

# Combatting sedentary lifestyles; can exercise prescriptions in the Emergency Department lead to a behavioural change in patients?

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## Introduction:

Patients with chronic diseases such as COPD, coronary artery disease, depression and anxiety are known to benefit from exercise. They also frequently visit the emergency department (ED). Despite the large therapeutic window and evidence supporting its role in disease management, there are few studies examining prescribing exercise in the ED. We asked: Is exercise prescription in the ED feasible and effective?

## Methods:

In our pilot prospective block randomized trial, consented patients were divided into control or intervention groups. The control group received routine care. The intervention group were given a standardized provincial written prescription to perform moderate exercise for 150 minutes per week. Participants answered a discharge questionnaire and were followed up by a telephone interview 2 months later. The primary outcome was achieving 150 min of exercise per week. Secondary outcomes included change in exercise, and differences in reported median weekly exercise. Comparisons were made by Mann Whitney, Fishers tests (GraphPad). A structured interview of opinions around exercise prescription was also conducted. Questions included a combination of non-closed style interview questions and Likert scale. Patients rated prescription detail, helpfulness and likelihood on a Likert scale from 1-5 (1 being strongly disagree and 5 being strongly agree). Median values (+/- IQRs) are presented, along with dominant themes.

## Results:

We recruited 28 ED patients. Follow up was completed for 23 patients (11 Control; 12 Intervention). Baseline reported median (with IQR) weekly exercise was similar between groups; Control 0(0-0)min; Intervention 0(0-45)min. There was no difference between groups for the primary outcome of 150min/week at 2 months (Control 3/11; Intervention 4/11, RR 1.33 (95%CI 0.38-4.6;p=1.0). There was a significant increase in median exercise from baseline in both groups, but no difference between the groups (Control 75(10-225)min; Intervention 120(52.5-150)min;NS) Further analysis revealed that 3 control patients had been given exercise counselling (as part of routine care). A post hoc comparison of patients receiving intervention vs. no intervention, revealed a significant increase in patients meeting the primary target of 150min/week (No intervention 0/8; Intervention 7/15, RR 2.0 (95%CI 1.2-3.4);p=0.023). In regards to patient perceptions of exercise prescription, only the intervention arm was assessed. 17 people consented to exercise prescription and follow up surveys. 2 were excluded due to hospital admission. 15 participants were enrolled and completed the discharge survey. Two-month follow up survey response rate was 80%. Patients rated the detail given in their prescription as 5 (+/-1). Helpfulness of prescription was rated as 4 (+/-2). Likelihood to continue exercising based on the prescription was rated as 4 (+/-2). 11/12 participants felt that exercise should be discussed in the Emergency Department either routinely or on a case-by-case basis. 1 participant felt it should not be discussed at all.

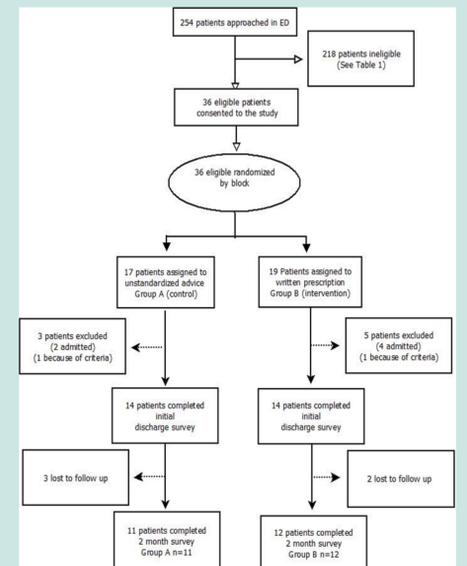


Figure 1: CONSORT diagram outlining screening of potential participants



ID	Baseline exercise, min/week	Was exercise prescribed? Y/N	Average weekly exercise at 2 month follow up, min/week	Met primary outcome, n	Secondary outcome - net change, min/week	Weekly exercise increased by 30 mins, n
1	75	N	75			0
2	0	N	30			30
3	0	N	100			100
4	0	Y	360	1	360	1
5	0	N	10			10
6	0	Y	560	1	560	1
7	20	N	0			-20
8	0	N	120			120
9	0	N	20			20
10	0	N	0			0
11	0	Y	225	1	225	1
	Median = 0	Total 3/11	Median = 75	Total 3/11	Median = 30	Total 6/11

Table 1 – Control group individual Results

ID	Baseline exercise, min/week	Was exercise prescribed? Y/N	Average weekly exercise at 2 month follow up, min/week	Met primary outcome, n	Secondary outcome - net change, min/week	Weekly exercise increased by 30 mins, n
12	0	Y	120			120
13	60	Y	140			80
14	0	Y	100			100
15	0	Y	150	1	150	1
16	0	Y	120			120
17	0	Y	350	1	350	1
18	0	Y	0			0
19	0	Y	60			60
20	30	Y	150	1	120	1
21	0	Y	0			0
22	65	Y	180	1	115	1
23	90	Y	50			-40
	Median = 0	Total 12/12	Median = 120	Total 4/12	Median = 107.5	Total 9/12

Table 2 -Intervention group individual results

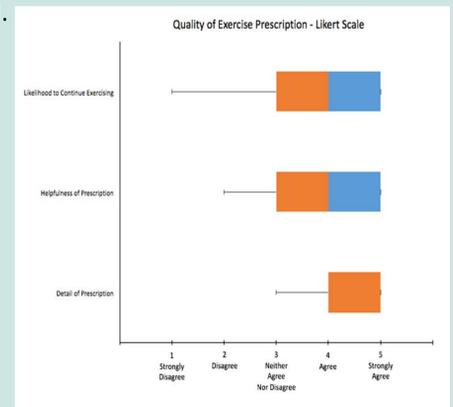


Figure 2: Intervention arm patients Likert scale data describing detail and helpfulness of exercise prescription, as well as likelihood to continue exercising

## Key words

Exercise prescription; health promotion; behaviour

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## Conclusion:

Recruitment was feasible, however our study was underpowered to quantify an estimated effect size. As a significant proportion of the control group received the intervention (as part of standard care), any potential measurable effect was diluted. The improvement seen in patients receiving intervention and the increase in reported exercise in both groups (possible Hawthorne effect) suggests that exercise prescription for ED patients may be beneficial. Our study demonstrates that most patients are open to exercise being discussed during their Emergency Department visit, and that the prescription format was well-received by study participants.