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## FAST FACTS AND CONCEPTS #134

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**Background** The decision to use or withhold non-oral hydration near the end-of-life is complex (see Fast Fact #133). This Fast Fact reviews the technical aspects of providing non-oral hydration. Fast Fact #190 discusses the related issue of parenteral nutrition in advanced cancer patients.

**Nasogastric and Gastrostomy Tubes** The use of enteral feeding tubes to provide nutrition is beyond the scope of this Fast Fact (see Fast Facts #10, 84). If already in place, enteral feeding tubes provide easy access for supplemental hydration. Placement of enteral tubes solely for hydration management in the last few weeks of life is generally not indicated, as other methods of hydration can be provided (see below).

**Intravenous Hydration** This method includes hydration via peripheral or central catheters. For short-term use, especially as a time-limited trial, intravenous hydration is a reasonable step. However, both peripheral and central catheters are plagued with problems of site selection, placement, and maintenance; clot formation; local skin irritation; and local or systemic bacterial infections.

**Hypodermoclysis (subcutaneous infusions)** Hypodermoclysis offers a number of advantages compared to the intravenous route due to greater ease of site access, the possibility of temporary disconnection to facilitate patient mobility, and ease and suitability for home administration. Thrombocytopenia may be a relative contraindication. Solutions with electrolytes should be used (e.g. 0.9% sodium chloride), as non-electrolyte solutions (e.g. 5% dextrose) can draw fluid into the interstitial space. Continuous infusion rates up to 120 ml/hr have been reported; patients can tolerate boluses of up to 500 ml/hr two to three times per day. Traditionally the use of hyaluronidase to promote absorption was recommended. More recent experience has demonstrated that most patients will achieve good absorption of subcutaneous fluids without hyaluronidase. Winged infusion sets with 25 – 27 gauge needles are recommended. Check the site frequently for redness, irritation, excessive edema, or a dislodged needle. If there is a problem with absorption it is recommended to a) slow the infusion rate and consider using an infusion pump, or b) consider dividing the total volume into two separate subcutaneous sites.

**Rectal Hydration (proctoclysis)** Rectal hydration is an alternative only when other resources are not available. A 22 French nasogastric catheter can be inserted approximately 40 cm into the rectum. The patient can be positioned as for any rectal procedure. Tap water can be used, and the rectal infusion increased from 100 ml to a maximum of 400 ml per hour, unless fluid leakage occurs before the maximum volume is achieved. The majority of patients can successfully tolerate this approach at a volume of 100 to 200 ml per hour.

**Fluid Volumes** For all routes, a reasonable goal is 1-1.5 L/day in fluid volume.

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**ACGME Competencies:** Medical Knowledge, Patient Care, Systems Based Practice

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