

# Relationship Between Amount of Post-op Ambulation and Return of Bowel Function in Patients Undergoing Major Abdominal Surgery



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## INTRODUCTION

### Purpose

To investigate the relationship between amount of post-op ambulation and speed of return of bowel function after major abdominal surgery.

### Background

Post-op ileus (POI), a ubiquitous side effect of major abdominal surgery, is a source of considerable clinical challenge, health care expense and patient discomfort. Accelerated clinical pathways intended to shorten length of stay and duration of POI are becoming widely used. Ambulation has long been thought to contribute to return of bowel function, yet research fails to support this notion. This study attempted to isolate the effect of ambulation as an independent variable in stimulating return of bowel function and preventing or mitigating POI.



## METHODS

**Design:** A prospective, observational, correlation study of 73 adult patients recovering from major abdominal surgeries, both laparoscopic and open procedures, ages 18 and older, able to ambulate in the hallways and able to read and understand English.

**Procedures:** Upon enrollment patients were issued a pedometer. Step counts and laps walked around the unit were logged daily by staff, patients and families, with entries corroborated by study team on rounds.

## METHODS

### Predictor variables:

- Step count per pedometer
- Number of laps walked around the unit

### Outcome variables:

- Time to first post-op flatus
- Time to first post-op BM
- Length of stay
- 14-day readmission for POI

### Control variables:

Age, gender, race, type of surgery, epidural analgesia, number of previous abdominal surgeries, day of 1<sup>st</sup> ambulation and day of 1<sup>st</sup> PO intake

Table 1. Sample description

Age	n	Mean (SD)	Min	Max
	73	59.3 (13.4)	24	85
Gender	n	%		
Male	45	61.6%		
Female	28	38.4%		
Race	n	%		
White	59	80.8%		
Black	13	17.9%		
Declined/not available	1	1.4%		
Type of Surgery	n	%		
Open	63	86.3%		
Lap	10	13.7%		
Bowel Resection	29	39.7%		



This minimal risk study involved no interventions beyond standard care, except for attaching a pedometer to the patient's sock. To avoid issues with infection control, patients were permitted to take their pedometers home with them after discharge.

## RESULTS

There were no statistically significant relationships between amount of post-op ambulation and any outcome variables, even after controlling for patient demographics and type of surgery.

Table 2. Results

	n	Median	Min	Max
Day of 1 <sup>st</sup> Ambulation	73	1	1	3
Day of 1 <sup>st</sup> PO Intake	73	1	0	9
Day of 1 <sup>st</sup> Flatus	71	2	1	8
Day of 1 <sup>st</sup> BM	64	3	1	8
Strides before 1 <sup>st</sup> flatus	69	823	0	19789
Strides before first BM	57	1591	98	22206
Number of laps before 1 <sup>st</sup> flatus	71	5.0	0	103
Number of laps before 1 <sup>st</sup> BM	61	8.3	0	118
Length of Stay (days)	73	5.0	2.0	41.0

Of 73 enrolled participants, only one patient was readmitted for complications related to POI.

## DISCUSSION

These results were consistent with previous studies. The negative findings may reflect the complex multifactorial nature of POI, as well as challenges experienced in measuring post-op ambulation in the clinical setting.

### Limitations:

- Current practice involves ambulating patients so early that there was little variability in the data. 80% of subjects were walking within 24 hours of surgery, and had passed flatus by POD#3.
- Calculation of distance walked from measurement of stride length proved labor intensive, inconsistent and inaccurate. Initial post-op pain levels resulted in a universally slow and shuffling gait, while stride length and strength invariably increased as healing progressed. Therefore, number of strides taken and number of laps walked, rather than calculated distances, were used to quantify amount of ambulation
- This study illuminated the challenges of nursing research in an active clinical setting.

## CONCLUSIONS

This study was unable to support the widely held assumption that ambulation specifically stimulates return of bowel function.

Despite these inconclusive findings, the circulatory, pulmonary and musculoskeletal benefits of ambulation, as well as its contribution to psychological well-being, justify maintaining early ambulation as an important element of post-surgical nursing care.