

SENSE

Supporting & Enhancing NICU Sensory Experiences

2nd Edition

PREVIEW

*A Guidebook for
Parents in the NICU*

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Glossary

The NICU has its own language. We have created a list to explain some words that you will hear in the NICU and throughout this book:

*A baby who is not preterm grows inside the pregnant parent for 40 weeks before being born. So, the 25th week of pregnancy means that the baby is 15 weeks from the due date.

- **NICU**: The neonatal intensive care unit.
- **Due Date**: The date your baby would have been born if your baby had stayed inside the pregnant parent for 40 weeks.
- **Full Term**: A baby who was born on the due date or two weeks before or after the due date.
- **Preterm**: A baby who was born three weeks or more before the due date.
- **Gestational Age**: The number of completed weeks that your baby spent developing in the pregnant parent's womb prior to being born (from the date of the pregnant parent's last menstrual period).
- **Postmenstrual Age**: The number of weeks gestation a baby was born at plus the number of weeks since birth. This helps us understand the 'developmental age' of our baby (how close or far from the due date your baby is). If your baby was born at 26 weeks gestation and is now 4 weeks old, your baby's postmenstrual age is 30 weeks (10 weeks before the due date).
- **Term Age**: A baby who has reached the original due date.
- **Womb or Uterus**: The place where a baby grows inside of the pregnant parent.
- **Senses or Sensory**: How you experience the world around you with touch, taste, smell, sight, hearing, and movement.
- **Development**: The process of growing and learning new things.
- **Stimulation**: Something applied to or around the baby to help the baby develop or grow.
- **Intervention**: Something done to help with a situation; something done to help the baby develop or grow.
- **Treatment**: Something done to help and/or fix a medical problem.
- **Nursing Cares**: Something the staff does to help care for your baby. This can include diaper changes, checking temperature and other vitals, and performing other procedures.

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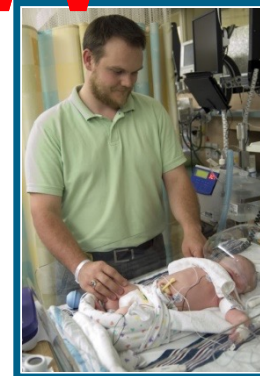
Parenting in the NICU

What You Can Do For Your Baby

Importance of Parents

- It is important to take care of yourself.
- Be sure you are eating regularly, drinking enough fluids, and getting the sleep you need.
- Your care team is here to support you. Please ask for help when it is needed.

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Interacting With Your Baby in the NICU

- Babies may be easily stressed by bright lights, noise, quick movements, and medical care. Your comfort can help your baby.
- Parents provide stability for babies in an unstable situation.
- Babies, especially premature babies, sleep most of the time. Sleep is very important for your babies' development.
- As babies grow and develop, they will wake for longer periods of time and will interact more.
- Whether babies are awake or sleeping, they can benefit from you speaking softly to let them know you are there or placing a hand on their body or head to let them experience loving touch.





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Experiencing the World

Our Body's Senses

We Have Seven Basic Senses

1. Touch.
2. Hearing.
3. Smell.
4. Taste.
5. Seeing.
6. Body Awareness (understanding the parts of your body, where they are located, how they feel, and what they can do).
7. Movement.

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In the Womb: Touch & Body Awareness



Baby's arms and legs are flexed (folded in) by the womb's walls.



Baby feeling the face, resting on the



Baby touching the umbilical cord



Baby sucking the thumb.

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- The tight wall of the womb keeps baby curled up, with pressure on the back, hands toward the middle of the body, and legs tucked in.
- **The “hug” of the womb makes the baby feel safe and secure. The baby is able to move about while still feeling the pregnant parent's "hug" all around the body.**
- This teaches the baby about the position of the bones and muscles during bending, straightening, pulling, and stretching.

In the Womb: **Smell & Taste**



- The baby's taste buds develop around the 13th to 15th week of pregnancy.
- The baby can smell and taste the pregnant parent's diet; including salty, sweet, sour, bitter, and savory. The baby can perceive the unique smell of the parent.
- The sense of smell and taste together allow the enjoyment of many different flavors.
- Smell has a strong connection to long term memory, and the baby recognizes the parent's smell immediately after birth.
- **The parent's smell is important for bonding and makes your baby feel safe.**



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Growing Up in The NICU

Supporting Your Baby's Developing Senses

The NICU Experience



- Premature birth and staying in the NICU changes how your baby experiences the world.
- Your baby no longer has the protection of the parent's body, and your baby experiences all of the noise, light, touch, pain, and gravity that is in the outside world.
- Your baby's senses continue to develop just like they would in the womb, but now these senses are getting different stimulation.
- It is important to make sure that your baby receives the right kind of stimulation, so that it will support the developing senses.
- How? By giving positive sensory experiences that are close to what your baby would get in the womb, by getting sensory experiences that are backed by research, and by spending quality time with parents every day.
- Your health care team can help guide you about the types of sensory experiences that are best for your baby. This may change as your baby grows stronger.
- This guide provides suggested types of activities along with how long to conduct them. All the activities in this book have research that has shown them to benefit you and/or your baby.

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Supporting Your Baby's Sense of Touch



- **Touch and contact help your baby feel calm.**
- Your touch is comforting to your baby.
- Your touch lets your baby know you are near.
- You can provide touch to your baby during nursing care or during a blood draw to help your baby deal with what is happening.

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Supporting Your Baby's Sense of Smell



Provide Parental Scent



Kangaroo Care

- Your scent is comforting and familiar to your baby.
- Breastfeeding and kangaroo care are great ways to allow your baby to experience your scent.
- Providing your scent and the scent of breast milk through scent cloths or other items can also provide your baby with comfort when you cannot be present.

PREVIEW

A black and white photograph of a newborn baby lying in a hospital bed. The baby is wearing several circular medical sensors on its chest and abdomen. A hand is visible near the baby's head, possibly adjusting a sensor. The background is blurred, showing other parts of the hospital room.

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How Your Baby Talks To You

Watching Baby's Signals

Approach Behaviors: “I’m Ready to Interact”



Focused
Attention

Baby will make
eye contact
with you.



Bright Eyed
& Sucking
Movements

Regular
Breathing Rate



Face, Arms, and Legs Relaxed



Good Color



Awake, Quiet, & Alert

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Baby nestled, relaxed, and ready for comforting touch.

Stressed Behaviors: “I Need a Rest”



Worried
Face, Salute
(Arms Up), &
Finger Splay



Stop Sign
(Hands up
and out with
fingers
splayed)



Worried Face,
Wrinkled
Forehead
(Furrowed
Brow), & Hand
Splaying



Yawning

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Your Time With Your Baby

When To Interact

Sleep is Important!

- Sleep is important for your baby, but having positive sensory experiences with you is most important.
- **By planning activities around your baby's sleep, your baby can have both uninterrupted sleep AND positive sensory experiences.**
- Some activities can be done while your baby is sleeping and may help your baby sleep.
- Other activities can be structured around a time when your baby is going to be waking soon.



Your Baby's Care Schedule

- Many babies are on a schedule so that all needed care happens around a scheduled time.
- While your baby is in the NICU, this is usually every 3 to 4 hours.
- When all of your baby's care is done on this schedule, it allows your baby to sleep for long periods.
- Parents are welcome in the NICU and encouraged to interact with their baby regardless of care schedule.





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Supporting Your Baby's Senses

Week-By-Week Sensory Plan

Week-By-Week Sensory Plan



Touch
(Tactile)



Hearing
(Auditory)



Smell
(Olfactory)



Seeing
(Visual)



**Movement &
Body Awareness**
(Vestibular & Proprioception)

Each week in the NICU, your baby's senses are developing.

This next section will introduce activities to do with your baby every day. The postmenstrual age at the top of each page will help you find the activities appropriate for your baby's current developmental stage.

The symbols on the left show which sense each activity is for.

You will see recommendations for the amount of time to provide sensory experiences for your baby. These are goals. Some babies will enjoy more or less of an activity, and you might not always be able to do as much as you would like. Do what you can, and follow your baby's lead!

Sensory Support: 24 Weeks

Here are some things to do with your baby each day this week
(as long as tolerated)



Touch

Do kangaroo care (skin-to-skin) or a hand hug with your baby for at least 1 hour per day.



Hearing

Engage in quiet conversation near the bedside and during diaper changes.



Smell

Provide at least 1 hour per day of parent scent or the smell of breast milk.



Seeing

Protect your baby from direct or bright light.



Movement & Body Awareness

- Unwrap your baby and allow stretching and free movement for at least 2 minutes prior to a diaper change at least 1 time per day.
- Allow your baby to experience being in at least 2 different positions for at least 10 minutes each.

Sensory Support: 32 Weeks*

*Denotes change from previous week

Here are some things to do with your baby each day this week
(as long as tolerated)



Touch

Give at least 2 hours of positive touch each day by doing one or more of these things:

- Provide a hand hug.
- Do kangaroo care (skin-to-skin) for at least 1 hour.
- Hold your baby in a blanket for 15 minutes at a time, or longer if your baby's temperature remains stable.
- Do massage for up to 15 minutes.



Hearing

Give at least 1 ½ hours of positive sound each day by doing one or more of these things:

- Read, sing, and/or speak to your baby (can be broken up into 30 minute periods several times per day).
- Play soft music or recorded voice.

*At the sound of whisper or quiet conversation.



Smell

Provide at least 1 hour per day of parent scent or the smell of breast milk.



Seeing

- Cycle light to your baby with natural light (or lights on, when there is no natural light) during the day and dim light or darkness at night.
- Avoid direct and bright lights.



Movement & Body Awareness

- Unwrap your baby and allow stretching and free movement for at least 2 minutes prior to a diaper change at least 3 times per day.
- Allow your baby to experience being in at least 2 different positions for at least 10 minutes each.
- Rock during holding for at least 3 minutes.

Sensory Support: 37 Weeks

Here are some things to do with your baby each day this week
(as long as tolerated)



Touch

Give at least 3 hours of positive touch each day by doing one or more of these things:

- Provide a hand hug.
- Do kangaroo care (skin-to-skin) for at least 1 hour.
- Hold your baby in a blanket.
- Do massage for up to 15 minutes at a time.



Hearing

Give at least 3 hours of positive sound each day by doing one or more of these things:

- Read, sing, and/or speak to your baby (can be broken up into 30 minute periods several times per day).
- Play soft music or recorded voice.

*At the sound of whisper or quiet conversation.



Smell

Provide at least 3 hours per day of parent scent or the smell of breast milk.

Hold your baby as often as possible.



Seeing

- Cycle light to your baby with natural light (or lights on, when there is no natural light) during the day and dim light or darkness at night.
- Avoid direct and bright lights.
- While shielding your baby from direct light, have your baby try to focus on or follow your face.



Movement & Body Awareness

- Unwrap your baby and allow stretching and free movement for at least 2 minutes prior to every diaper change.
- Allow your baby to experience tummy time and being in at least 3 other positions for at least 10 minutes each.
- Rock during holding for at least 7 minutes.



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Helping Your Baby's Senses

A "How-To" Guide

Kangaroo Care

- It may be easier if you wear something that opens in the front, such as a robe, hospital gown, or a button-down shirt.
- Use the restroom, wash your hands, and get any items you will need during your time holding your baby.
- Have a member of the care team assist you as needed.
- Ensure that there is enough room on your baby's leads to allow movement from the bed to the chair to the chair.
- There are different ways to transfer your baby to your chest.
 - To do a stand transfer, bend down over your baby until your chest is close to your baby's chest. Pull your baby onto your chest and then stand up straight and sit in the chair (pulled up behind you).
 - If you are not able to do a stand transfer, a member of the care team can put your baby

on your chest and help secure any leads.

- You can do kangaroo care for as long as you would like, as long as you and your baby are tolerating it.
- Do kangaroo care for at least 1 hour to allow your baby to settle into it and achieve its benefits.
- Kangaroo care can be done chest-to-chest or can be done with your baby's side to your chest. You can add your voice, music, or other touch activities while doing kangaroo care, as long as your baby tolerates it.

- Take time to enjoy this special moment with your baby.
- Your calmness helps your baby feel calm and connected to you.



Providing Scent

- You can provide your scent through close contact with your baby.
 - Kangaroo care, breastfeeding or nuzzling at the breast, and holding your baby are great ways to do this!
- Another way to provide your scent, when you cannot be present with your baby is to leave your baby with a cloth that has your scent.
 - Each day you can wear one scent cloth and place the other under your baby's head.
 - Exchange the scent cloths every 24 hours.
 - Have an extra in case one scent cloth is in the laundry.
 - You can also add breast milk to the scent cloth.
 - You can also bring clothes or bedding for your baby that smell like you.
- Provide your scent for your baby at least 3 hours each day.



Cycling Light

- Always protect your baby from direct or bright lights.
- Use different items in the NICU (curtains, blankets, coverings over incubator, etc.) to change light level for your baby.
- Once your baby is around 32 weeks postmenstrual age (2 months before their due date), cycling light can be beneficial:
 - Use natural light exposure or lights on when there is no access to natural light)
 - During the daytime
 - Light levels consistent with moderate office lighting
 - Your baby should still be protected from bright and direct light
 - Use dim light or darkness
 - During the nighttime
 - Light levels consistent with nighttime (twilight or darkness)
- It is ideal if the light levels can gradually go down at the end of the day and gradually come up at the beginning of the day to be similar to normal day and night cycles.

Movement Opportunity

- You can help your baby move prior to diaper changes.
 - Talk to your baby quietly.
 - Place a hand on your baby's chest.
 - Unwrap your baby.
 - Allow your baby to move freely for at least 2 minutes.
 - If your baby has large or uncontrolled movements or isn't tolerating movement well, give containment with your hand to aid controlled movement.
- If your baby is <28 weeks postmenstrual age, has large and uncontrolled movements, or becomes stressed, allow smaller movements of only one arm or leg while leaving your baby tucked into any positioning items or blankets that are being used.
- You can also use your hands to gently guide smooth, stretching movements of the arms and legs.
- Swaddle and/or reposition in appropriate positioning when finished.



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Position Changes

- Different positions to try out include being on the back, on the stomach (tummy time), on the left and right sides, in a supported sitting position in the bed, cradled in your left and right arms, or held upright on your shoulder.
 - Having supervised time specifically on the stomach is important after 34 weeks postmenstrual age (6 weeks before the due date), when possible. However, after supervised tummy time, the infant should be positioned on the back for sleep and when unsupervised.
- Use your hands to contain your baby during the transition to a new position to decrease stress. Have someone from the care team help you, if needed.
- Encourage your baby's head to be in the middle, hands to be close to the face, and arms and legs to relax into the new position.
- Allow your baby to be in the new position for at least 10 minutes to get the benefits from the new position.



Week of _____

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Day of Week	Who did it today? (Check all that apply)	Time in NICU (Check all that apply)	Touch (Check all that apply)	Smell (Check all that apply)	Seeing	Movement
<i>Monday</i>	<input type="checkbox"/> Mom <input type="checkbox"/> <input type="checkbox"/> Dad <input type="checkbox"/> <input type="checkbox"/> Non-Binary Parent <input type="checkbox"/> <input type="checkbox"/> Grandparent <input type="checkbox"/> <input type="checkbox"/> Sibling <input type="checkbox"/> <input type="checkbox"/> Other _____ _____	<input type="checkbox"/> Morning <input type="checkbox"/> Afternoon <input type="checkbox"/> Evening <input type="checkbox"/> Night Total time in NICU: _____hrs _____mins	<input type="checkbox"/> Hand Hugs _____mins <input type="checkbox"/> Kangaroo Care _____mins Total Time: _____hrs _____mins *Recommended: at least 1 hr	<input type="checkbox"/> Scent Cloth _____mins <input type="checkbox"/> Breast Milk _____mins Total Time: _____hrs _____mins *Recommended: at least 3 hrs	Isolette Cover: ____On ____Off 	<input type="checkbox"/> Movement Opportunity -# of times: _____ -Total Time: _____mins *Recommended: 1x/day for at least 2 mins <input type="checkbox"/> Position Change -# of positions: _____ -Total Time: _____mins *Recommended: at least 10 minutes in 2 positions
<i>Tuesday</i>	<input type="checkbox"/> Mom <input type="checkbox"/> <input type="checkbox"/> Dad <input type="checkbox"/> <input type="checkbox"/> Non-Binary Parent <input type="checkbox"/> <input type="checkbox"/> Grandparent <input type="checkbox"/> <input type="checkbox"/> Sibling <input type="checkbox"/> <input type="checkbox"/> Other _____ _____	<input type="checkbox"/> Morning <input type="checkbox"/> Afternoon <input type="checkbox"/> Evening <input type="checkbox"/> Night Total time in NICU: _____hrs _____mins	<input type="checkbox"/> Hand Hugs _____mins <input type="checkbox"/> Kangaroo Care _____mins Total Time: _____hrs _____mins *Recommended: at least 1 hr	<input type="checkbox"/> Scent Cloth _____mins <input type="checkbox"/> Breast Milk _____mins Total Time: _____hrs _____mins *Recommended: at least 3 hrs	Isolette Cover: ____On ____Off 	<input type="checkbox"/> Movement Opportunity -# of times: _____ -Total Time: _____mins *Recommended: 1x/day for at least 2 mins <input type="checkbox"/> Position Change -# of positions: _____ -Total Time: _____mins *Recommended: at least 10 minutes in 2 positions
<i>Wednesday</i>	<input type="checkbox"/> Mom <input type="checkbox"/> <input type="checkbox"/> Dad <input type="checkbox"/> <input type="checkbox"/> Non-Binary Parent <input type="checkbox"/> <input type="checkbox"/> Grandparent <input type="checkbox"/> <input type="checkbox"/> Sibling <input type="checkbox"/> <input type="checkbox"/> Other _____ _____	<input type="checkbox"/> Morning <input type="checkbox"/> Afternoon <input type="checkbox"/> Evening <input type="checkbox"/> Night Total time in NICU: _____hrs _____mins	<input type="checkbox"/> Hand Hugs _____mins <input type="checkbox"/> Kangaroo Care _____mins Total Time: _____hrs _____mins *Recommended: at least 1 hr	<input type="checkbox"/> Scent Cloth _____mins <input type="checkbox"/> Breast Milk _____mins Total Time: _____hrs _____mins *Recommended: at least 3 hrs	Isolette Cover: ____On ____Off 	<input type="checkbox"/> Movement Opportunity -# of times: _____ -Total Time: _____mins *Recommended: 1x/day for at least 2 mins <input type="checkbox"/> Position Change -# of positions: _____ -Total Time: _____mins *Recommended: at least 10 minutes in 2 positions
<i>Thursday</i>	<input type="checkbox"/> Mom <input type="checkbox"/> <input type="checkbox"/> Dad <input type="checkbox"/> <input type="checkbox"/> Non-Binary Parent <input type="checkbox"/> <input type="checkbox"/> Grandparent <input type="checkbox"/> <input type="checkbox"/> Sibling <input type="checkbox"/> <input type="checkbox"/> Other _____ _____	<input type="checkbox"/> Morning <input type="checkbox"/> Afternoon <input type="checkbox"/> Evening <input type="checkbox"/> Night Total time in NICU: _____hrs _____mins	<input type="checkbox"/> Hand Hugs _____mins <input type="checkbox"/> Kangaroo Care _____mins Total Time: _____hrs _____mins *Recommended: at least 1 hr	<input type="checkbox"/> Scent Cloth _____mins <input type="checkbox"/> Breast Milk _____mins Total Time: _____hrs _____mins *Recommended: at least 3 hrs	Isolette Cover: ____On ____Off 	<input type="checkbox"/> Movement Opportunity -# of times: _____ -Total Time: _____mins *Recommended: 1x/day for at least 2 mins <input type="checkbox"/> Position Change -# of positions: _____ -Total Time: _____mins *Recommended: at least 10 minutes in 2 positions

Week of _____

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Day of Week	Who did it today? (Check all that apply)	Time in NICU (Check all that apply)	Touch (Check all that apply)	Smell (Check all that apply)	Seeing	Movement
Friday	<input type="checkbox"/> Mom <input type="checkbox"/> Dad <input type="checkbox"/> Non-Binary Parent <input type="checkbox"/> Grandparent <input type="checkbox"/> Sibling <input type="checkbox"/> Other _____ _____	<input type="checkbox"/> Morning <input type="checkbox"/> Afternoon <input type="checkbox"/> Evening <input type="checkbox"/> Night Total time in NICU: _____hrs _____mins	<input type="checkbox"/> Hand Hugs _____mins <input type="checkbox"/> Kangaroo Care _____mins Total Time: _____hrs _____mins *Recommended: at least 1 hr	<input type="checkbox"/> Scent Cloth _____mins <input type="checkbox"/> Breast Milk _____mins Total Time: _____hrs _____mins *Recommended: at least 3 hrs	Isolette Cover: ____On ____Off 	<input type="checkbox"/> Movement Opportunity -# of times: _____ -Total Time: _____mins *Recommended: 1x/day for at least 2 mins <input type="checkbox"/> Position Change -# of positions: _____ -Total Time: _____mins *Recommended: at least 10 minutes in 2 positions
Saturday	<input type="checkbox"/> Mom <input type="checkbox"/> Dad <input type="checkbox"/> Non-Binary Parent <input type="checkbox"/> Grandparent <input type="checkbox"/> Sibling <input type="checkbox"/> Other _____ _____	<input type="checkbox"/> Morning <input type="checkbox"/> Afternoon <input type="checkbox"/> Evening <input type="checkbox"/> Night Total time in NICU: _____hrs _____mins	<input type="checkbox"/> Hand Hugs _____mins <input type="checkbox"/> Kangaroo Care _____mins Total Time: _____hrs _____mins *Recommended: at least 1 hr	<input type="checkbox"/> Scent Cloth _____mins <input type="checkbox"/> Breast Milk _____mins Total Time: _____hrs _____mins *Recommended: at least 3 hrs	Isolette Cover: ____On ____Off 	<input type="checkbox"/> Movement Opportunity -# of times: _____ -Total Time: _____mins *Recommended: 1x/day for at least 2 mins <input type="checkbox"/> Position Change -# of positions: _____ -Total Time: _____mins *Recommended: at least 10 minutes in 2 positions
Sunday	<input type="checkbox"/> Mom <input type="checkbox"/> Dad <input type="checkbox"/> Non-Binary Parent <input type="checkbox"/> Grandparent <input type="checkbox"/> Sibling <input type="checkbox"/> Other _____ _____	<input type="checkbox"/> Morning <input type="checkbox"/> Afternoon <input type="checkbox"/> Evening <input type="checkbox"/> Night Total time in NICU: _____hrs _____mins	<input type="checkbox"/> Hand Hugs _____mins <input type="checkbox"/> Kangaroo Care _____mins Total Time: _____hrs _____mins *Recommended: at least 1 hr	<input type="checkbox"/> Scent Cloth _____mins <input type="checkbox"/> Breast Milk _____mins Total Time: _____hrs _____mins *Recommended: at least 3 hrs	Isolette Cover: ____On ____Off 	<input type="checkbox"/> Movement Opportunity -# of times: _____ -Total Time: _____mins *Recommended: 1x/day for at least 2 mins <input type="checkbox"/> Position Change -# of positions: _____ -Total Time: _____mins *Recommended: at least 10 minutes in 2 positions