

# The Beneficial Effect of ST-36 (Zusanli) Acupressure on Postoperative Gastrointestinal Function in Patients With Colorectal Cancer

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**A** loss of bowel peristalsis is common after abdominal surgery and can lead to abdominal distention, pain, reduced bowel sounds, emesis, or other discomforts. If patients do not have bowel sounds or bowel movement by the fourth day postsurgery, they are considered to be at risk for postoperative ileus (POI). POI is a significant clinical consequence and can prolong hospitalization, which is a financial burden on patients and the healthcare system (Behm & Stollman, 2003; Chen et al., 2003; Delaney, Senagore, et al., 2006; Meng et al., 2010).

After surgical stress, which is the hormonal and metabolic changes following an injury or operation, large amounts of catecholamines release because of overactive sympathetic tone and result in suppressed bowel function (Behm & Stollman, 2003). Inflammatory response following abdominal surgery also can stimulate the release of prostaglandins and cytokines, which inhibit bowel activity (Delaney, Kehlet, et al., 2006). The intestine is more sensitive to anesthetic drugs because of a lack of gaps between neuronal cells in the bowel. Anesthetics such as atropine, enflurane, and halothane can inhibit gastrointestinal (GI) function (Baig & Wexner, 2004). Analgesics, particularly opioids such as morphine, also can inhibit bowel sound (Baig & Wexner, 2004). Nasogastric intubation is a supportive therapy to prevent abdominal distension, vomiting, and POI, which may complicate the postoperative course after abdominal surgery; however, studies have shown that the use of nasogastric intubation does not shorten the bowel function recovery time. Instead, intubation further slows the passage of flatus and can interfere with food intake (Lee, Hyung, & Noh, 2002; Vermeulen, Storm-Versloot, Busch, & Ubbink, 2006).

Voluntary flatus passage is an important indicator of postoperative bowel function recovery. According to the literature, the recovery of small intestine motility is

**Purpose/Objectives:** To evaluate the effectiveness of ST-36 (Zusanli) acupressure on recovery of postoperative gastrointestinal function in patients with colorectal cancer.

**Design:** A longitudinal, randomized, controlled trial design.

**Setting:** An urban medical center in Taiwan.

**Sample:** 60 patients with colorectal cancer who had undergone abdominal surgery.

**Methods:** Patients were randomly assigned to two groups, the ST-36 acupressure group (n = 30) and a sham acupressure group (n = 30). Patients in the ST-36 group received an acupressure procedure in a three-minute cycle performed three times per day during the five days after surgery. Patients in the control group received routine postoperative care and sham acupressure. Generalized estimating equations (GEEs) were used to gauge longitudinal effects of the two groups of patients.

**Main Research Variables:** Frequency of bowel sounds, the time to first flatus passage, first liquid intake, solid intake, and defecation.

**Findings:** Patients who received acupressure had significantly earlier flatus passage and time to liquid intake as compared to patients in the control group. Other main variables, including the first time to solid intake and defecation, did not show significant difference between the two groups. The GEE method revealed that all patients had increasing bowel sounds over time, and the experimental group had greater improvement of bowel motility than the control group within the period of 2–3 days postoperatively.

**Conclusions:** ST-36 acupressure was able to shorten the time to first flatus passage, oral liquid intake, and improve gastrointestinal function in patients after abdominal surgery.

**Implications for Nursing:** ST-36 acupressure can be integrated into postoperative adjunct nursing care to assist patients' postoperative gastrointestinal function.

**Knowledge Translation:** Few studies have explored the effectiveness of acupressure techniques on promoting bowel sounds. Evidence from this study suggests stimulation of the ST-36 acupressure point can increase bowel sound frequency for patients with colorectal cancer in the first three days after surgery. Application of this technique may improve a patient's comfort after surgery.