

# Does Tube Feeding Prevent Pneumonia?

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The use of artificial nutrition and hydration in elderly patients with severe dementia is common under hospice care. This topic will become increasingly important as the prevalence of dementia rises and population ages.

Interrupting the cycle of feeding, aspiration and subsequent pneumonia is one of the most commonly cited reasons for using the feeding tube. Use of feeding tubes to prevent aspiration pneumonia in hospitalized population of frail elderly individuals or patients with severe Alzheimer's dementia needs evaluation.

Aspiration is defined as the inhalation of oropharyngeal or gastric contents into the larynx and lower respiratory tract.<sup>1,2</sup> Several pulmonary syndromes may occur after aspiration, depending on the amount and nature of the aspirated material, the frequency of aspiration and the host response to the aspirated material.<sup>2</sup> Aspiration pneumonitis (Mendelson's syndrome) is a chemical injury caused by the inhalation of sterile gastric contents, whereas aspiration pneumonia is an infectious process caused by the inhalation of oropharyngeal secretions that are colonized by pathogenic bacteria.

The reflex by families and doctors to provide nutrition for the patient who cannot swallow is overwhelming. It is now common practice for such patients to undergo a swallowing evaluation and if the patient fails, to move forward with feeding tube placement (Nasogastric, Gastrojejunostomy tubes). Data suggests that placement of feeding tubes has an in hospital mortality of 15-25%, and one year mortality of 60%. Not surprisingly, predictors of early mortality include: high age, CNS pathology (CVA, dementia), cancer-

except early stage head/neck cancer, disorientation, and low albumin.

We had tried to evaluate whether feeding tube such as percutaneous endoscopic gastrostomy(PEG) or Gastrostomy tube (G-tube) feeding prevents aspiration pneumonia in this population taking into consideration barriers with health care providers and family members about benefits and burden of continued tube feedings.

Treating Physicians or caregivers may not be proactive in discussing artificial tube feeding issue in advance in patients with mild dementia, multiple medical problems and at high risk for cerebrovascular accidents.

Patients and surrogate decision makers often feel overwhelmed at making the decision in the settings of acute and debilitating illness.

Health care providers and family members may not know about the alternatives of tube feeding. These could be giving patients small amounts of food or using mouth swabs, sips of water, ice chips and lubrication of the lips. These may be sufficient to alleviate hunger and thirst. There are studies which suggest patients with terminal illness can experience comfort despite minimal intake of food and fluids.

There is a common feeling amongst personnel involved in hospice care and care givers that

- a) the quality of life is better once patient is on feeding tube;
- b) the patient will be at increase risk for pneumonia and may die sooner if not fed through feeding tube and
- c) tube feeding decreases the risk for aspiration pneumonia

A study was conducted at Fontana Medical centre, Kaiser Permanente, California to evaluate whether permanent tube feeding will decrease incidence of pneumonia especially aspiration pneumonia in frail and demented susceptible elderly individuals.

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**Table 1.** Prevalence of pneumonia and it's relation with feeding tube.

	Pneumonia readmissions 2003 (n=111)	Pneumonia readmissions 2004 (n=69)	Pneumonia readmissions 2005 (n=101)
Pneumonia with NGT/PEG	46	24	38
Aspiration pneumonia with NGT/PEG	8	16	17
Aspiration pneumonia w/o NGT/ PEG	7	0	4
% of pneumonia readmissions had NGT/PEG	54 (48%)	40 (57%)	55 (54%)

As a long term care department we care for geriatric patients in a skilled, long term custodial care or in assisted living setting. Here hospital medical group geriatricians, continuing care physicians and registered nurse practitioner follow these patients routinely.

We looked into the retrospective data of the patients who were transferred to the Kaiser Fontana medical center emergency room with the possible diagnosis of pneumonia.

This was retrospective chart review as a part of quality indicator review.

We reviewed 281 patients from 2003 to 2005 and the objective was to follow the elderly patients who were transferred to the emergency room. We reviewed how many patients were diagnosed of aspiration pneumonia v/s community acquired pneumonia. Also, among the patients who were admitted with diagnosis of pneumonia, how many were on feeding tube.

On the retrospective chart review it was found that more than 50% of the patients on nasogastric tube had pneumonia. In the number of patients studied, the incidence of aspiration pneumonia was higher in patients who were tube fed versus not on any tube.

Our retrospective analysis reconfirms that tube feeding does not help in preventing pneumonia especially aspiration pneumonia. The data could be extrapolated to show that patients who are on tube feed will end up more in hospital / emergency room, thus affecting their quality of life.

The risk and burden of tube feeding in elderly frail/demented population should be discussed earlier on. Every effort should be made to educate caretakers and nursing staff about benefits and risks concerning tube feeding of severely demented patients. Caregivers need to be reminded that advanced dementia is a terminal illness and that patients with severe dementia can be comfortable without feeding tube in place if not better.

Caretakers should be encouraged to hand feed patients instead of placing feeding tubes. Speech pathologist can be used to help in determining the right consistency and texture of food, proper positioning and feeding technique.

Decisions regarding feeding management should not be made solely upon the speech pathologist's assessment of swallowing dysfunction, which may be a sign of the final stage of life in many terminal conditions. Feeding tube placement decisions in this population should not be based on the likelihood of aspiration. In patients with advanced dementia and other terminal conditions, feeding tubes have not been found to reduce the incidence of aspiration and can significantly impair the dying patient's quality of life. We suggest that we should:

1. recognize that the inability to maintain nutrition through the oral route, in the setting of a chronic life limiting illness and declining function, is usually a marker of the dying process. Discuss this with families as a means to a larger discussion of overall end of life goals.
2. ensure there is true informed consent prior to

feeding tube insertion. Families must be given alternatives (e.g. hand feeding, comfort measures) along with discussion of goals and prognosis.

3. assist families by providing information and a clear recommendation for or against the use of a feeding tube. Families who decide against feeding tube placement can be expected to second guess their decision and will need continued team support.
4. if a feeding tube is placed establish clear goals (e.g. improved function) and establish a timeline for re-evaluation to determine if goals are being met (typically 2-4 weeks).

## References

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3. Lazarus BA, Murphy JB, Culpepper L. Aspiration associated with long term gastric versus jejunal feeding: a critical analysis of the literature. *Arch Phys Med Rehabil* 1990; 71: 46-53.
4. Valles J, Artigas A, Rello J, et al. Continuous aspiration of subglottic secretions in preventing ventilator-associated pneumonia. *Ann Intern Med* 1995; 122: 179-186.
5. Ina Li. Feeding tubes in patients with dementia. *Am Fam Physician* 2002; 65: 1605-1610.

## International Conference Calendar

### August 15-20, 2006

Centro de Convenciones, Madrid, Spain  
The Alzheimer's Association presents the 10th International Conference on Alzheimer's Disease and Related Disorders. Contact: (312) 335-5790 or [icad@alz.org](mailto:icad@alz.org) or visit [www.alz.org/icad](http://www.alz.org/icad).

### August 10-13, 2006

Balai Sidang Jakarta Convention Center, Jakarta, Indonesia  
Collegium Internationale Geronto Pharmacologicum Congress 2006. Contact: +62-21-55960180 Fax: +62-21-55960179 or <mailto:cigp@cigp.org> or <mailto:pharmapro@cbn.net.id> or visit <http://www.cigp.org>.

### September 4-5, 2006

Paris, France  
The Institute for Biomedical Aging Research in Innsbruck, Austria, is co-organizing an EU sponsored meeting titled "Aging Research in Immunology: the Impact of Genomics." Contact: [www.arig.ac.at](http://www.arig.ac.at) or [arig@oeaw.ac.at](mailto:arig@oeaw.ac.at)

### September 4-6, 2006

Christchurch, New Zealand  
Australian Society for Geriatric Medicine 2006 Annual Scientific Meeting  
Contact – Emma Waygood on ph. +61 2 9437 9333 or e-mail [emma@conferenceaction.com.au](mailto:emma@conferenceaction.com.au) or visit <http://www.asgm.org.au>

### September 7-9, 2006

"The Ageing Jigsaw: Interdisciplinary Approaches to Understanding Old Age", 35th Annual Scientific Meeting of British Society of Gerontology. Contact: +44 (0) 1248 382225 Fax: +44 (0) 1248 382229 or <mailto:csprd@bangor.ac.uk> or visit <http://www.bangor.ac.uk/csprd/bsg2006.htm>.

### September 14-16, 2006

Cologne, Germany  
EGREPA Xth International Conference "Physical Activity and Successful Aging. Contact: <http://www.egrepa.org> or [conference2006@egrepa.org](mailto:conference2006@egrepa.org)

### September 16-20, 2006

Istanbul, Turkey  
5th European Congress of Biogerontology. Contact: [www.biogerontology2006.org](http://www.biogerontology2006.org)

### October 13-15, 2006

Melbourne, Australia  
3rd International Conference on Healthy Ageing and Longevity. 3rd Annual Scientific Meeting of the International Research Centre for Healthy Ageing and Longevity (IRCHAL). Co-sponsored by the World Health Organization. Contact: +61 3 9587 9190 Fax: +61 2 66 80 9643 or <mailto:info@longevity-international.com> or visit <http://www.longevity-international.com>.