

**Gum chewing versus standard care on recovery of bowel activity after LSCS**

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**Abstract**

**Introduction:** Caesarean Section (CS) is the most frequent major surgery in the world. A transient impairment of bowel motility is expected after CS. It was evident that gum chewing which is a form of sham feeding is considered as an effective and inexpensive method which hastens the return of gut motility after CS, cheap and best way to reduce post-operative ileus.

**Objectives:** To assess the effect of chewing gum to reduce post-operative complications like ileus and to enhance early post-operative recovery after a CS.

**Materials and methods**

- A total of 100 pregnant women undergoing emergency or elective LSCS were randomized into gum chewing group(n=50) a control group (n=50).
- Groups were compared in terms of time of first bowel movement, time of first flatus and feces pass time.
- Study was carried out in department of Obstetrics and Gynecology of Navodaya medical college, hospital & research center Raichur.

**Results:** The mean of bowel sounds timing (3.30 vs 8.38hrs) mean time to flatus (9.34 vs 17.82hrs), mean time to defecation (19.62 vs 40hrs) were significantly

reduced in patients that chewed gums compared with controls.

**Conclusion:** It is evident from the study that gum chewing is associated with early recovery of intestinal motility after Caesarean Section, which may be helpful to reduce the time for first passage of flatus. Gum Chewing offers a safe, simple and inexpensive for hastening the recovery of gut motility after Caesarean section, hence it can be recommended as a routine post-operative measure.

**Keywords:** Gut motility, Caesarean section, Gum chewing

**Introduction**

CS is one of the most commonly performed surgical operations in the world nowadays. Although it can be life saving for mother and baby, when necessary, it has the risk of producing more complications than normal vaginal deliveries<sup>[1]</sup>

From 1970 to 2007, the caesarean delivery rate in United States rose from 4.5 percent of all deliveries to 31.8 percent.

After CS, you can expect a temporary decrease in intestinal motility. Although this normally goes away on its own within a few days, it can be quite inconvenient,

necessitate symptomatic treatment, and postpone hospital discharge, all of which add to the cost.<sup>[3]</sup>

The recovery of motility is usually noticed in the small bowel first, then the stomach, and ultimately the large bowel.

Because the recovery of large bowel function is less predictable than that of other portions of the GIT, doctors use endpoints like flatus passage and stools as indicators of clinical ileus resolution.<sup>[4]</sup>

Abdominal distension, nausea and vomiting are expected complains after CS. Ileus is serious complication that alter digestive functions after abdominal operation.

The etiology of ileus remains controversial. Bowel motility is suppressed postoperatively owing to sympathetic hyperactivity and increased concentrations of circulating catecholamine. Pacemaker dysfunction owing to bowel manipulation is another postulated mechanism ileus. In addition, electrolyte abnormalities, peritoneal and/or retroperitoneal irritation, and narcotic analgesia effects may contribute to it.<sup>[5]</sup>

The focus of more recent studies has been on neural and humoral factors. Vasoactive intestinal peptide directly inhibits smooth muscle contraction in the intestine, and increased levels are seen after surgery.<sup>[5]</sup>

In addition, pain increases the release of substance P, which is also known to inhibit bowel motility. Surgery also inhibits the promotive hormones gastrin, neurotensin, and pancreatic polypeptide.<sup>[5]</sup>

Recovery of gastrointestinal function is clinically important because Early resumption of gut motility results in earlier oral feeding, breast-feeding, ambulation, and hospital discharge, lowering overall hospital costs.<sup>[6]</sup>

Chewing gum may have limited impact on lowering some complications, and the recovery of intestinal

function may be mostly dependent on the process of digestive tract integrity.

However, the mechanism by which gum chewing works is unclear. The possibility is that, Chewing a stick of gum may represent a form of 'sham feeding' whereby a food substance is chewed, but does not enter the stomach. Sham feeding may accelerate bowel function via a combination of mechanisms, including increased vagal cholinergic stimulation of the gut, which in turn leads to the release of gastrointestinal hormones such as gastrin, neurotensin and pancreatic polypeptide.

Gum chewing may also boost saliva secretion, resulting in sufficient amounts of nitrous oxide to combat microorganisms in the mouth and gut.

## Methods

### Source of data

Ethical committee clearance obtained from institute, total of 100 pregnant women undergoing emergency or elective LSCS who gave consent were randomized into gum chewing group(n=50) a control group (n=50) From October 2020 to April 2021. Groups were compared in terms of time to first bowel movement, time of first flatus and feces pass time.

### Methods of collection of data

**Study site:** Navodaya Medical College, Hospital and Research Centre, Raichur

**Study design:** prospective study

**Sample size:**100

Study was carried out in department of Obstetrics and Gynecology of Navodaya medical college, hospital & research center Raichur. A total of 100 pregnant women undergoing emergency or elective LSCS were randomized into gum chewing group(n=50) a control group (n=50). Groups were compared in terms of time to

first bowel movement, time of first flatus and feces pass time.

**Methodology**

A liquid filled gum with artificial sweeteners was used in the study. Gum chewing was initiated in patients of Group I within 2 hours of completion of surgery and the subjects were instructed to chew it for 15 minutes every 2 hours till the bowel sounds became auscultable or the first flatus was passed or 12 hours elapse whichever was earlier. The total number of gums chewed was noted. In Group II (control group) patients were encouraged to initiate feeding after 12 hours or once the bowel sounds become auscultable or the first flatus was passed whichever was earlier, with liquids and semisolids followed by regular solid diet.

Table -2: show the mean time of appearance of bowel sound in control and cases

				Total	Chi-square value	p-value
		Control	Case			
Timing of bowel sounds (hrs.)	<4	0	30	30	54.043	0.0001
	4-8.0	27	20	47		
	>8	23	0	23		
Total		50	50	100		
Mean time		8.38	3.30			

The mean time of appearance of bowel sound in control is 8.38hrs and 3.30hrs in cases which is statistically significant.

**Inclusion criteria**

- Women who underwent elective or emergency CS.
- Patient willing to give informed consent.

**Exclusion criteria**

- Previous history of gastrointestinal surgery
- Diabetes mellitus
- History of extensive intra-abdominal surgery
- Water and electrolyte imbalance
- Patient not willing to give informed consent.

**Results:** SPSS software was used for data analysis

Table-1: shows the mean age of cases and control

	Control		Case		t-value	p-value
	Mean	SD	Mean	SD		
AGE	24.88	3.52	24.50	3.19	0.566	0.573

Figure 1: shows the mean time to flatus in control and case.

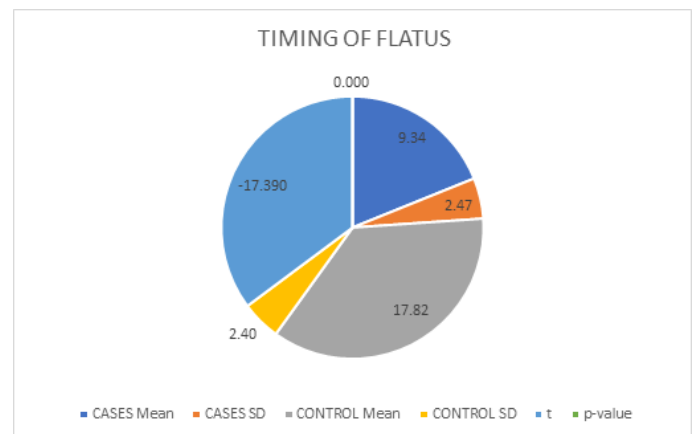
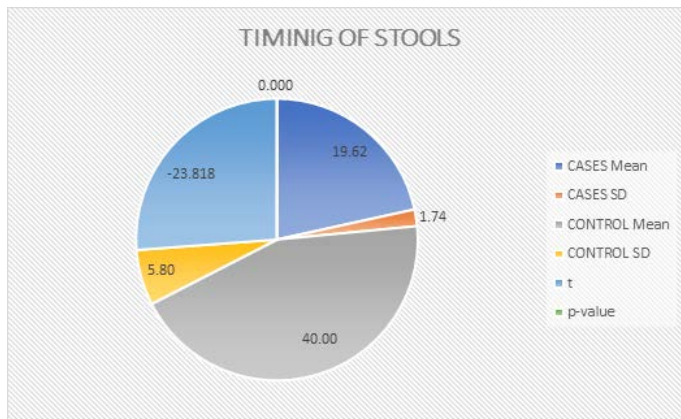


Figure 2: shows the mean time to pass stools in case and control



**Discussion**

The goal of this study was to see how chewing gum affected the recovery of intestinal function following CS. According to the findings of the study, there was a statistically significant difference in intestinal parameters between the two groups.

The study group's mean interval of intestinal parameters was statistically significantly shorter than the control group's. As a result, the concept that chewing gum can improve intestinal motility in the post-operative period after CS was re-emphasized was offered.

The general characteristics of the gum chewing and control groups did not differ statistically significantly.

Gum chewing may offer a better option to regulate a potential risk which is associated with early post operative enteral or oral feeding.

The current study was conducted at Navodaya Medical College & Research Center Raichur. A total of 100 women who underwent caesarean section were enrolled in the study and were further sub-divided into two groups of 50 women. The outcomes of the data compilation were compared to similar research and are described further below.

In present study mean time to bowel sounds in cases is 3.30hrs and in controls 8.38hrs, which is statistically significant. Which is similar to the study conducted by Shang et al. time to bowel sounds is 18.2hrs and in controls 23. 2hrs.In Mansour et al. study time to bowel sounds is 3.93+/-1.02hrs and in controls 4.87+/-1.96.

Table 3

	Control	Case
Present study	8.38 Hours	3.3 Hours
Mansour et al	4.87 Hours	3.93 Hours
Shang et al	23.2 Hours	18.2 Hours

In present study mean time to flatus in cases is 9.34hrs and in controls17.82hrs, which is statistically significant. Which is similar to the study conducted by Shang et al.34.6hrs in cases and 39.9hrs in controls.

Table 4

	Control	Case
Present Study	17.82 Hours	9.34 Hours
Shang Et Al	39.9 Hours	34.6 Hours

In present study mean time to stools is 19.62hrs in cases and 40hrs in controls, which is statistically significant. In study conducted by Mansour et al. time to stool is 10.25+/- 2.15hrs and 11.58+/-1.96.

Table 5

	Control	case
Present study	40 Hours	19.62 Hours
Mansour et al	11. 58 HOURS	10.25 HOURS

**Conclusion**

It is evident from the study that gum chewing is associated with early recovery of intestinal motility after Caesarean Section, which may be helpful to reduce the time for first passage of flatus. Gum Chewing offers a safe, simple and inexpensive for hastening the recovery of gut motility after Caesarean section, hence it can be recommended as a routine post-operative measure.

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