

How to Check NG Tube Placement

Protocol Identifier: NG-TUBE-PLACEMENT-CHECK

Version: 1.0

Issuing Institution: Children's Hospital Colorado

This document explains how to check NG tube placement before giving feeds or medications through the tube. It is written for caregivers and follows a structured protocol format so that every step, requirement, and safety check can be reviewed and verified. This guidance is for informational and educational purposes only and does not replace professional medical advice.

Study Synopsis

Field	Description
Protocol Title	How to Check NG Tube Placement
Issuing Institution	Children's Hospital Colorado
Phase	Not applicable – patient/caregiver education procedure
Indication	Confirming correct NG tube position before feeding or giving medication
Study Population	Children with a nasogastric (NG) tube in place, procedure performed by a caregiver
Design Summary	Sequential, single-subject procedure using a syringe, pH paper, and visual/behavioral monitoring
Primary Endpoint	pH value of withdrawn stomach contents (target range 1–5 indicates correct stomach placement)
Estimated Duration	Approximately 115 seconds (under 2 minutes) per check

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Background & Rationale

Children who require NG tube feeding rely on the tube remaining correctly positioned in the stomach. If the tube shifts out of place, it may enter the lungs instead, which creates a serious safety risk.

The unmet need addressed by this procedure is the lack of a simple, at-home method for caregivers to confirm tube position before every feed or medication dose.

The mechanism used to verify placement is pH testing: stomach contents are more acidic than lung fluid, so testing the pH of withdrawn fluid indicates whether the tube tip is in the stomach.

The rationale for this protocol is to give caregivers a reliable, repeatable check they can perform at home to reduce the risk of feeding or medicating through a misplaced tube.

Study Design

This is a single-subject, caregiver-administered procedure with no treatment arms or randomization. The caregiver performs the same sequence of steps each time placement needs to be confirmed.

Materials used ("dosing regimen" equivalent):

- Syringe labeled "FEEDING/MEDICATION ONLY"
- pH paper (Hydriion brand or similar)
- Dressing (adhesive patch)

Visit schedule overview: The procedure consists of preparation, syringe attachment, fluid withdrawal, pH testing, result interpretation, and finalization of tube placement, all performed in a single sitting.

Study duration: The full check takes approximately 115 seconds from securing the tube to finalizing placement.

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Black background showing the labeled items needed for the check: syringe, pH paper, and dressing

Eligibility Criteria

Inclusion Criteria

1. Child has an NG tube currently in place.
2. Caregiver has gathered all required supplies: syringe labeled "FEEDING/MEDICATION ONLY," pH paper, and a dressing.

3. The NG tube is secured, either with a dressing/tape or by holding it in place by hand, before the check begins.

Exclusion Criteria (Procedure Must Stop / Tube Must Be Removed)

4. Child is coughing or gagging non-stop.
5. Child is turning blue.
6. Child is having trouble breathing.
7. Child is fussier than usual.
8. Child shows a change in voice or ability to speak.

If any exclusion criterion is met, remove the tube immediately and call the child's doctor. Call 911 if the child continues to have any difficulty breathing.

Study Endpoints

Primary Endpoint: pH value of withdrawn stomach contents falls between 1 and 5, indicating the tube is likely in the stomach and safe to use for feeding or medication.

Secondary Endpoint: pH value greater than 5, indicating the tube may be in the lungs rather than the stomach; this endpoint requires removal of the tube and replacement with a new one.

Exploratory Endpoint: Presence or absence of warning signs (coughing/gagging, turning blue, trouble breathing, increased fussiness, change in voice) during or after the check, used to determine whether immediate medical contact is required.

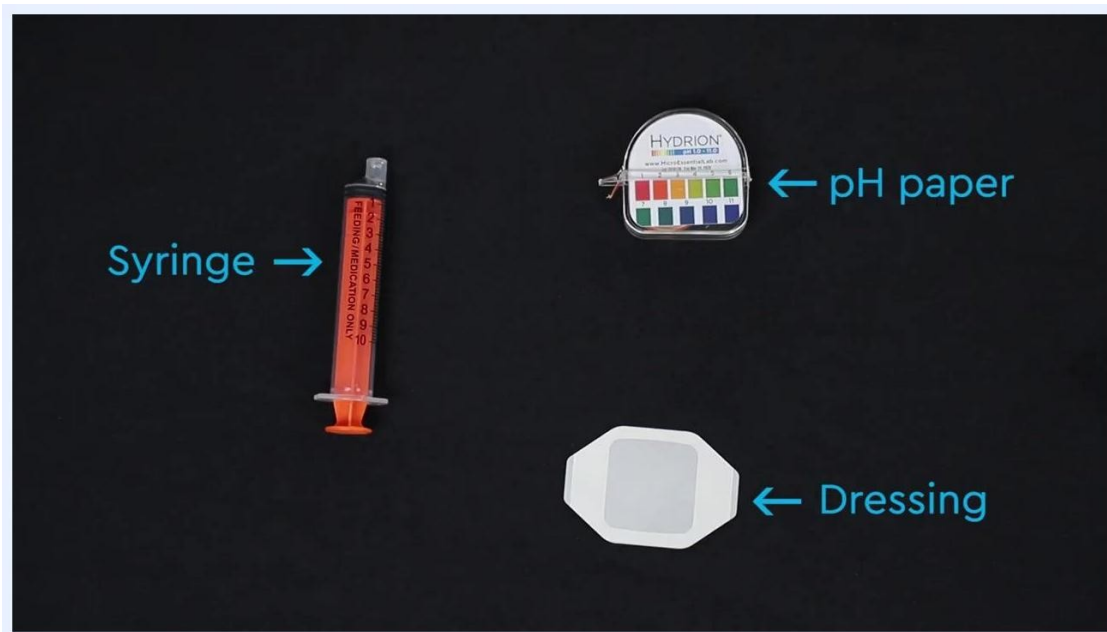
Schedule of Assessments

Step	Procedure/Assessment	Timing
1	Review disclaimer and educational purpose statement	0:00:04
2	Gather supplies (syringe, pH paper, dressing)	0:00:04
3	Secure the NG tube with dressing/tape or by hand	Prior to testing

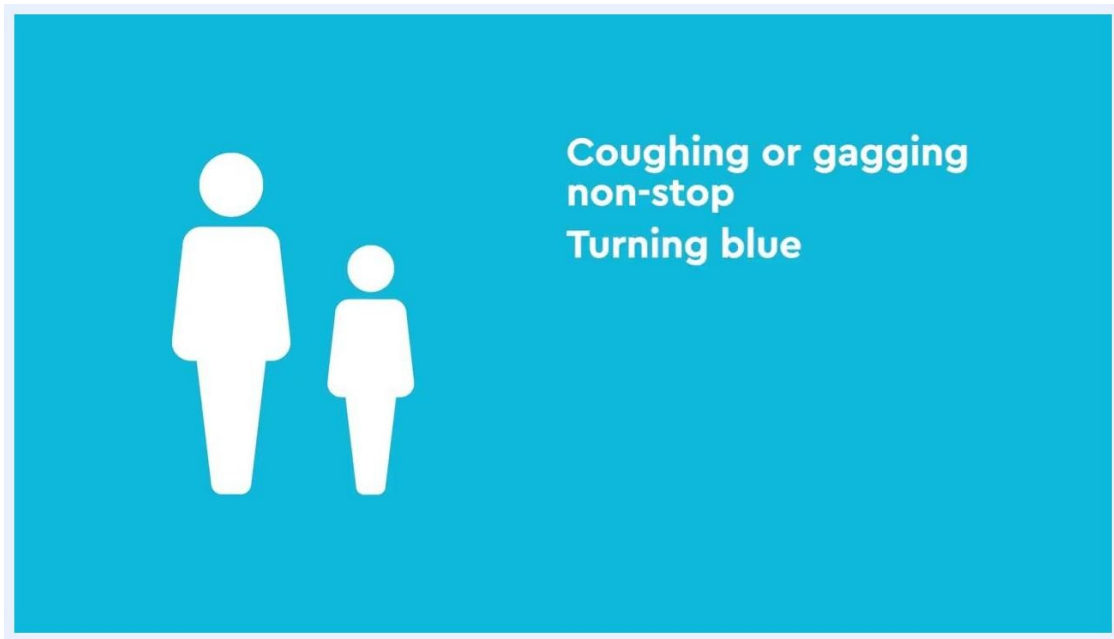
4	Clamp tube and remove cap in preparation for testing	Prior to attaching syringe
5	Attach syringe to end of NG tube	0:00:04
6	Withdraw a small amount of stomach contents	0:00:16
7	Apply withdrawn fluid to pH paper and compare color	0:01:18
8	Interpret pH result (1–5 vs. >5)	Following step 7
9	Monitor for warning signs; call doctor or 911 if needed	0:01:25
10	Finalize placement: remove guide wire (if present), tape tube securely	0:01:25
11	Access additional resources at childrenscolorado.org/ngtube	0:01:47

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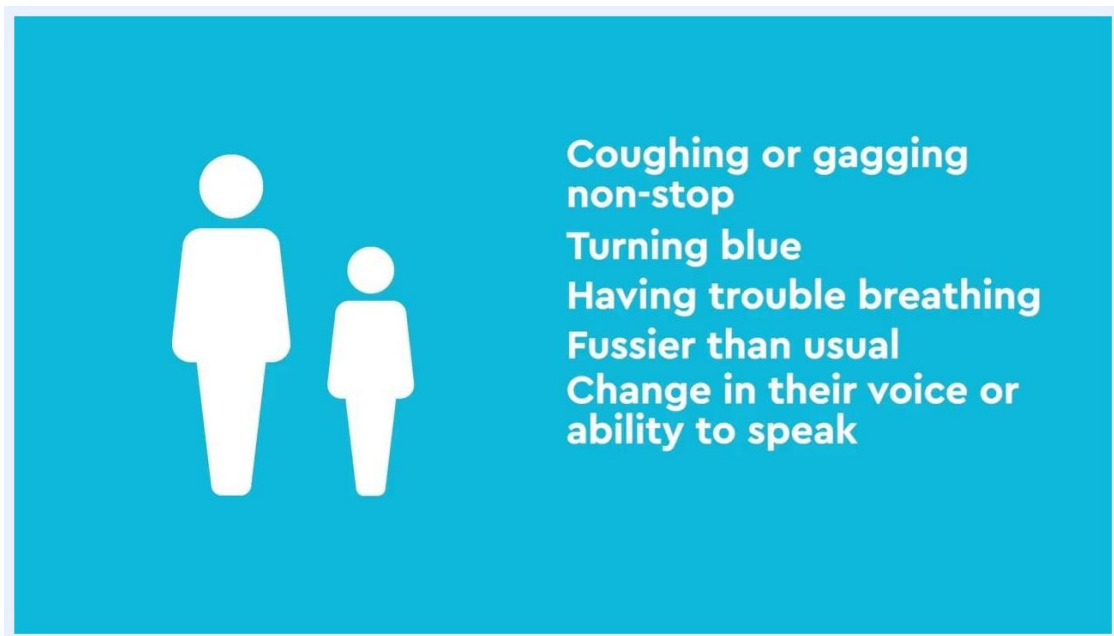
Person in a green shirt holding a syringe and NG tube, preparing to attach the syringe to the tube



Person holding the syringe attached to the NG tube while pulling back to withdraw stomach contents



Person holding pH paper next to a color chart, comparing the test strip color to the chart



Child sitting at a table while the NG tube is secured to their cheek with a dressing; a glass of water, a jar with a straw, a mirror, and hand sanitizer are visible nearby

Statistical Considerations

This procedure uses a threshold-based interpretation rather than a formal statistical analysis: a pH reading of 1–5 is classified as a successful (in-

stomach) result, and a reading greater than 5 is classified as a failed (out-of-stomach) result requiring tube replacement.

No sample size calculation applies, as this protocol is performed on a single patient at a time by a caregiver rather than across a study population.

Analysis population and primary analysis method are therefore not applicable in the traditional clinical-trial sense; the "analysis" is the direct visual color comparison of the pH paper against its reference chart, as shown above.

Safety Reporting

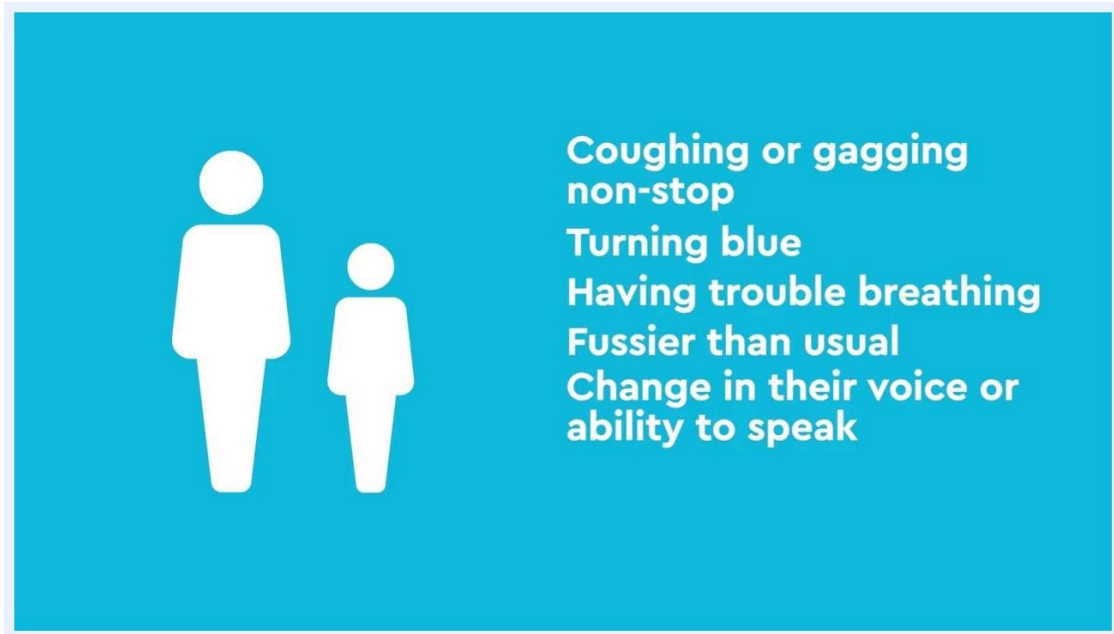
Adverse Event Definitions: The following are defined as warning signs requiring action: coughing or gagging non-stop, turning blue, having trouble breathing, being fussier than usual, or a change in voice or ability to speak.

Grading:

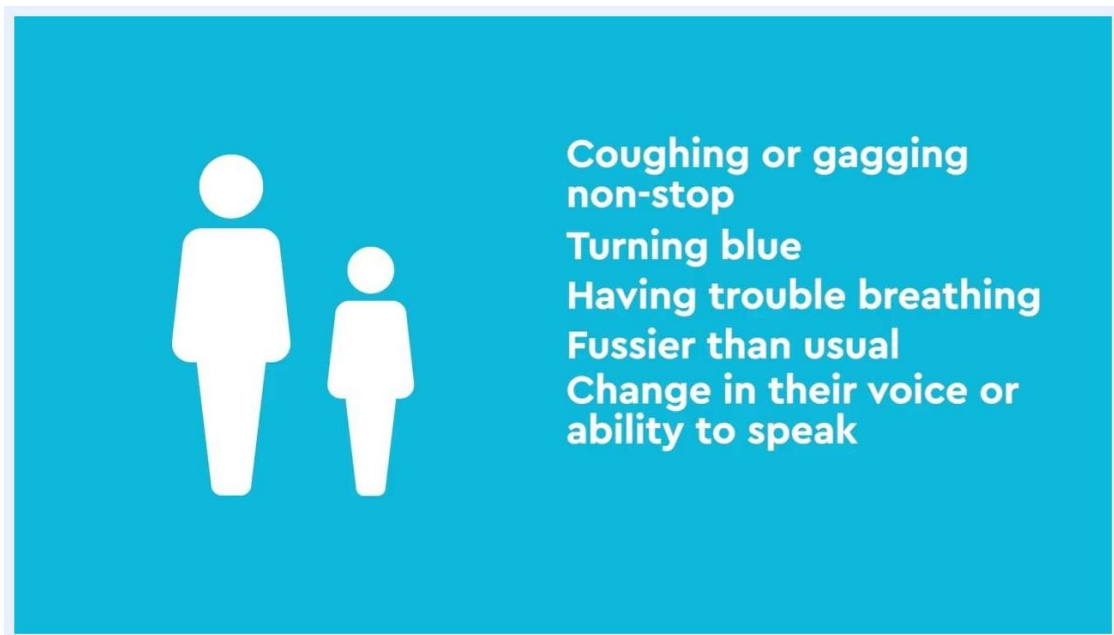
- Moderate: Any single warning sign listed above — remove the tube immediately and call the child's doctor.
- Severe: Continued difficulty breathing — call 911.

Reporting Timeline: Action must be taken immediately upon observing any warning sign; there is no delay period before removing the tube or contacting medical support.

Oversight: Ongoing oversight and support are provided by the child's medical team. For further guidance, troubleshooting tips, and additional educational resources, caregivers should visit childrenscolorado.org/ngtube. No independent monitoring board applies to this home-care procedure.



Blue background with white icons of an adult and child alongside the text: "Coughing or gagging non-stop, Turning blue"



Blue background with white icons of an adult and child alongside the text: "Coughing or gagging non-stop, Turning blue, Having trouble breathing, Fussier than usual, Change in their voice or ability to speak"

For more information, visit
childrenscolorado.org/ngtube



Children's Hospital Colorado

Blue background with white text reading "For more information, visit childrenscolorado.org/ngtube" alongside the Children's Hospital Colorado logo

Always consult your healthcare provider for personalized medical advice and support. Refer to childrenscolorado.org/ngtube for up-to-date instructions, troubleshooting tips, and additional resources related to NG tube care.