

Lead Author and Source	Title	Type of Article & Sample	Strength of Evidence	Outcomes & Key Concepts
Asao, Kuwano, Nakamura, Morinaga, Hirayama, & Ide <i>Journal of American College of Surgery</i> (2002)	Gum chewing enhances early recovery form postoperative ileus after laparoscopic colectomy	RCT	Level II	Gum chewing was shown to be statistically significant at reducing time to flatus and time to first bowel movement in gum chewing intervention group compared to non gum chewers. colorectal cancer patients undergoing laparoscopic colectomy.
Choi, Kang, Yoon, Kang, Ko, Moon, Park, Joo, & Cheon <i>Journal of Urology</i> (2010)	Chewing Gum has a stimulatory effect on bowel motility in patients after open or robotic radical cystectomy for bladder cancer: a prospective randomized comparative study	RCT	Level II	Gum chewing was statistically significant at reducing time to flatus and time to first bowel movement. Gum chewing was not statistically significant at reducing hospital length of stay. Open or robotic radical cystectomy for bladder cancer
Edward, Fitzgerald, & Ahmed <i>World Journal of Surgery</i> (2009)	Systematic Review and meta-analysis of chewing-gum therapy in the reduction of postoperative paralytic ileus following gastrointestinal surgery	Systematic review and meta-analysis	Level I	Gum chewing was statistically significant at reducing time to flatus and time to first bowel movement. Gum chewing was not statistically significant at reducing hospital length of stay. Elective open or laparoscopic gastrointestinal surgery for any indication

Exhibit NK3-a

<p>Ertas, Gungorduk, Ozdemir, Solmaz, Dogan & Yildirim <i>Gynecology Oncology</i> (2013)</p>	<p>Influence of gum chewing on postoperative bowel activity after complete staging surgery for gynecological malignancies: A randomized controlled trial.</p>	<p>RCT</p>	<p>Level II</p>	<p>Gum chewing significantly influenced time to flatus, time to BM, time to tolerate diet and length of hospital stay. Elective total abdominal hysterectomy and lymphadenectomy</p>
<p>Hirayama, Suzuki, Ide, Asao, & Kuwano, <i>Hepatogastroenterology</i> (2006)</p>	<p>Gum-Chewing stimulates bowel motility after surgery for colorectal cancer</p>	<p>RCT</p>	<p>Level II</p>	<p>Gum chewing was statistically significant in reducing time to flatus and time to first bowel movement. Open colectomy for cancer</p>
<p>Hocevar, Rominson, & Gray <i>Journal of the Wound, Ostomy, and Continence Nurses Society</i> (2010)</p>	<p>Does chewing gum shorten the duration of postoperative ileus in patients undergoing abdominal surgery and creation of a stoma?</p>	<p>Systematic review</p>	<p>Level I</p>	<p>Gum chewing is statistically significant at decreasing time to first flatus and first bowel movement. Not enough evidence to support gum chewing reduces hospital length of stay. abdominal resection and creation of ostomy</p>
<p>Jakkaew & Charoenkwan <i>Archives of Gynecology & Obstetrics</i> (2013)</p>	<p>Effects of gum chewing on recovery of bowel function following cesarean section: a randomized controlled trial</p>	<p>RCT</p>	<p>Level II</p>	<p>Time to flatus was statistically lower in the gum chewing group. Cesarean section</p>

Exhibit NK3 a

<p>Kouba, Warren, & Pruthi <i>Journal of Urology</i> (2007)</p>	<p>Gum chewing stimulates bowel motility in patients undergoing radical cystectomy with urinary diversion</p>	<p>RCT</p>	<p>Level II</p>	<p>Gum chewing was statistically significant at reducing time to flatus and time to first bowel movement. Gum chewing was not statistically significant at reducing hospital length of stay. radical cystectomy with urinary diversion</p>
<p>Leier <i>Journal of the American Academy of Nurse Practitioners</i> (2007)</p>	<p>Does gum chewing help prevent impaired gastric motility in the postoperative period?</p>	<p>Literature review</p>	<p>Level IV</p>	<p>Literature suggests that gum chewing decreases time to first flatus and bowel movement. abdominal surgery</p>
<p>Li, Liu, Peng, Xie, Wang & Qin <i>Journal of Gastroenterology and Hepatology</i> (2013)</p>	<p>Chewing gum reduces postoperative ileus following abdominal surgery: a meta-analysis of 17 randomized controlled trials.</p>	<p>Meta-analysis</p>	<p>Level I</p>	<p>17 RCTs with 1374 participants were included. Time to flatus, time to BM and overall LOS were significantly reduced in patients who chewed gum. Reduced duration of postoperative ileus. Surgery patients</p>
<p>Matros, Rocka, & Zinner <i>Journal of American College of Surgery</i> (2006)</p>	<p>Does gum chewing ameliorate postoperative ileus? Results of a prospective, randomized, placebo-controlled trial</p>	<p>RCT</p>	<p>Level II</p>	<p>Gum chewing was not statistically significant at reducing time to flatus or time to first bowel movement. Open colectomy</p>

Exhibit NK3 a

McCormick, Garvin, Cuashaj, et al. <i>Journal of American College of surgery</i> (2005)	The effects of gum-chewing in bowel function and hospital length of stay after laparoscopic vs. open colectomy: a multi-institution prospective randomized trial	RCT	Level II	Gum chewing was significantly significant at reducing time to first flatus and decreasing hospital length of stay. Laparoscopic and open colectomy
Noble, Harris, Hosie, Thomas, & Lewis <i>International Journal of Surgery</i> (2009)	Gum chewing reduces postoperative ileus? A systematic review and meta-analysis	Systematic review and meta-analysis	Level I	Gum chewing was statistically significant at reducing time to flatus (on average about 14hrs shorter than non gum chewers). Gum chewing was statistically significant at reducing time to first bowel movement. Gum chewing was statistically significant at reducing hospital length of stay. Colorectal and cystectomy surgeries
Purkayastha, Tilneu, Drzi, & Tekkis <i>Archives of Surgery</i> (2008)	Meta-Analysis of randomized studies evaluating chewing gum to enhance postoperative recovery following colectomy	Meta-analysis	Level I	Gum chewing was statistically significant at reducing time to first flatus, first bowel movement, and reduced hospital length of stay. Colectomy
Quah, Samad, Neathey, Hay, & Maw <i>Colorectal Disease</i> (2006)	Does gum chewing reduce postoperative ileus following open colectomy for left-sided colon and rectal cancer?	RCT	Level II	Gum chewing was not statistically significant at reducing time to first flatus or first bowel movement between the gum chewing and non gum chewing groups. Left-sided colectomy surgery for colon and rectal cancer
Schuster, Grewal, Greaney, & Waxman <i>Archives of Surgery</i>	Gum chewing reduces ileus after elective open sigmoid colectomy	RCT	Level II	Gum chewing was statistically significant at reducing time to first flatus and bowel movement in gum chewing versus non gum chewing groups. Elective open sigmoid colectomy

Exhibit NK3.a

<p>(2006) Shang, Yang, Tong, Zhang, Fang & Hong <i>American Journal of Perinatology</i> (2010)</p>	<p>Gum chewing slightly enhances early recovery from postoperative ileus after cesarean section: results of a prospective, randomized, controlled trial.</p>	<p>RCT</p>	<p>Level II</p>	<p>388 patients. 193 chewed gum. 195 served as controls. Time to return of bowel sounds, time to flatus, lack of ileus symptoms were statistically significant in patients who chewed gum. Cesarean section</p>
<p>Takaqi, Teshima, Arinaga, Yoshikawa, Hori, Kashikie & Nakamura <i>Surgery Today</i> (2012)</p>	<p>Gum chewing enhances early recovery of bowel function following transperitoneal abdominal aortic surgery.</p>	<p>Experimental</p>		<p>Time to flatus, time to oral intake and length of stay were statistically lower in the gum chewing group. Transperitoneal Abdominal Aorta surgery</p>
<p>Vasquez, Hernandez, & Garcia-Sabrido <i>Journal of Gastrointestinal Surgery</i> (2009)</p>	<p>Is gum chewing useful for ileus after elective colorectal surgery? A systematic review and meta-analysis of randomized clinical trials</p>	<p>Systematic review and meta-analysis</p>	<p>Level I</p>	<p>The systematic review included six randomized controlled trials with a total of 244 patients. Sugar free gum was given three times a day to post operative elective colorectal surgery intervention group patients. Results: Four studies- statistical significant time to first flatus with gum chewing compared to non-gum chewers Two studies- statistical significant time to first bowel movement and reduction in hospital length of stay.</p>

Exhibit NK3 a

<p>Yin, Sun, Liu, Zhu, Peng & Wang <i>Digestion</i> (2013)</p>	<p>Gum chewing: another simple potential method for more rapid improvement of postoperative gastrointestinal function.</p>	<p>Meta-analysis</p>	<p>Level I</p>	<p>1,148 cases. Time to flatus, time to BM and hospital length of stay were significantly decreased in the gum chewing group. Abdominal surgeries</p>
<p>Zhang, & Zhao <i>European Journal of paediatric Surgery</i> (2007)</p>	<p>Influence of gum chewing on return of gastrointestinal function after gastric abdominal surgery in children</p>	<p>RCT</p>	<p>Level II</p>	<p>Gum Chewing was not statistically significant in reducing time to flatus in children undergoing gastric abdominal surgery.</p>

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Exhibit NK3 a
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