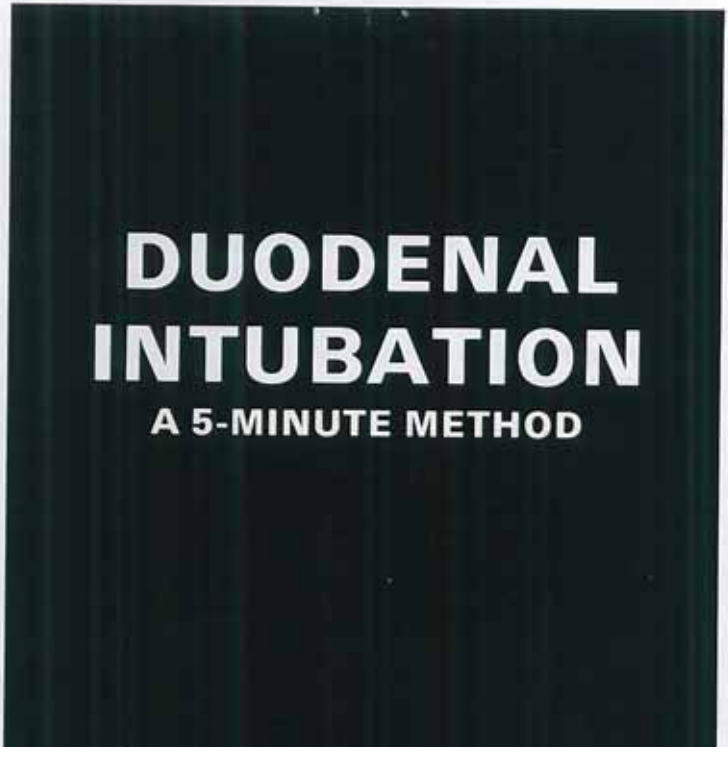


COOK®

T_DI_REV.0

DUODENAL INTUBATION

A 5-MINUTE METHOD

The route from nose to duodenum is a complex series of bends commonly negotiated either blindly or under single-plane control, using a tube too limp to push or direct. Fortunately, peristalsis will pass most tubes (if one can wait long enough). Current diagnostic and therapeutic procedures make controlled duodenal intubation desirable; new equipment makes it possible.

PRINCIPLES OF INTUBATION ARE SIMPLE

KNOW THE ROUTE. In the upper GI tract there are four major bends to negotiate:

1. Nasopharynx—straight back, then down
2. Cardia—a sharp left
3. Mid-stomach—swings right and forward over the spine
4. Cap—up, back and down

WATCH WHAT YOU'RE DOING. (Use fluoroscopy) From the nose on, if necessary, use barium, air and multiple viewpoints.

REDUCE FRICTION. Bends in the route increase friction and reduce control over the tube.

1. Do a "lube job" using viscous lidocaine in nose and silicone spray (or mineral oil) on the tube and torque cable.
2. Straighten out the bends (see below).

CONTROL THE TUBE. How to pass a tube depends on what tube: "You can't push a chain," as the old man said, "but you sure can pull it..."

by gravity (mercury) *Miller-Abbott*
by peristalsis (balloon) *Miller-Abbott*
by telepathy (?) *Levin*

As the tip points, so goes the tube...

Flexible guide for stiffening and torque control *Gianturco**
Curved tip for directional control *Bilbao-Dotter**

FIVE-MINUTE INTUBATION
One Method Described in Detail

1. Thoroughly lubricate (dripping wet) tube and torque cable with silicone spray.
2. With your patient supine, inject viscous lidocaine 2% into his nostril and have him "snuff" until his nasopharynx fills up.
3. While he sips a little water (to distract him and to keep the tube out of the mouth or larynx) pass a soft plastic duodenal tube* to the cardia.
4. Now turn him steeply onto his right side (almost into prone oblique), inject a little barium to show anatomy, and insert a flexible torque cable* to stiffen and control the tube. With the aid of fluoroscopy, pass the tube and torque cable from cardia to pylorus.
5. Turn him to the left supine oblique. Gradually withdraw the torque cable while advancing the flexible tube down and around to the transverse duodenum.

AVERAGE TIME after a little practice—five minutes or less.

THEORETICAL HAZARDS—cardiac arrhythmias, rupture of bleeding varices, perforation have not occurred.

FAILURE RATE—virtually nil.

DIFFICULTIES nearly always relate to:

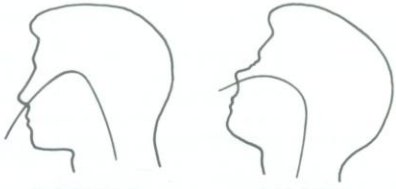
- **a.** Inadequate visualization of anatomy, i.e., not knowing what's going on.
- **b.** Illogical positioning of patient.
- **c.** Damaged equipment or unlubricated tube and torque cable, etc.

*Equipment available through Cook Incorporated, P.O. Box 489, Bloomington, IN 47402

SHAPE THE ANATOMY TO FIT THE TUBE. Do this by means of manual (or other) pressure, and ESPECIALLY BY MEANS OF GRAVITY...Roll the patient so as to swing the stomach from its anchors, aiming to straighten the bends and also to bend the end of the tube appropriately.

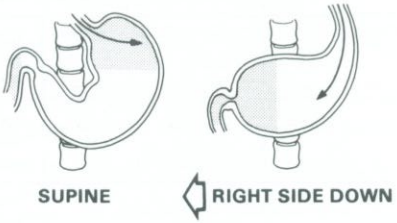
NASOPHARYNX

Gently push the nose up, push the tube down and back along the floor of the nasal fossa, not up into the turbinates.



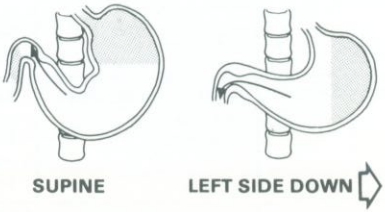
CARDIA

The bend is to the left and the tube tends to go that way. To direct it down and to the right, put the patient in right lateral position.



APEX OF CAP

(A hairpin bend) Hang it by the stomach (put patient in left lateral position) to straighten it.



TROUBLE-SHOOTING CHART

	Hang-up	Cure
Nasopharynx	sore nose, tube sticks	Probably deviated septum or swollen mucosa. Decongest (¼% neosynephrine nasal spray), lubricate, anesthetize (2% viscous lidocaine).
	can't turn corner from nasal cavity to nasopharynx	Extend the head. Turn the head to lateral view and use fluoroscope. Push down, not up!
Oropharynx	patient gags	Viscous lidocaine or cetacaine spray in back of throat.
	tube pops out of mouth or goes into trachea	Turn head to side. Use the torque cable, fluoroscopy and rapid water drinking.
Cardia	tube coils in fundus	(Esophagus enters obliquely directing tube to left.) Turn patient to right lateral, right prone oblique, or upright, leaning forward. Put a bend in the tip of the torque cable. Empty the stomach.
Pylorus	tube won't go through	Turn patient to left supine oblique or right lateral. Visualize anatomy with barium. Line up tube and pylorus using gravity, breathing & manual palpation. Push tube. Use the torque cable.
Apex of Bulb	sticks in bulb, won't go down the duodenum	Turn patient to left lateral, which straightens the flexure. Visualize the anatomy, push the tube. Back out the torque cable, change its tip curve to suit.
Ligament of Treitz	tube won't pass the duodenal jejunal flexure	Try same maneuvers as for bulb.

REFERENCES

M. K. Bilbao, L. H. Frische, C. T. Dotter, J. Rosch: "Hypotonic Duodenography," *Radiology*, 89 (1967), 438.

C. Gianturco: "Rapid Fluoroscopic Duodenal Intubation," *Radiology*, 88 (1967), 1165.

M. K. Bilbao: "Interventional Radiology of the GI Tract," pages 2283-2299, in A.R. Margulis, H. J. Burhenne: *Alimentary Tract Radiology*, The C. V. Mosby Company, 1983.

COOK INCORPORATED
A COOK GROUP COMPANY
P.O. Box 489
Bloomington, IN 47402 U.S.A.
Phone: 812 339-2235
Toll Free: 800 457-4500

COOK (CANADA) INC.
A COOK GROUP COMPANY
151 Esna Park Drive Unit 16
Markham, Ontario L3R 3B1 CANADA
Phone: 416 475-1793
Toll Free: 800 268-3449

WILLIAM A. COOK AUSTRALIA PTY. LTD.
A COOK GROUP COMPANY
P.O. Box 133 Surrey Hills
Melbourne, Victoria 3127 AUSTRALIA
Phone: 830-1200

 November 2005