# Should we allow ventilated patients with a tracheostomy to eat and drink?

*Daniel Conway, Claire Parker*

Tracheostomy is often performed on intensive care unit (ICU) patients in order to facilitate weaning from mechanical ventilation. These patients are often fully conscious, absorbing enteral feed and keen to take oral food and drink. Specialists in intensive care and speech therapy have to weigh up the potential benefit of oral nutrition with the risks of aspiration. Furthermore, there is often disagreement between specialists as to whether the tracheostomy cuff should be inflated or deflated and how best to assess swallowing at the bedside.

## THE ARGUMENT AGAINST ORAL INTAKE

### Risk of aspiration

Most patients weaning from mechanical ventilation will be weak as a result of critical illness myopathy and neuropathy. This is likely to affect the muscles of the larynx and pharynx, and the complex physiology of swallowing may be impaired.

Elpern et al (1994) detected aspiration rates of 50% in long-term ventilated patients using videofluoroscopy. Leder (2002) used endoscopy to detect aspiration rates of 33% in ventilated patients. These studies were both conducted with the tracheostomy cuff inflated and aspiration was often silent. O'Neil-Pirozzi et al (2003) performed videofluoroscopy in patients with deflated cuffs and detected an aspiration rate of 42%.

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### Difficulty with bedside assessment of swallow

This can be performed by clinical observation, fibreoptic endoscopic evaluation or a modified blue dye test, but O'Neil-Pirozzi et al (2003) suggest that blue dye assessment of swallowing with an inflated cuff is less accurate in detecting trace aspiration.

### Effect of cuff deflation

To deflate the cuff during positive pressure ventilation with high flows may compromise ventilator function, as there may be a leak of gas into the mouth. Loss of positive end expiratory pressure may cause atelectasis.

## THE ARGUMENT FOR ORAL INTAKE

### Risk of aspiration

The risk of aspiration in these patients is high, even after their ICU stay. El Solh et al (2003) detected aspiration in 52% of elderly ICU patients 48 hours after extubation. The aspiration rate fell to 13% by day 14 post-extubation. Despite this, no patients developed signs of aspiration pneumonia.

### Bedside assessment of swallow

A blue dye test can be performed by a suitably trained multidisciplinary professional, and is therefore a useful screening tool for patients with swallowing problems. Early detection of such patients with the tracheostomy in situ may allow early intervention before critical care discharge.

### Effect of cuff deflation

Continuous positive pressure (CPAP) devices are sometimes used to bridge the gap between mechanical and unsupported ventilation. Conway and Mackie (2004) studied the effects of tracheostomy cuff deflation on ICU patients requiring CPAP. They reported small falls in intratracheal pressure with no apparent respiratory compromise during cuff deflation. They also found that patients regained their voice and sense of smell when the cuff was deflated.

## CONCLUSIONS

The decision to allow patients ventilated via tracheostomy to eat and drink is complex. Aspiration of oral intake can occur with the cuff inflated or deflated. Bedside assessment of swallow can be unreliable in detecting aspiration, but early detection may facilitate early intervention. Encouraging oral intake often improves quality of life in patients who require long-term ventilatory support and we believe that a multidisciplinary approach to managing oral intake should be available to individual patients. HM

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