

Children's National Hospital
Division of Nursing and Patient Services

Nursing Practice Guideline

Chapter: Gastroenterology 2

Date Effective: 12/15

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Nasogastric/Orogastric Tube Management

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I. Introduction

Nasogastric/Orogastric tubes are used to provide nutrition and medication to infants and children who cannot safely swallow, are unwilling to eat, or who are unable to take in enough calories for growth. NG/OG tubes are also used for stomach decompression.

These tubes are inserted either orally or nasally into the stomach. **This guideline is not intended for the management of transpyloric tubes.**

II. Definitions

A. Nasogastric tube, (NG): A tube placed into the left or right nostril, down the esophagus, through the lower esophageal sphincter into the stomach.

- B. Orogastric tube, (OG): A tube placed into the mouth, down the esophagus, through the lower esophageal sphincter into the stomach.
- C. Gastric decompression tube, (G.D. i.e., Salem Sump): A double lumen drain that allows air to enter the drained area through the smaller lumen and displace fluid into the larger lumen. Frequently used in conjunction with surgical procedures to remove gastric contents, relief of gastric distention, and the measurement of blood loss from gastric hemorrhage.
- D. pH: A measure of body fluid acidity. In this case, we are measuring the acidity of the aspirate from the orogastric, nasogastric tube and sump drains.

III. Supplies for Tube Insertion & Tube Placement Verification following insertion procedure

- A. Supplies for Insertion of a Nasogastric/Orogastric
 - 1. Nasogastric tube
 - 2. Water soluble lubricant with NG insertions
 - 3. Skin preparation agent
 - 4. Hydrocolloid barrier to place under tape.
 - a. [See Skin Care Nursing Practice Guideline](#)
 - 5. Clean gloves
 - 6. 10mL oral syringes for obtaining aspirate
 - 8. Marker or tape to mark depth of insertion on tube
 - 9. Tape measure for obtaining internal and external tube length for documentation
 - 10. Bedside suction equipment
 - 11. Cardiorespiratory monitor, as indicated
- B. Supplies for performing pH testing for tube verification:
 - 1. Correctly labeled pH strip bottle. Correct label must include:
 - a. Verification the quality control tests have been performed, as referenced from the Point of Care home site pages:
<https://cnmc.sharepoint.com/sites/laboratory/SitePages/Point-of-Care.aspx>
 (Scroll down the site for relevant pH QC information)
 - b. The bottle's open date and 3-month expiration dates are included on the label.
 (Check the manufacturer's expiration date for use of the strips, has not passed.)
 - 2. Sterile or filtered water for flushing, following the verification of placement.

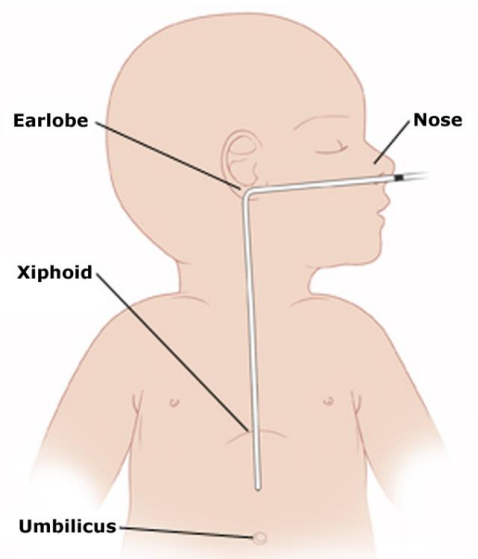
IV. Selecting the Correct Tube: Tubes are available in a variety of sizes and materials. Choose the smallest tube that will be effective in accomplishing the task.

- A. Available lengths: 60cm or 90cm: considerations when choosing the length:
 - 1. Long external length may pose a strangulation risk
 - 2. Short external length may pose challenges when accessing the tube and could result in pressure injuries
- B. Available diameters: 5 French to 12 French, Choose the smallest tube to be effective, consideration should be given to what will be going through the tube (formula, medications, thickened feeds), to avoid the possibility of clogging the tube.
- C. The information below is available as guidelines to be used in concert with the nurse's judgment.
 - 1. Neonate to 3 months: 5 - 8 French
 - 2. 6 months to 1 year: 8 – 10 French
 - 3. 2 – 3 years: 10 French
 - 4. 4 – 5 years: 10 -12 French

5. 6 years: 10 – 14 French
 6. 8 - 10 years: 14 French
 7. 12 years: 14 – 18 French
 8. 14 years: 16 – 18 French
- D. Tube material options: Polyurethane or Silicone
1. Silicone is softer, better in younger children but has a tendency to coil
 2. Polyurethane is stiffer, tolerated better in older children, less tendency to coil
- E. Change tube every 30 days to assure optimal functionality
- F. Gastric decompression tubes
1. Select the smallest tube to effectively drain the stomach.
 - a. Recommended sizes for infants are 6 to 10 French
 - b. Recommended sizes for children are 8 to 14 French

V. Nasogastric/Orogastric Tube Insertion

- A. Ensure the patient, and their caregivers, (whenever it is developmentally appropriate for the patient), understand procedure and their questions are answered prior to tube insertion.)
- B. Gather supplies. (As listed above in section III.)
- C. Have emergency equipment available for use as needed
- D. Perform hand hygiene and put on clean gloves.
- E. Position the child in the supine position. The head of the bed may be flat or elevated 30 to 45 degrees as the child's condition permits. For infants, swaddling is advised for comfort and safe insertion of the tube.
- F. Estimate required depth of tube insertion
 1. Nasogastric Tube:
 - a. Measure from the tip of the nose to the earlobe, then from the earlobe to the midpoint between the xiphoid process and the umbilicus
 - b. Mark this point on the tube with a marker or a small piece of tape.



2. Orogastric Tube: Measure from the mouth to the earlobe, then from the earlobe to the midpoint between the xiphoid process and the umbilicus. Mark this point on the tube with a marker or a small piece of tape.

- G. For Nasogastric tubes and Gastric decompression tubes, apply a water-soluble lubricant to the distal end of the tube. (This isn't necessary for an oral -gastric tube insertion.)
- H. If the child's orders allow and patient is able to follow commands, ask the patient to swallow sips of water during insertion of tube. Infants may be offered a pacifier along with procedural sucrose to encourage swallowing and reduce the associated trauma.
- I. Gently, but steadily thread the tube through either the mouth or one of the nares (aiming posteriorly and parallel to nasal septum), to the previously identified distance, marked on tube
- J. Prior to securing tube to the patient's face, assess tube placement by aspirating stomach contents and verifying pH of aspirate to confirm gastric placement.
- K. Apply skin preparation to face where hydrocolloid dressing will be placed, affix the hydrocolloid dressing to face and secure the tube with tape over the hydrocolloid dressing. (Avoid taping to skin directly and applying tape to the patient's nose.)
- L. Use tape measure to obtain external tube length
- M. Label the tube with type of tube (NG, OG or G.D.), size (Fr.), external tube length and date of insertion.
- N. Document appropriately as described in section X.

VI. Assessment /verification of Tube Placement

- A. X-Ray is the gold standard for placement verification but increases patient's radiation exposure.
 - 1. The following patient conditions require an X-ray on their INITIAL insertion:
 - a. Pt. history of facial trauma and/or basilar skull fractures
 - b. Patients taking proton pump inhibitors or h2 blockers with an initial reading of >5
 - c. Clinical uncertainty regarding placement
 - d. Unable to obtain aspirate after two attempts
 - 2. Placement verification may be done **via x-ray** once a day if patient meets ALL the following criteria:
 - a. tube markings remain consistent
 - b. patient's clinical status does not change
 - c. patient has not vomited
- B. pH testing for placement verification is used to limit the patient's exposure to radiation when it is appropriate for the patient's condition.

C. Frequency of Tube Placement Verification:

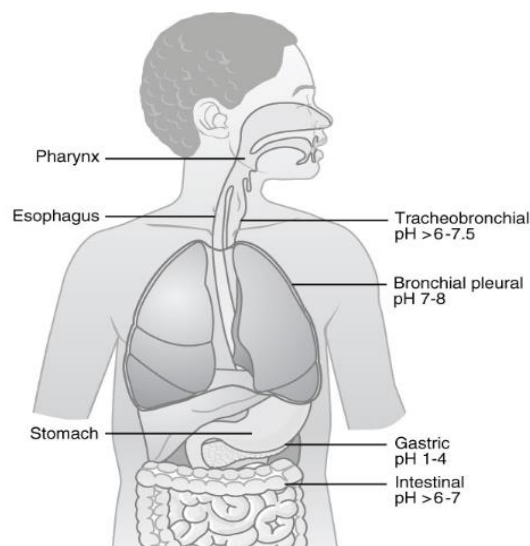
Nasogastric & Orogastric Tube Verification Requirements	
<i>Documented in AdHoc - Point of Care – Point of Care Gastric pH</i>	
Patient Scenario	pH verification
Continuous feeding schedule	Once in 24 hours, <i>Stop feeding for 15-20 minutes to allow gastric emptying prior to obtain an aspirate for pH verification</i>
Initial insertion, re-insertions of the tubes	Every time <i>pH verification required for correct placement of distal end of the tube</i>
Intermittent feeding schedule	Prior to each feeding <i>Unless it was verified with recent medication administration which may affect the results.</i>

Oral intake potentially to be followed with an NG supplement/feed	Prior to start of oral intake, NOT BETWEEN oral and NG feed <i>pH value may be influenced after recent oral intake e.g., Eating Disorder patients, infants with P.O./NG order</i>
Medication administration	Prior to each medication administration <i>Unless the placement has been verified prior to currently infusing feed</i>
Change in patient status	Status changes: <ul style="list-style-type: none"> • Respiratory symptoms, (coughing, gagging and or shortness of breath) • Any episodes of vomiting because of the potential for tube displacement.
Possible tube dislodgement	If the external measurement of the tube has changed.

Gastric Decompression Tube Verification Requirements <i>Documented in AdHoc - Point of Care – Point of Care Gastric pH</i>	
Patient Scenario	pH verification
Initial insertion, re-insertions of the tubes	Every time <i>pH verification required for correct placement of distal end of the tube</i>
Continuous decompression	A minimum of once in 24 hours <i>If tube is not manipulated or dislodged</i>
Whenever Gastric decompression tube is manipulated to improve patency	Following each manipulation of the tube

D. Performing and assessing the pH test of the aspirate:

1. Wash hands and put on clean gloves
2. Verify Patient using 2 identifiers
3. Verify pH strips are labeled appropriately, are not moist, faded, or showing signs of bleeding of color on the color pads. Obtain a new bottle when needed.
4. Attach fresh 10mL oral syringe and instill air to clear the line of water/formula/fluid
 - a. 1mL of air for 6.5fr-8fr 60cm nasogastric tube
 - b. 2mL of air for 6.5fr-8fr 90cm nasogastric tube
 - c. 3mL of air for 10fr nasogastric tube
5. Aspirate fluid
6. Place aspirated fluid on pH strip
7. Read results immediately by comparing the color produced on the pH strip, to the color chart on the pH strip bottle
8. Actions are based on results of pH test.
(See ad hoc form in Cerner to interpret results and next appropriate action.)



- E. Tube Markings
 1. Internal tube marking – last visible marking on the tube
 2. External tube marking – amount of tube outside the body
- F. Aspirate
 1. Color
 2. Refer to the Ad Hoc pH testing form in Cerner

VII. Medication Administration

- A. Verify placement per above recommendations before administration
- B. Avoid mixing medication together to avoid the following risks:
 1. Physical and chemical incompatibilities
 2. Tube obstruction
 3. Altered therapeutic drug response.
- C. Administer each medication separately
- D. Flush with sterile or filtered water before & after each medication to prevent clogging of the tube (Air may be used for patients on fluid restrictions)
- E. If appropriate, use liquid dosage forms when available so nurses do not need to crush or manipulate medications.

VIII. Removing a Nasogastric/Orogastric Tube

- A. Ensure child and family understand pre-procedural teaching.
- B. Collect all necessary supplies (adhesive removal solution, clean gloves)
- C. Have suction available, if indicated.
- D. If applicable, turn off feeding or suction.
- E. Position child in the supine position. Elevate head of bed 30 to 45 degrees or higher, if tolerated by the child.
- F. Using an adhesive remover, gently remove tape from under the lip or cheek.
- G. Pull tube out of mouth or nose in a steady motion.
- H. Dispose of tube in appropriate receptacle and perform hand hygiene.
- I. Document the procedure in the child's medical record.

IX. Troubleshooting

ISSUE	POTENTIAL SOLUTIONS
Unable to retrieve an aspirate	<ul style="list-style-type: none"> • Turn patient on left side • Wait 15 minutes • Re-aspirate • If unable, you may attempt with a smaller syringe • If still unable to obtain aspirate, consult provider to discuss need to obtain x-ray to confirm placement
No pH strips	<ul style="list-style-type: none"> • Check your unit supply. • If unit supply is empty, contact Central Supply
pH strip lot number not found on Intranet lab site	<ul style="list-style-type: none"> • M-F contact Point of Care Lab, 476-2379 https://cnmc.sharepoint.com/sites/laboratory/SitePages/Point-of-Care.aspx (link for hours of availability) • After hours: locate another bottle with a lot listed on the site, e.g. Central supply, other nursing units

X. Documentation:

- A. Upon insertion, documentation located in I-view section, “Lines, Tubes, and Drains”, open a Dynamic group to include tube details:
 - 1. Type of tube
 - 2. Insertion location
 - 3. Size of tube diameter (i.e., 6Fr.)
 - 4. Internal and external tube length
 - 5. Date of placement
- B. Ongoing documentation of the tube following insertion, is also located in in “Lines Tubes and Drains”.
 - 1. Tube Activity
 - 2. Flushes
 - 3. Flush description
 - 4. Placement confirmation (method utilized to validate correct placement)
 - 5. Site care & tube care
 - 6. Site condition
 - 7. Details related to tube intake, securement, and patient response & unexpected events

XI. Patient and Family Education:

- A. Education should be presented in understandable terminology through multimodal learning opportunities to maximize the learner’s understanding; visual, printed, kinesthetic, and verbally.
- B. Video learning, printed instruction handouts, and mannequins are available to patient and family instruction.
- C. Validate the learner’s understanding and ability through their re-demonstration of their instruction
- D. May utilize “[NG Booklet](#)” handout to provide coverage of the information to be communicated. [Appendix E](#) [Appendix F](#)
- E. [Document the patient and family education in Ad Hoc Charting-utilizing “NG Me Home” teaching checklist.](#)

XII. References:

- Claiborne, M. K., Gross, T., McGreevy, J., Riemann, M., Temkit, M., & Augenstein, J. (2020). Point-of-Care Ultrasound for Confirmation of Nasogastric and Orogastric Tube Placement in Pediatric Patients. *Pediatric emergency care*, 10.1097/PEC.0000000000002134. Advance online publication. <https://doi.org/10.1097/PEC.0000000000002134>
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- Kisting, M. A., Korcal, L., & Schutte, D. L. (2019). Lose the Whoosh: An Evidence-Based Project to Improve NG Tube Placement Verification in Infants and Children in the Hospital Setting. *Journal of pediatric nursing*, 46, 1–5. <https://doi.org/10.1016/j.pedn.2019.01.011>

- Mori, T., Takei, H., Ihara, T., Hagiwara, Y., & Nomura, O. (2021). Ultrasound-guided nasogastric tube placement in a pediatric emergency department. *Journal of clinical ultrasound: JCU*, 49(2), 106–109. <https://doi.org/10.1002/jcu.22958>
- Northington, L., Kemper, C., Rempel, G., Lyman, B., Pauley, R., Visscher, D., Moore, C., Guenter, P., & NOVEL Project, ASPEN Enteral Nutrition Committee (2021). Evaluation of methods used to verify nasogastric feeding tube placement in hospitalized infants and children - A follow-up study. *Journal of pediatric nursing*, S0882-5963(21)00315-8. Advance online publication. <https://doi.org/10.1016/j.pedn.2021.10.018>
- Rowat, A. M., Graham, C., & Dennis, M. (2018). Diagnostic accuracy of a pH stick, modified to detect gastric lipase, to confirm the correct placement of nasogastric tubes. *BMJ open gastroenterology*, 5(1), e000218. <https://doi.org/10.1136/bmjgast-2018-000218>

XIII. Reviewers:

- A. Gastrointestinal Nurse Practitioner
- B. Professional Practice Specialist, Gastrointestinal Rehabilitation Unit
- C. Professional Practice Specialist, 7- East Medical Care Unit
- D. Professional Practice Specialist, NICU
- E. Shared Nursing Leadership Practice Council – Systems Level

XIV. Legal Statement:

The nursing practice guidelines are intended to serve as a reference for the nurses in their practice. The compilation of information provided is drawn from relevant literature research from juried, reliable and respected sources. The guidelines are not intended to replace individual judgment but instead to inform decision making. The material is updated approximately every 12- 24 months.

XV. Approval:

Senior Vice President & Chief Nursing Officer

Date

Original Date: 02/13

Updated: 9/14, 11/15, 4/16, 2/19, 12/21

CHILDREN'S NATIONAL HOSPITAL
DEPARTMENT OF NURSING STAFF DEVELOPMENT & RESEARCH
Competency Validation Checklist
RN must respond to all items.
PCT must respond to * items.

NAME:	UNIT:
EMPLOYEE ID.:	DATE:

COMPETENCY TITLE: Insertion of a Nasogastric Tube

COMPETENCY STATEMENT: Demonstrate the correct technique for NGT insertion

Instructions: Please circle method of validation and initial each line

Performance Criteria	Method of Validation	Validator Initials	Comments
1. Discusses and/or demonstrates the checking for the presence of the patient's identification band and legibility	RD OB SM VF D		
2. Discusses the various types of nasogastric tubes and purposes for each tube	VF D		
3. Discusses the various sizes of nasogastric tubes and describes how to determine the appropriate sized nasogastric tube	VF D		
4. Discusses risks of pressure ulcers from nasogastric tubes	VF D		
5. Explains the procedure to the child and family and answers questions	VF D		
6. Collects all necessary supplies and equipment	RD OB SM		
7. Sets up suction and cardiopulmonary monitoring, if indicated	RD OB SM		
8. Performs hand hygiene and dons clean gloves	RD OB SM		
9. Positions child appropriately based on age and condition	RD OB SM		
10. For NG tubes: Measure the length of gastric tube (tip of the nose to ear to midpoint between the xiphoid process and the umbilicus) and mark the tube	RD OB		
11. For OG tubes: Measure the length of gastric tube (ear to midpoint between the xiphoid process and the umbilicus) and mark the tube			
12. Lubricate the distal tip of the tube with water-soluble lubricant	RD OB SM		
13. Thread tube through one of the nares until mark on the tube was attained	RD OB SM		
14. During insertion, ask child to swallow sips of water or if appropriate, offer a pacifier	RD OB SM		
15. Apply skin prep to skin and allow to dry	RD OB SM		
16. Stabilize tube securely	RD OB SM		
17. Verify placement using hospital approved method (pH testing, x-ray)	RD OB SM		
18. Remove gloves and perform hand hygiene	RD OB SM		
19. Document the internal tube marking (last visible number on tube) and external tube length (cm between naris and external end of tube)	RD OB SM		
20. Document the procedure and the child's response in the medical record	RD OB SM		
21. Discuss when it is required to obtain x-ray to confirm placement	D VF		
22. Discuss procedure to follow when unable to obtain aspirate for gastric pH			
• Reposition on left side			
• Wait 15 minutes and reattempt			

Name (Please Print)	Initials	Name (Please Print)	Initials

Validation Key:

VF = Verbal Feedback; OB = Observation; D = Discussion; RD = Return Demonstration

NG-Me-Home



1 WASH HANDS

Use soap and water or hand sanitizer.

2 GATHER SUPPLIES

Correct size NG tube. Water-soluble lubricant, 10mL syringe, pH strips, 3 pieces of tape: one small piece to mark how far you will place the tube, the second to hold the tube in place while you make sure the tube is in the stomach, and the third to hold the tube in place.

3 MEASURE THE TUBE FOR PLACEMENT

Starting with the small end of the feeding tube (the end that will go into the patient) - Measure from the tip of the nose to the earlobe, then from the earlobe to the midpoint between the xiphoid process (where ribs come together) and the belly button.

Mark the tube with the small piece of tape (or a permanent marker) to show how far to pass the tube. It is also important to remember the number on the tube to check that the tube does not move while in place.

4 PREPARING TO INSERT THE TUBE

You may need another person to help you hold your child (swaddle younger children).

Encourage swallowing during procedure. A pacifier can be helpful and older children may drink through a straw while the tube is being placed (If allowed by doctor).

5 INSERT AND SECURE

Put a small amount of water-soluble lubricant on the end of the tube. Gently insert tube into nostril. Child may gag or cough.

If you meet resistance, stop and encourage swallowing. Do not force it.

Continue to gently pass the tube until you reach the tape or mark on the tube. Put a temporary piece of tape to secure the tube.

6 CHECK PLACEMENT

Put a 10mL syringe at end of the tube. Pull back on the syringe and take out a drop or two of stomach fluid.

Place stomach fluid on pH strip and read color change immediately using the pH color chart on pH container.

- If pH is between 1-5 proceed with feedings.
- If pH is above 5 wait 15 minutes and do another pH test.
- If child is coughing, gagging, vomiting or pH is above a 5, pull tube out and replace the tube.

If unable to pull back any stomach fluid place on left side or reposition, wait 15 minutes and try again.

If you have questions, call your doctor or GI clinic

7 TAPING THE TUBE

Replace the temporary tape on the face with the permanent tape which lets the skin breathe.

8 FEEDING

Now you are ready to start the feeding.

Flush tube with ____ mL of water before and after feeds/medications.

9 ROUTINE CARE

The tape on the face should be changed when wet.

The NG tube should be changed at least every thirty (30) days.

H
O
M
E



A casa con mi tubo NG



1

LAVARSE LAS MANOS

Use jabón y agua o gel antibacterial para manos.

JUNTAR EL TAMAÑO

2

CORRECTO DEL TUBO NG. Lubricante soluble en agua, jeringa, estetoscopio, dos pedacitos de cinta adhesiva: Un pedacito para marcar que tan adentro **MATERIALES** Introducir el tubo y el segundo para sostener el tubo en su lugar.

3

MEDIR EL TUBO PARA LA COLOCACIÓN

Comenzando con la parte final del tubo de alimentación mida la distancia de la punta de la nariz al lóbulo del oído de su hijo(a) y después a la parte más baja del esternón (donde se juntan las costillas). Marque el tubo con un pedacito de cinta adhesiva (o con un marcador permanente) para indicar hasta donde se debe introducir el tubo. También es importante recordar el número en el tubo para verificar que el tubo no se mueva durante la colocación.

4

PREPARACIÓN PARA INSERTAR EL TUBO

Es posible que necesite a otra persona para que le ayude a sostener a su hijo(a). Envuelva en una cobija a los niños más pequeños. Anime al niño(a) a tragar. Puede ayudar si le da un chupete y los niños más grandes pueden tomar de una pajilla mientras que se está colocando el tubo (si lo permite el medico).

5

INSERTAR Y ASEGURAR

Coloque un poco de lubricante soluble en agua en la parte final del tubo. Suavemente inserte el tubo en la fosa nasal. Es posible que el niño(a) jadee o tosa. Si encuentra alguna resistencia, pare y anime al niño(a) que trague. No lo fuerce. Continúe suavemente con la colocación del tubo hasta que haya llegado a la cinta o la marca del tubo. Coloque un pedacito de cinta pegante temporal para asegurar el tubo.

6

REVISAR LA COLOCACIÓN

Coloque la jeringa de 10mL al final del tubo. Jale la jeringa hacia atrás y saque una gota o dos de líquido del estómago. Coloque el líquido del estómago sobre la tira indicadora del pH e inmediatamente lea el cambio de color usando la tabla de color del pH sobre el contenedor del pH. Si el pH está dentro del 1-5 proceda con los alimentos. Si el pH está por encima de 5, espere 30 minutos y haga otro examen del pH. Si el niño(a) está tosiendo, jadeando, o vomitando y el pH está por encima de 5, jale hacia afuera el tubo NG y reemplace el tubo. Si no puede sacar el líquido del estómago, colóquelo al lado izquierdo o reposiciónelo, espere 15 minutos y inténtelo de nuevo. Si tiene alguna pregunta llame a su doctor o la clínica gastrointestinal.

7

COLOCACIÓN DE CINTA ADHESIVA EN EL TUBO

Reemplace la cinta temporal de la cara con una cinta permanente que le permita transpirar a la piel.

8

ALIMENTACIÓN

Ahora ya está listo para comenzar la alimentación. Enjuague el tubo con cc/ml de agua antes y después de la comida/medicamentos.

9

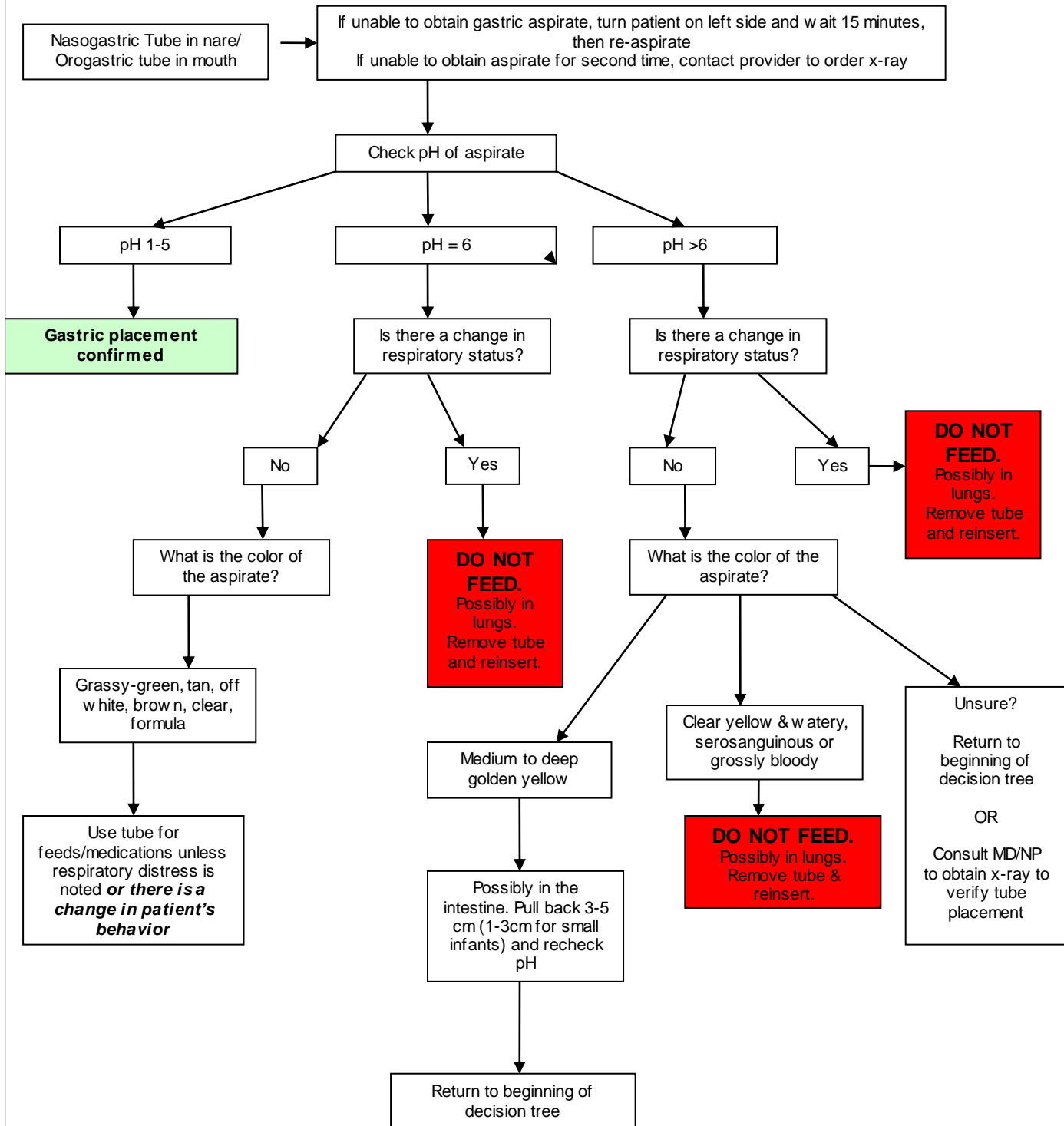
CUIDADO RUTINARIO

La cinta en la cara se tiene que cambiar cada vez que se moje. El tubo NG se debe cambiar por lo menos cada treinta (30) días.

10



Verification of Nasogastric/Orogastric Tube Placement Decision Tree



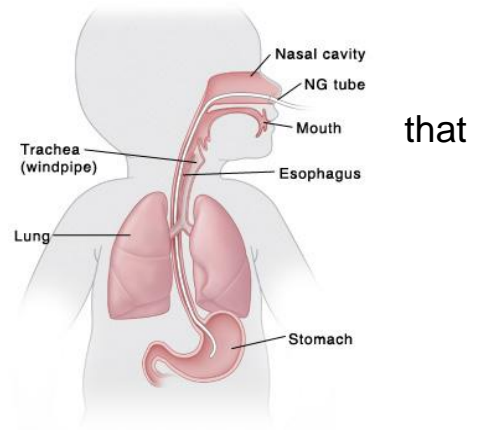
Preparing to Go Home with a Nasogastric Tube (NG Tube)

We understand that you may have a lot of questions about the care of the NG tube at home. The steps below are divided into several topics to help you follow our teaching process. As you complete each step, check off the box. This will help your care team to know what else needs to be taught before you go home.

- ☐ **Watch Videos:** There are 5 short videos loaded onto the TV in your room that will introduce you to using the NG tube.
- ☐ **Read through Packet:** Your nurse will review this packet with you and address any questions or concerns you may have.
- ☐ **Watch Nurse Place NG Tube on Doll:** The nurse will show you how to place the NG tube on a doll the same way you would place it in your child. We will make it as real as possible.
- ☐ **Place NG Tube on Doll:** You will place the NG tube on the doll. At this time, we can discuss your understanding of the process. You will be given as much time as necessary to practice on the doll.
- ☐ **Place NG Tube on Your Child:** When you feel comfortable placing the NG tube on the doll, you will then place the NG tube in your child. This is strongly recommended before you are discharged home with the NG tube. In addition, you will practice giving medications and feeds to your child through the NG tube.
- ☐ **Work with Case Manager:** Our case manager will work with you and your insurance to get the supplies you will need. This includes a feeding pump, feeding bags, formula, syringes, and more. A representative from the supply company will also teach you how to use your feeding pump.

What is an NG tube?

A nasogastric tube (NG tube) is a long, thin, flexible tube that passes through your child's nostril, down the esophagus, and into the stomach. NG tubes are used to deliver nutrition, hydration (fluids), or medications directly into the stomach.



Why does my child need an NG tube?

An NG tube may be ordered by your doctor for many different reasons. The most common reasons include: Your child is

- unable to eat or drink enough calories required for growth
- unable to swallow or having difficulty swallowing
- inhaling food or liquid into their lungs
- in need of nutritional therapy to treat an illness

Common Terms and Definitions

- GI tract: the esophagus, stomach, and the intestines
- pH: a scale of acidity from 0-14 used to tell if the NG tube is placed properly in the stomach
- Bolus: feeding that occurs over a short period of time
- Continuous: feeding that occurs over an extended time period
- Lubricant: a water-soluble substance used to help the NG tube slide into the nose more comfortably
- To flush: to push a liquid through the NG tube with a syringe

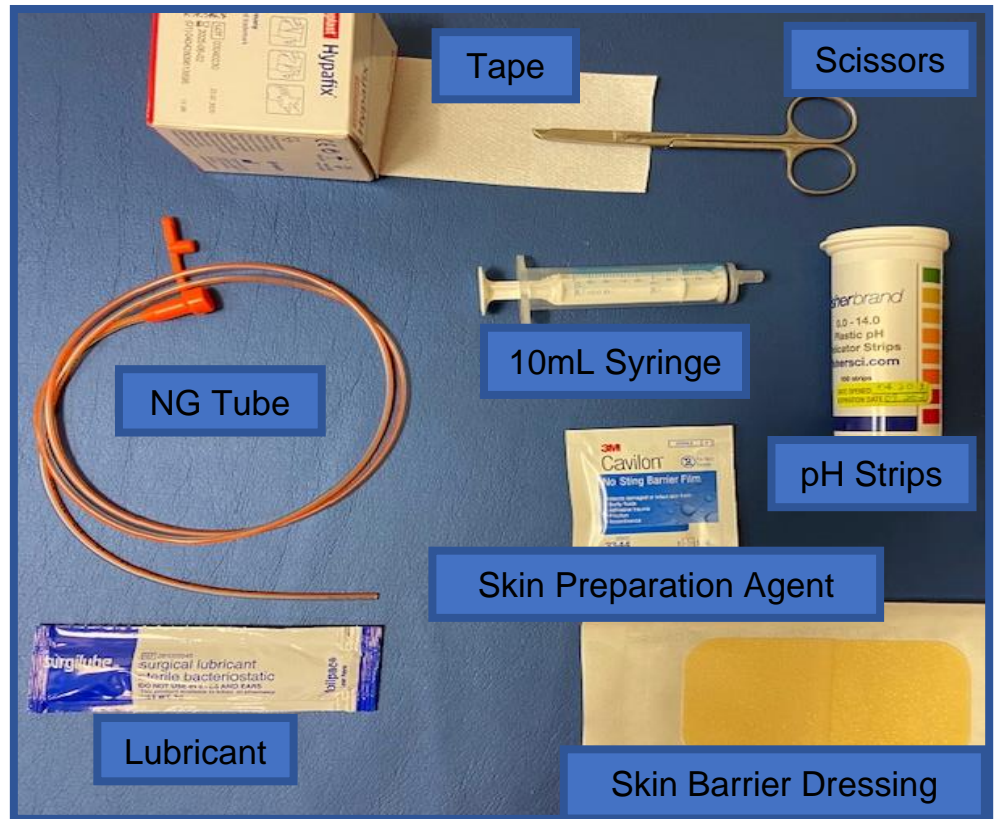
Preparing for NG Tube Placement

Gather Your Supplies:

Gather the following supplies on a clean, flat surface to be your workspace.

- Correct Size NG Tube
- Lubricant
- Skin Preparation Agent
- Skin Barrier Dressing
- Tape
- 10mL Syringe
- pH Strips Bottle:

****Check that your pH bottle is within the manufacturer's expiration date. When opened, label your bottle with the expiration date which is 3 months after opening.**



Prepare Your Child: Prepare your child for the NG tube insertion, including explaining what to expect. How you prepare your child depends on their age.

For infants and toddlers, have a second person to help hold the child. Swaddling is a helpful tool to promote comfort and safety during NG placement. Position the child on their back. The head of the bed may be flat or elevated 30 to 45 degrees as the child's condition permits. Use a pacifier to encourage sucking and swallowing during placement.

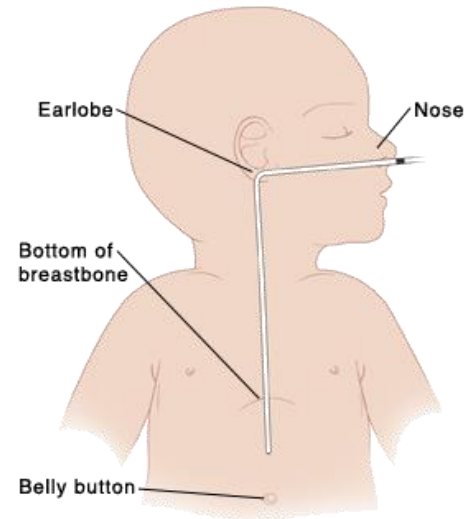
For school age and adolescent children, have the child sit in a comfortable position where they can sit still and sip water through a straw. Sipping water helps swallowing during NG tube placement to guide the tube into position.

NG Tube Placement

Clean Hands: Be sure to wash your hands thoroughly with soap and water for at least 20 seconds before you start.

Measure for the NG Tube:

1. Starting with the small end of the feeding tube (the end that will go into the child) - Measure from the tip of the nose to the earlobe
2. Then measure from the earlobe to the midpoint between the bottom of the breastbone and the belly button.
3. Mark the tube with the small piece of tape (or a permanent marker) to show how far to pass the tube.
4. It is also important to remember the number on the tube and the tape marking to check that the tube does not move while in place.



Insert the NG Tube:

Put a small amount of lubricant on the end of the tube. Gently insert tube into nostril and guide the tube down the throat.

Your child may gag or cough. This is a normal response. Try to encourage your child to swallow small sips of water or suck on a pacifier.

- If you meet resistance, stop and encourage swallowing.
- If the tube coils in your child's nose or mouth, stop, remove the tube, and try again.
- If your child is choking, having trouble breathing, or turning blue, remove NG tube immediately.

Continue to gently pass the tube until you reach the tape or mark on the tube. Put a temporary piece of tape to secure the tube while you check pH.

Check the Placement of the NG Tube:

Using a 10mL empty syringe, pull back on the plunger to the 1-2ml mark.

Attach the syringe at end of the NG tube. Push the air to clear the tube of water/formula/fluid.



Pull back on the syringe and until you get back stomach fluid. You only need a drop of stomach fluid. Place the drop of stomach fluid on a pH strip and read color change immediately using the pH color chart on pH bottle.

- If pH is between 1 and 5, the NG tube is in the correct place.
- If pH is 6 or higher, wait 15 minutes and recheck the pH.
 - If pH remains 6 or higher after rechecking, pull NG tube out and replace the tube.
- If unable to pull back any stomach fluid, place your child on their left side and wait 15 minutes before checking again.

Securing the NG Tube:

Replace the temporary tape on the face with the permanent tape which lets the skin breathe.



Apply a skin barrier dressing across your child's cheek in the area that will be under the tube.



Use tape to secure the tube over the barrier dressing. Stabilize the tube by taping securely above the upper lip or cheek. Avoid taping the tube on the nose.

Caring for a NG Tube at Home

When to change NG tube and taping:

The tape on the face should be changed when wet or soiled. The NG tube must be changed at least monthly.

When to check the pH of the NG tube:

Checking the NG tube's pH verifies that the tube is still in the correct placement within the stomach. This should be done at the following times:

- Before giving a medication or a feed
- Any time the NG tube is replaced
- If the tape securing the NG tube loosens
- If the tube marking is no longer at the tip of the nose

Giving Medications

1. If your child does not have a feed running when medications are due, you will need to check the pH before giving medications.
2. If a feed is running, pause the feed and flush NG tube before giving any medications.
3. Slowly push your liquid medication through the tube. Avoid mixing medications together.
4. Flush NG tube after each medication.
5. Ensure the closure of the tube is secure.

*Please note: some medications can change the pH of the gastric fluid. Talk with your provider to determine if your child is taking any such medications.

*Crushing medications: Whole tablets/ pills cannot pass through the NG tube. You will need to crush the medication and mix with enough water to dissolve medication so that it can pass through the tube easily.

Giving Feeds:

Step 1: Prime pump so that formula reaches the tip of the tubing and there is not any air in the line.

Step 2: Program the pump for the appropriate rate and volume. Ensure that the pH testing is completed.

Step 3: Securely connect tubing to the NG tube.

Step 4: Begin feeding.

Step 5: When feeding is complete, flush the NG tube.

*A representative from case management or a home health care company will teach you how to appropriately program your home pump.

Your Child's NG Tube Information

- Your child's NG tube size: _____
- Your child's formula is: _____
- Your child's feeding plan is:

Troubleshooting NG Tubes

The Problem	What May be Causing it	What You Can Do
pH of stomach fluid is 6 or higher	<ul style="list-style-type: none"> Your child's tube may not be in the correct place. Medications prescribed by your provider may alter the pH of stomach contents. 	<ul style="list-style-type: none"> Wait 15 minutes and recheck the pH. If the pH remains 6 or higher after rechecking, replace NG tube. If you have questions or concerns, contact your child's provider.
Your child begins choking, has trouble breathing or turns blue during NG tube insertion	<ul style="list-style-type: none"> NG tube may be in the lungs. 	<ul style="list-style-type: none"> Remove tube immediately. If these symptoms persist, seek medical attention. Once symptoms improve, give your child 20-30 minutes to recover before attempting to insert NG tube again.
NG tube will not flush	<ul style="list-style-type: none"> There may be a blockage or clog in tubing. 	<ul style="list-style-type: none"> Attempt to flush with warm water. (DO NOT MICROWAVE WATER) If blockage persists, replace the NG tube.
You are unable to pull back stomach fluid from NG tube to check the pH.	<ul style="list-style-type: none"> NG tube may be in the wrong position. There may not be enough contents in your child's stomach. 	<ul style="list-style-type: none"> If your child is able, have them take a few sips of liquid and try to pull back stomach fluid again in 15 minutes Have your child lay on their left side for 15 minutes and try to pull back stomach fluid again. If problem persists, remove NG tube. Re-measure and attempt to replace NG tube If you have made multiple attempts and are still unable to pull back stomach fluid, contact your provider

Bloating, diarrhea, or vomiting during NG tube feedings	<ul style="list-style-type: none"> • Feeds may be going too fast. • There may be too much air or liquid in your child's stomach. 	<ul style="list-style-type: none"> • Pause the feeds for 15-30 minutes and attempt to restart feeds. • If the problem persists, contact your child's provider.
Marking of NG tube is no longer at child's nostril	<ul style="list-style-type: none"> • The NG tube has moved out of place. 	<ul style="list-style-type: none"> • If you can see the original marking, move the NG tube until it is back at your child's nostril- check pH for placement. • Re-tape the NG tube.
Skin irritation from NG tube tape.	<ul style="list-style-type: none"> • Tape needs to be replaced. 	<ul style="list-style-type: none"> • Always replace soiled tape right away. • Remove tape while carefully holding NG tube in its place • Carefully clean and dry face. • Re-tape the NG tube. • Call your provider if your child has persistent skin irritation

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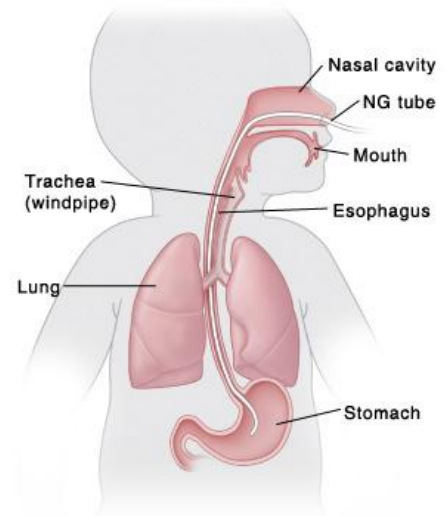
Preparándose para ir a casa con una sonda nasogástrica (NG Tube en inglés)

Comprendemos que podría tener muchas preguntas acerca del cuidado de la sonda nasogástrica en el hogar. Las etapas a continuación están divididas en varios temas para ayudarle a seguir el proceso de capacitación. A medida que complete cada etapa, ponga una marca en la casilla. Esto ayudará a que su equipo de cuidado sepa qué otros temas deben cubrir antes de que usted regrese a casa.

- ☐ **Mirar Videos:** Hay 5 videos cortos que se han cargado en la televisión de su habitación y que le darán una introducción del uso del NG.
- ☐ **Leer el paquete:** Su enfermera revisará este paquete con usted y responderá a cualquier pregunta o preocupación que usted tenga.
- ☐ **Observe a la enfermera colocar una sonda NG en la muñeca:** La enfermera le mostrará cómo colocar la sonda NG en la muñeca, de la misma forma en que usted lo colocaría en su hijo(a). Haremos esto de la manera más realista posible.
- ☐ **Colocar la sonda NG en la muñeca:** Usted colocará la sonda NG en la muñeca. En este momento, podemos discutir acerca de su comprensión del proceso. Se le dará todo el tiempo necesario para practicar con la muñeca.
- ☐ **Colocar la sonda NG a su hijo(a):** Cuando se sienta cómodo(a) al colocar la sonda Ng en la muñeca, usted colocará la sonda NG en su hijo(a). Se recomienda ampliamente que lo haga antes de que se le dé de alta del hospital y regrese a su hogar con la sonda NG. Además, usted practicará dar medicamentos y alimentos a su hijo(a) a través la sonda NG.
- ☐ **Póngase de acuerdo con la administradora de caso:** Nuestra administradora de caso se pondrá de acuerdo con usted y con su compañía de seguro para obtener los suministros que usted necesitará. Estos incluyen una bomba de alimentación, bolsas de alimentación, fórmula, jeringas y más. Un representante de la compañía suministradora también le enseñará cómo usar la bomba de alimentación.

¿Qué es una sonda NG?

La sonda nasogástrica (tubo NG) es un tubo largo, delgado y flexible que entra por la fosa nasal de su hijo(a), y baja por el esófago hasta llegar al estómago. Las sondas NG se usan para llevar nutrientes, hidratación (líquidos), o medicamentos directamente al estómago.



¿Por qué necesita mi hijo(a) un tubo NG?

El doctor puede pedir que se coloque una sonda NG por muchas razones diferentes. Las razones más comunes incluyen: Su hijo(a)

- no puede comer o beber las suficientes calorías requeridas para el crecimiento
- no puede tragar o tiene dificultades para tragar
- inhala alimentos o líquidos en sus pulmones
- necesita una terapia nutricional para tratar una enfermedad

Términos y definiciones comunes

- Tracto gastrointestinal -GI-: el esófago, el estómago y los intestinos
- pH: una escala de acidez de 0-14 se usa para determinar si la sonda NG está colocada adecuadamente en el estómago
- Bolo: Alimentación que ocurre en un corto periodo de tiempo
- Continuo: alimentación que ocurre en un periodo extenso de tiempo
- Lubricante: una sustancia que es soluble en agua que se usa para deslizar el tubo dentro de la nariz más cómodamente
- Enjuagar: empujar el líquido a través del tubo NG con una jeringa

Preparándose para la colocación del tubo NG

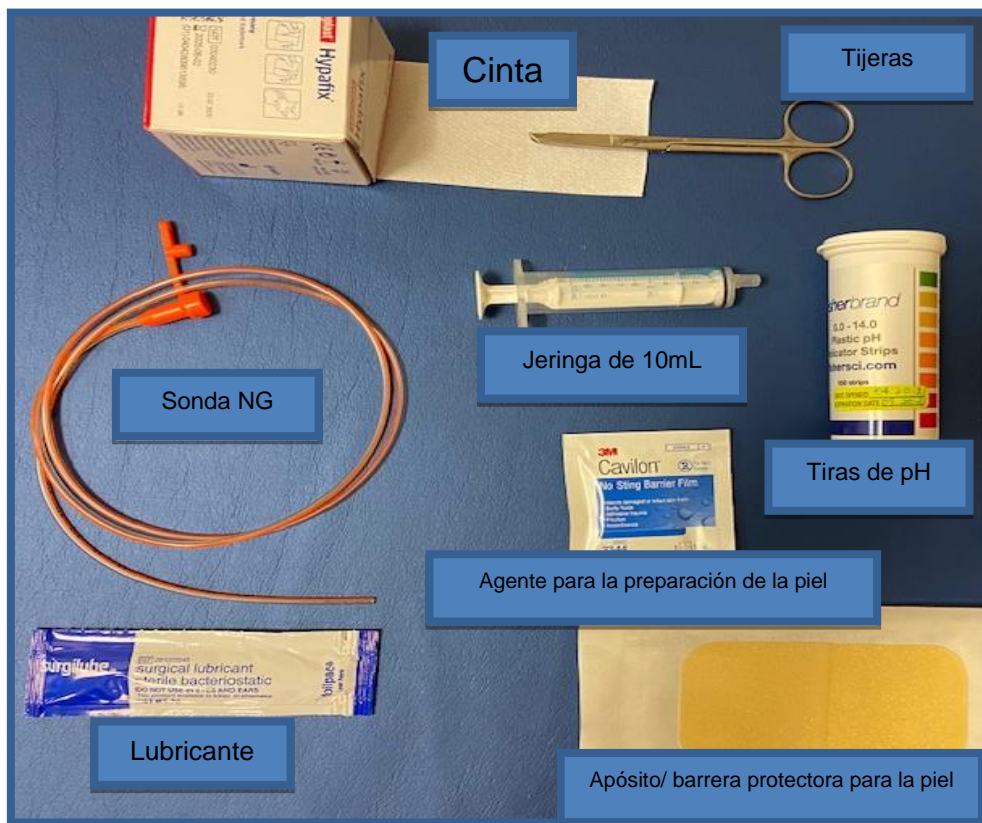
Reúna los suministros:

Reúna los siguientes suministros en una superficie limpia, plana como su lugar de trabajo.

- Tamaño correcto de la sonda NG
- Lubricante
- Agente de preparación de la piel
- Apósito barrera protectora para la piel
- Cinta
- Jeringa de 10mL
- Bote de tiras de pH:

Verifique la fecha de vencimiento de su botella de pH. Cuando la abra,

etiquete su botella con la fecha de expiración que es 3 meses después de abrirse.



Prepare a su hijo(a): Prepare a su hijo(a) para la inserción de la sonda NG, incluyendo explicarle que es lo que debe esperar. La manera en que prepare a su hijo(a) depende de su edad.

Para bebés y niños pequeños, tenga a otra persona que le ayuda a detener al niño(a). Envolverlo en una manta es una forma útil de promover su comodidad y seguridad durante la colocación de la sonda NG. Coloque al niño(a) de espalda. La cabecera de la cama puede estar plana o con 30 a 45 grados de elevación según permita la condición del/ de la niño(a). Use un chupete para animarlo a que chupe y trague durante la colocación.

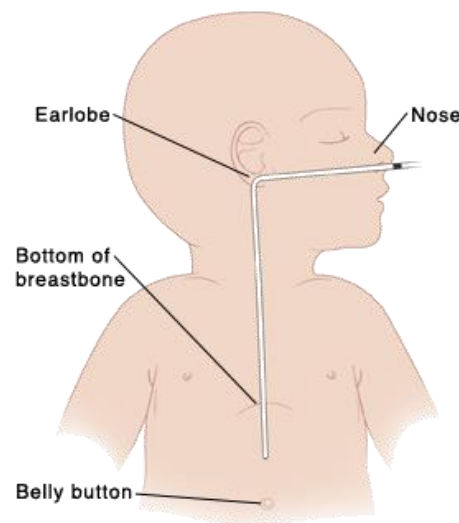
Para niños de edad escolar y adolescentes, pida al niño que se siente en una posición cómoda en la que pueden sentarse quieto y tomar agua por una pajilla. El sorber agua ayuda a tragar durante la colocación de la sonda NG para guiar la sonda a que quede posicionada.

Colocación de la sonda NG

Manos limpias: Asegúrese de lavarse las manos a fondo con agua y jabón durante al menos 20 segundos antes de comenzar.

Medir la sonda NG:

5. Comenzando con el extremo pequeño de la sonda de alimentación (el extremo que se introduce en su hijo(a)) – Mida desde la punta de la nariz hasta el lóbulo de la oreja
6. Luego mida desde el lóbulo de la oreja hasta el punto medio entre la base del esternón y el ombligo.
7. Marque la sonda con un trozo de cinta (o con un marcador permanente) para mostrar hasta dónde debe pasar el tubo.
8. También es importante recordar el número en la sonda y la marca de la cinta para verificar que la sonda no se mueva mientras está en su lugar.



Inserte la sonda NG:

Coloque una poca de lubricante en la punta de la sonda. Inserte cuidadosamente la sonda en la fosa nasal y guíela hacia abajo en la garganta.

Su hijo podría toser o tener un reflejo de náusea. Esta es una respuesta normal.

Intente animar a su hijo a que trague agua o chupe un chupete.

- Si encuentra resistencia, pare y anímelo(a) a que trague.
- Si la sonda se enrosca en la nariz o la boca de su hijo(a), pare, retire la sonda y vuelva a intentarlo.
- Si su hijo(a) se ahoga, tiene problemas para respirar o se pone azul, retire la sonda NG inmediatamente.

Continúe haciendo avanzar la sonda suavemente hasta que llegue a la marca o a la cinta que está en el tubo. Coloque una porción de cinta para sujetar la sonda mientras verifica el pH.

Verifique la colocación de la sonda NG:

Usando una jeringa vacía de 10mL, retraiga el émbolo a la marca 1-2ml.

Conecte la jeringa con el extremo de la sonda NG.

Empuje el aire para vaciar el tubo de agua/formula /líquido.

Tire del émbolo de la jeringa hasta que obtenga

líquido estomacal. Solo necesita un gota de

líquido. Coloque la gota de líquido estomacal en la

tira de pH y vea el cambio de color inmediatamente consultado la tabla de color del pH en la botella.



- Si el pH es de entre 1 y 5, la sonda NG está en el lugar correcto.
- Si el pH es de 6 o más, espere 15 minutos y vuelva a verificar el pH.
 - Si el pH sigue siendo de 6 o más alto después de volver a verificar, retire la sonda NG y reemplácela.
- Si no puede recuperar ningún líquido estomacal, coloque a su hijo(a) de su lado izquierdo y espere 15 minutos antes de volver a verificar.

Para sujetar la sonda NG:

Reemplace la cinta temporal de la cara con una cinta permanente que permita que la piel respire



Aplique un apósito como barrera protectora de la piel sobre el área de la mejilla de su hijo que estará debajo de la sonda.



Use cinta para asegurar la sonda sobre el apósito de barrera. Estabilice la sonda colocando una cinta segura sobre el labio superior o la mejilla. Evite colocar el tubo con la cinta sobre la nariz.

Cuidado de la sonda NG en el hogar

Cuándo cambiar la sonda NG y la cinta:

La cinta que se coloca en la cara debe cambiarse cuando se moje o se ensucie. La sonda NG debe cambiarse por lo menos una vez al mes.

Cuándo se debe verificar el pH de la sonda NG:

Verificar el pH de la sonda NG comprueba que la sonda esté aún en el lugar correcto dentro del estómago. Esto debe hacerse en las siguientes ocasiones:

- Antes de dar medicamentos o nutrición
- En cada ocasión que se cambia la sonda NG
- Si se afloja la cinta que sujeta la sonda
- Si las marcas de la sonda ya no se encuentran en la punta de la nariz

Para dar medicamentos

6. Si su hijo(a) no está recibiendo nutrición cuando los medicamentos deben darse, usted deberá verificar el pH antes de darle los medicamentos.
7. Si se le está dando nutrición, haga una pausa en la nutrición y enjuague la sonda NG antes de darle medicamentos.
8. Empuje sus medicamentos líquidos lentamente por la sonda. Evite mezclar medicamentos.
9. Enjuague la sonda NG después de cada medicamento.
10. Asegúrese que el cierre de la sonda está seguro.

*Por favor tome en cuenta que algunos medicamentos pueden cambiar el pH del líquido gástrico. Hable con su proveedor para determinar si su hijo(a) está tomando este tipo de medicamento.

*Triturar medicamentos: Las tabletas/ pastillas no pueden pasar por la sonda NG. Usted necesitará triturar los medicamentos y mezclarlos con suficiente agua para disolver el medicamento y así permitir que pase a través de la sonda fácilmente.

Sesiones de alimentación

1er paso: Ceba la bomba para que la fórmula llegue al extremo de la sonda y haya aire en la línea.

2o paso: Programe la bomba para la velocidad y volumen correctos. Asegúrese de completar la prueba del pH.

Step 3: Conecte el tubo a la sonda NG de manera segura.

Step 4: Comience la alimentación.

Step 5: Cuando se ha completado la alimentación, enjuague la sonda NG.

*Un representante de administración de casos o de una empresa de cuidado de la salud en el hogar le enseñará cómo programar la bomba de su hogar adecuadamente.

Información acerca de la sonda NG de su hijo(a)

- Tamaño de la sonda NG de su hijo(a): _____
- La fórmula de su hijo(a) es: _____
- El plan de alimentación de su hijo(a) es:

Resolución de problemas de las sondas NG

Problema	Posible causa	Lo que usted puede hacer
El pH del líquido estomacal es de 6 o más alto	<ul style="list-style-type: none"> La sonda de su hijo(a) podría no estar en el lugar correcto. Los medicamentos recetados por su proveedor podrían alterar el pH del contenido estomacal. 	<ul style="list-style-type: none"> Espere 15 minutos y vuelva a verificar el pH. Si el pH sigue siendo de 6 o más alto, cambie la sonda NG. Si tiene preguntas o inquietudes contacte al proveedor de su hijo(a).
Su hijo(a) comienza a ahogarse, tiene problemas para respirar o se pone azul mientras se inserta la sonda NG	<ul style="list-style-type: none"> La sonda NG podría estar en los pulmones. 	<ul style="list-style-type: none"> Retire la sonda inmediatamente. Si estos síntomas persisten, busque atención médica. Una vez que los síntomas mejoren, dele 20-30 minutos a su hijo para recuperarse antes de insertar la sonda NG de nuevo.
No se puede enjuagar la sonda NG	<ul style="list-style-type: none"> Podría haber algún bloqueo u obstrucción en la sonda. 	<ul style="list-style-type: none"> Intente enjuagarlo con agua tibia. (NO CALIENTE EL AGUA EN EL MICROONDAS) Si persiste el bloqueo, reemplace la sonda NG.
No puede recuperar líquido estomacal de la sonda NG para verificar el pH.	<ul style="list-style-type: none"> La sonda NG podría estar en una posición incorrecta. Su hijo(a) podría no tener suficientes contenidos en el estómago. 	<ul style="list-style-type: none"> Si su hijo(a), puede hacerlo, pídale que tome unos sorbos de líquido e intente recuperar de nuevo líquidos estomacales en 15 minutos Acueste a su hijo(a) del lado izquierdo durante 15 minutos e intente recuperar de nuevo líquidos estomacales. Si persiste el problema, retire la sonda NG. Vuelva a medir e intente recolocar la sonda NG Si después de intentarlo múltiples ocasiones no puede recuperar líquido estomacal, contacte a su proveedor

Distensión, diarrea, o vómito durante la alimentación con la sonda NG	<ul style="list-style-type: none"> • La alimentación podría ser demasiado rápida. • Podría haber demasiado aire o líquido en el estómago de su hijo(a). 	<ul style="list-style-type: none"> • Haga una pausa en la alimentación durante 15-30 minutos e intente volver a comenzar la alimentación. • Si el problema persiste, contacte al proveedor de su hijo(a).
La marca de la sonda NG ya no está en la fosa nasal de su hijo(a)	<ul style="list-style-type: none"> • La sonda NG se ha movido de lugar. 	<ul style="list-style-type: none"> • Si todavía puede ver la marca original mueva la sonda NG hasta que vuelva a estar en la fosa nasal de su hijo(a) y verifique el pH para colocarla. • Vuelva a colocar la cinta en la sonda NG.
Irritación de la piel por la cinta en la sonda NG.	<ul style="list-style-type: none"> • Es necesario reemplazar la cinta. 	<ul style="list-style-type: none"> • Siempre reemplace la cinta sucia inmediatamente. • Retire mientras sujeta la sonda NG en su lugar • Limpie y seque cuidadosamente la cara. • Vuelva a colocar la cinta en la sonda NG. • Llame a su proveedor si su hijo(a) tiene irritación persistente en la piel

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