



# Turning Tube Feeding Off While Repositioning Patients in Bed

**Q** I question the practice of turning tube feeding off while repositioning patients in bed. I understand that the purpose of this practice is to prevent aspiration. It seems to me that if the patient is going to aspirate gastric contents, it would be from what is already in their stomach, not from the small amount they would receive while being repositioned. I am also concerned about the decrease in nutritional support if the tube feeding is repeatedly turned off. Does any research support this practice?

**A** Norma Metheny, RN, PhD, replies:

Although researchers have not directly addressed this topic, several studies provide relevant information that can be used to determine

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“best practice.” These studies, as well as risks and benefits of interrupted feedings, are discussed here.

### Risk Versus Benefit of Interrupted Feedings

As pointed out by the reader, the risk of interrupted feedings is inadequate delivery of calories (a serious problem because a poorly nourished patient is predisposed to poor outcomes). In the absence of definitive guidelines, nurses often choose to

turn feedings off when the head of the patient’s bed is lowered. For example, in a study of 44 critically ill patients, McClave et al<sup>1</sup> reported feeding interruptions of up to 1 hour for the performance of routine nursing procedures, presumably because nurses forgot to restart the feedings when the procedure was completed. If the flow of formula is interrupted frequently throughout the day to reposition patients, caloric intake could be seriously compromised. For example, stopping feedings 12 times a day for 5 to 10 minutes would result in 1 to 2 hours of missed feedings. This situation is a distinct possibility

because standard care mandates frequent position changes to prevent pressure ulcers as well as pooling of respiratory secretions. When missed calories due to position changes are added to those associated with feeding interruptions for other reasons (eg, preparation for surgery or diagnostic procedures), it is clear that a critically ill patient’s nutrient intake may be significantly decreased. For example, in a study of 39 critically ill patients followed for 276 tube feeding days, Elpern et al<sup>2</sup> reported that patients received a mean of 64% of the goal energy intake (largely because of feeding interruptions). The mean length of feeding interruptions in the study was 5.23 hours per patient per day; 15% of the interruptions were associated with changes in the patient’s body position.

To evaluate the potential benefit of reduced gastric volume after a brief feeding interruption, it is necessary to consider the rate at which the stomach empties. In a study<sup>3</sup> of 10 healthy males, a mean of 89.5 minutes was required for 50% of a specially marked 200-mL liquid meal to empty from the subjects’ stomachs when they were sitting up. Gastric emptying is even slower in many critically ill patients.<sup>4</sup> For example, another group of investigators found that the mean gastric half-emptying time was 155 minutes

in a group of critically ill patients (as opposed to 133 minutes in a group of healthy volunteers,  $P=.008$ ).<sup>5</sup> Findings from these studies strongly suggest that stopping feedings for a few minutes is unlikely to significantly reduce gastric volume.

## Relationship Between Aspiration and Body Position

To understand the relationship between aspiration and body position, it is helpful to review findings from a widely cited study<sup>6</sup> on this topic. In a randomized, 2-period crossover trial that included 19 intubated patients receiving mechanical ventilation, Torres et al<sup>6</sup> compared the incidence of aspiration on 2 separate days when the patients were positioned supine versus in the semirecumbent position (45° head-of-bed elevation). To measure aspiration, the investigators instilled Tc-99m sulphur colloid into the patients' nasogastric tubes and subsequently measured the radioactivity of bronchial secretions collected at 0, 30, 60, 120, 180, 240, and 300 minutes. Radioactivity was recorded in counts per minute (cpm). As expected, radioactivity of the bronchial secretions was significantly higher when the patients were supine than when they were semirecumbent. Additional findings demonstrated that aspiration increased over time when the patients were supine, as manifested by much higher radioactivity levels of bronchial secretions at 300 minutes than at 30 minutes (2592

versus 298 cpm, respectively,  $P=.01$ ). In summary, findings from this study demonstrate that a supine position increases risk for aspiration, and the longer a patient is supine, the greater is the risk for aspiration. Because of a variety of treatment needs, most patients cannot remain in a bed with the head elevated to a 30° to 45° angle every minute of the day. Clearly, the goal is to minimize the amount of time a patient is positioned flat in bed.

## Conclusion

Based on the preceding discussion, the logical conclusion is that it is unnecessary (and even counterproductive) to turn feedings off during the brief period of time the bed is lowered to reposition a patient. This conclusion is supported by recent practice recommendations for enteral nutrition published by the American Society for Parenteral and Enteral Nutrition.<sup>7</sup> After the patient is repositioned, it is imperative to quickly elevate the bed to the desired angle (usually at least 30° and preferably 45°, unless contraindicated). Doing so requires a conscious effort because it is not uncommon for caregivers to become distracted and forget to return the bed to an elevated position.<sup>8</sup> One final consideration: In situations where the head of a patient's bed should not be lowered even for a brief period, it may be possible to reposition the patient while the bed is in reverse Trendelenburg position (while feedings are continued). **CCN**

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**Financial Disclosures**  
None reported.

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