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## Best Practice for Confirmation of Nasogastric Tube Placement in Pediatric Patients

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## **Abstract**

**Background:** Nasogastric (NG) tubes are used to provide nutrition or charcoal to patients who cannot swallow or are intubated. For pediatric patients, auscultation confirmation is often used to confirm placement despite the evidence that x-ray confirmation is a more accurate way to confirm placement. Incorrect placement leads to incidents of higher rates of healthcare acquired infections, financial strain on the hospital, and longer lengths of stay for patients.

**Objectives:** The objective of this evidence-based review is to review relevant published studies in determining the best practice for confirmation of NG tubes in pediatric patients.

**Methods:** A database search was conducted in which five databases (PubMed NCBI, CINAHL Plus with Full Text, MEDLINE Complete, Ovid Nursing Collection, and Proquest) were searched using a variety of keywords. Studies were included in this review if they met the following criteria: English language, pediatric population, hospital setting, NG tubes used, published after 2012, peer-reviewed journals, and full-text availability.

**Results:** Thirteen articles were included (six quantitative, six qualitative, and one mixed-method). The results showed that recommendations for the use of auscultation for confirmation is split amongst researchers despite statistics showing that incorrect placement is happening at significant rates. X-ray confirmation remains the best way to confirm NG tube placement despite radiation concerns. Ultrasound guidance remains largely untested, and its safety level is inconclusive.

**Conclusions:** X-ray confirmation of NG tube placement remains the best and safest way to confirm NG tube placement. Future research should focus on discovering new methods of

confirmation, and ways to make previously known methods of confirmation safer for patients and nurses.

*Keywords:* nasogastric tubes, pediatric patients, auscultation confirmation, x-ray confirmation, healthcare acquired infections, financial strain, ultrasound guidance