

# Frail patients potentially have the most to gain from the Enhanced Recovery Programme

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# Study Rationale

- Frail patients are at higher risk of perioperative morbidity and mortality

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Review article

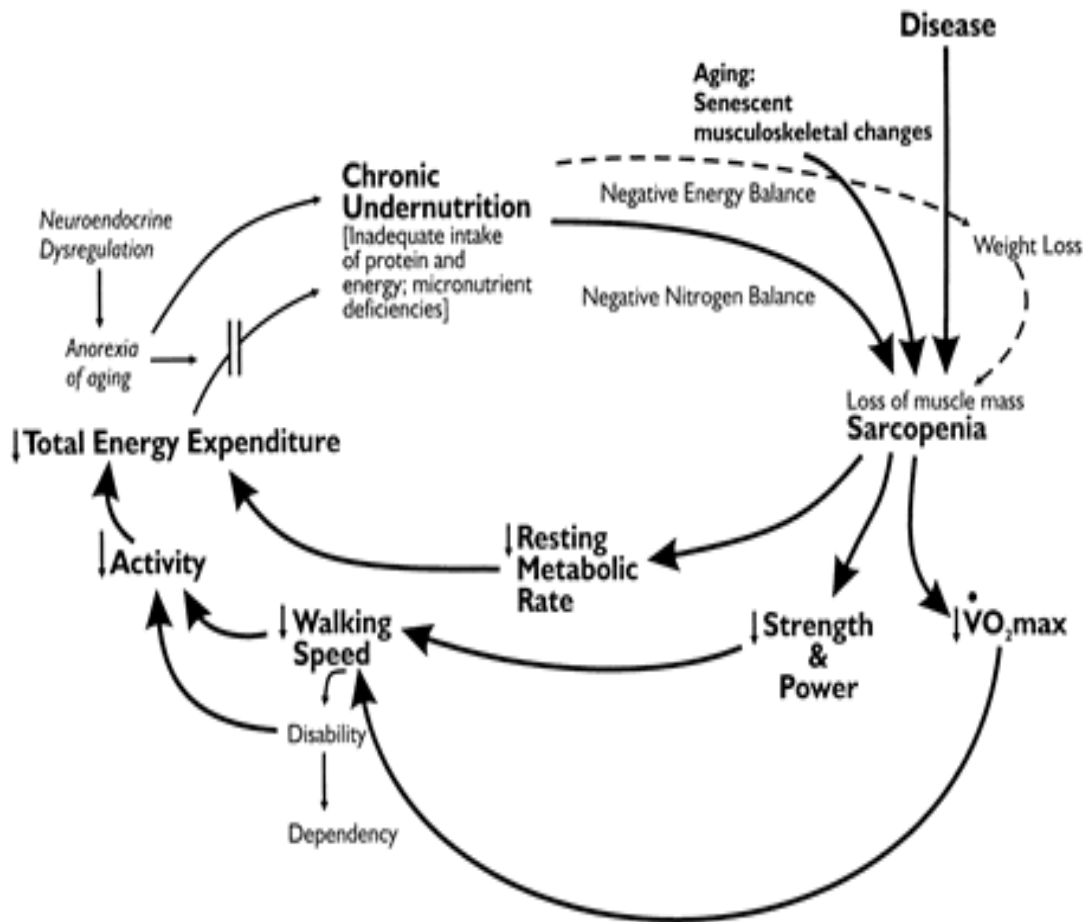
## **The impact of frailty on postoperative outcomes in individuals aged 65 and over undergoing elective surgery for colorectal cancer: A systematic review**



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Compared to the non-frail group, the frail group had a higher risk of developing moderate to severe postoperative complications, had longer hospital stays, higher readmission rates, and decreased long-term survival rates.

# Phenotype model of frailty



Weight loss  
Handgrip strength  
Exhaustion  
Low activity  
Slow gait speed

[Frailty in older adults: evidence for a phenotype.](#)

Fried LP, Tangen CM, Walston J, Newman AB, Hirsch C, Gottdiener J, Seeman T, Tracy R, Kop WJ, Burke G, McBurnie MA; Cardiovascular Health Study Collaborative Research Group. J Gerontol A Biol Sci Med Sci. 2001 Mar;56(3):M146-56. PMID: 11253156

# Study Aims

- To assess frailty in patients  $\geq 60$  years undergoing colorectal surgery:
  - Can we use ERAS in frail patients?
  - Recovery trajectories (using QOL as proxy)
  - How do complications affect recovery

# Methods

Patient inclusion criteria	Patient Groups	Outcomes
Consecutive patients planned for colorectal resection at 2 centres over 15 month period	Fit (Phenotype score 0-1)	Length of hospital stay
Age $\geq$ 60 years at time of operation	Frail (Phenotype score 2-5)	90 day complications (Clavien-Dindo)
		ERAS compliance
		30 day reop/readmission
		Discharge to nursing care / package of care needed
		QOL scores at 0, 1, 3, 6 and 12 months

# Results: Demographic data

Demographics	Fit (n=85)	Frail (n=80)	P
Mean age	71.3 ± 7.1	77.9 ± 6.9	0.001
Men	47 (55%)	33 (41%)	0.05
Mean BMI	27.4 ± 2.4	25.2 ± 4.3	0.05
Poor social support	10 (12%)	22 (28%)	0.05
Lives alone	26 (31%)	28 (35%)	NS
Current Smoker	1 (1%)	6 (8%)	NS
ASA	1.9 ± 0.6	2.4 ± 0.4	0.01
Comorbidity (CCI≥2)	23 (27%)	62 (78%)	0.01
No of meds >4	17 (24%)	56 (70%)	0.01
ADL	6.0 ± 0.5	5.6 ± 0.2	0.05
IADL	7.5 ± 0.6	5.8 ± 1.4	0.01
Fatigue	4.3 ± 4.2	11.8 ± 5.3	0.01
MMSE	29.4 ± 1.4	27.8 ± 1.8	0.05
HADS depression	1.4 ± 1.8	3.5 ± 3.0	0.05

# Results: Operative Data

	Fit (n=85)	Frail (n=80)
Transanal	2 (2%)	1 (1%)
Laparoscopic	63 (74%)	52 (65%)
Open	11 (13%)	17 (21%)
Converted	9 (11%)	10 (13%)
Segmental Colectomy	43 (51%)	44 (55%)
Anterior resection	28 (33%)	22 (28%)
APER	2 (2%)	12 (15%)
Sigmoid colectomy/Hartmanns	1 (1%)	2 (3%)
Subtotal colectomy	7 (8%)	4 (5%)
Other	15 (18%)	13 (16%)
Malignant disease	74 (87%)	70 (88%)

# Compliance with ERAS

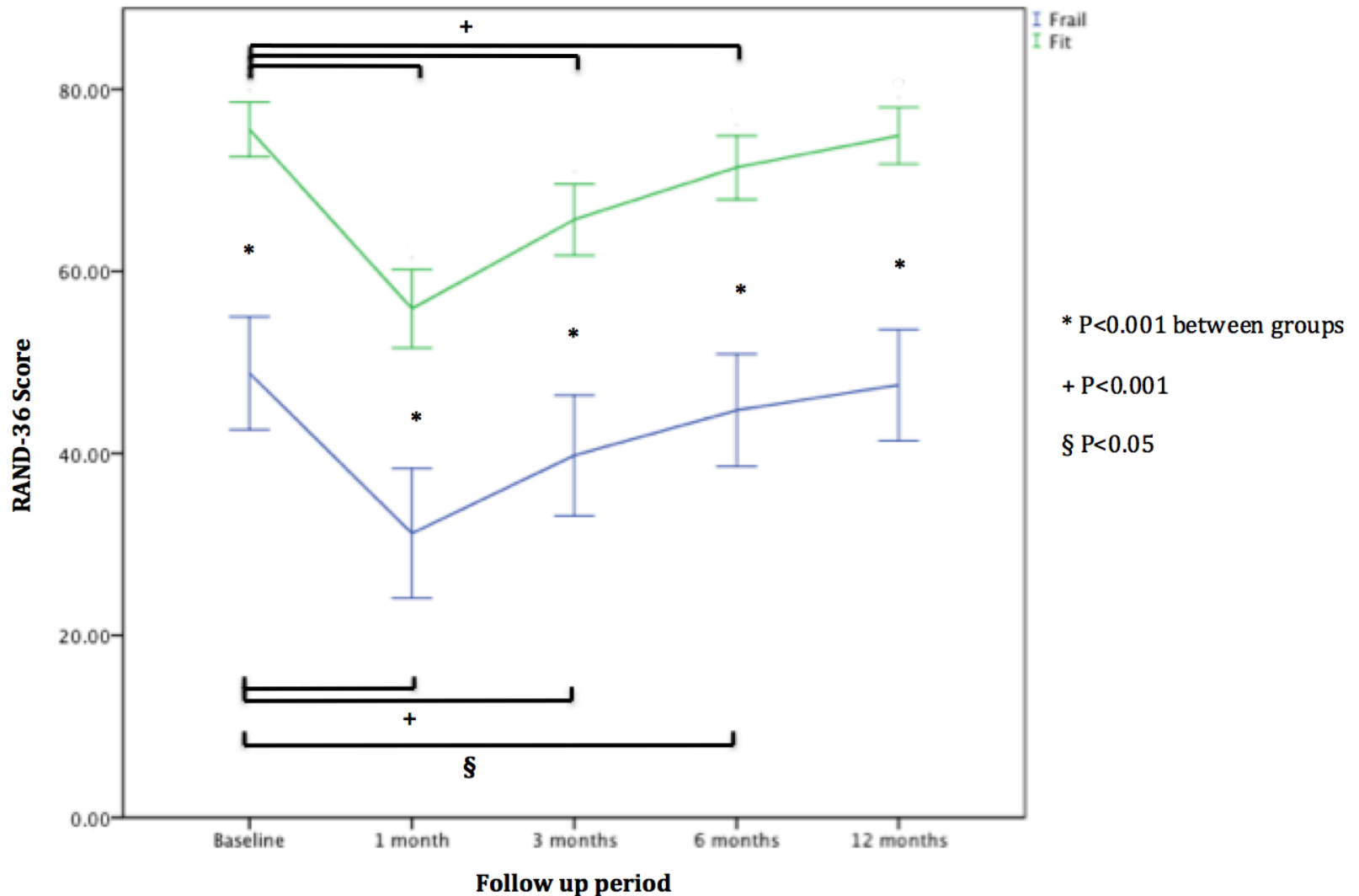
	Fit (n=85)	Frail (n=80)	P
Preop counselling	85 (100%)	80 (100%)	NS
Preop carbohydrate drinks	85 (100%)	80 (100%)	NS
Avoid bowel prep	80 (94%)	79 (99%)	NS
VTE	85 (100%)	80 (100%)	NS
GOAL fluid	42 (49%)	40 (50%)	NS
Laparoscopic surgery	63 (74%)	52 (65%)	NS
Avoid NG tube	82 (97%)	73 (91%)	NS
Avoid opiates	55 (65%)	52 (65%)	NS
<1L postop IV	61 (72%)	55 (69%)	NS
No drain	79 (93%)	76 (95%)	NS
Early removal of catheter	70 (82%)	61 (76%)	NS
Day 1 enteral nutrition	50 (59%)	45 (56%)	NS
Day 2 mobilisation	58 (68%)	36 (45%)	<0.05



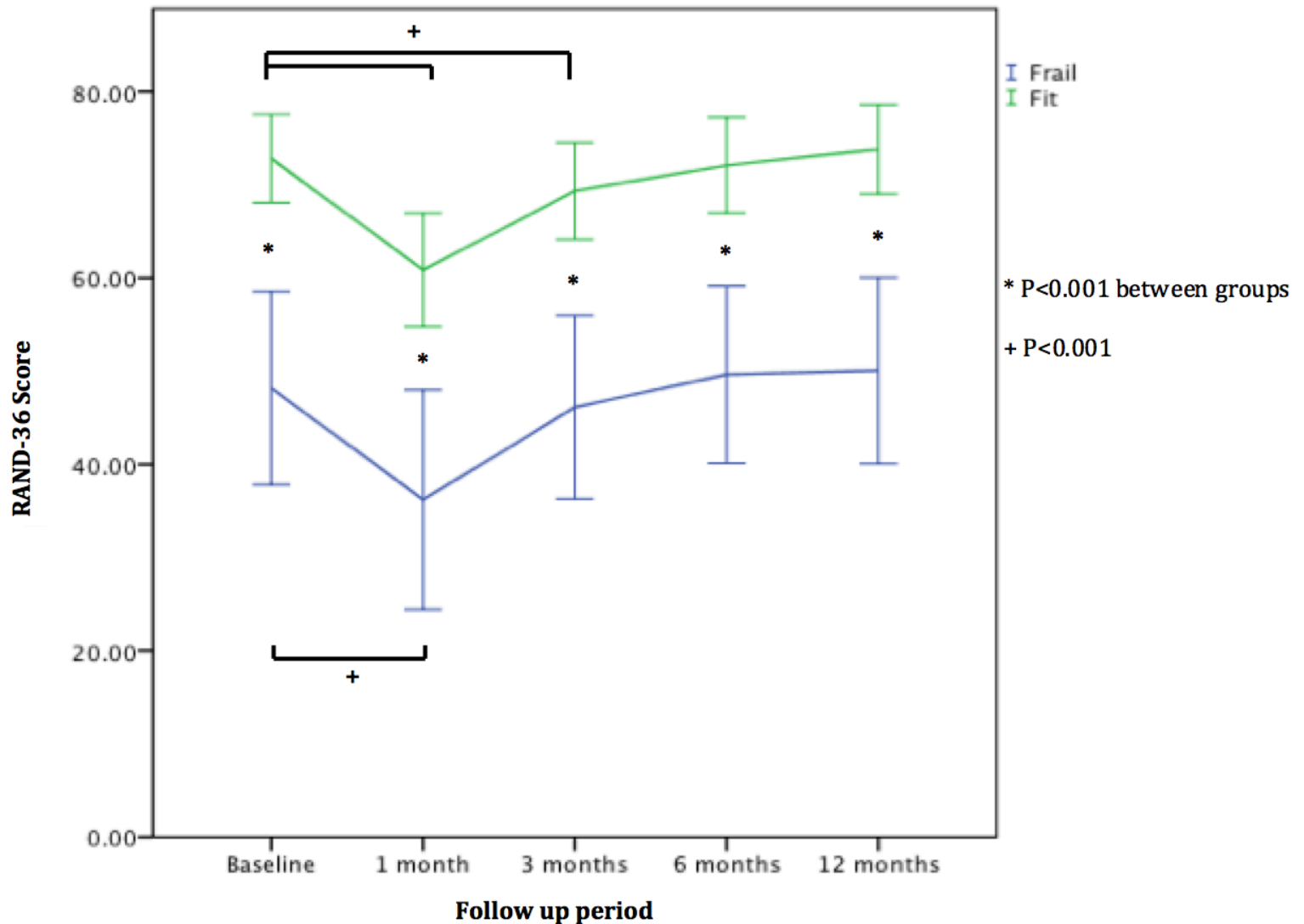
# Short term Outcomes

	Fit (n=85)	Frail (n=80)	P
Median Length of stay (IQR)	6 (4-8)	7.5 (5-12)	NS
No complications (Clavien 0)	47 (56%)	20 (25%)	0.01
Clavien 1	3 (4%)	9 (11%)	
Clavien 2	24 (28%)	33 (41%)	
Clavien 3	6 (7%)	6 (8%)	
Clavien 4	5 (6%)	4 (5%)	
Death (Clavien 5)	0 (0%)	4 (5%)	
30d Reoperation	4 (5%)	4 (5%)	NS
30d Readmission	6 (7%)	5 (6%)	NS
Discharge to nursing home or care package needed	1 (1%)	9 (11%)	0.01
Compliance with $\geq 10$ ERAS components	63 (74%)	55 (69%)	NS

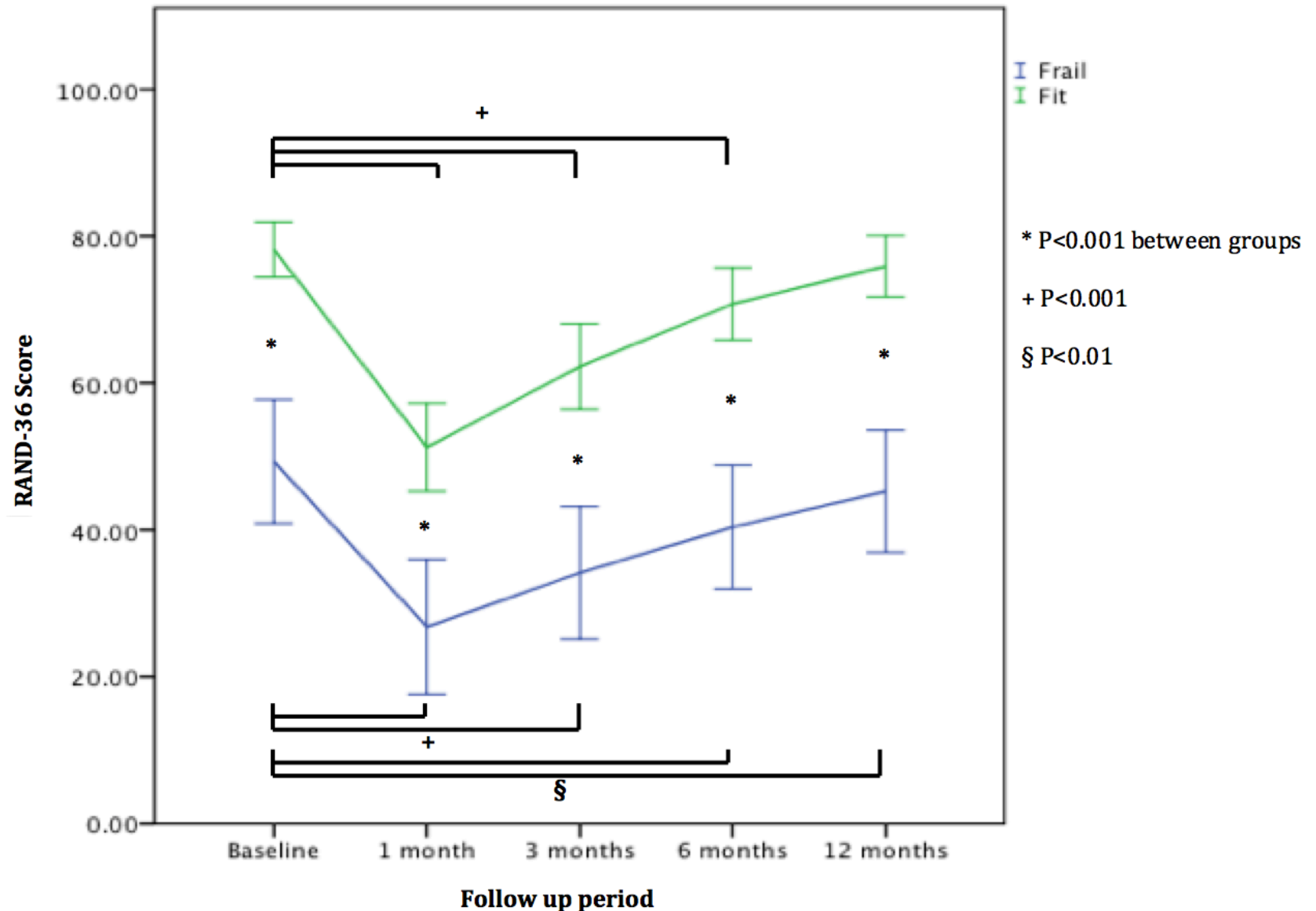
# Mean RAND 36 Scores in Fit and Frail Groups over 12 months following colorectal surgery



# Mean RAND 36 Scores in Patients with complications Clavien 0 or 1



# Mean RAND 36 Scores in Patients with complications Clavien $\geq 2$



# Conclusions

- Frailty:
  - Not necessarily a barrier to ERAS: mobilisation
  - Two-fold risk of complications
  - 10% will need discharge support
  - if no/minor complication return to baseline QOL by 3 months
  - if Clavien  $\geq 2$  complication do not return to baseline QOL/function even after 1 year