One object of science is to examine generally held beliefs in a purposeful manner using the scientific method. In the multicenter prospective clinical trial reported in this issue by Lassen et al, the commonly held belief that patients should not receive oral intake immediately after major upper abdominal gastrointestinal operations is examined. The use of nasogastric tube decompression during the early postoperative period is highly variable, usually based on physician bias. It is known, however, that recovery of normal gastrointestinal peristalsis after major abdominal surgery is immediate in the small intestine and returns next in the stomach and the large intestine. Thus, the teaching of decades was that when patients pass flatus, they are ready for oral intake. In fact, standard practice 30 years ago was to wait for that event even to remove the nasogastric tube. This approach to perioperative care was taken as a means to avoid aspiration, gastric and intestinal distension and increased anastomotic and abdominal wall incision stresses.

A number of clinical trials have questioned this traditional teaching. The introduction of abdominal laparoscopy supported the recognition that the extent of gastrointestinal manipulation was a substantial factor leading to abnormal gastrointestinal function after a major operation. Others have taken an approach using methods of multimodal rehabilitation to hasten return of bowel function and decrease the duration of hospitalization. For example, Khoo et al randomized 70 patients who underwent elective colorectal resection to multimodal therapy with intravenous fluid restriction, unrestricted oral intake with prokinetic agents, early ambulation, and fixed regimen epidural analgesia, or to more standard care. Median stay was significantly reduced in the multimodal group compared with controls. Wolff et al reviewed 4 clinical trials evaluating alvimopan (12 mg twice daily) versus placebo administered perioperatively. Postoperative ileus-related morbidity was less in the treated patients compared with results in placebo-treated controls. Herroeder et al administered systemic lidocaine perioperatively, noting a shortened time to return of bowel function and decreased length of hospital stay in treated patients. Thus, aggressive approaches have led to protocol-driven methods to reduce postoperative intestinal ileus-related morbidity and length of hospital stay.

In addition, numerous studies have shown that enteral nutrition via nasoenteral or jejunostomy tubes could be given immediately after an operation without increased anastomotic complications due to feeding. For example, Kaur et al randomized 100 patients with perforation peritonitis to early nasoenteral feeding or to delayed oral intake, noting that return of bowel function was earlier and the rate of complications was less in the nasoenterally fed group compared with the controls. However, others have noted higher rates of complications in enterally fed patients and, thus, prospective studies have not been uniform in demonstrating beneficial clinical outcomes of immediate postoperative jejunostomy feeding in surgical patients.

In 2005 Lassen, et al reviewed the standards of perioperative care for patients undergoing upper gastrointestinal operations in major surgical centers located in 5 northern European countries. They noted marked heterogeneity in clinical practices related to the use and duration of nasogastric decompression and the timing of initiation of oral intake after surgery.
These results led to the current study by Lassen et al of patients undergoing upper gastrointestinal operations, in which a routine of allowing normal food at will immediately after surgery was compared with patients who were not allowed oral intake but were given enteral tube feeding for 5 days. Both groups were able to discontinue nasogastric tubes and thoracic epidural analgesia early, to avoid parenteral opioids, and mobilize early. The 447 patients analyzed by intent-to-treat were stratified by institution and high- versus medium-risk operations (an excellent study design). Most patients underwent gastric, hepatic or pancreatic operations; only 1.8% underwent esophageal resections. Thus, results of this study are not truly applicable to patients undergoing esophageal surgery. Patients in the enteral tube feeding (ETF) group had a greater total number of complications (165) than the group allowed normal food (100), but the rate of complications was not significantly different between the groups. Return of bowel function occurred approximately 9.6 hours earlier in the group allowed normal food versus the ETF group. Although statistically significant, there does not appear to be clear clinical benefit to this result. In addition, there were no significant differences in the average time to first bowel movement between groups. The rate of major complications was not different between groups. Unfortunately, the authors did not actually measure food intake in patients in either group to determine if allowing food actually resulted in patients taking in food during the first 5 postoperative days. There were significantly more wound infections in the ETF group (17/211) compared with the group allowed normal food postoperatively (5/209). It is interesting to speculate as to the potential associations or causes of this result such as site placement of the tube jejunostomy in proximity to the incision, potentially higher blood glucose levels in the ETF group compared with the ad lib food group, etc. In addition, 3 of 224 patients in the ETF group required reoperation due to catheter complications.

As pointed out by the authors, allowing normal food by mouth has become more the standard of care in those undergoing major gynecologic and colorectal operations. In 2007, Charoenkwan, et al reviewed randomized controlled trials comparing early oral intake versus delayed (after resolution of ileus) oral intake in women undergoing major abdominal gynecologic operations. They concluded that early feeding was safe and was associated with reduced length of hospital stay but an increased risk of nausea. In 2004 Feo et al reported a randomized study in which patients who underwent colorectal resection were allowed immediate oral intake versus a control group that continued nasogastric decompression until passage of flatus. Only 20% of the patients in the oral intake group required tube reinsertion; few other outcome differences were noted between groups. In 2006 Zhou et al reported a randomized trial of 316 patients who underwent surgery for colorectal cancer allowing immediate oral feeding after nasogastric tube removal at 12 to 24 hours postoperatively in one group compared with a second group that continued nasogastric tube drainage until passage of flatus. Average time to passage of flatus, passage of stool, and discharge from the hospital was shorter in the group allowed food compared with results in controls. In addition, the incidence of fever and pulmonary infection were also less in the fed group compared with those with continued nasogastric tube drainage. Thus, results of these randomized trials lend strong credence to the decision to remove nasogastric tubes early in the postoperative course of those undergoing gastrointestinal operations, following an aggressive multimodal program to minimize intestinal ileus and allow food intake under medical guidance. As the current study by Lassen et al points out it is only by challenging clinical dogma with rigorous prospective trials that we can advance our continuum of care.

REFERENCES