact during the hospital care is highly important for the future development of the infant and it should be encouraged throughout the hospital stay (Lehtonen 2009). Thus, parents should be empowered as the natural caregivers and decision-makers through family-centered nursing (McGrath 2013).

Without proper education and guidance parents can, however, feel powerlessness and intimidated by the new overwhelming situation. Lack of orientation can further isolate parents from their infants. (Bracht et al. 2013.) Moreover processing new information while experiencing a traumatic life situation can be very difficult (Lee &

O'Brien 2014). Therefore sufficient orientation should be provided for parents to empower them in the difficult situation. Through sufficient orientation parental motivation to participate in the infants care, treatment safety, treatment results and overall family wellbeing can be positively affected (Penttinen and Mäntynen 2009). Furthermore only through parental involvement family centered care in the NICU can be fully incorporated (Bracht et al. 2013).

The aim of this thesis was to create an orientation guide for parents entering the neonatal intensive care unit and to support family centered nursing through increased parental involvement and knowledge. The guide was build on the latest evidence based information on family centered nursing, developmentally focused nursing and orientation as a tool with the focus being on the KSSHP's daily activities and principles. With the help of this orientation guide parental autonomy, self-determination and independence in the NICU environment can be promoted as the guide educates parents and encourages them to actively participate in the care and treatment of their infants. It also encourages parents in the care of their infants while promoting the important parental role and early attachment with the infant regarding the technical environment.

When creating the orientation guide for the parents in the NICU environment there were few challenges to think about considering the overall content and tone of language chosen for the final product. First outlining the content needed careful consideration. While the orientation guide aims to be easily approachable and light it still needs to educate parents on very important issues and therefore cannot be too superficial. Sufficient education material reduces parents stress and increase parental confidence (Gooding et al. 2011, De Rouck & Leys 2009). Additionally only trough adequate educations parents can be empowered in the care process and family centered care can be fully incorporated (Bracht et al. 2013).

Throughout this thesis process the content of the orientation guide was discussed with the staff of the Neonatal Intensive Care Unit of KSSHP and it aims to fulfill the needs and wishes that the staff had pointed out for us. With the collaboration of NICU staff and basing on the content of the old orientation the content of the new orientation guide was sufficiently outlined to to fit the needs of parents entering the

neonatal intensive care unit for the first time. However at the point of writing this report the final orientation guide has not yet been presented to the end users (the parents), thus it has only been evaluated by the staff. Hopefully later on when the orientation guide will be in use, parents will give feedback on the guide and it can be further developed if necessary.

Secondly, the language chosen for the orientation guide was kept as simple as possible to make the content easily understandable for all parents. Hence the orientation guide could be considered as a simplified version of this report part of this thesis, with the same references and sources. This was done deliberately to guarantee information would be easy to read and process by all parents. In the neonatal intensive care unit both the hospital environment as well as the uncertain life situation can be scary for parents and processing huge amounts of new information can be very difficult. Therefore the orientation guide needs to be simple and easy to read. Thus in order for an orientation guide to be efficient it should be relatively tight packaged of easily adaptable information. (Lehtonen 2011.) However it needs to be recognized that some parents need/want more evidence based information and therefore in the end of the orientation guide there is a list of references to sources used in this thesis where parents wanting more detailed information can turn to.

Throughout the process there has been an open dialogue with the head nurse and nurses responsible of family centered work in the ward. Feedback from the staff of the ward has mainly focused on the end result and has been positive. In this writing process the latest evidence based information has been offered through this thesis and the ward staffs expertise on filtering the information for the parents has been relied on. Thus all feedback given by the staff has been taken into careful consideration. The ward staff, with their feedback, has been a great help with the production of the orientation guide.

## 7.2 Product reliability

According to Hirsjärvi, Remes and Sajavaara (2007) product reliability can be supported by choosing source material critically and by selecting sources that are up to date. Additionally information must be evidence-based and gathered through research and scientific criteria (Heikkilä, Jokinen & Nurmela 2008). Product reliability of this thesis is guaranteed through using accurate references. All references used in this thesis were critically examined and selected, peer reviewed and current. Additionally both Finnish and English sources were used to access the most recent research done in the fields of family centered nursing, neonatal nursing and orientation.

Finally in this thesis the reporting guidelines of JAMK were followed to assure right referencing technique. With right referencing any issues of plagiarism or copyright issues can be prevented. This increases both the ethicality and reliability of the work and allows the reader to find the original source material easily.

Like any research also this thesis has some limitations that need to be considered when assessing the product reliability. While the aim of this thesis was to create an orientation guide for the parents entering neonatal intensive care unit for the first time, the content of the orientation guide is created together with the staff and relies on the viewpoint of the staff. While parents' perspective is of course considered and the orientation guide aims to support parents specifically no parents were consulted when creating the content for the guide. Thus some details parents find important might have been overlooked. Still, it could be argued that the staff has an insight of what kind of information parents need and want, and what is important for them to know of the everyday functioning of the unit.

Finally this study is not a literature review and only consists of information collected to fit the purpose of this thesis through literature search. Therefore the list of references might be somewhat limited. Still, throughout the theoretical framework the focus has been on the most recent evidence based referencing and all articles that are used have been peer reviewed. Other than scientific articles only sources that are considered universally reliable (WHO, JAMK) are used. According to O'Gorman et al.



(2013) the above measures can be indeed used to guarantee the reliability of the information search.

### **7.3 Research ethics**

Professional ethics can be seen as the foundation of nursing. Ethics are relevant in all aspects of the nursing role, including research activities, education and management. (Chaloner 2007.) Ethical principles of autonomy, justice, fidelity, beneficence and nonmaleficence guide the nursing practice and decision making (Potter & Perry 2011). This thesis can be viewed as a tool to enhance the autonomy, self-determination and independence, of parents in the NICU environment as it educates parents and encourages them to participate actively in the care and treatment of their infants. Additionally beneficence is supported by actively doing something positive, supporting the early attachment and offering parents much needed information in a difficult situation with the help of the orientation guide. Outlining developmentally focused nursing care supports the ethics of nonmaleficence. Finally the orientation guide supports justice in the ward as it allows everyone in the ward to access the same information. This guarantees that everyone is treated fairly.

Further more according to Heikkilä et al. (2008) choosing the right developmental area for a thesis can be seen as an ethical topic. In this thesis the topic was chosen based on the need from the KSSHP neonatal intensive care unit. It was very important to find a topic that would be beneficial in real life and could be used. The topic and the content of the final product were outlined together with the staff of the neonatal ward and stayed the same throughout the work process. The aim was to create a positive orientation guide that would support parents to cope in a very difficult situation.

The end product, the orientation guide, currently presents the most up to date theoretical information found. As an educational material in the important orientation process of parents it is acknowledged that the orientation guide needs to be accu-

rate and up to date. Therefore it relies on the most current evidence based information and is approved both by the ward staff and by two tutoring teachers. Additionally there has been close collaboration with the staff of the ward, and all correction suggestions given by them have been carefully considered to the end product. As the field of nursing constantly develops, it is understood and accepted that this orientation guide will require future changes as the research and information in the field of nursing is changing fast (i.e. neonatal pain management, parental care, medicinal technology). Outlining the professional ethics of nursing (justice, fidelity, beneficence and nonmaleficence) the orientation guide will require constant updating as the focus of it should always be in presenting the most recent evidence based information for the parents.

#### **7.4 Conclusion and Recommendations for future studies**

This thesis was a functional study that simultaneously produced an orientation guide for parents in the Neonatal Intensive Care Unit of KSSHP and a written report. Through literature research a vast amount of information was processed and selected to best present the current research done in the field of family centered nursing, neonatal intensive care nursing and orientation as a tool. It highlight the importance of family centered nursing, parental education and parental involvement in the care process of the infant regardless of the technical environment of the NICU environment. This information was then presented in more detail in this theoretical framework and in simplified version in the orientation guide produced for the parents. As an end product this thesis contributes directly in the field of nursing by offering an everyday tool for parents and staff to use in the KSSHP's NIC unit.

In this thesis process only the staff was consulted when outlining the content for the orientation guide. Thus the orientation guide follows the outlines of what the NICU staff views important when first entering the NICU environment. Therefore as a future study it would be very interesting to study how parents themselves view the new orientation guide and how they would possible develop it further. Additionally

other alternative forms of orientation guides should be considered in the future, as people more and more wish to study things online or electronically.

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## APPENDIX 1. The Orientation Guide

# PERHEOPAS

*Kansio kertoo sanoin ja kuvin vastasyntyneiden osaston toiminnasta.*





## Sisällys

Sisällys.....	1
Vastasyntyneiden osasto .....	2
Hoitoon liittyvät tekniset asiat .....	3
Osaston tilat .....	3
Keskoskaappi .....	3
Monitorointi .....	4
Infuusiopumput .....	5
Hengityksen tukeminen .....	5
Sinivalo .....	6
Potilasturvallisuus.....	6
Lääkehoito .....	7
Käsihygieniä .....	8
Vauvan hoitaminen.....	9
Vauvan ruokailu ja imettäminen .....	9
Kenguruhoito.....	9
Käsikapalo.....	10
Asentohoito .....	11
Omahoitaja .....	11
Lue lisää.....	13

## Vastasyntyneiden osasto

Tervetuloa Keski-Suomen Keskussairaalan Vastasyntyneiden osastolle!

Pitelet käsissäsi vauvojen vanhemmille ja läheisille suunnattua perheopasta, tietopakettia osastomme toiminnasta, arvoista ja periaatteista. Oppaan tavoitteena on helpottaa ymmärtämään vauvojen hoitotyötä vso:lla.

Oman vauvan tehoahoito voi tuntua sekasortoiselta kokemukselta. Perheen tilanne on muuttunut vauvan odotuksen myötä. Synnytyksen ja vauvan tarvitseman tehoahoidon tai tehostetun tarkkailun myötä tilanne muuttuu uudelleen. Vauva-arki alkaa vastasyntyneiden osaston kliinisissä olosuhteissa, eikä kotona rauhassa ihastellen ja ihmetellen sekä tutustuen uuteen perheenjäsenen.

Vauva tarvitsee nyt lääkinnällistä ja sairaanhoidollista apua. Vauva tarvitsee myös Sinua, läheistään. Me hoitajat ja lääkärit tällä osastolla haluamme varmistaa turvallisen alun elämälle sekä turvallisen ja lämpimän alun myös perheellenne. Haluamme mahdollistaa oman vauvanne ihmettelyn, ihastelun ja tutustumisen tehoahoidon ja tehovalvonnan aikana. Vastasyntynyt ja perhe eivät ole osastollamme vierailijoita, ja perheenjäsenten odotetaan osallistuvan hoivatyöhön ja ottavan vauvan päivittäisestä hyvinvoinnista vastuuta alusta alkaen.

Vauvanne hoitoon osallistuu moniammatillinen henkilökunta. Siihen kuuluvat lääkärit, sairaanhoitajat, lastenhoitajat ja välillisesti osastonsihteeri ja sairaalahuoltajat. Lisäksi on saatavilla tarvittaessa fysioterapeutin, sosiaalityöntekijän, psykologin ja ravitsemusterapeutin palvelut. Röntgenin ja laboratorion palvelut kuuluvat myös osana vauvan hoitoon.

Kansioon on koottu erilaisia teemoja, jotka ovat tehoahoitoa ja tehostettua valvontaa vaativan vauvan kannalta olennaisia. Voitte aina kysyä tai keskustella teille tärkeistä asioista henkilökunnan kanssa. Potilasturvallisuutta ja hygieniaa koskevat kohdat on syytä kerrata usein, myös osastolla vierailleille isovanhemmille tai muille läheisille. Yhdessä voimme turvata pienten potilaidemme hyvän kehityksen, toipumisen ja kasvun.

## Hoitoon liittyvät tekniset asiat

### Osaston tilat

Vastasyntyneiden osasto on 11 potilaspaikan osasto. Tiloista löytyy tehohoitohuone jossa on 7 paikkaa, sekä valvontahuoneita ja perhehuone. Osastolla on myös oleskelutiloja perheille jossa voi hengähtää ja viettää aikaa, vaikka katsellen televisiota tai lueskellen. Oleskelutiloissa on myös mahdollista keittää kahvia ja syödä eväitä. Tiloista löytyy myös jääkaappi, sekä lukollisia säilytyskaappeja henkilökohtaisia tavaroita varten. Kahvit tarjoaa Lastenosastojen tuki ry, eli Lastu.

### Keskoskaappi

Vastasyntyneen vauvan lämmönsäätelykyky on vajavainen. Varsinkin ennenaikaisesti syntyneellä vauvalla ei ole ihonalaista rasvakerrosta pitämässä lämpöä. Kehityksen ollessa vajavainen myös muutoin (keuhkot, aivot, iho jne.) tarvitaan kaikki energia kasvuun. Lämpimien olosuhteiden tukeminen on siis kasvun ja kehityksen kannalta oleellista. Keskoskaappi tarjoaa mahdollisuuden lämpimään ja riittävän kosteaan suljettuun ympäristöön. Se eristää samalla myös kovilta ääniltä sekä liialliselta valaistukselta.



Keskoskaappi helpottaa myös tarkkailua; kaapin lämpöolosuhteet mahdollistavat vauvan vaatettamisen kevyemmin, eikä peittoa tarvita. Ruumiinlämmön varmistamiseksi hoidot pyritään toteuttamaan joko keskoskaapissa, tai jos vauvan kunto kestää liikuttelua, hoitopöydällä lämpölampun alla.

Lämmönsäätelykyky otetaan huomioon myös vauvan pukemisessa sekä esimerkiksi avokaapissa ollessa vaikka lämpöpatjalla.

## Monitorointi

Vauvojen tilaa seurataan tarkasti erilaisilla mittareilla. Yhdelle näytölle on mahdollista saada erilaisia elintoimintoja numeraalisesti ja käyrinä esitettynä. Nämä mittaukset pystytään tekemään asettamalla vauvan ihoa vasten erilaisia sensoreita, jotka häiritsevät vauvaa vain vähän.

Lukemia seurataan jatkuvasti siksi, että mahdolliset ongelmat pystytään havaitsemaan mahdollisimman nopeasti. Mahdollisimman aikainen puuttuminen mahdollistaa hyvän ja tarkan hoidon, sekä vähentää myöhempiä komplikaatioita. Tärkeitä seurattavia asioita ovat hengitys ja happeutuminen, verenkierto, ruumiinlämpö, ravitsemus sekä kipu. Näitä asioita kuvaavat mm. verenpaine, pulssi, happisaturaatio, hengitystiheys ja lämpö.

Monitoreihin on usein asetettu erilaisia raja-arvoja, joiden ylittyessä tai alittuessa monitori saattaa hälyttää. Hälytyksiä saattaa tulla myös sensorin huonosta kontaktista, tai liikkumisen aiheuttamista virheistä. Erilaiset hälytysäänet ovatkin osastollamme arkea, mutta niitä ei kannata kuitenkaan säikähtää. On tärkeä muistaa että hälytysten kuittaamisesta huolehtii henkilökunta, joilla on valmiudet puuttua tilanteisiin joissa vaaditaan lääketieteellisiä toimenpiteitä.



Vauvan seurantaan käytettäviä laitteita: monitori, verenpainemittari ja ekg-lätkät

### Infuusiopumput

Pienten vauvojen häiritsevää hoitoa pyritään välttämään. Tavallisesti on kuitenkin tarpeellista avata suoniyhteys jonka kautta lääkintä ja ravitsemus voidaan turvata. Infuusiopumput mahdollistavat tarkan ja tasaisen lääkinnän sekä pienet annokset suoniyhteyden kautta. Tämä varmistaa osaltaan vauvan turvallisen lääkinällisen hoidon josta ei koidu ylimääräistä haittaa.



### Hengityksen tukeminen

Saturaatiomittari kertoo helposti vauvan hapettumisen tilasta. Sensori asetetaan iholle, usein käteen tai jalkaan, ja se kertoo kuinka paljon vauvan veressä kiertää happea. Saturaatiomittari reagoi välittömästi muutoksiin. Mittari on myös herkkä liikkutulle, joten vauvan liikkua tai häntä siirrettäessä se saattaa aiheuttaa hälytyksen. Hoitajat reagoivat tähän ja asettavat mittarin paikalleen.



Vauvojen hengitystä joudutaan välillä tukemaan. Kevyemmät versiot tuesta ovat esimerkiksi happiviikset tai -maski joissa virtaa erikseen määritelty määrä happea per minuutti. Muita hengityksen tukemiseen tarkoitettuja välineitä ovat esimerkiksi CPAP-laite, eli positiivisen paineen aiheuttava maski joka asetellaan vauvan kasvoille. Vauvojen hengitystä tuetaan joskus, harvoin, myös intuboinnilla, eli hengitysputkella. Vauvaan voi koskea ja häntä saattaa voida kenguruhoitaa myös hengitystyössä. Kaikki askarruttavat asiat kannattaa ottaa puheeksi hoitajan kanssa.



## Sinivalo

Sinivalolla hoidetaan "vauvan keltaisuutta", eli bilirubinemiaa. Bilirubinemia voi syntyä vastasyntyneellä erilaisista syistä. Sinivalohoito toteutetaan laittamalla vauva makoilemaan sinivalolampun alle silmät peitettynä. Bilirubiini on lyhytaaltoiselle valolle herkkää, ja hajoaa sinivalon alla vesiliukoiseksi sekä häviää virtsan mukana. Hoito kestää usein 1-4 vuorokautta.



## Potilasturvallisuus

Terveiden ja hyvinvoinnin laitos (2015) on määritellyt potilasturvallisuuden sisältävän muun muassa seuraavaa:

- Potilas saa tarvitsemansa ja oikean hoidon, josta aiheutuu mahdollisimman vähän haittaa.
- Potilasturvallisuuteen kuuluu hoidon turvallisuus, lääkehoidon turvallisuus sekä lääkinnällisten laitteiden turvallisuus
- Potilasturvallisuuskulttuuri on potilaiden hoitoa edistävää suunnitelmallista ja järjestelmällistä toimintatapaa.

Hoitohenkilökunnan lisäksi myös potilaan läheisillä on iso rooli potilasturvallisuuskulttuurin toteutumisessa. Käytännössä tämä tarkoittaa rauhallisuutta, hienotunteisuutta ja toisten huomioon ottamista sekä ennen kaikkea hygieniasta huolehtimista. Vauvan hoitoon liittyy paljon samaa hoivaa kuin kotiooloissakin. Yhtälailla täällä sairaalaolosuhteissa, kaikki vauvan hoito toteutetaan rauhallisesti ja turvallisesti.

Osastolla voi olla samaan aikaan useita perheitä. Toisten huomioon ottaminen koostuu muun muassa seuraavista:

- Meluttomuus ja rauhallisuus
- Tuoksuttomuus
- Ehdoton vaitiolovelvollisuus
- Käsihygienia

## Lääkehoito

Lääkehoidosta vastaa aina lääkäri. Hoitoa toteuttaa yhdessä lääkärin kanssa lääkeluvat omaava sairaanhoitaja tai lastenhoitaja. Lääkehoitoa toteutetaan suun kautta, nenä-mahaletkun kautta sekä suonen sisäisesti. Joitain lääkkeitä käytetään vauvoilla myös peräaukon kautta, sekä hengitettynä höyrynä. Lääkehoidon turvallisuutta varmistetaan muun muassa:

- Selkeillä lääkemääräyksillä
- Huolehtimalla hygieniasta lääkkeiden kanssa toimiessa
- potilaan, lääkkeen, annoksen ja antoreitin tarkistus kahden hoitajan voimin
- lääkkeiden antoon liittyvien laitteiden turvallinen käyttö

Vauvan hoidossa käytetään monenlaisia laitteita. Laitehoidon turvallisuus tarkoittaa laitteiden oikeanlaista ja tarkoituksenmukaista käyttöä, laitteiden toimintavarmuutta ja huoltoa sekä niiden käytön osaamista. Hoitajat on perehdytetty käyttämään laitteita, ja onkin erityisen tärkeää että he käyttävät niitä. Jos jokin hälyttää tai vilkkuu, on syytä odottaa että hoitaja tulee kuittaamaan hälytyksen ja tarkistamaan mistä se on johtunut.

## Käsihygienia

Vauvanne on erityisen herkkä infektioille. Käsidesin oikeanlaisella käytöllä pystytään ehkäisemään valtavia määriä erilaisten infektioiden leviämistä ja näinollen ehkäisemään sairastumista.

Erilaisten tartuntojen ehkäisyyn liittyy läheisesti kolme erityyppistä leviämistapaa: kosketustartunta, pisaratartunta ja ilmatartunta. Näistä kosketustartunta on selvästi yleisin tartuntamuoto. Kosketuksen välityksellä tartunta voi olla joko suora, eli esimerkiksi käsien kosketuksesta tarttuva tai epäsuora, esimerkiksi erilaisilta pinnoilta joita kosketaan paljon, kuten puhelin. Käsien pesu saippualla ja käsidesin tehokas, riittävä ja oikeanlainen käyttö auttaa ehkäisemään suuren osan kosketustartunnoista.

Onnistuneen käsihygienian kannalta on tärkeää koruttomuus ja käsidesin saatavuus ja oikeanlainen käyttö. Käsidesiä tulee käyttää aina osastolle tullessa ja sieltä poistuttaessa. Käsidesiä on hyvä käyttää myös juuri ennen vauvan koskemista ja myös sen jälkeen. Käsidesiä tulee annostella riittävästi, 30-50ml eli kaksi painallusta pumppupullost. Huuhdetta hierotaan ensin sormenpäihin, sitten kämmenet vastakkain, sitten peukalot ja lopuksi sormien välit unohtamatta kämmenselkää. Huuhdetta tulee hieroa käsiin niin kauan että kädet ovat kuivat.

Yskimishygienian noudattaminen ehkäisee pisaratartuntojen välityksellä tapahtuvia sairastumisia. Yskimistä ei aina voi estää, mutta pisaroiden leviämisen voi. Oikeanlainen tapa estää leviäminen on peittää suu ja nenä kertakäyttölinalla. Nenäliinan puuttuessa, yksi hihan yläosaan, ei käsiin. Kädet tulee pestä saippualla ja desinfioida käsihuuhteella huolellisesti. (Ksshp Potilasohjeet).

Vauvojen infektioherkkyyden vuoksi osastolle tuloa tulee välttää sairaana.

## Käsien desinfiointi-ohjeet

- 2-3 painallusta käsidesiä
- Aloita upottamalla sormenpäät huuhteeseen. Tee sama toisella kädellä.
- Levitä joka puolelle käsiä, sormien välejä ja peukaloita unohtamatta.
- Hiero käsiä yhteen kunnes ne ovat kuivat. Muista myös kämmenselkä.
- Ajallisesti koko prosessiin kuluu n. 30 sekuntia



## Vauvan hoitaminen

### Vauvan ruokailu ja imettäminen

Vastasyntyneen luonnollinen ja paras ravinto on rintamaito. Viimeaikainen tieteellinen näyttö viittaa erittäin vahvasti siihen että äidin maito on koostumukseltaan juuri omalle vauvalle sopivaa. Rintamaito sisältää ravintoaineiden lisäksi muun muassa entsyymejä ja hormoneja jotka vaikuttavat vauvan kehitykseen positiivisesti ja edistävät vastustuskykyä. Imetys nopeuttaa myös äidin palautumista synnytyksestä ja vapauttaa onnellisuuteen liitettyä oksitosiinia. Imetys auttaa myös yhteisen tutustumisen aloittamisessa ja varhaisen vuorovaikutuksen kehittymiseen myönteisesti. Vaikka tarkkailu- ja tehohoito tuovat mutkia matkaan, kannustamme kaikkia äitejä aloittamaan turvallisen ja rauhallisen tutustumisen imettämällä vauvaa.



Mikäli imettäminen ei vauvan voimien vuoksi ole mahdollista, on synnytysvuode- ja vastasyntyneiden osastoilla rintapumppuja maidon pumppaamiseksi. Käytöstä ja sen ohjaamisesta voit kysyä tarvittaessa hoitajiltamme. Maidon pumppaamiseen, säilytykseen ja hygieniaan on olemassa hyvät ohjeet vanhempia ja erityisesti äitejä varten.

Usein vauvojen ravinnonsaanti turvataan nenä-mahaletkulla. Nenä-mahaletku helpottaa ruokailua sillä se poistaa imemiseen ja nielemiseen liittyvän työn vauvalta ja vauva voi keskittyä kasvamiseen. Nenä-mahaletku sallii imetys- ja pulloruokintaharjoitukset. Harjoituksissa edetään vauvan voimien ehdoilla, heti kun tilanne on tasainen, voi lyhyitä kokeiluja alkaa tehdä.

### Kenguruhoito

Teho-osaston vauvat ovat tavallista enemmän alttiina erilaiselle henkiselle ja fyysiselle stressille. Yhdessä ja lähekkäin vietetty aika vähentää stressihormonien määrää ja lisää onnellisuushormonin tuotantoa, ja vanhempien läsnä ja lähellä olo on erittäin suotavaa!

Kenguruhoito on ihokontaktia ja läheisyyttä tarjoava tapa. Sen tarkoituksena on tarjota rauhaa, lämpöä ja helpottaa imetyksen aloittamista ja maidon erittymistä. Kengurussa vauva lepää vanhemman paljaalla rinnalla kohoasennossa. Se usein tasaa vauvan lämmönsäätelyä, sekä hengitystä ja sydämen sykettä.

Saturaatio, eli happeutumisen voi parantua, ja kivun ja stressin merkkejä esiintyy vähemmän. Äideillä ihokontakti lapsen kanssa vähentää stressiä, riskiä sairastua synnytyksen jälkeiseen masennukseen ja rohkaisee vauvan hoitamiseen ja imettämiseen epätavallisissa olosuhteissa. Lähellä olo lisää herkkyyttä vastata vauvan tarpeisiin ja herättää positiivisia tunteita vauvaa kohtaan. Se voi toimia tavallaan terapiana erilaisen alun käsittelyssä. Ei ole olemassa mitään ennalta määrättyä ikää jolloin vauva on valmis kenguruhoitoon. Kun vanhemmat ovat valmiita, keskittyneitä, läsnä ja varmoja, sekä vauvan vointi on riittävän tasainen, voidaan kenguruhoito turvallisesti aloittaa. Kenguruhoitoon tulee valmistautua niin että siinä voidaan viettää pitkään, jopa neljä tuntia. Ennen aloittamista on hyvä syödä ja käydä esimerkiksi vessassa. Kenguruhoitoon aloituksesta tulee aina keskustella hoitajan kanssa.

Kenguruhoito on myös erityisesti isille, ja vaikka isovanhemmille erittäin oiva tapa tutustua pieneen vauvaan. Lämmin lähellä olo rakastavan ihmisen sylissä ei katso ikää, sukupuolta tai roolia lapsen elämässä. Se tarjoaa mahdollisuuden osallistua, auttaa, tutustua. Se on mainio keino olla konkreettisesti läsnä turvaamassa lapsen kasvua ja kehitystä.

### Käsikapalo

Vastasyntyneen kivun hoidon haasteena on kivun arviointi. Vastasyntyneen kommunikointikeinojen puuttuminen haastaa tarkkailemaan vauvan kokonaistilaa, asentoa, ilmettä ja elintoimintoja. Kipua voidaan mitata useammallakin mittarilla, mutta näiden luotettavuutta on vaikea arvioida. Elintoimintojen muutokset, ruumiinkieli sekä ilmeet, ja mahdollisesti itku auttavat arvioinnissa. Vanhempien osallistuminen vauvan kivunhoitoon vähentää tutkitusti sekä vanhemman että lapsen stressiä. Vanhempien osallistuminen voi käytännössä tapahtua käsikapalon muodossa.

Käsikapaloa voidaan käyttää pienimmillään ennenaikaisesti syntyneillä vauvoilla.

- Kokoa kylkiasennossa oleva vauva lämpimin käsin sikiöasentoon tuoden vauvan kädet ja jalat lähelle vartaloon
- Ihokontaktia tulisi olla mahdollisimman paljon
- Käsikapalo-ote kannattaa aloittaa jo esimerkiksi hetkeä ennen epämiellyttävää tapahtumaa, niin että vauva on rauhallinen toimenpiteen koittaessa
- Vauvan tiivistä ja lämmintä käsikapaloa jatketaan toimenpiteen ajan, ja vielä muutama minuutti sen jälkeen, kunnes vauva on rauhoittunut.
- Irrotus käsikapalo-otteesta tulee tehdä rauhallisesti.

### Asentohoito

Vauvan ollessa osastollamme hoidossa, häntä makuutetaan usein kylkiasennossa. Asentoa saatetaan tukea erilaisilla makkaroilla ja tyynyillä. Kyljellä, sikiöasennossa maaten vauvan hermoston kehitys vastaa kohdun olosuhteita muistuttavaksi, ja tämä on erityisen tärkeää ennenaikaisesti syntyneillä lapsilla. Myös täysiaikaisten vauvojen oloa helpotetaan vaihtelemalla tasaisin väliajoin asentoa. Asentohoito ajoitetaan usein muiden hoitotoimenpiteiden kanssa samaan yhteyteen. Kun vauvaa pestään, ruokitaan, tutkitaan tai lääkitään, hänen lepoasento vaihdetaan samalla. Tällöin saatetaan vaihtaa myös mittausantureiden paikkaa. Näin pyritään edesauttamaan vauvan tottumista eri asentoihin sekä tuntoaistin kehittymistä. Vauvan on hyvä saada tuntoaistimuksia joka puolelle kehoa. Asennon ja sensorien paikan vaihtamisella ehkäistään myös painehaavoja, eli paineen aiheuttamia ihorikkoja herkällä iholla.

### Omahoitaja

Vauvanne ollessa osastollamme pidemmän aikaa, nimetään hänelle omahoitaja. Omahoitajia voi olla useampi, yleensä yhdestä kolmeen hoitajaan. Omahoitaja perehtyy vauvan asioihin usein syvällisemmin ja pyrkii osallistumaan hoitoa koskeviin tapaamisiin aina kun mahdollista. Mikäli haluatte keskustella vauvanne asioista, kannattaa omahoitajaan olla yhteydessä. Omahoitajan tehtäviin voi tilanteesta riippuen liittyä esimerkiksi perheen hoidon tarpeen arviointia, hoidon suunnittelua, sekä toteutuneen hoidon arviointia.

Kun on oikein pieni

Kun on oikein pieni  
Voi lentää linnun untuvalla,  
Nukkua orvokin lehden alla,  
Kun on oikein pieni

Kun on oikein pieni  
Voi keinua heinässä heiluvassa,  
Levätä kukassa tuoksuvassa,  
Kun on oikein pieni

Kun on oikein pieni,  
Voi istua lumihuutaleille,  
Litätä maailman tuulien teille,  
Kun on oikein pieni.

-Hannele Huovi

## Lue lisää

Maailman terveysjärjestö tarjoaa kansainvälisiä suosituksia hoitotyöhön. Esimerkiksi käsihygieniasta voit lukea [www.who.int](http://www.who.int)

Terveyden ja hyvinvoinnin laitos THL tarjoaa laajasti tietoa kansallisista terveyssuosituksista aina potilasturvallisuudesta lasten rokotusohjelmiin. [www.thl.fi](http://www.thl.fi)

Väestöliiton sivuilta löytyy vanhemmuuskeskus joka tarjoaa tietoa perheen eri vaiheisiin [www.vaestoliitto.fi](http://www.vaestoliitto.fi)

Kelan verkkosivut ja sähköinen asiointi, sekä Sosiaali- ja terveysministeriön verkkosivut helpottavat lapsiperheen arkea [www.kela.fi/lapsiperheet](http://www.kela.fi/lapsiperheet) , <http://stm.fi/toimeentulo/lapsiperheet>

Jyväskylän kaupungin neuvolat <http://www.jyvaskyla.fi/terveys/neuvolat>

Terveyskirjasto tarjoaa laajasti luotettavaa tietoa sairauksista ja käypä hoito -ohjeita [www.terveyskirjasto.fi](http://www.terveyskirjasto.fi)

**Vertaistukea** voi löytää esimerkiksi erilaisten potilasjärjestöjen sivuilta:

Leijonaemot [www.leijonaemot.fi](http://www.leijonaemot.fi)

Keskosvanhempien yhdistys [www.kevyt.net](http://www.kevyt.net), MLL Jyväskylä Hätähouset [jyvaskyla.mll.fi/hatahouset/](http://jyvaskyla.mll.fi/hatahouset/)

Sydänlapset ja -aikuiset <http://www.sydanlapsetja-aikuiset.fi/>