

Tube Feeding in Infancy: Implications for the Development of Normal Eating and Drinking Skills

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Abstract. Tube feeding is commonly used as a method of giving children nutrition while they are being treated for disease. While this is an effective way of ensuring a child thrives and grows, research studies and clinical experience have shown that long-term oral feeding difficulties often arise when the child no longer requires tube feeding. This article gives a critical review of the literature on tube feeding and its effect on normal eating and drinking skills. While few studies have followed a rigorous research design, there is enough literature to identify a number of factors which may be implicated in later feeding difficulties and which therefore need further exploration in research studies. These factors include age at which oral feeding commences, medical complications, exposure to taste and textures during sensitive periods, aversive experiences, and different methods of delivering tube feeds.

Key words: Tube feeding — Oral feeding — Sensitive periods — Oral-motor skills — Aversion — Deglutition — Deglutition disorders.

In children's hospitals it is not unusual to see sick babies and young children being fed artificially, by nasogastric tube or gastrostomy. Studies have shown that tube feeding can be beneficial to children with a variety of conditions such as chronic renal failure, liver disease, or heart disease, where calorie intake might otherwise be inadequate and lead to malnutrition [1–3]. Other children may have structural

abnormalities of the digestive tract or absorption problems, which require tube feeding and/or total parenteral nutrition. While tube feeding is essential to ensure that these children grow and thrive while their disease is active, it is usually anticipated that they will feed normally in the long term, unless the tube is placed because of long-term swallowing difficulties. However, these children often present with feeding difficulties when the time comes for them to eat by the normal oral route. Resistance to weaning onto oral feeding has been described in a number of studies [4,5]. Dello Strologo et al. [6] reported difficulties in chewing and swallowing that persisted even after children with chronic renal failure were established on oral feeds. In our clinical experience, tube feeding can lead to feeding difficulties lasting months and sometimes years, with some children refusing to allow food into their mouths at all, while others may accept only a very small range of tastes and textures. Trying to wean a child off the tube may be a traumatic or prolonged process causing considerable stress and anxiety for families [4].

While many studies have investigated the medical and nutritional benefits and complications of tube feeding, there is relatively little literature about the effects of tube feeding on later oral feeding. However, it is important to understand when and how tube feeding impacts on normal eating and drinking. This can then be taken into account in the child's care at the time of tube feeding. The topic is difficult to investigate because of the number of variables that could have an effect on outcome, for example, duration of tube feeding, the age of the child when tube feeding commences, the method and schedule of delivery of tube feeding, and the child's medical condition and treatments.