

## NTSP Podcast series



### This month's top papers: October 2025

Welcome to the latest blog in the literature podcast from the NTSP. We try to bring you a quick roundup of what is hot in the world of tracheostomy and laryngectomy publications by scouring internationally recognised journals and media and bringing you the highlights.

The papers we will discuss this month are detailed below.

You can find the links to the podcast on [www.tracheostomy.org.uk](http://www.tracheostomy.org.uk) and by searching for NTSP on your favourite podcast platform. Some of the podcasts are also uploaded to YouTube if you prefer to get your news that way. Check out the NTSP YouTube channel at <https://www.youtube.com/c/NationalTracheostomySafetyProject>. Please follow us and/or subscribe to keep up to date! [https://x.com/NTSP\\_UK](https://x.com/NTSP_UK)



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## NTSP Podcast series

### This month's top papers:

- Early Initiation and Structured Education Promote Long-Term Heat and Moisture Exchanger Use After Total Laryngectomy.
- Living with tracheostomy ventilation for motor neurone disease: a qualitative study of family member perspectives.
- Hospital Readmission and Mortality After Discharge With Pediatric Tracheostomy: A One-Year Population-Based Cohort Study in Taiwan.

### Early Initiation and Structured Education Promote Long-Term Heat and Moisture Exchanger Use After Total Laryngectomy.

#### Lay Summary

After a total laryngectomy, patients breathe through a permanent opening in the neck. This means air no longer passes through the nose, where it is normally warmed and humidified. As a result, patients are at higher risk of chest infections, coughing, and mucus problems.



This study looked at whether using a heat and moisture exchanger (HME), a small device worn over the stoma that warms and moistens the air, reduces these complications. Researchers reviewed 118 patients and found that those who used an HME long term had far fewer respiratory infections (9% vs 50%) and needed less medication for cough and mucus.

Importantly, patients were much more likely to keep using the device if it was started early-during their hospital stay-and if they received structured education and support on how to use and care for it. The study highlights that early introduction and good patient training can significantly improve long-term health outcomes after laryngectomy.

#### Summary for Healthcare Professionals

This retrospective two-centre study (n=118) evaluated the impact of heat and moisture exchanger (HME) use on respiratory morbidity following total laryngectomy and examined predictors of long-term adherence.



Among 96 patients who initiated HME use, 83.3% maintained long-term adherence. Continued users experienced significantly lower rates of respiratory infection (8.8% vs 50%,  $p<0.01$ ) and reduced prolonged expectorant/antitussive use (3.8% vs 18.4%,  $p=0.01$ ) compared with the non-use group.

Multivariate analysis identified early initiation ( $\leq 1$  month postoperatively during hospitalisation) and tracheoesophageal voice prosthesis (TEP) use as independent predictors of continued HME adherence ( $p=0.02$  for both). Although peristomal skin complications were more frequent in the discontinued group, targeted skin care strategies and individualised device selection supported continued use in many cases.

The findings support standardised inpatient protocols for early HME initiation combined with structured, multidisciplinary education to optimise long-term adherence and reduce respiratory morbidity after total laryngectomy.

### **Living with tracheostomy ventilation for motor neurone disease: a qualitative study of family member perspectives.**

#### **Lay Summary**

This UK study explores what life is like for family members caring for someone with motor neurone disease (MND) who requires ventilation via a tracheostomy to help them breathe. Although this treatment can extend life, it brings major changes for families.



Researchers interviewed 16 family members and found that decisions about tracheostomy were usually driven by the person with MND, often happening in emergencies that left families shocked and unprepared. Once in place, care needs intensified. Homes became medical spaces, with round-the-clock carers and equipment, reducing privacy and changing family life. Many relatives felt their own independence and identity gradually eroded, yet they struggled to voice concerns because the treatment kept their loved one alive.

Despite finding meaning in the extra time together, family members described emotional strain, isolation, guilt, and limited support. The study concludes that families need much better psychological, practical, and social support both during care and after bereavement of tracheostomy ventilated MND patients.

#### **Summary for Healthcare Professionals**

This qualitative study examined the experiences of 16 UK family members involved in caring for people with motor neurone disease (MND) using tracheostomy ventilation (TV).



Using a constructivist interpretivist approach and thematic analysis, four key themes were identified: (1) decision-making and implementation, often emergency-driven and centred on the patient's wishes; (2) impact on family members' quality of life, including erosion of autonomy and identity; (3) redefining family place and space, with medicalisation of the home and blurred caregiving boundaries; and (4) limited formal support for family members.

The findings highlight how family members' autonomy became subordinated to the needs of the person with MND, conceptualised as "inverse relational autonomy." While extended survival provided meaning, caregiving demands intensified, with persistent psychological strain, guilt, and social isolation. Emergency tracheostomy placement was frequently described as traumatic, particularly where prior decisions were not operationalised in acute settings.

The study underscores the urgent need for structured psychological, social, and practical support for families, realistic home assessments, and improved advanced care planning processes that meaningfully incorporate and support relatives' perspectives.

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### **Hospital Readmission and Mortality After Discharge With Pediatric Tracheostomy: A One-Year Population-Based Cohort Study in Taiwan.**

#### **Lay Summary**

This study looked at what happens to children in Taiwan during the year after they receive a tracheostomy, a surgical procedure that creates an opening in the neck to help with breathing. Using nationwide health data, researchers followed nearly 2,000 children. They found that hospital readmissions were very common - about 78% of children were readmitted within a year. Around 14% died during that time. The risk of both readmission and death was higher in younger children, especially infants and toddlers. These findings highlight how children with tracheostomies are at higher risk of readmission and how important close follow-up care and support for families can be after hospital discharge.

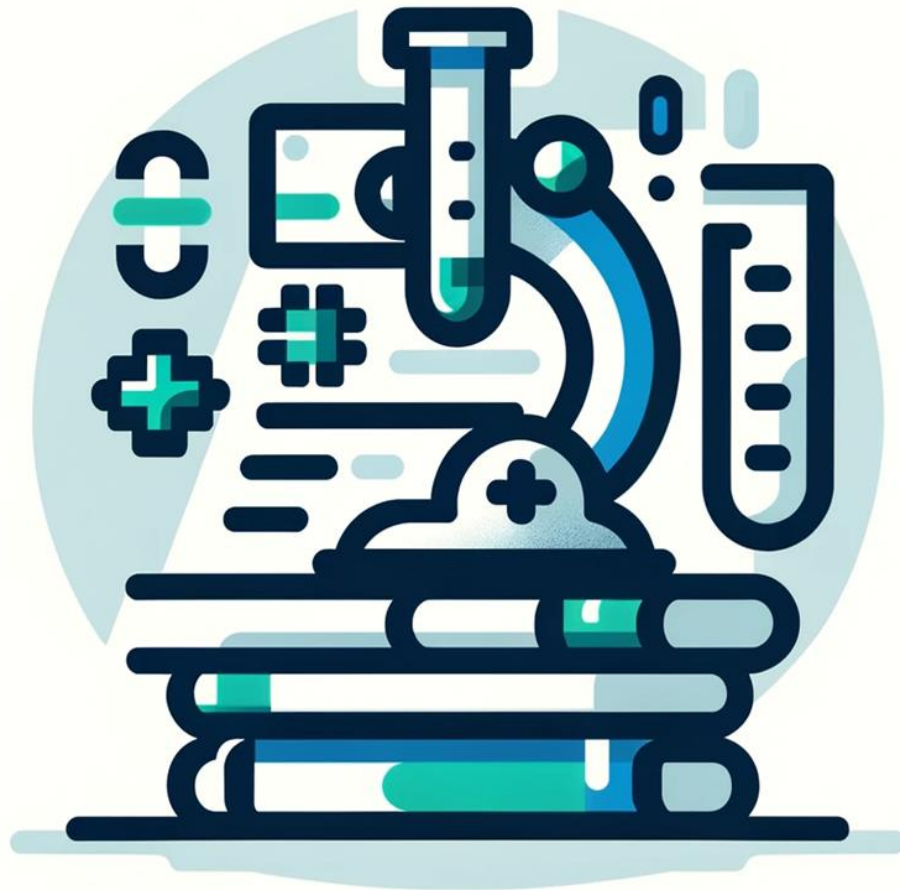


#### **Summary for Healthcare Professionals**

This population-based cohort study used Taiwan's National Health Insurance Research Database to examine 1-year readmission and mortality outcomes among 1,911 paediatric patients undergoing tracheostomy (2001–2019). Cumulative readmission rates reached 78% at 12 months, with 32% occurring within 30 days. One-year mortality was 14%, increasing progressively over time. Multivariable analysis demonstrated that younger age groups - particularly infants and toddlers - had significantly higher risks of both readmission and mortality compared with adolescents. These findings highlight the substantial post-discharge morbidity and mortality burden in paediatric tracheostomy patients and emphasize the need for age-targeted transitional care strategies and long-term follow-up planning.



**Scientific abstracts and references**



Laryngoscope. 2026 Mar;136(3):1403-1408. doi: 10.1002/lary.70191.Epub 2025 Oct 4.

**Early Initiation and Structured Education Promote Long-Term Heat and Moisture Exchanger Use After Total Laryngectomy**

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**Abstract**

**Objectives:** To evaluate the impact of heat and moisture exchanger (HME) use on respiratory complications after total laryngectomy (TL), and to identify factors associated with continued use, with a focus on initiation timing and inpatient education.

**Methods:** We retrospectively reviewed 118 patients who underwent TL between 2017 and 2024 at two tertiary centers. Patients were categorized by HME initiation (yes/no), timing (early  $\leq 1$  month postoperatively during hospitalization vs. late), and adherence (continued vs. discontinued). Respiratory infection and prolonged use of expectorants or antitussives were assessed as clinical outcomes. Logistic regression was performed to identify predictors of continued HME use.

**Results:** Among 96 patients who initiated HME, 80 (83.3%) maintained long-term use. Compared to the non-use group ( $n = 38$ ), continued users had significantly fewer respiratory infections (8.8% vs. 50%,  $p < 0.01$ ) and less prolonged use of expectorants or antitussives (3.8% vs. 18.4%,  $p = 0.01$ ). Early initiation and tracheoesophageal puncture use were both significantly associated with continued use ( $p = 0.02$  each). Although peristomal skin complications were more common in the discontinued group, targeted skin care and individualized device selection enabled many patients to continue.

**Conclusion:** Early and sustained HME use significantly reduced respiratory morbidity following TL. Initiation during hospitalization, along with structured education on device handling, skin care, and baseplate management, played a key role in supporting adherence. These findings support standardized inpatient protocols for HME introduction.

**Keywords:** adherence; heat and moisture exchanger; respiratory infection; total laryngectomy.

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**Living with tracheostomy ventilation for motor neurone disease: a qualitative study of family member perspectives**

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**Abstract**

**Purpose:** To examine the experiences of family members caring for people with motor neurone disease (MND) who use tracheostomy ventilation.

**Methods:** Drawing on a constructivist interpretivist approach, qualitative interviews with family members from England, Scotland, and Northern Ireland were conducted. Data were thematically analysed to interpret meaning and identify key themes.

**Results:** Sixteen family members took part. Four themes are presented: (1) Decision-making and implementation: The decision about undergoing tracheostomy was driven by the person with MND. Tracheostomy ventilation was often initiated in an emergency, leaving families unprepared and distressed. (2) Impact on quality of life for family members: Responsibilities intensified once tracheostomy ventilation was in place, leading to a gradual erosion of personal autonomy for family caregivers. (3) Redefining family place and space: The continuous presence of paid carers and the medicalisation of the home impacted family dynamics. (4) Support for family members: Family members took on many roles with little support yet found meaning in the extended life of the person with MND.

**Conclusion:** Enhanced psychological, social, and practical support is urgently needed for families caring for someone with tracheostomy ventilation for MND. Greater awareness of its long-term impact, realistic home assessments, and structured support networks are essential.

**Keywords:** Motor neurone disease; amyotrophic lateral sclerosis; caregiver experience; invasive ventilation; qualitative research; tracheostomy.

DOI: [10.1080/09638288.2025.2574536](https://doi.org/10.1080/09638288.2025.2574536) PMID: 41093908

**Hospital readmission and mortality after discharge with pediatric tracheostomy: A one-year population-based cohort study in Taiwan**

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**Abstract**

**Objective:** To analyze hospital readmission and mortality rates within 1 year after discharge with pediatric tracheostomy.

**Methods:** Data were obtained from Taiwan's National Health Insurance Research Database. All inpatients aged <18 years who underwent tracheostomy between 2001 and 2019 were identified using International Classification of Diseases codes. All-cause readmission and mortality rates at 30, 90, 180, 270, and 365 days after pediatric tracheostomy were calculated, and factors associated with readmission and mortality at 1 year after tracheostomy were analyzed.

**Results:** A total of 1911 children who underwent tracheostomy were included. At 1 year after tracheostomy, 1485 (78 %) children experienced hospital readmission, and 273 (14 %) died. The accumulated readmission rates at 30, 90, 180, 270, and 365 days were 32 %, 56 %, 69 %, 74 %, and 78 %, respectively. The accumulated mortality rates at 30, 90, 180, 270, and 365 days were 2 %, 6 %, 9 %, 12 %, and 14 %, respectively. Children who experienced readmission within the 1-year follow-up period were significantly younger (8.3 vs 9.9 years) and less indicated for trauma or head injury (33 % vs 39 %), and they had longer intensive care unit stays (38 days vs 30 days) and hospital stays (62 days vs 51 days) than had those without readmission. Multivariable analysis revealed that infants (HR = 1.20, 95 % CI: 1.01 to 1.44) and toddlers (HR = 1.24, 95 % CI: 1.04 to 1.48) were at significantly greater risk of readmission than were adolescents during the 1-year follow-up period. Mortality risk within this period was significantly higher among infants, toddlers, preschoolers, and school-aged children than among adolescents.

**Conclusion:** Children at young ages are at greater risk of readmission and mortality following tracheostomy.

**Keywords:** Age groups; Child; Mortality; Patient readmission; Tracheostomy.

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### **Conflict of interest statement**

Declaration of competing interest: The authors declare no conflicts of interest.