

Nasogastric Tube Feeding



A Guide for Parents

Maternal, Infant, Children and Youth Program

This booklet tells you about how to feed your child through their nasogastric tube feedings and how to take care of the equipment. This booklet also tells you what problems to look out for and what to do if they come up.

Your nurse will help you to understand the information and teach you how to give the feedings.

- Take your time.
- Write down any questions you might have.
- Talk to us about your concerns and ask questions.

We are here to help you and your child.

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Words to Know

Word	What it means
Aspirate (sounds like <i>ass-per-ate</i>) Aspirating (sounds like <i>ass-per-ate-ing</i>) Aspiration (sounds like <i>ass-per-ay-shun</i>)	When food or drink goes into your airway instead of your stomach Can cause pneumonia
Esophagus (sounds like <i>ee-sof-fuh-gus</i>)	A muscular tube that connects your mouth to your stomach. Your 'food tube'.
Feed - Bolus (sounds like <i>boh-lus</i>)	Bolus feeding is when you give liquid food over a short time, usually over 5 to 60 minutes. There can be multiple feeds in one day, just like eating regular meals. You can give bolus feeds by gravity or with an infusion pump. This is also called intermittent feed.
Feed - Continuous	Continuous feeding gives a constant flow of liquid food over a longer period, usually over several hours up to 24 hours. Some children get sick or have stomach pain if they have too much liquid food at one time. Continuous feedings are done using an infusion pump.
Feed - Mixed	Mixed feeding is when you feed using a mix of bolus and continuous feeding.
Gravity Feeding	Food flows by gravity down from the syringe or container through the tubing to the nasogastric tube.
Infusion Feeding (sounds like <i>in-few-shun</i>)	An infusion pump controls how fast the liquid food flows from the feeding bag through the tubing to the nasogastric tube.
Liquid Food	Can be breastmilk, formula, and/or nutritional drink
Nasogastric (sounds like <i>ney-so-gas-trik</i>)	'Naso' means nose and 'gastric' means stomach
Reflux	When the liquid food goes back up the food pipe from the stomach into throat.

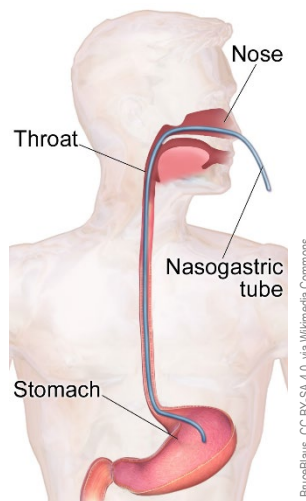
Introduction

What is a nasogastric tube?

Nasogastric is a medical term meaning from nose to stomach.

A nasogastric tube is a soft, thin tube put in through one of your child's nostrils, down the throat and into the stomach. We refer to it by the 2 main letters: NG tube.

The tube is used to put liquid food and medicines into your child's stomach.



This picture shows the nasogastric tube in place.

Why does my child need a nasogastric tube?

Some children might have problems with eating or swallowing. Some might not be eating enough to get the nutrients they need.

How long will my child need this tube?

The tube is meant to only be used as a temporary way to feed your child. Your child's care team will let you know how long your child will need to be fed this way. Some children continue to have feeding problems and need a permanent tube placed in the stomach.

Do nasogastric tubes hurt?

To put the tube in place, the nurse coats it with a clear gel. This helps the tube move through the nose and down into the stomach.

As the nurse puts the tube in place, your child might cry, cough, or gag a little. Usually, children feel better a few minutes after the tube is in place. The nurse will help your child be as comfortable as possible during the tube insertion.

The feedings do not hurt, but they might feel strange for the first few times.

What do I feed my child?

Your child's care team talks with you about what liquid foods your child might need, and what you can or cannot give your child. Your child's care team chooses liquid foods that give the nutrition your child needs.

Types of liquid foods:

- breastmilk
- formula
- nutritional drinks such as Pediasure®

How much do I feed my child?

How much you feed and how often you feed your child each day depends on what they need. As your child grows, their needs will also change.

Your child's care team checks your child's health and growth at every follow-up appointment. They adjust the feeding schedule as needed.

Can my child still eat by mouth?

It depends. Some children get all the food they need through tube feedings. Some children need to eat food by mouth as well.

Is a nasogastric tube dangerous? Is tube feeding dangerous?

Before the tube can be used the first time, the nurse always checks to make sure that it is in the correct place: the stomach. Sometimes the tube moves out of the stomach. If this happens, food could go into the child's airway and lungs. This is called aspiration.

Tube feeding is not dangerous if:

- You check that the tube is in the correct place before it is used.
- You put your child in the correct position for the feed.
- You follow the steps for giving the feed.

Your nurse teaches you what you need to know to safely feed your child and give medicines to your child.

Tube Feeding Equipment

These are the items you might use to give your child a tube feeding or to care for your child with a feeding tube.

Liquid food

The healthcare team will assess your child and tell you what kind of liquid food they might need.

Tips for using expressed breast milk:

- Keep glass bottles or bags of breast milk in the fridge or freezer.
 - Date the bag or bottle.
 - Fill bottles $\frac{3}{4}$ full if freezing.
 - Thaw frozen milk in the fridge. Never refreeze.

Tips for using formula:

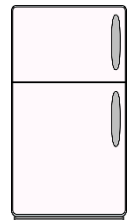
- Keep unopened containers in a dry place at room temperature.
- Check the best before or expiry date before using the formula.
- After opening a container:
 - Write down the date and time you opened it on the container.
 - Keep the container closed.



Liquid food can be kept:

- at room temperature for up to 4 hours
- in the fridge for up to 24 hours
- in the fridge freezer for 1 month
- in a deep freeze for up to 12 months

Always throw out
liquid food past
the expiry date.

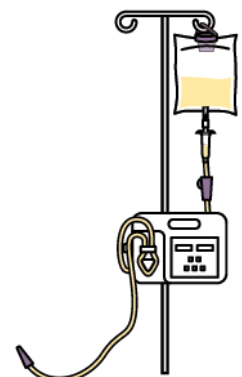


Feeding Bag and Tubing

The feeding bag is used for continuous feedings. It can hold more liquids than a syringe. The tubing attached to the bag can be used on an infusion pump. The feeding bag and tubing can also be used for gravity feeds. The tubing has a roller clamp to control the flow of liquid food.

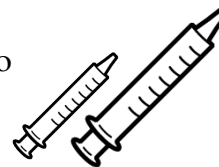
Infusion Pump

The infusion pump is used for continuous feedings. You can choose how fast the feed is given. The pump has an alarm that rings if there is a problem.



Syringes

Syringes can be used for giving water, liquid food, or medicine to your child. Use the size of syringe that can hold the amount you are giving.



Water for Flushing and Giving Medicines

For babies **less than 3 months old**:

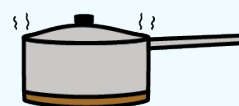
- Use **sterile water** at room temperature to flush the tube and give medicines.

Sterile water is water that has been sterilized to remove all germs. You can buy sterile water or make your own.



Recipe for Sterile Water

- Place distilled water in a clean pot.
 - Boil the distilled water in a covered pot for 15 minutes.
 - Let it cool in same pot.
- This is to make sure the sterile water stays sterile and free from bacteria.



For children **3 months or older**:

- Use **tap water** at room temperature to flush the tube and give medicines.



How much water you use to flush your child's tube depends on what they need. Your healthcare team will tell you how much your child needs.

Special tape

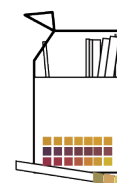
Special tapes are used to hold your child's tube in place. There are different types, including Tegaderm, Duoderm, and Nuderm.



pH test strips

These are small strips of special paper to test the pH of fluids.

There is usually a colour guide on the packaging or the package insert. Use this guide to compare the pH test results of the fluid you are testing.



Note: The equipment and supplies shown in this booklet might look different from those you use at home.

Giving a Tube Feed

Get ready for the feed

1. Take the amount of liquid food you need out of the fridge.
Check the best before or expiry date before using formula.

2. Let it sit at room temperature for a half (1/2) hour
or
Warm it by placing the container in a bowl of warm water. Make sure you keep the cap or nipple above the water.

Do not immerse the container in the water.

Do not warm with **hot** water.

Do not warm in the microwave.

Check the placement of the NG tube

Before starting each feed or giving any medicines, you must check that the tube is in the correct place. To do this, you test for stomach fluid.

1. Wash your hands for at least 30 seconds with soap and water.



2. Get your supplies:
 - a 3 to 5 millilitre (mL) syringe
 - 1 pH test strip
 - the pH color guide



3. Check the position of the NG tube.

There are markings along the tubing.

The marking at the nostril tells you, in centimeters, the length of the tubing. The marking should be the same as the length written on your *Getting an NG Inserted & Feeding Schedule* sheet.



4. Check that the tape holding the tube in place is firmly in place.

If not, change the tape (see page 14).



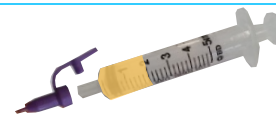
- Attach the empty syringe to the end of the NG tube.



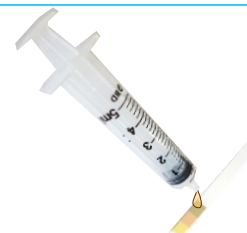
- Pull back on the plunger until you have about 2 millilitres of stomach fluid in the syringe. (see page 16 if there is no fluid from the NG)



- Disconnect the syringe from the NG tube.



- Push the plunger slightly to wet the end of the pH test strip with the stomach fluid.

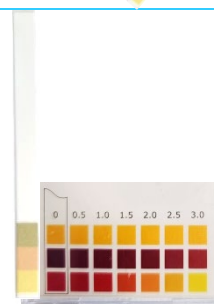


- Compare the colour bands on the strip with the colour guide.

If the pH is **less than 5**, the fluid is from the stomach and the tube is in the correct place.

Go to the next step to position your child.

If the pH is **more than 5**, the tube might not be in the correct place (see page 17).



Colour guide

Note: Some medicines can change the pH of your child's stomach fluid. Your pharmacist can tell you if it is safe to give the tube feed even if the pH is more than 5.

Some liquid foods can make the pH more than 5. If the fluid looks like breast milk or formula, the tube is in the correct place.

Position your child

Before starting **every feed**, make sure your child is in a safe position.

When your child is in a safe position, it helps keep your child from:

- feeling sick to their stomach (nausea)
- throwing up (vomiting)
- having stomach pain
- choking on the feed (aspirating)

To position a baby

- Hold or place your baby in an upright position, either on your chest or lying on their left side. This is good for bonding.
- If you must leave your baby in bed for a continuous feed, place your baby flat on their back (see *Safe Sleeping for Babies*, page 19). Do not raise the head of the bed or prop them up on pillows. This can cause aspiration.

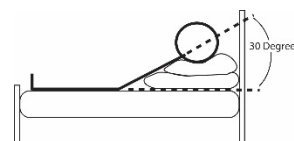
If your baby needs other position options, your healthcare team will teach you other positions.

- Never place your baby in a car seat, bouncy chair, swing, or on top of pillows for feeds. These positions can cause aspiration.



To position a toddler or older child

- Sit your child upright for the feed, such as in a high chair or on your lap.
- If your child is lying down for their feed, place in a position comfortable to them with the head of the bed raised to 30 degrees.



Give the feed

Gravity Feeding

1. Get your supplies ready:
 - 60 millilitre (mL) feeding syringe
 - supplies for flushing (page 11)
 - room temperature liquid food

2. Remove the plunger from the 60 millilitre (mL) feeding syringe.



3. Open the cap on the NG tube.



4. Attach the feeding syringe to the opening of the NG tube.



5. Slowly pour the liquid food into the syringe. Pinch the feeding tube closed while filling the syringe. Only pour as much as needed for the feed.



6. Release the tubing when ready to start feeding. Watch for signs the tube is in the wrong place (see page 15).

7. Hold the syringe so that the top level of the liquid is 8 to 12 inches above your child's head. The liquid food flows down the NG tube by gravity.

8. Raise the syringe higher to speed up the flow. Lower the syringe to slow down the flow. The feed should be given over 20 to 30 minutes. If your child looks uncomfortable, is fussing or crying, try lowering the syringe to feed slower.



If the breastmilk or formula does not flow:

- Lightly put the plunger in the end of the syringe and gently push down just enough to get the feed flowing.
- Once the feed is flowing, remove the plunger.
- Do not force the feed through the tube using the plunger.

If the feed still does not flow after using the plunger:

- Stop the feed.
- Turn to page 18.

Infusion Feeding

1. Get your supplies ready:
 - room temperature liquid food
 - feeding bag and tubing
 - infusion pump and pole or hook
 - supplies for flushing (page 11)

2. Close the roller clamp on the feeding tubing by rolling the clamp down.



3. Fill the feeding bag with the amount of breast milk or formula needed.

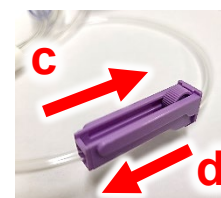
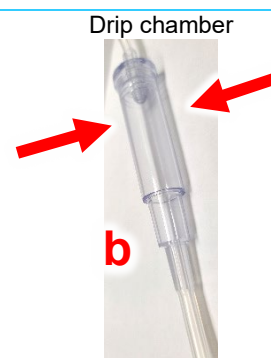
Bolus feed: Fill the feeding bag with enough liquid food for one feed.

Continuous Feed: Fill the feeding bag with enough liquid food for up to 4 hours.

After 4 hours of feeding, you need to flush the tube with water before starting the next 4 hours (see page 11).

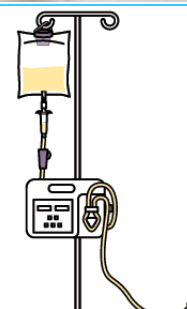


4. Fill the feeding tubing.
 - a) Hang the feeding bag above the infusion pump.
 - b) **Squeeze the drip chamber**, then let it go. This pulls the liquid into the chamber.
 - c) **Open the roller clamp** by pushing the roller upward with your thumb. The liquid food will start to flow through the tubing.
 - d) As the liquid gets to the end, **close the roller clamp again**. This stops the liquid from dripping out the end of the tube.



5. Place the feeding tubing into the infusion pump.

Some pumps might fill the tubing for you. The nurse will walk you through which buttons to press on your feeding pump.



6. Pinch the NG tube closed near the connection.

7. Open the cap on the NG tube.



8. Connect the end of the feeding tubing to the end of the NG tube.

9. Turn on the infusion pump.

10. Set the correct rate and amount of liquid food being given.

11. Open the roller clamp.



12. Press the Start button on the infusion pump.

If an alarm sounds, the tubing might be blocked (see page 18).

13. Watch for signs the tube is in the wrong place (see page 15).

Flush the tube

Flush the tubing with water to make sure no liquid food stays in the tubing.

1. Get your supplies ready:

- one 3 or 5mL syringe
- sterile or tap water (see page 5)

2. Fill the syringe with the amount of water specific for your child.

3. Pinch the NG tube closed near the connection.

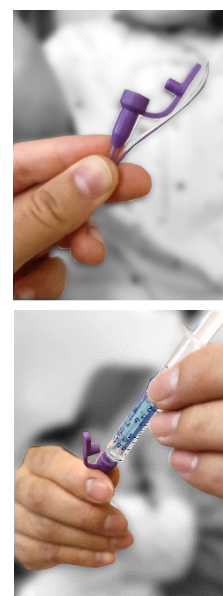
4. Disconnect the feeding syringe or tubing from the NG tube.

5. Connect the water-filled syringe to the NG tube and release the tube.

6. Gently push the water through the NG tube.

7. Pinch the NG tube closed near the connection.

8. Remove the syringe, cap the end of the NG tube, and release the tube.



Clean the equipment

Clean the equipment by hand after each time it is used. Do not use the dishwasher for cleaning the equipment.

1. Soak the feeding syringe or bag and the tubing in a basin of warm water for at least 5 minutes.
2. Rinse well.
Do not use any soap or detergent. It can cause stomach cramps and diarrhea.
3. Let the equipment air dry.
4. Once dry, keep the feeding bag, syringe, and tubing in the fridge.

Change the equipment

Feeding equipment needs to be changed regularly.

Change the feeding bag or syringe and tubing based on this table.

Feeding Breastmilk		
Child's age	0 to 6 months old	Older than 6 months
Change bag / syringe and tubing	Every day	Every 2 days

Feeding Formula		
Child's age	0 to 6 months old	Older than 6 months
Change bag / syringe and tubing	Every 2 days	Every 2 days

You should change the feeding syringe / bag or tubing more often if it is broken, leaking, or smells.

Giving Medicine

Ask your pharmacist for liquid medicines instead of pills or tablets, if possible. If your child can swallow safely, give the medicine by mouth.

You can give some of your child's medicines through the NG tube. Check with your pharmacist. If the medicine only comes in a pill or tablet, ask your pharmacist how best to prepare it so it can be given through your child's NG tube.

When giving medicine through the NG tube:

- Give each medicine one at a time.
- Do not mix the medicines together or mix them with the liquid food.
- Always flush the tube with water after each medicine you give.

Steps for giving medicine through the NG tube

1. Wash your hands for at least 30 seconds with soap and water.
2. Check the placement of the NG tube (see page 6).
3. Get your supplies ready:
 - the medicine
 - 2 syringes for flushing
 - 1 syringe for medicine
 - water for flushing (sterile or tap water)
 - pH test strip
4. Fill 1 syringe with the amount of medicine you are giving.
5. Fill 2 syringes, each with the amount of water your child needs to flush the tube (sterile or tap water – see page 5).
6. Remove the cap from the NG tube. Connect the 1st water-filled syringe.
7. Slowly push the water through the NG tube.
8. Disconnect the water syringe. Connect the medicine syringe.
9. Slowly push the medicine into the NG tube.
10. Disconnect the medicine syringe. Connect the 2nd water-filled syringe.
11. Slowly push the water through the NG tube to flush the tube.
12. Clean the syringes (see page 12).



Caring for Your Child

Tube changes

Most children have a type of NG tube that needs to be changed every 30 days. You can make an appointment for the first tube change before you leave the hospital.

Skin Care

The NG tube is held in place with special tape.

Check the skin around your child's nose and taped areas on their face every day.

Keep the skin clean and dry. Remove and replace wet or dirty tape right away.

If the skin around and under the tape gets red and sore looking, move the tape.

If the skin around your child's nostril remains red and sore, contact the nursing unit. The tube can be changed to the other nostril by the nurse.

Securing the tube

Place the tape along the tube from the cheek towards the ear. Try to keep the tube from pulling on the nostril. Use only enough to keep the tube in place. Have a second person to help you, so you can make sure the NG tube does not come out.

To help keep the tube from being pulled out, you can also secure the tube to your child's clothing.



Mouth Care

Even though your child is not eating or drinking by mouth, you still need to look after their mouth. Mouth care prevents a dry mouth, gum problems, and cavities.

How you care for your child's mouth depends on your child's age. A baby's gums need to be massaged. As teeth come in, the teeth should be brushed and flossed. Ask your health care team about how best to care for your child's mouth.

Diarrhea or constipation

If your child is having diarrhea or constipation more than what is normal for them, call your family doctor or dietitian. Your child could have a stomach infection.

Keep a record of how often they have dirty diapers or go to the toilet, and what their stool (poop) looks like. Give this to your doctor or dietitian.

Problems with Tube Feeds

Here are some common problems with tube feeding and what you should do if they happen.

Tube is in the wrong place

The tube could be in the wrong place if you notice any of these signs while feeding:

- coughing that doesn't stop
- signs of choking
- lips that are turning blue
- hard time breathing
- not able to talk

What to do:

1. **Stop the feed right away.**
2. Pinch the NG tube near your child's nostrils and pull the tube out. Pulling it out will stop any more liquids from going in their airway.
3. Watch your child for signs they are breathing better.

If your child **does not get better** after you pull out the tube, **call 9-1-1.**

If your child's breathing gets better:

- Call your nursing unit.
- Let the nurse know what happened.
- Make an appointment to have a new tube put in place.

NG tube comes out

For many children, if the tube comes out, it is not an emergency.

- Wash the NG tube.
- Call the nursing unit to arrange to have a new NG tube put in place.

Bring both the NG tube that came out and a new NG tube with you.

My child is gagging or throwing up

Your child can gag or throw up for different reasons, such as:

- Your child's stomach is too full.
- The feed might be going too fast.
- Your child has an infection or other illness.
- The NG tube is not in the right place.

Things to try to stop the gagging or throwing up:

- Turn your child onto their side or sit them upright.
- Check that the feed is not flowing faster than usual.
- Slow the feed down.

If your child continues to gag or throw up:

- Stop the feed.
- Call your family doctor or take your child to nearest Emergency Room.

If your child stops gagging or throwing up:

- Check the tube placement before you continue to feed (see page 6).
- For gravity feeding, lower the syringe and run the feed slower than normal.
- For infusion feeding, slowly increase the rate until you reach the regular rate.

No fluid from the NG when pH testing

There are several actions you can take.

Try each of these to see if it clears the NG tube so you can pull fluid from the stomach for testing.

- Pull the plunger back on the syringe until you have 1 to 2 millilitres of air in it. Connect the syringe to the NG tube. Slowly push the air into the tube. This might clear the blockage in the NG tube.
- Turn your child to lay on their side. Try to pull fluid again.
- Try using a smaller syringe to pull the fluid.

If you still cannot get any fluid out of the NG tube, call your nursing unit.

When the pH is greater than 5

This could mean the tube is not in the right place and the fluid might not be stomach fluid.

It could also mean that the medicine you are giving your child has changed the pH of your child's stomach.



Steps for checking that the tube is in the right place

1. Check that the marking on the tube is the same as the length written the length written on your *Getting an NG Inserted & Feeding Schedule* sheet.
 - If the correct mark is not at the nostril:
 - Do not give your child the tube feeding or medicine.
 - Call your nursing unit.
 - If the marking is at the nostril and the numbers match, go to the Step 2.
2. Use a clean syringe and try the pH test again (page 6 to 7).

If the pH is still more than 5:

• Check to see if the fluid looks like breast milk or formula. If it does then the tube is in the correct place.	➤	Only go ahead with feeding if the fluid looks like breast milk or formula.
• Call your pharmacist. Ask if any of your child's medicines change the pH of your child's stomach fluid.	➤	Only go ahead with giving medicine if the pharmacist has confirmed it is safe.

3. Call your nursing unit if you are not sure whether to go ahead and feed or give medicine.

Feed not flowing

With Gravity Feeding: When your child is crying or passing stool (poop), it will change how the liquid food flows. Continue the feed when your child has stopped crying or finished passing stool. If the feed still does not flow, follow the steps below.

With Infusion Feeding: If the NG tube is blocked, the machine will sound an alarm. Press the Stop button and follow the steps below.

Steps to check if the tube is blocked:

1. Get your supplies ready:
 - one 3 or 5mL syringe
 - sterile or tap water (see page 5)
2. Fill the syringe with the amount of water specific for your child.
3. Pinch the NG tube closed near the connection.
4. Disconnect the feeding syringe or tubing from the NG tube.
5. Connect the water-filled syringe to the NG tube.
6. Gently push the water through the NG tube.

If the water cannot be flushed through the tube, the tube is blocked.

- Call the nursing unit.
- Arrange for the NG tube to be changed.

Infusion pump not working

The pump might not be working correctly if you notice:

- There is liquid food left over after the feed is done, or
 - The liquid food runs out before the end of the feed even though you poured the correct amount
1. Check that the amount of liquid food you are giving is the same amount as what you entered into the pump.
 2. If the amounts and settings are correct, call your equipment supplier for help.

Steps for when the alarm sounds:

1. Make sure the feeding bag and tubing are connected to the pump.
2. Check that the pump is plugged in correctly and fully charged.
3. Check if the tube is blocked (see above).
4. Try clearing all of the volumes from the pump and restarting the feed.
5. If the pump still is not working, call your equipment supplier for help.

More Information

About Kids Health from Toronto Sick Kids Hospital

aboutkidshealth.ca

QR Code



- [Nasogastric \(NG\) Tube: Feed Your Child](#)

aboutkidshealth.ca/Article?contentid=2457&language=English

or

tinyurl.com/y5wedhsn



- [Nasogastric \(NG\) Tube Feeding: Common Problems](#)

aboutkidshealth.ca/Article?contentid=2456&language=English

or

tinyurl.com/y2hrqu35



Fraser Health

- [Expressing Breast Milk When Your Baby Is In The Hospital](#)

patienteduc.fraserhealth.ca/search/results/37673

or

tinyurl.com/y6cnqfjb



- [My Breast Milk Expressing Record](#)

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or

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- [Using a Breast Pump](#)

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- [Help Your Premature Baby Practice Sucking](#)

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HealthLinkBC

- [Safe Sleeping for Babies](#)

healthlinkbc.ca/healthlinkbc-files/safe-sleeping-babies

or

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A QR code (short for 'quick response' code) is a type of barcode that you scan with your smart device's camera. Once scanned, it takes you to that web page.



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Catalogue # 256093 (January 2021)
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