

**SERVIZIO SANITARIO REGIONALE
EMILIA-ROMAGNA**
Azienda Unità Sanitaria Locale di Ferrara
DIPARTIMENTO INTERAZIENDALE DI CHIRURGIA
Unità Operativa di Chirurgia Generale Provinciale
Direttore: Prof. Carlo FEO



**Università
degli Studi
di Ferrara**



La sorveglianza epidemiologica dello screening dei tumori del colon- retto nella Regione Emilia-Romagna

Seminario di studio

**Tavola rotonda: Diagnostica e
trattamento delle lesioni piane**
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Bologna, 4 aprile 2019

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Outline

- Indications to surgical resection
- Surgical techniques and approach
- Optimal perioperative care to achieve the best outcomes

Superficial lesions (type 0)

Protruding

Pedunculated

0-Ip

Sessile

0-Is

Nonprotruding and nonexcavated

Slightly elevated

0-IIa

Completely flat

0-IIb

Slightly depressed

0-IIc

Elevated and depressed types

0-IIc + IIa

0-IIa + IIc

Excavated

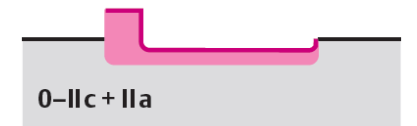
Ulcer

0-III

Excavated and depressed types

0-IIc + III

0-III + IIc



Risk of Occult Submucosal Invasive Cancer (SMIC) According to Gross Morphology and Location n = 1712



A typical proximally located 0-IIa Granular Lesion.
Overall risk of SMIC 0.7%

0-IIa G

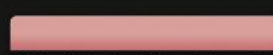


SMIC risk by Paris Type Alone 2.1%
SMIC risk by Surface Morphology Alone 3.5%

SMIC Risk 0.8%

Proximal 0.7% **Very Low Risk** Distal 1.2% **Low Risk**

0-IIa NG



SMIC risk by Paris Type Alone 2.1%
SMIC risk by Surface Morphology Alone 8.1%

SMIC Risk 4.2%

Proximal 3.8% Distal 6.4%



A proximal 0-IIa Non-Granular Lesion.
Overall risk of SMIC 3.8%

0-IIa+Is G

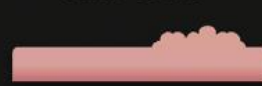


SMIC risk by Paris Type Alone 8.4%
SMIC risk by Surface Morphology Alone 3.5%

SMIC Risk 7.1%

Proximal 4.2% Distal 10.1%

0-IIa+Is NG



SMIC risk by Paris Type Alone 8.4%
SMIC risk by Surface Morphology Alone 8.1%

SMIC Risk 14.1%

Proximal 12.7% **High Risk** Distal 15.9% **High Risk**



A rectal (distal) 0-IIa+Is Granular Lesion.
Overall risk of SMIC 10.1%



A transverse colon (proximal) 0-IIa+Is Non-Granular Lesion.
Overall risk of SMIC 12.7%

0-Is G



SMIC risk by Paris Type Alone 6.0%
SMIC risk by Surface Morphology Alone 3.5%

SMIC Risk 3.7%

Proximal 2.3% **Low Risk** Distal 5.7%

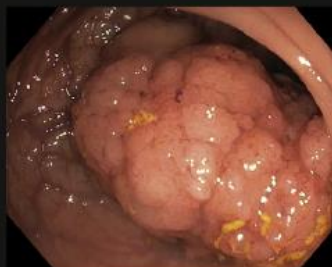
0-Is NG



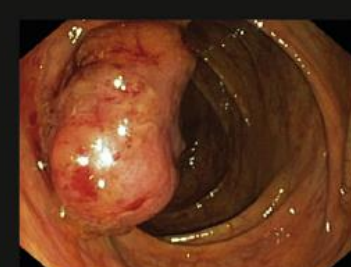
SMIC risk by Paris Type Alone 6.0%
SMIC risk by Surface Morphology Alone 8.1%

SMIC Risk 15.3%

Proximal 12.3% **High Risk** Distal 21.4% **Very High Risk**



A sigmoid colon (distal) 0-Is Granular Lesion.
Overall risk of SMIC 5.7%



An ascending colon (proximal) 0-Is Non-Granular Lesion.
Overall risk of SMIC 12.3%

Surgical indications

- Suspected endoscopic evidence of *deep* submucosal invasive cancer
- Suspected endoscopic evidence of *superficial* submucosal invasive cancer (after referral to expert centre to evaluate *en bloc* EMR or ESD)
- Difficult anatomic location or access, prior failed attempts, non-lifting as evaluated at expert centre
- Incomplete (not radical) endoscopic excision (R1)

Multidisciplinary team

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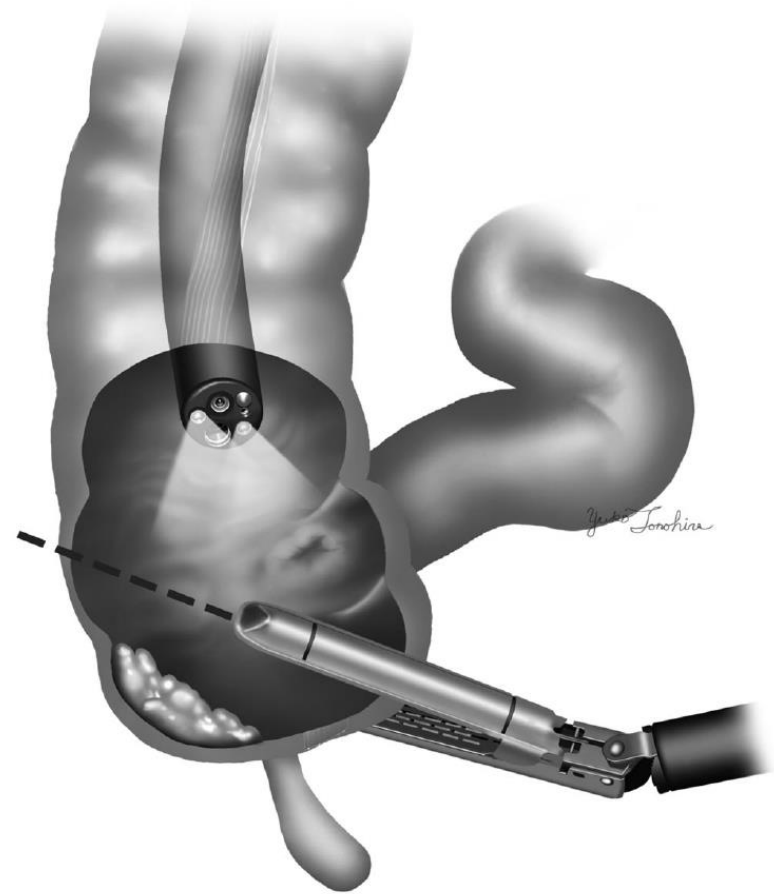
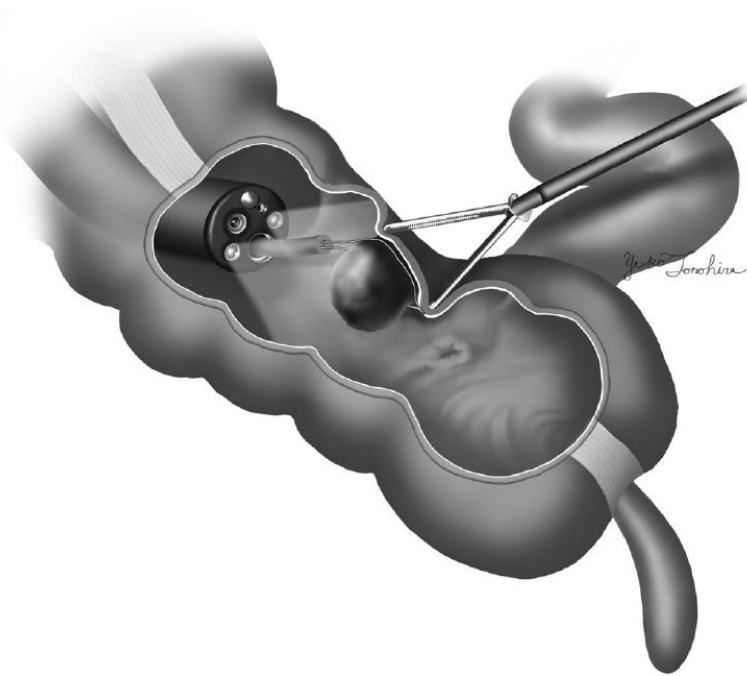
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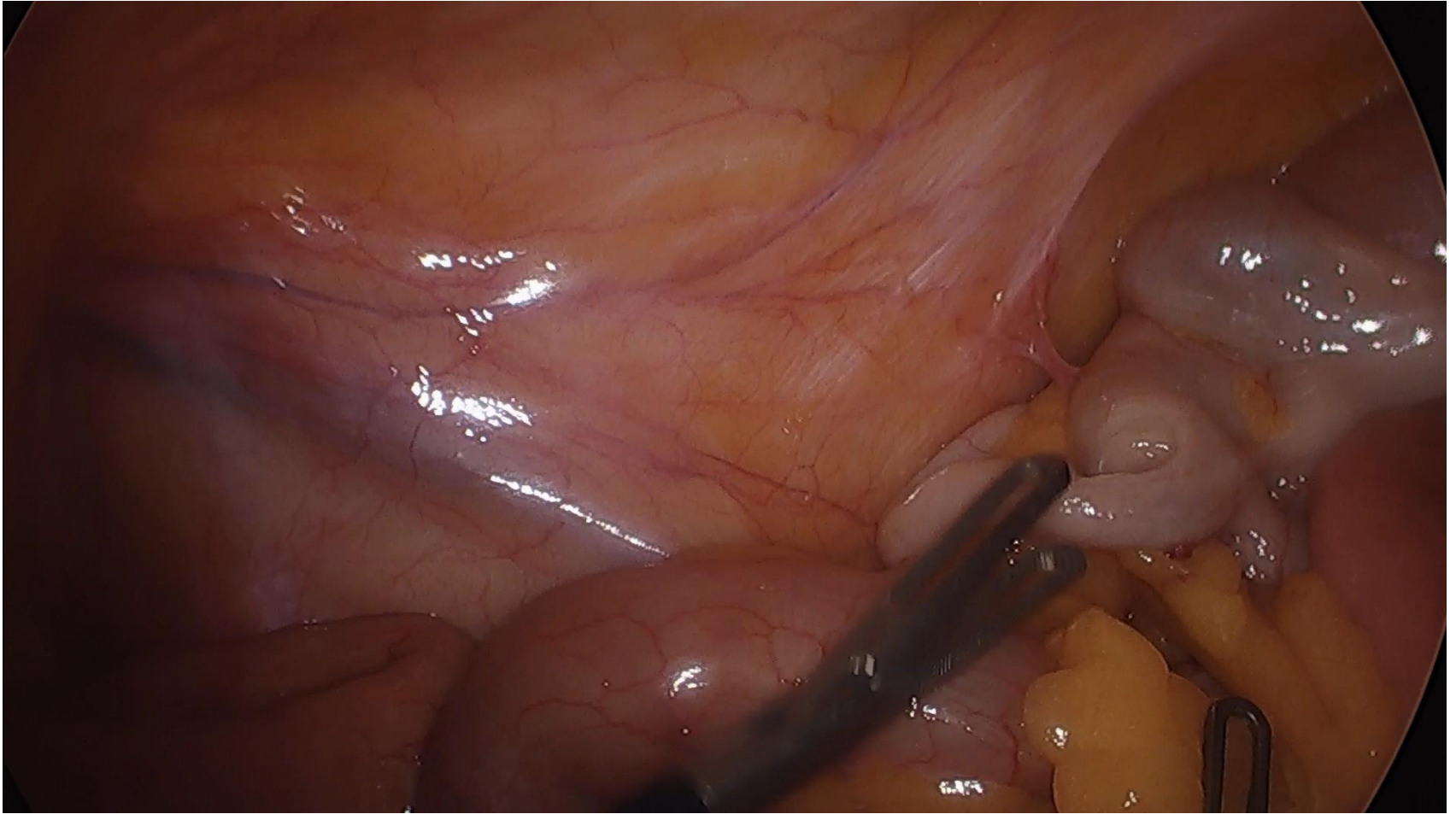
Case manager

P.D.T.A del Colon - Retto

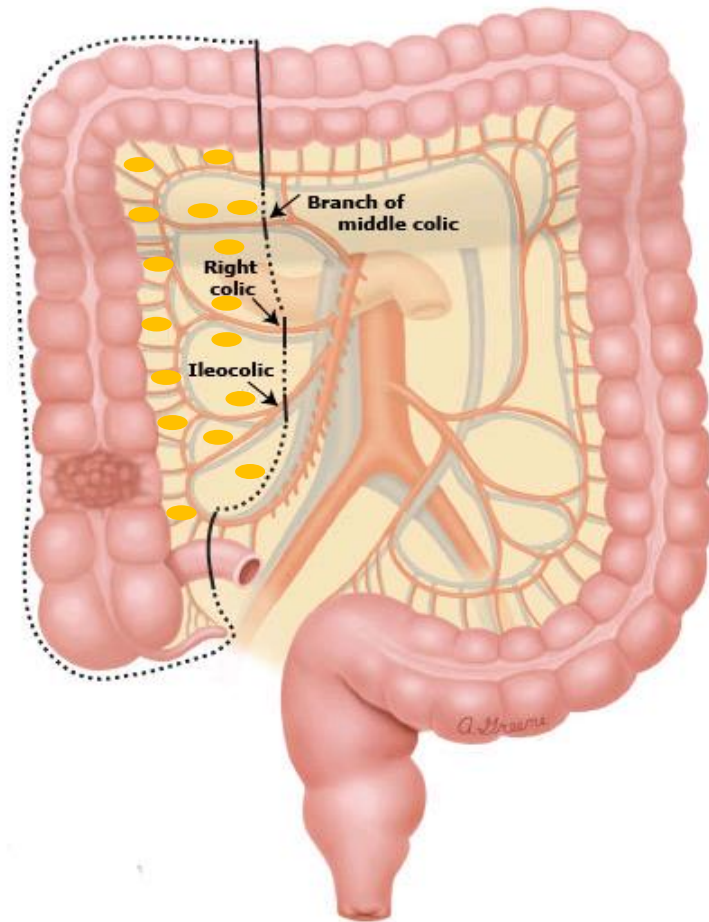
Combined endoscopic laparoscopic techniques



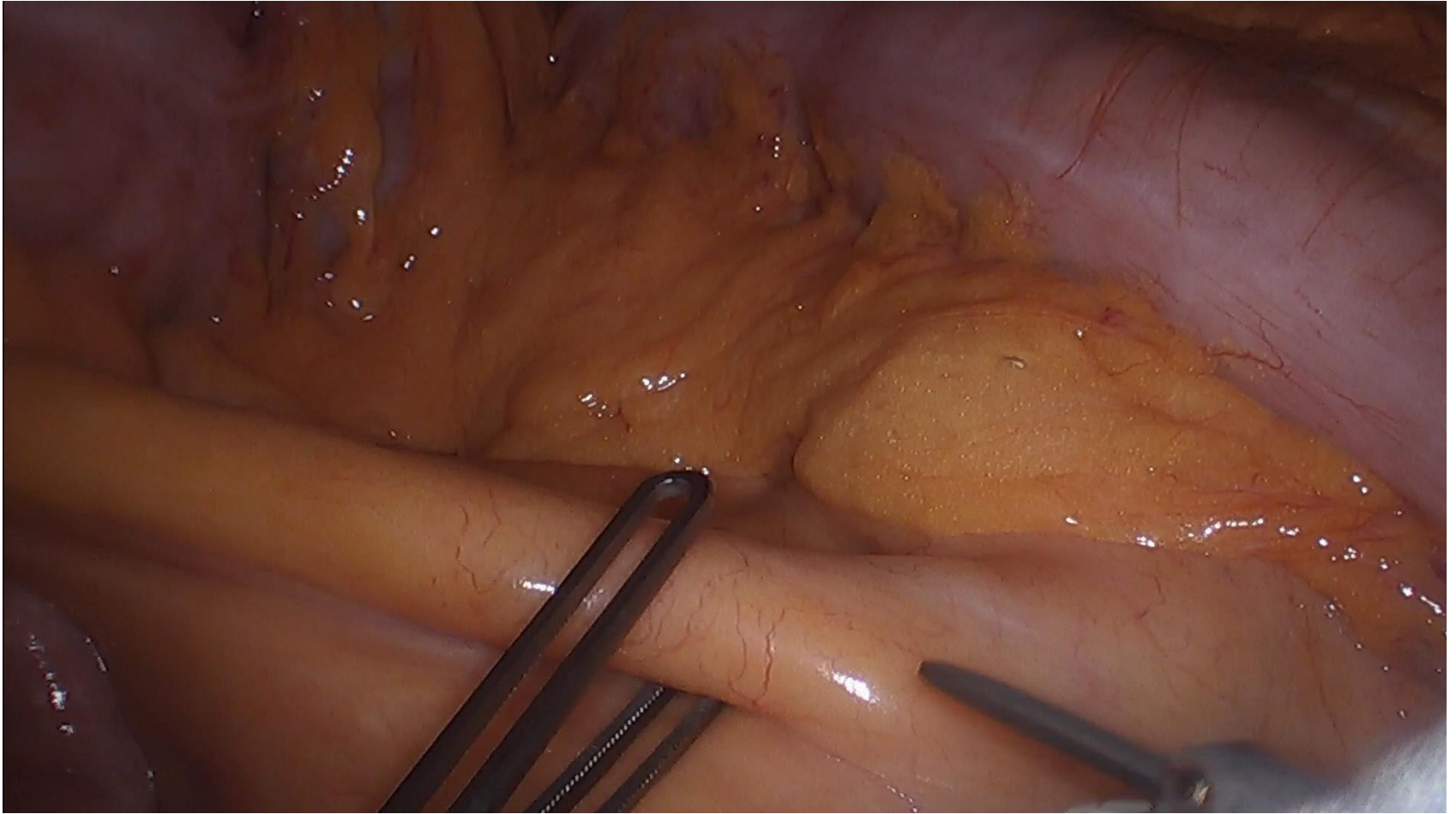
Cecal resection



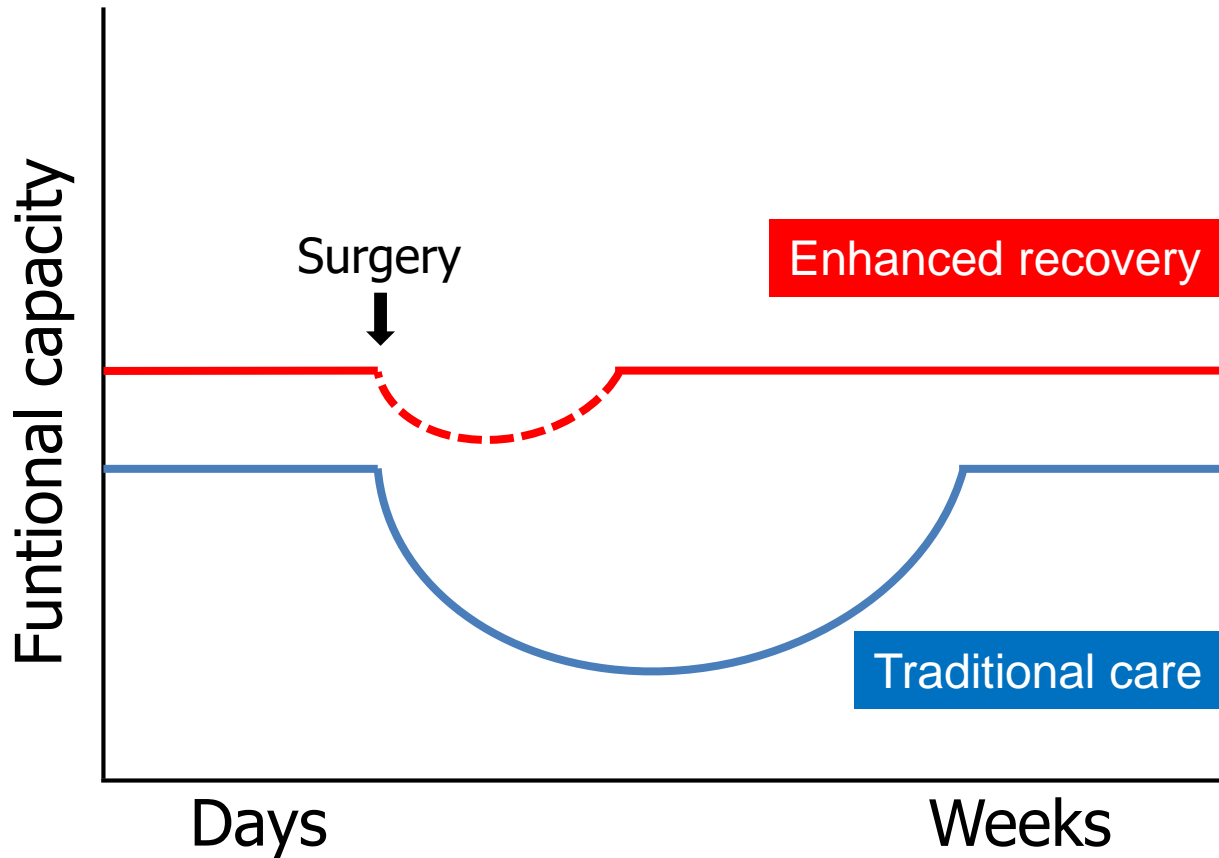
Oncologic colorectal resection



Right colectomy for cancer



Postoperative recovery



Minimally invasive surgery

Other interventions:

- prevention of intraoperative hypothermia
- pre-intraop fluid optimization
- preop carbohydrates

Surgical stress:

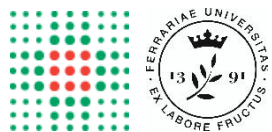
pain, catabolism, immuno-dysfunction, nausea/vomiting, ileus, impaired pulmonary function, ↑ cardiac demands, coagulatory-fibrinolytic dysfunction, cerebral dysfunction, fluid homeostasis alteration, sleep disturbances & fatigue

Pharmacological intervention:

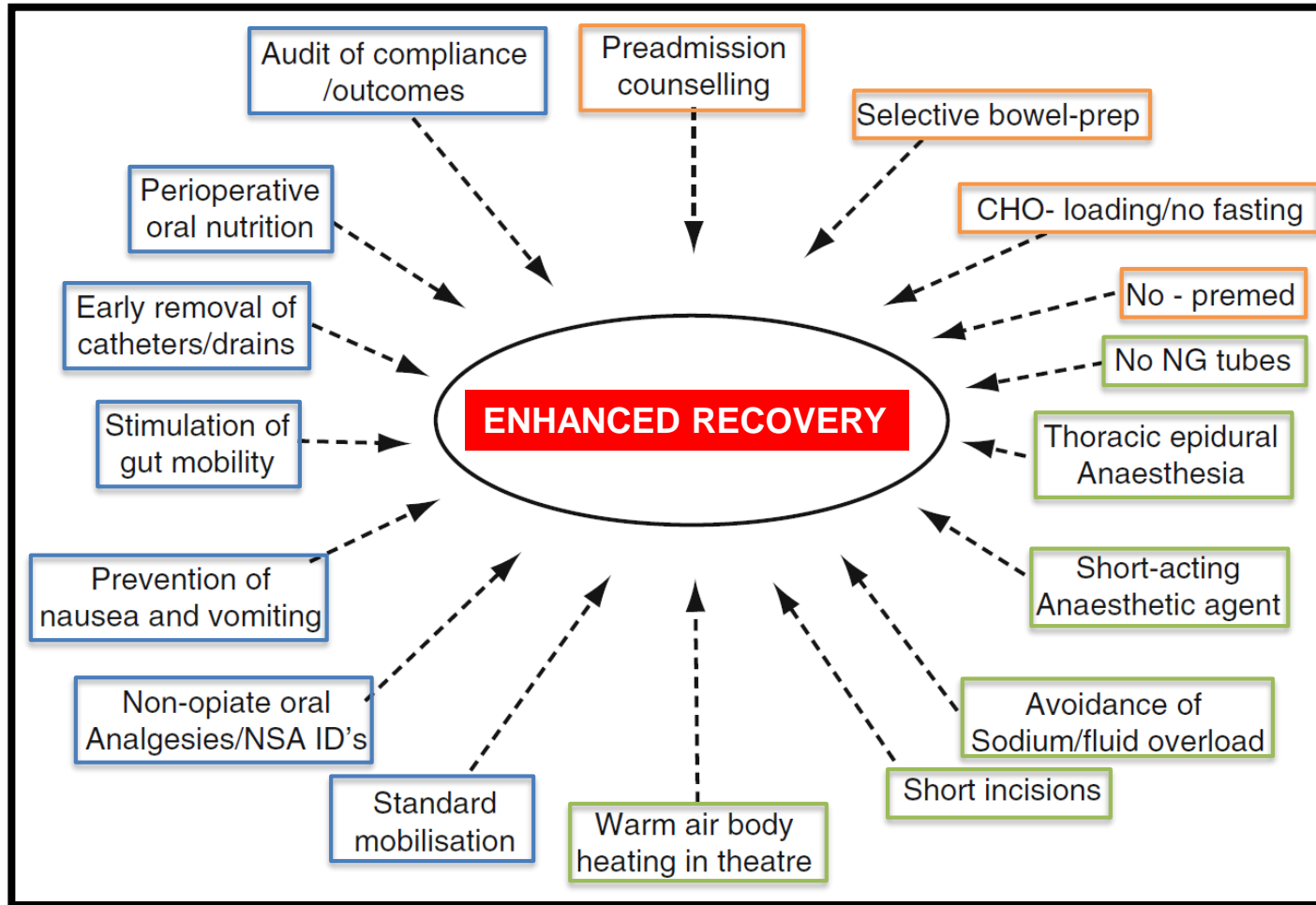
- non opiod multimodal analgesic
- glucocorticoids
- statins
- B-blockers
- alfa₂-agonist
- insulin
- anabolic agents
- nutrition
- systemic local anesthetics

Afferent neural blockade:

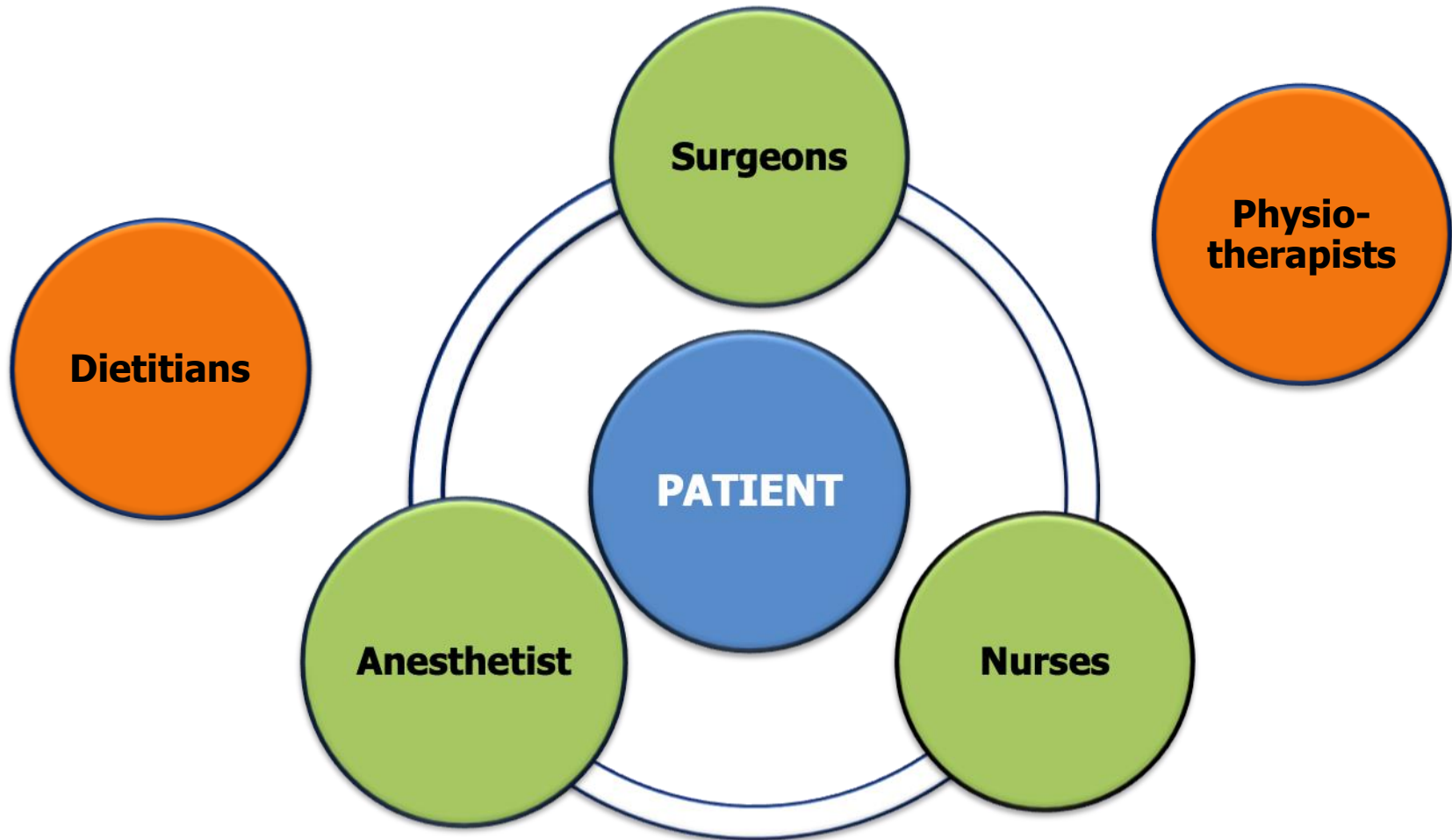
- local infiltration anesthesia
- periferal nerve block
- epidural
- spinal anesthesia analgesia



ERAS protocol

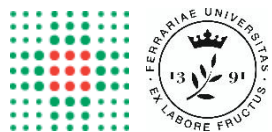
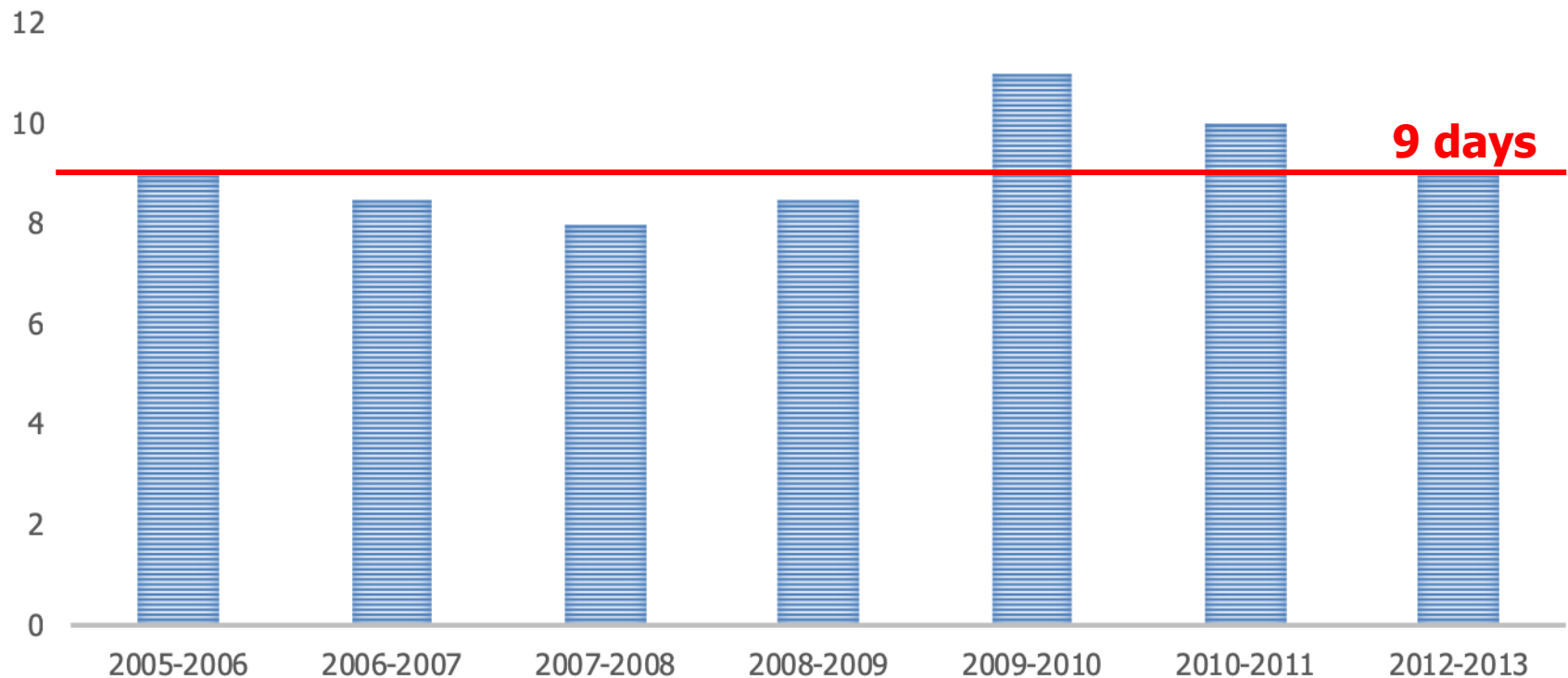


Multidisciplinary team

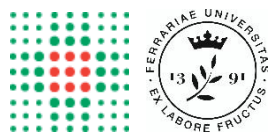


Do we need ERAS?

Postoperative Length of Hospital Stay in Colorectal Cancer Screenings



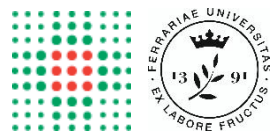
ERP element	Pre-ERP group	ERP group
Preoperative counseling	Informed consent	Extensive w/ booklet
Preoperative fasting	Since midnight	No
Preoperative CHO load	No	Yes
Preoperative bowel prep.	Yes	No
Anesthesia	Long-acting opioid based ± thoracic epidural	Blended (short-acting drugs w/thoracic epidural)
Intraoperative (i.v.) fluids	Liberal	Avoid overhydration
Postoperative pain control	Thoracic epidural or i.v. opioids	POD [†] 0-2 Thoracic epidural POD ≥3 NSAIDs + paracetamol
Removal of gastric tube	Intestinal activity	In the operating room
Start of liquid diet	Intestinal activity	POD 0-1
Start of solid food	Bowel movements	POD 1
i.v. fluids abolition	Bowel movements	POD 1-2
Removal of Foley catheter	Bowel movements	POD 2
Mobilization	No structured plan	POD 0-1



*CHO – Carbohydrate
[†]POD – Post-Operative Day

— Preoperative elements
— Intraoperative elements
— Postoperative elements

POSTOPERATIVE OUTCOMES	Pre-ERP Group (N=100)	ERP Group (N=100)	p
Time to liquid diet (days)	3 (2-4)	1 (1-1)	< 0,001
Time to solid food (days)	5 (5-7)	3 (2-3)	< 0,001
Time to intestinal activity (days)	4 (3-4)	2 (1-2)	< 0,001
Time to bowel movements (days)	5 (4-6)	3 (2-4)	< 0,001
Pain control on oral analgesic (days)	4 (3-5)	3 (3-4)	< 0,001
Postoperative day fit for discharge (days)	7 (6-8)	4 (4-5)	< 0,001
Hospital length of stay (days)	8 (7-9)	4 (4-5)	< 0,001
Postoperative complications (Clavien-Dindo)*			0,663
Grade I	3	7	
Grade II	22	26	
Grade IIIa	1	1	
Grade IIIb	1	1	
In hospital mortality*	0	0	
30 days re-admission*	6	3	0,498



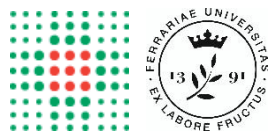
Median (IQR 25-75) | Log-rank test

*Chi square test

Direct costs analysis

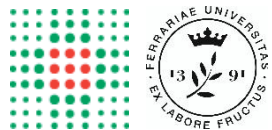
- Costs included:
 - Implementation of the program
 - Preoperative counseling
 - Surgical operation (OR, instruments)
 - Hospitalization (drugs, exams, visits)
 - Re-hospitalization

Variables	Pre-ERP Group (N=100)	ERP Group (N=100)	p
Total direct costs per patient (€)	6.796,76 ± 1.381,34	5.339,05 ± 1.909,24	<0,001

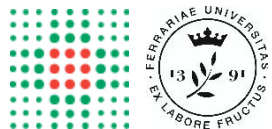
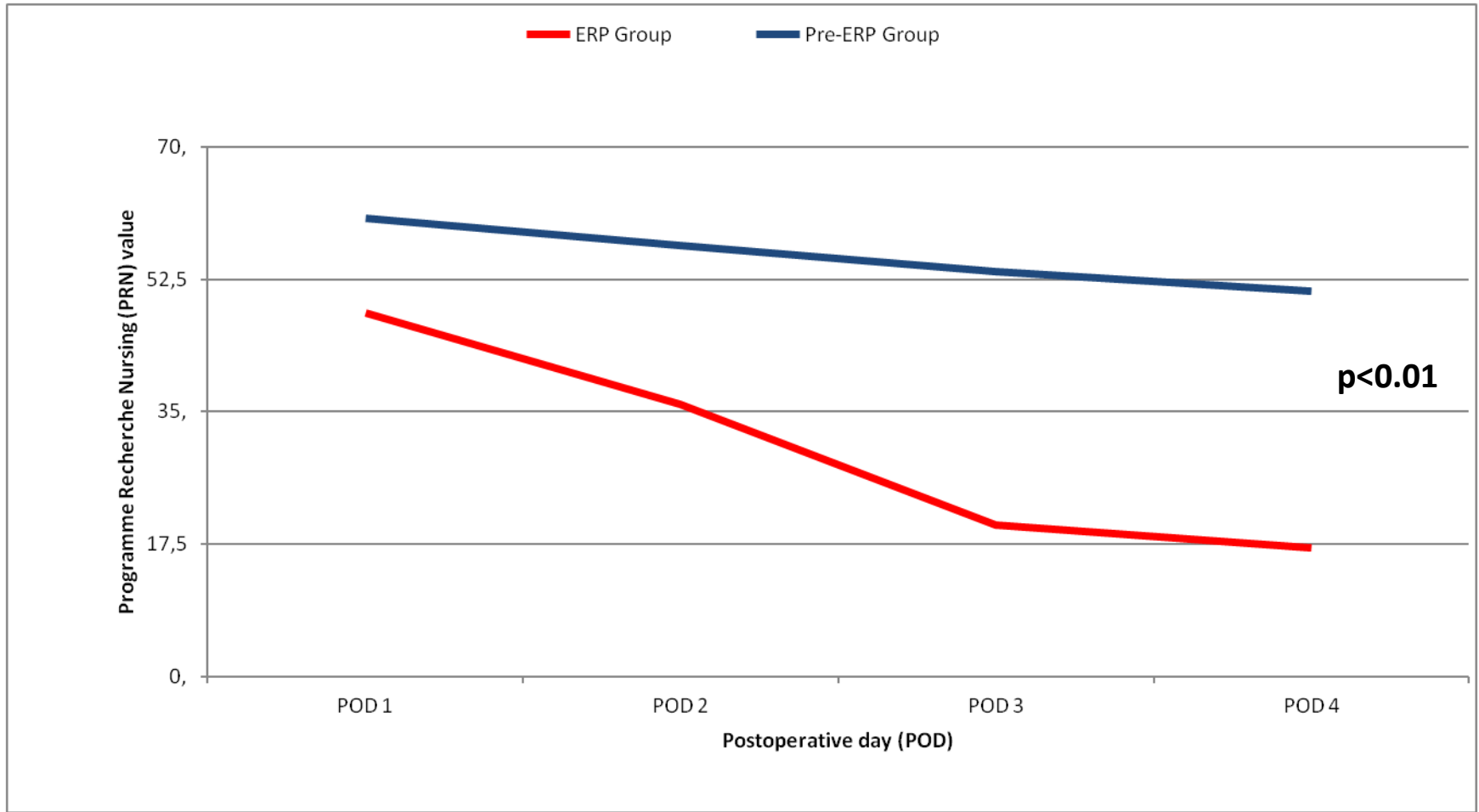


Project de Recherche en Nursing

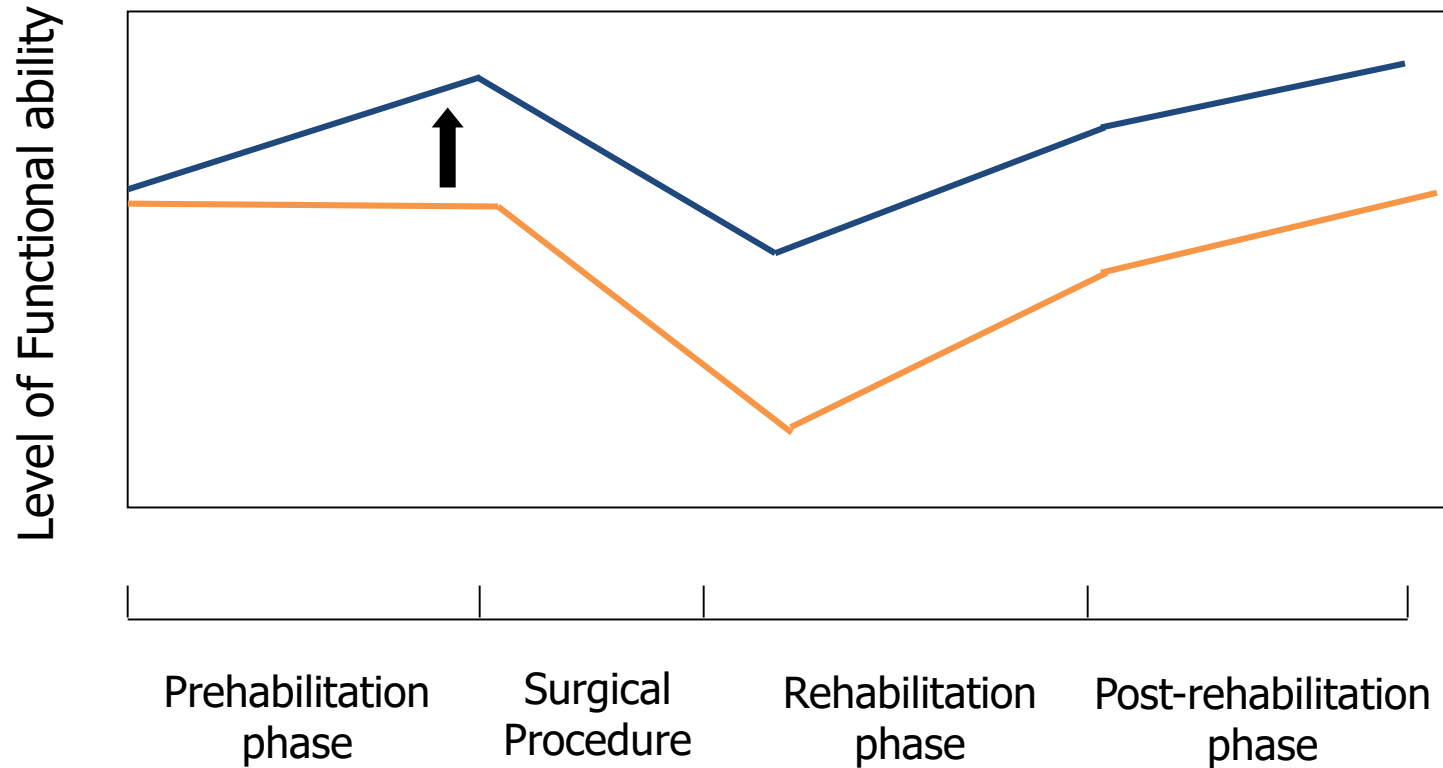
- Standardized, validated point system based on 8 groups of activities
 - Respiration
 - Feeding and hydration
 - Elimination
 - Hygiene, Mobilization
 - Communication
 - Treatments
 - Diagnostic procedures
- PRN value compared between groups for first few days of hospital stay based on the ERP patients' median LOS
- Higher PRN point value corresponds to a greater amount of direct care required



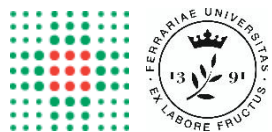
Project de Recherche en Nursing



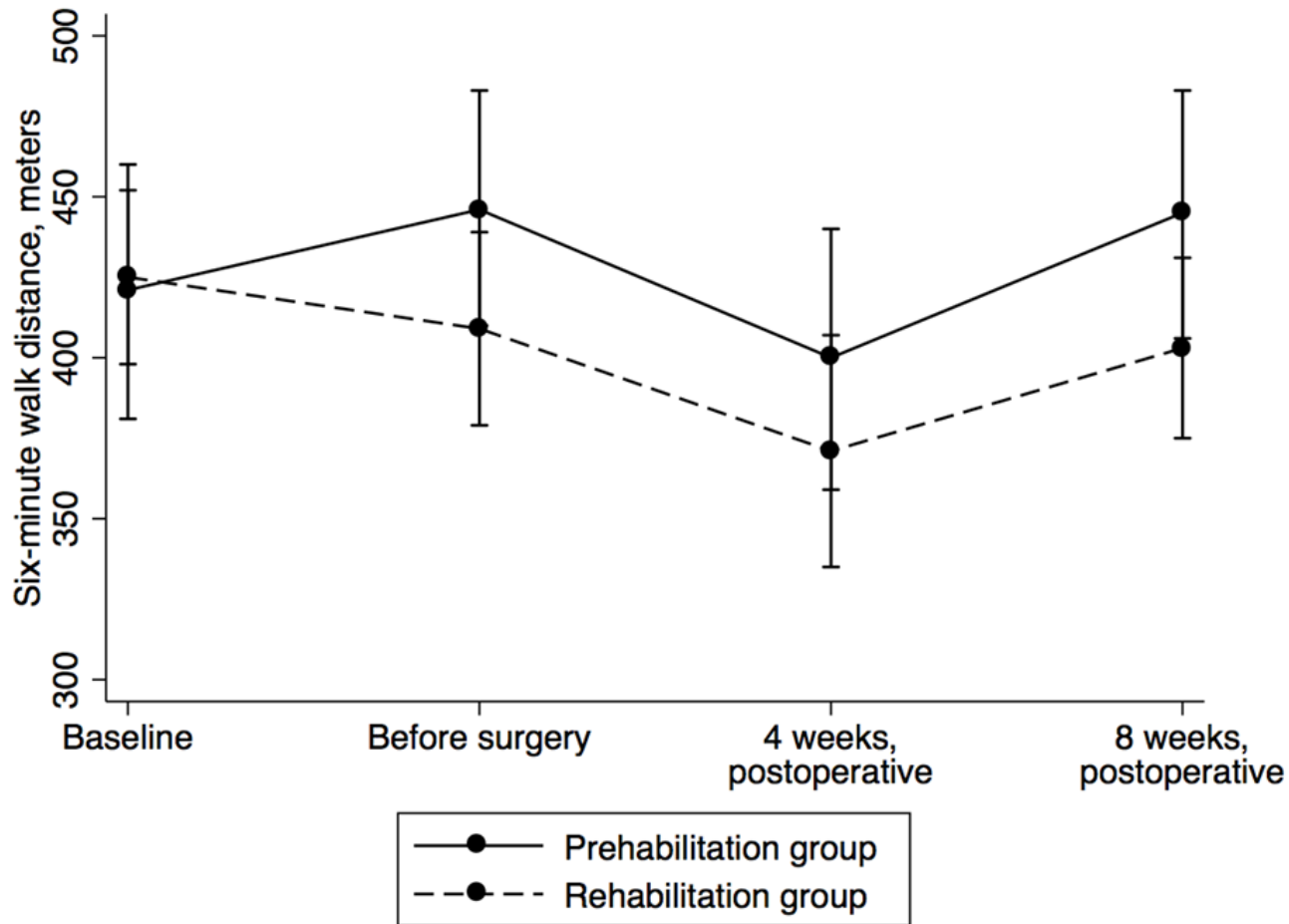
Functional ability throughout the surgical process



Prehab patient ———
Non-prehab patient ———



Multimodal Prehab vs Rehab: RCT




STUDY PROTOCOL

Open Access



Multimodal prehabilitation in colorectal cancer patients to improve functional capacity and reduce postoperative complications: the first international randomized controlled trial for multimodal prehabilitation

Stefanus van Rooijen¹ , Francesco Carli², Susanne Dalton³, Gwendolyn Thomas¹, Rasmus Bojesen⁴, Morgan Le Guen⁵, Nicolas Barizien⁶, Rashami Awasthi², Enrico Minnella², Sandra Beijer⁷, Graciela Martínez-Palli⁸, Rianne van Lieshout⁹, Ismayil Gögenur⁴, Carlo Feo¹⁰, Christoffer Johansen^{3,11}, Celena Scheede-Bergdahl^{4,12}, Rudi Roumen¹, Goof Schep¹³ and Gerrit Slooter^{1,14*}

Summary

- **Laparoscopy** for colorectal cancer surgery
- **Enhanced recovery programs** to attenuate surgical stress response and accelerate convalescence
- **Prehabilitation** to promote physical and psychological health to reduce the incidence and/or severity of future impairments

Grazie per l'attenzione

