**Tabel 1.** Search List

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| **Find the database** | **Key Word** |
| Sopus = 32 | chewing gum “OR” |
| Science Direct = 63 | coffee”OR” |
| Proquest = 98 | warm water “AND” |
| Oxford = 22 | Postoperative |

**Tabel 2.** Article characteristicts Identification

| **Author** | **Population** | **Intervention** | **Outcome** | **Result** |
| --- | --- | --- | --- | --- |
| 10 | Appendectomy (240) | Gum chewing was started 2 hours after surgery  and continued every 2 hours for 15 minutes in  duration excluding throughout sleeping until  passing flatus | Intestinal sound, first  time of feeling hunger, first time of passing flatus,  and defecation time and the time of  hospital stay. | Significantly shorter in the time of resumption of gastrointestinal functions and postoperative  ileus symptoms |
| 11 | Liver  Transplantation (59) | Chewed two pieces of sugarless xylitol flavored gum for 15 minutes three times a day at regular meal times | Primary :  Time first flatus  Secondary:  Time to sips of water, time to soft  blended diet, cumulative energy intake, and hospital length of stay (LOS) | Sham feeding with gum chewing did not shorten the duration of POI nor facilitate oral intake after liver transplantation. |
| 12 | Cholecystectomy surgery(40) | Chewed sugar free gum 3 times a day for 20 minutes each time after full  consciousness until the beginning of the oral intake | Bowel sound, gas passing, and defecation. | Chewing the  sugar-free gum will  lead to the decrease of the gas passing, defection,  and bowel sound hearing time |
| 13 | Cesarean section (120) | Every 2 hr post-cesarean section and until first flatus, Groups A (xylitol gum) and B (nonxylitol gum)  received two pellets of chewing gum and were asked to chew for 15 min | The times to first bowel sounds, first flatus, and first  defecation | The gum-chewing groups demonstrated a faster return of flatus than the control group, but the time to flatus did not differ significantly between the gum-chewing groups, the differences in  the time to first defecation were not significant |
| 14 | Elective laparotomy or laparoscopic intestinal resection or  non-intestinal surgery by laparotomy (2000) | Instruction to chew  gum three times per day for 30 min starting on the day  of surgery, and to continue as instructed until discharge  from hospital | Primary:  postoperative LOS  Secondary :  Time to bowel recovery and 30-day complications | LOS did not differ, Neither was any difference found in time to flatus or time to defaecation  respectively. The rate of 30-day complications was not significantly different either |
| 15 | Elective open or laparoscopic bowel surgery (158) | Participants in this group were asked to chew gum for 15 minutes, four times a day,  for up to 14 days following their operation, or until a normal bowel motion had occurred and  the participant was able to tolerate a normal full diet for 24 hours, whichever occurred earlier. Patients were asked to discard gum and not swallow it. | Primary:  time to discharge (LOS), time  to first flatus (TFF) and time to first bowel motion (TBM)  Secondary:  complication rates, pain and total morphine equivalent (TMEq) medication | Chewing sugar-free gum resulted in an earlier return to bowel function  and decreased analgesic requirements |
| 16 | Laparotomy for benign gynecologic diseases (112) | Patients chewed sugarless gum for 15 minutes after  6 hours postoperatively then every 4 hours until the first passage of flatus and the control group  had the routine postoperative care | Primary:  The time to first  Flatus  Secondary:  Time to tolerate  for liquid and regular diet, postoperative nausea and  vomiting, anti-emetic drugs requirement | Chewing gum was a statistically significant in reducing time to first flatus, time to tolerate regular diet, postoperative vomiting, There were no significant differences  between the groups in time to tolerate liquid diet, postoperative nausea, antiemetic drug  requirement and length of a hospital stay |
| 17 | Elective oncological colorectal  surgery (40) | Patients had to chew the allocated chewing gum 2 h preoperatively and three times a day postoperatively, for half an hour  at a time, until the first passage of faeces and tolerance of solid  food for more than 24 h | Primary:  the time from surgery until  the resolution of POI, defined as passage of faeces and toleration of solid food for at least 24 h  Secondary:  Time to first flatus, hospitalisation length, postoperative (infectious) complications, postoperative mortality, postoperative opioid use, patient reported outcomes (e.g. pain  score, nausea, regurgitations, vomiting, chewing gum use),  inflammatory parameters (e.g. CRP, WBC and IL-6), blood  pressure, body temperature and heart rate. | Did not differ significantly between  normal and nicotine gum. There were no differences in  PROMS (Patient reported outcomes) inflammatory parameters and postoperative  complications |
| 18 | Elective colorectal  resection owing to colorectal neoplasia (invasive cancer  or dysplasia), ulcerative colitis or diverticular disease (402) | Participants allocated to chewing gum were asked to chew  a stick of commercially available sugar-free gum for at least 10 min, four  times a day for 5 consecutive days (or until discharge, if less than 5 days) from the first postoperative morning. | Primary :  Length Of Stay (LOS)  Secondary:  passage of first bowel movement, passage of first flatus, and first day of auscultated bowel sounds;  patient-reported abdominal pain, nausea, vomiting, solid  food consumption and tolerance, and quality of life; and  clinical complications and death | Chewing gum did not alter the return of bowel function or LOS after colorectal resection |
| 19 | Cholecystectomy (40) | Patients  in the intervention group chewed sugar free gum 3 for 20 minutes each time after full  consciousness until the beginning of the oral intake | The first bowel sounds, flatus passage and defecation | Gum chewing is useful approach that reduces paralytic ileus following cholecystectomy |
| 20 | Elective caesarean section (100) | The intervention group received 100cc  coffee at 8, 12 and 20 h after the surgery, while the control group received 100cc hot water at the same  intervals | First bowel sound, first passage of flatus, first defecation, and length of stay | Drinking coffee after a caesarean section reduces time to first flatus in patients |
| 21 | Elective laparoscopic left-sided colectomy (105) | Group 1 patients had to drink 3 cups of coffee with caffeine daily (100 mlat 8:00 am, 12:00 Pm, and  4:00 Pm), beginning on the morning after surgery. in group  2, coffee was without caffeine and in control group 3,  coffee was replaced by water, at the same schedule and  amount as in group 1, until the first bowel movement had occurred | Primary : the time to the first postoperative bowel movement (time from the  end of surgery until the first passage of stool recorded by  the patient).  Secondary :  The time to first postoperative bowel movement, time to tolerance of solid food (no vomiting) and time to first flatus. | Decaffeinated  coffee is associated with a shorter time to bowel movement  and tolerance of solid food but not time to first flatus |
| 22 | Caesarean section (100) | Group 1 (women given sugar-free gum at 4-hour intervals  after postoperative hour 2 until defaecation), Group 2 (women given  100 mL coffee at 4-hour intervals beginning from postoperative hour 2 until  defaecation for three times a day), Group 3 (Sham group—women given  100 ml hot water at 4-hour intervals beginning from postoperative hour 2  until defaecation for three times a day), | Time to sensation of first bowel movement and time to passage of first  flatus and defaecation | Sugar-free gum chewing and decaffeinated coffee consumption during postoperative period after caesarean  section may decrease the time to first flatulence and defaecation |
| 23 | Patients undergone scheduled LVR (laparoscopic ventral rectopexy) | Patients in the coffee group drank 100 ml of coffee 5 h  after surgery on the day of surgery. They drank coffee three times daily (100 ml at 9:00 AM,1:00PM,and  5:00PM) beginning on the day after surgery (postoperative day 1) until the first defecation. In the water  group, coffee was replaced by 100 ml of water and was  consumed according to the same schedule.  Each cup of coffee or water was heated to 50–60 °C | Primary:  defined as the  total number of evacuated radiopaque markers 26 h  (9:00 AM on postoperative day 2) after their administration  Secondary :  Time to first flatus, time to first defecation, and results of  the segmental transit analysis used to evaluate the  radiopaque marker distribution to enable estimation  of the whole intestinal movement | Coffee consumption accelerates bowel  movements, but its clinical effect after LVR is also  small |
| 7 | Laparoscopic cholecystectomy surgeries (60) | The experimental group was provided with 200 ml of warm water at  98.6°F (37 ° C) in the fourth postoperative hour and were made to drink it within 15 minutes. Patients received no oral  intake other than warm water until the eighth postoperative hour. The oral feeding of both groups started in the eighth  postoperative hour with fluids and soft food | Bowel habits, surgery durations, postoperative applications, nausea/vomiting conditions, and initial mobilization times. Times of Flatus and the stool defecation. | Warm water intake in the fourth postoperative  hour signifi cantly decreased the fi rst fl atus expulsion period and had a favorable impact on intestinal movements |
| 9 | Abdominal hysterectomy and bilateral salpingooophorectomy (114) | Group A served as the control group and received no treatment, groupB (the coffee group) drank 3 cups of  caffeinated coffee daily (100 mL at 10:00 AM, 3:00 PM, and 7:00 PM),  beginning on the morning after  surgery. Patients were asked to  drink the entire 150-mL amounts  within 20 minutes under the supervision of a nurse or doctor | Primary:  First passage of flatus after surgery.  Secondary:  Time to first defecation, time to first bowel movement, and time to tolerance of a solid diet | Coffee consumption after total abdominal hysterectomy and systematic paraaortic lymphadenectomy expedites the time to  bowel motility and the ability to tolerate food |

Identification

Scopus (n=32), Science Direct(n=63), Proques (n=98) dan Oxford (n=22)

Electronic data base search (n=215)

Selection

Selection after duplicate articles removed (n=65)

Article Identification (n=65)

Excluded Articles (n=31)

Acceptance

Excluded Articles because of some reasons (n=15)

1. Systematic review
2. Non RCTs
3. Combination
4. Comparison with other interventions

Selected Articles (n=31)

Received Articles (n=16)

Inclusion

Articles included in the systematic review (n=16)

Chewing gum (n=11)

Consuming warm water (n=1)

Coffee (n=5)

**Figure 1.** Flow PRISMA Diagram