

# ERAS



Peut-on réduire les  
conséquences nutritionnelles  
de la chirurgie

CHC Dejong

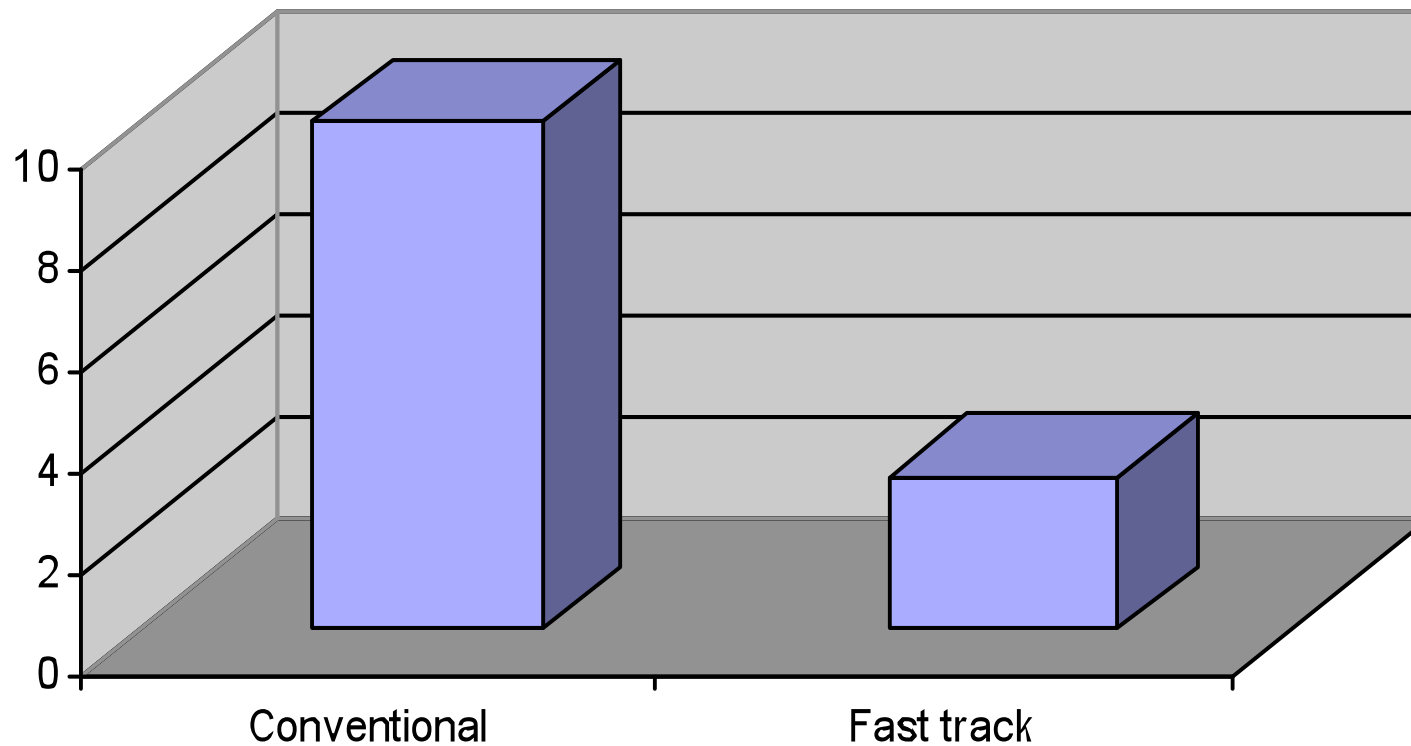
Department of Surgery

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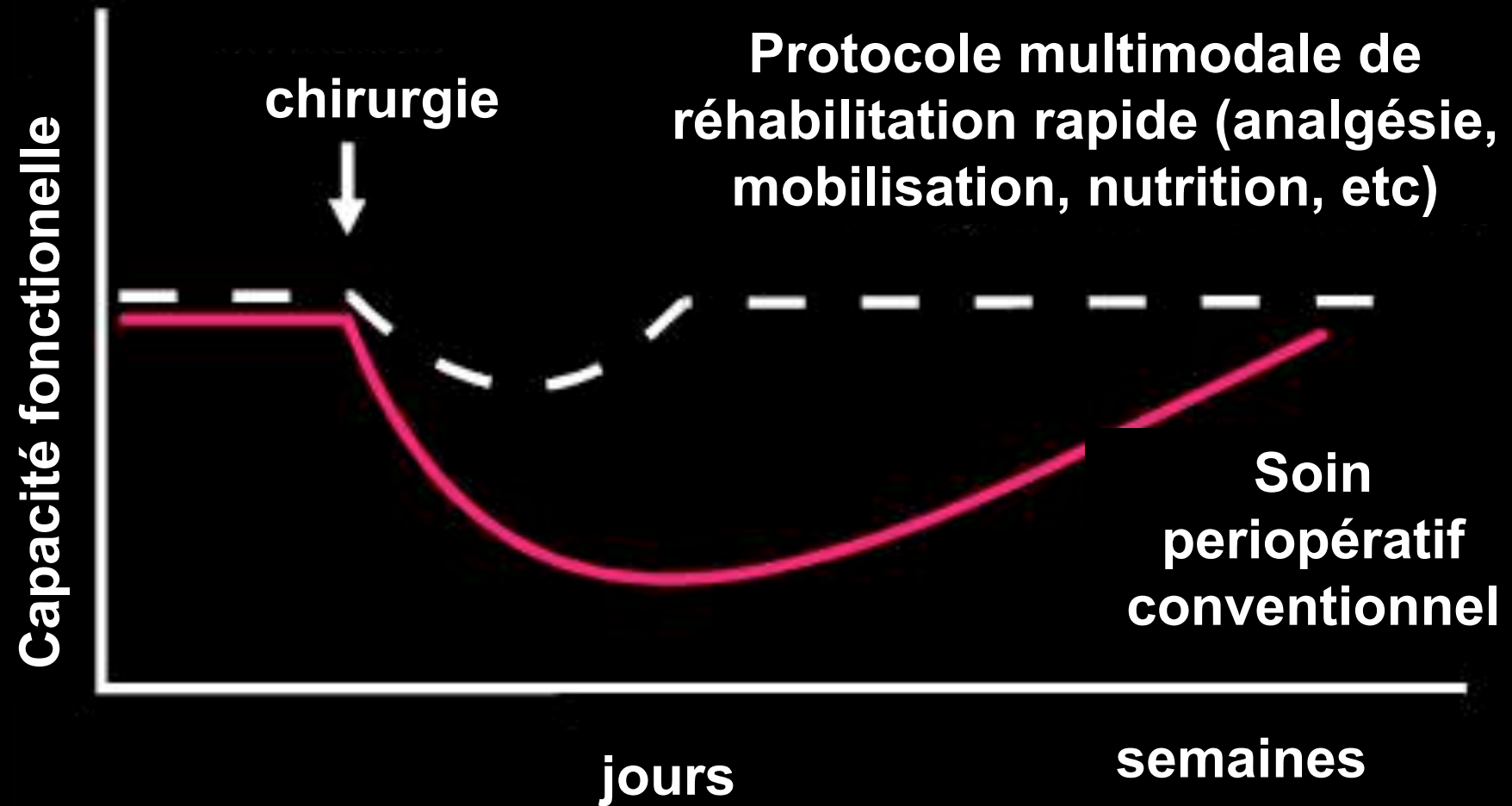
# Conventionnel versus 'Fast Track'

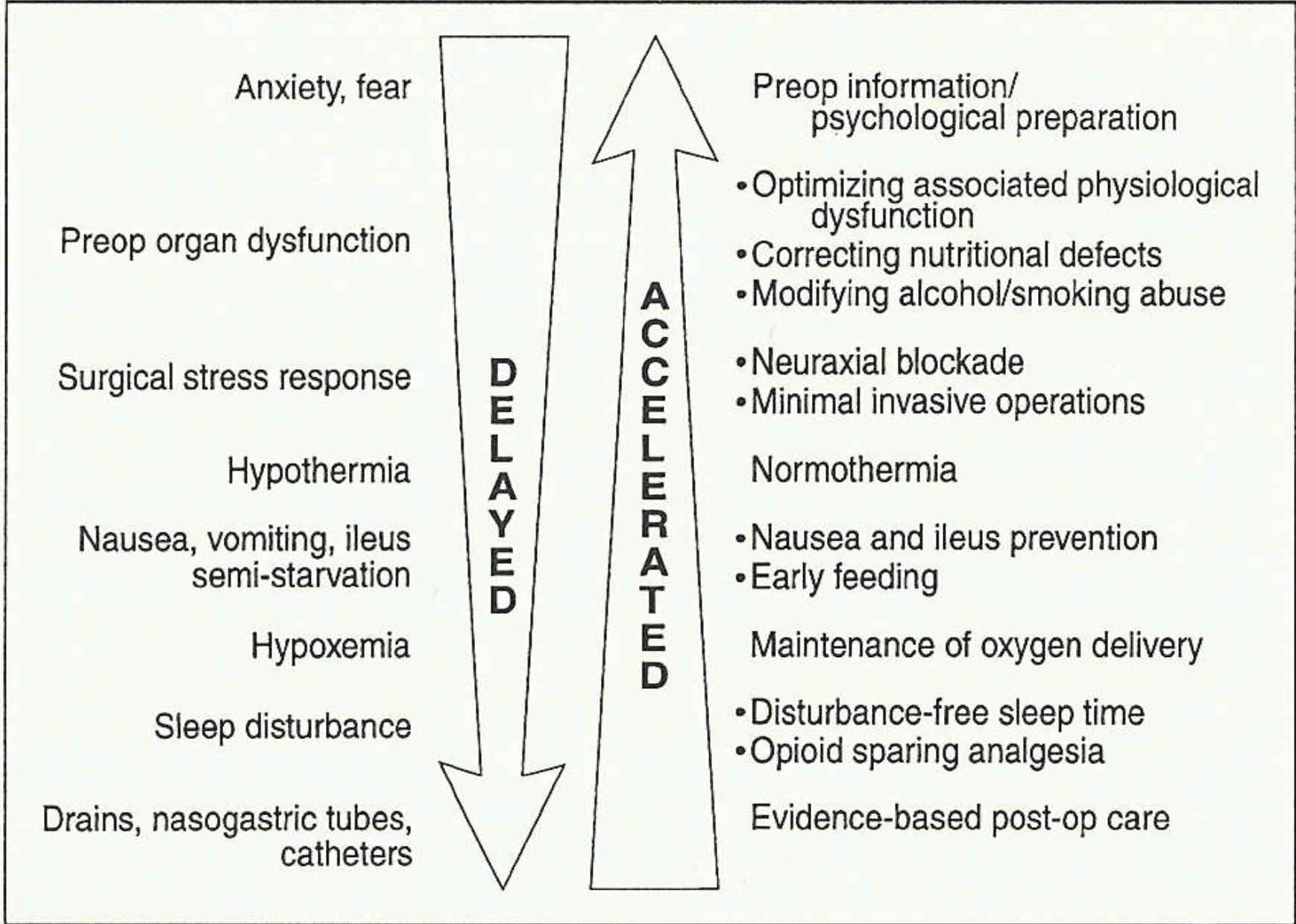
**journées dans l'hôpital après colectomie droite**



*Kehlet & Wilmore, Am J Surg 2002;183:630-641; Janson et al, BJS 2004; 91: 409-417*

# Modulation de la réponse physiologique au stress de la chirurgie



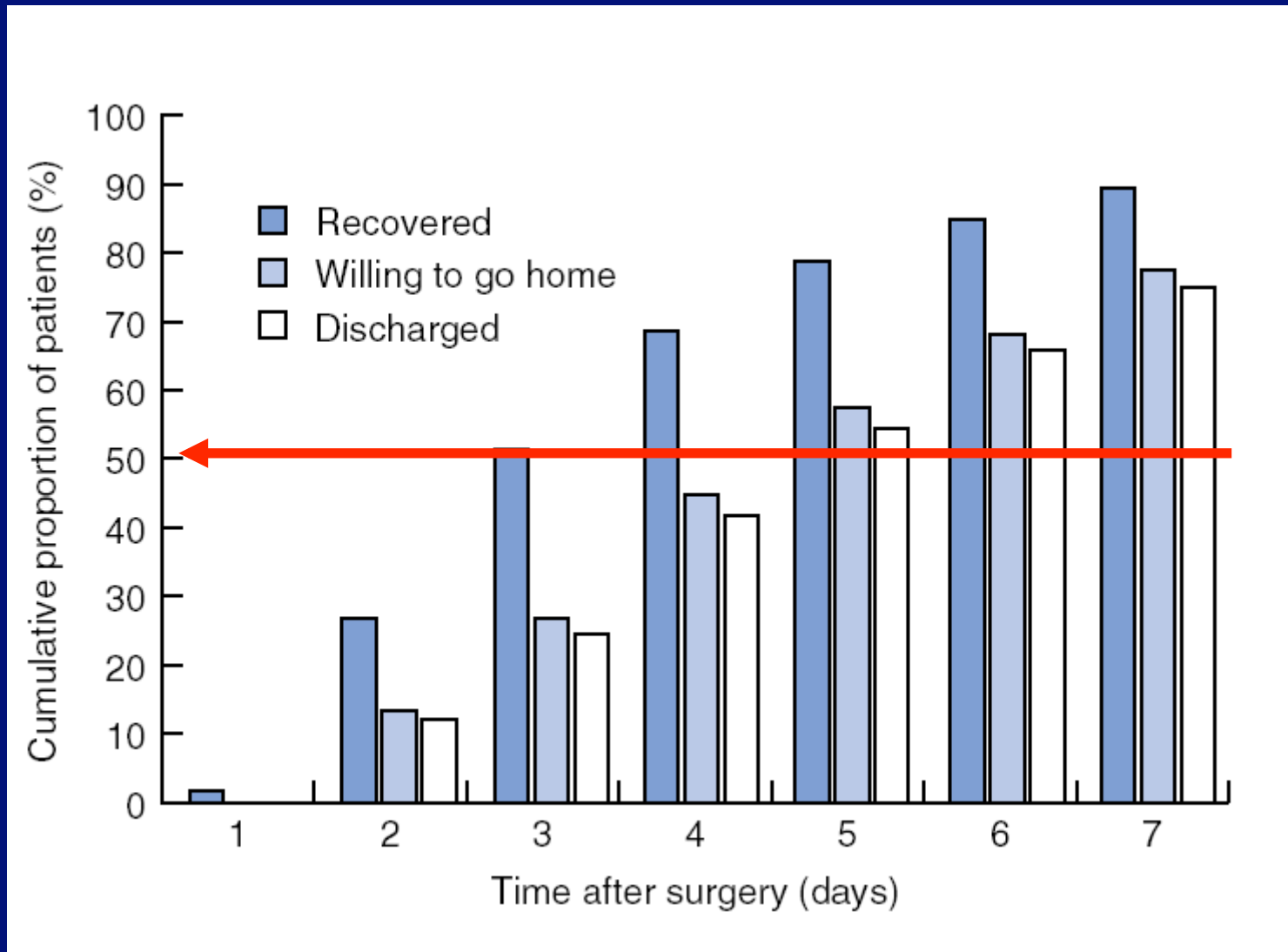




# Critères pour démission de l'hôpital

- Sans douleur avec uniquement de l'analgésie orale
- Prends la nourriture normale, boit, sans perfusion, ayant fait les besoins
- Mobile indépendant au niveau pré-opératoire
- Tous ci-dessus et
- D'accord de retourner à la maison

# Chirurgie colorectale – Récupération versus démission



# Consensus Review of Optimal Perioperative Care in Colorectal Surgery

## *Enhanced Recovery After Surgery (ERAS) Group Recommendations*

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**Objectives:** To describe a consensus review of optimal perioperative care in colorectal surgery and to provide consensus recommendations for each item of an evidence-based protocol for optimal perioperative care.

**Data Sources:** For every item of the perioperative treatment pathway, available English-language literature has been examined.

**Study Selection:** Particular attention was paid to meta-analyses, randomized controlled trials, and systematic reviews.

**Data Extraction:** A consensus recommendation for each protocol item was reached after critical appraisal of the literature by the group.

**Data Synthesis:** For most protocol items, recommendations are based on good-quality trials or meta-analyses of such trials.

**Conclusions:** The Enhanced Recovery After Surgery (ERAS) Group presents a comprehensive evidence-based consensus review of perioperative care for colorectal surgery. It is based on the evidence available for each element of the multimodal perioperative care pathway.

*Arch Surg.* 2009;144(10):961-969



# Implementation de la Directive Nationale 'Soin Nutritionnel Péri-opératoire'



**MUMC**  
début Avril 2002



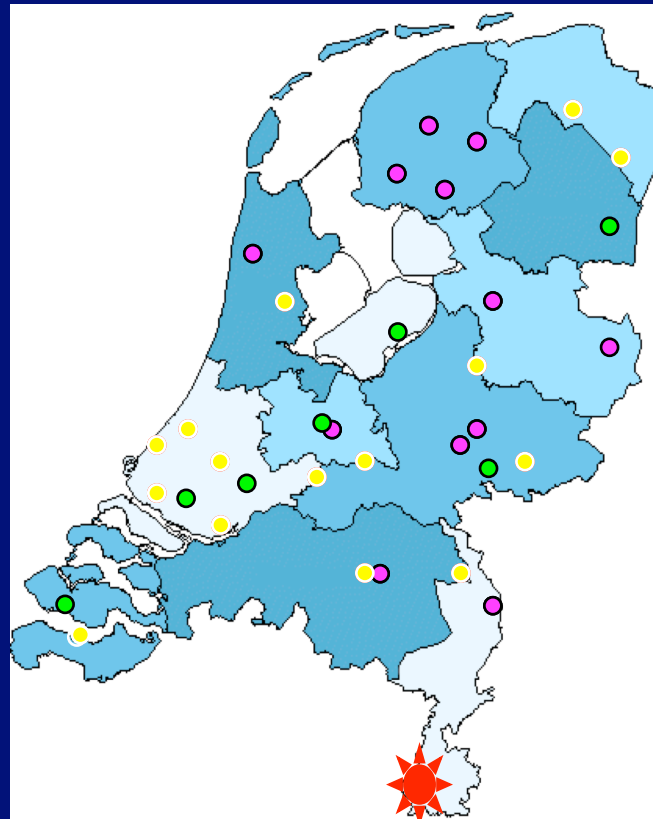
**1<sup>ère</sup> série**  
12 hôpitaux  
départ Jan 2006



**2<sup>de</sup> série**  
14 hôpitaux  
départ Mai 2006

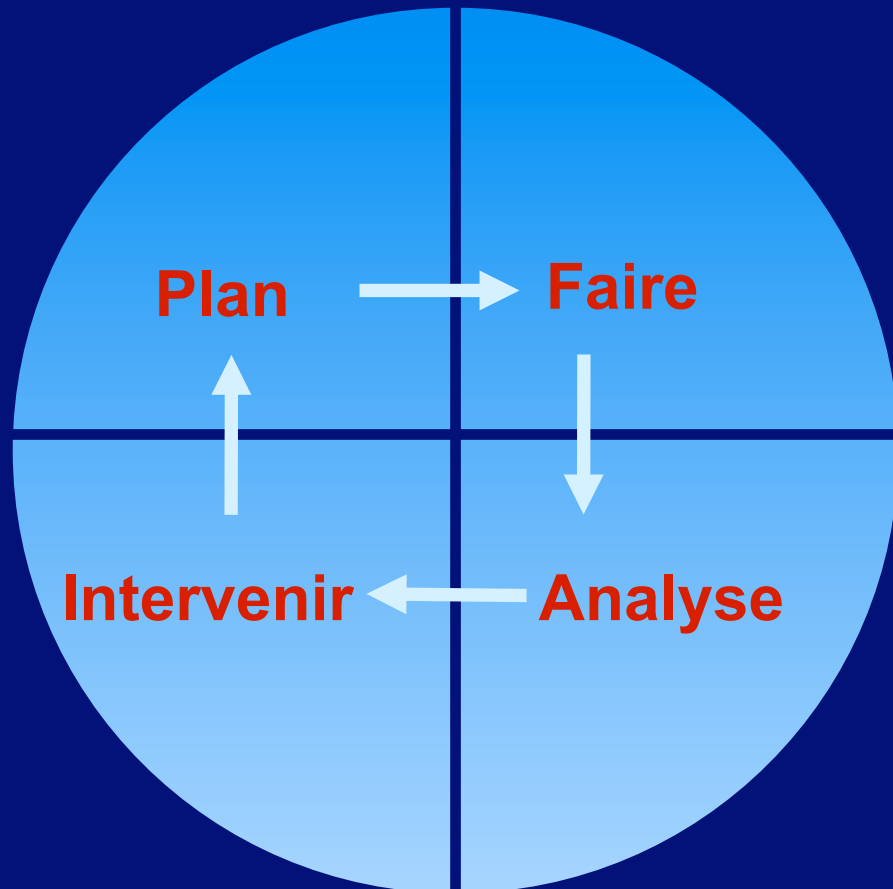


**3<sup>ème</sup> série**  
7 hôpitaux  
départ Mai 2008





# Implémentation – Cycles courtes

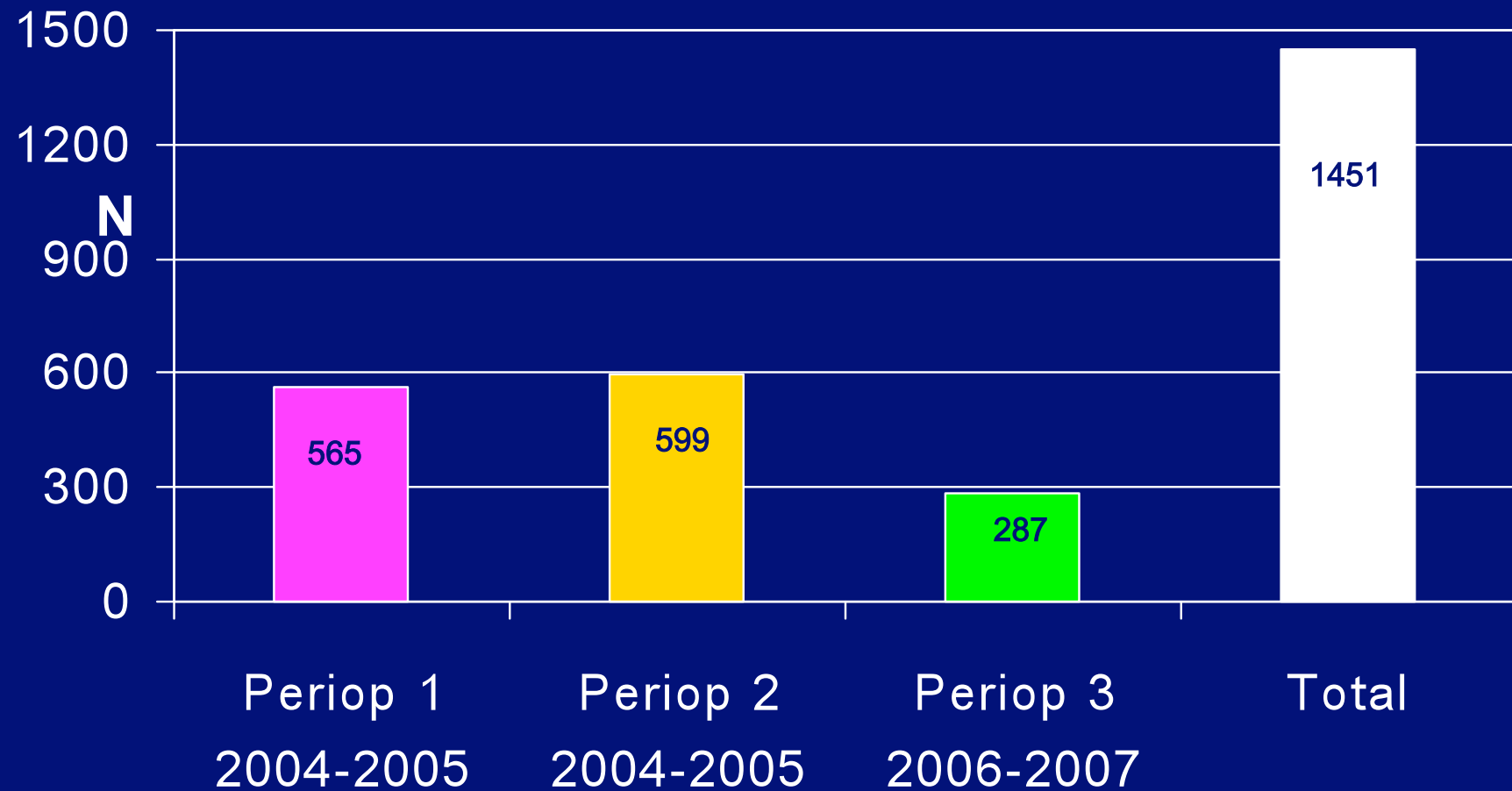


- **But**
  - Qu'est-ce qu'on veut achever
- **Measurer**
  - Quoi en combien de temps
- **Amélioration?**
  - Est-ce que le changement a amélioré le soin péri-operatif

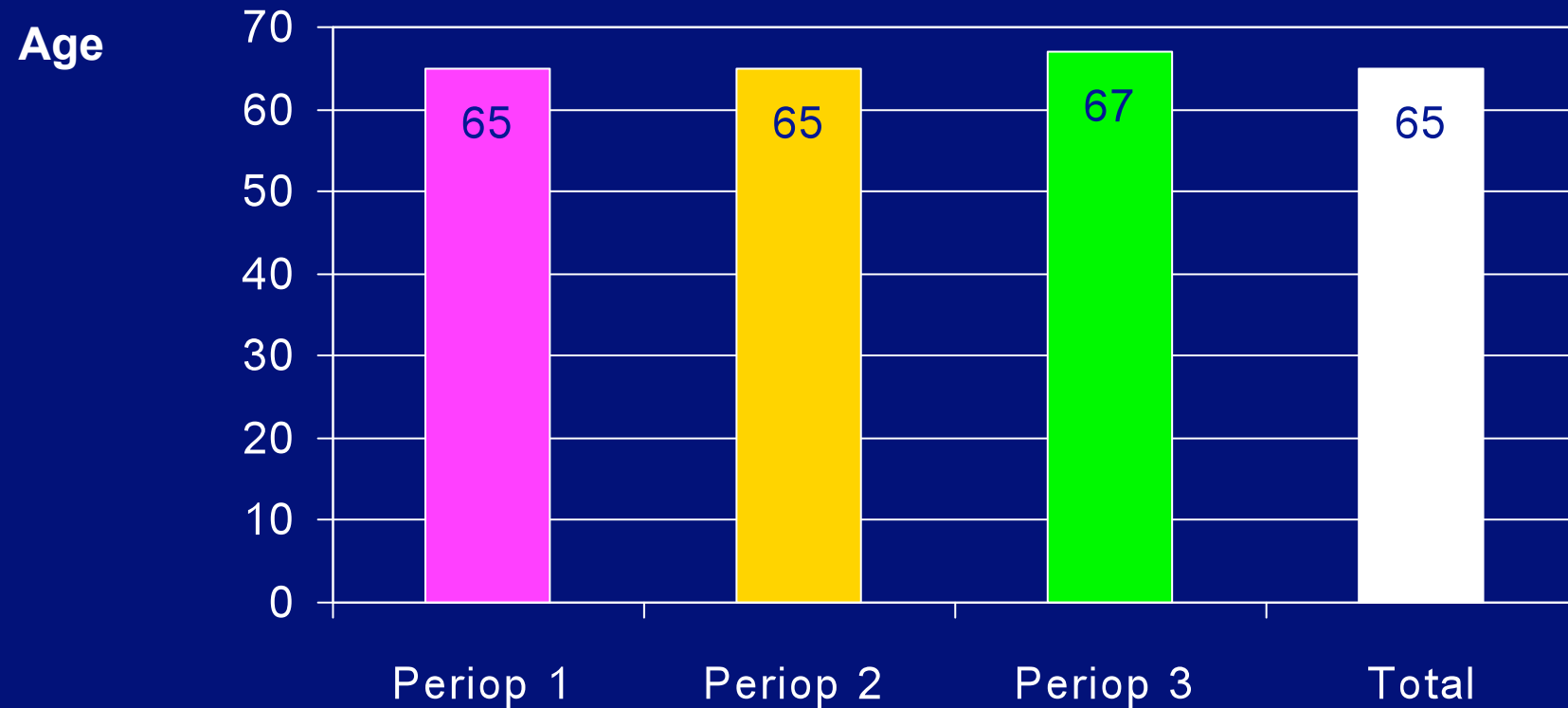
# Mesurage au point de départ

- 50 patients dans chaque hôpital
- Chirurgie électif, planifié
- Chirurgie Colorectale en dessus de la réflexion péritonéale
- Chirurgie 1 à 2 ans avant le début du project

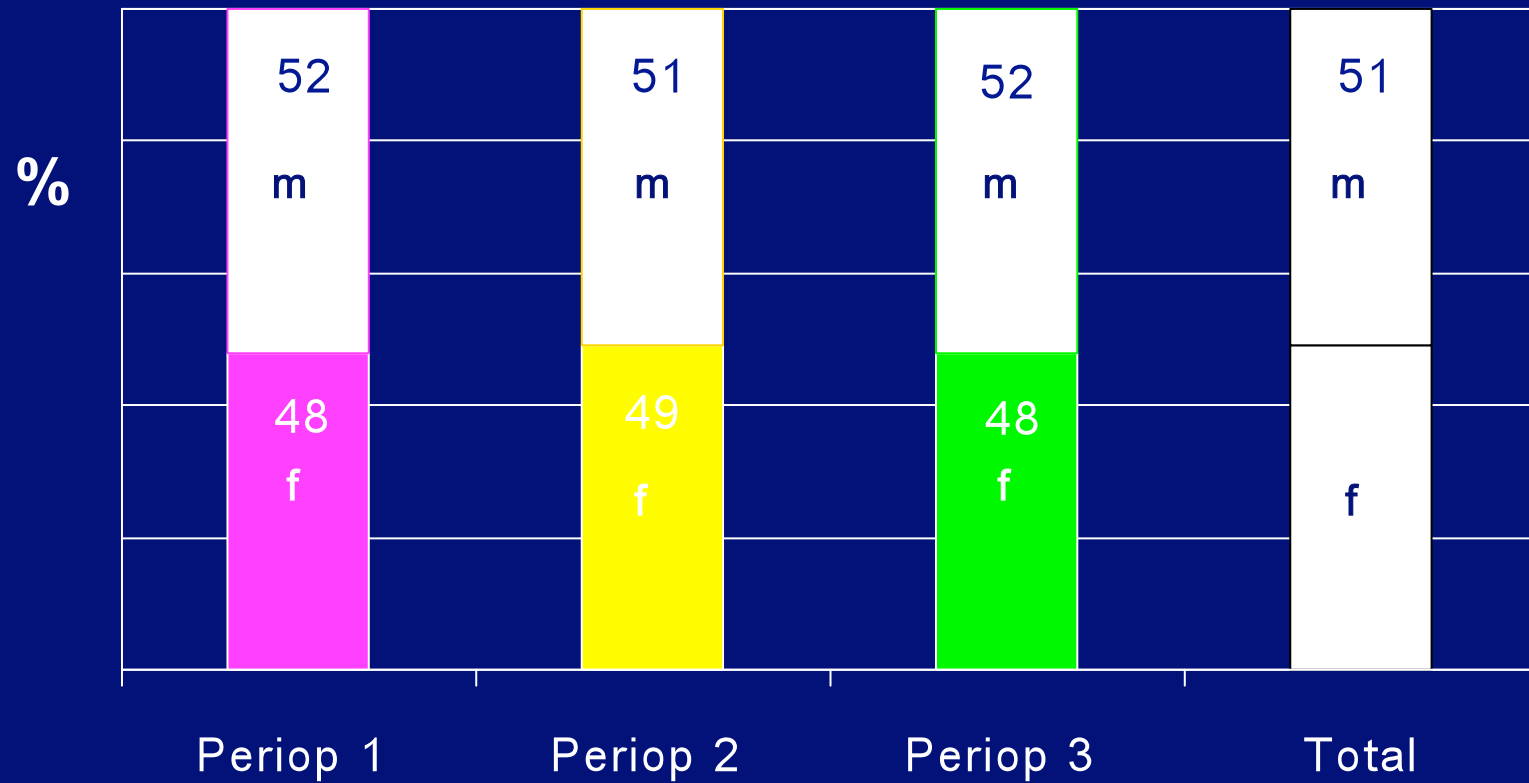
# Mesurage au point de départ



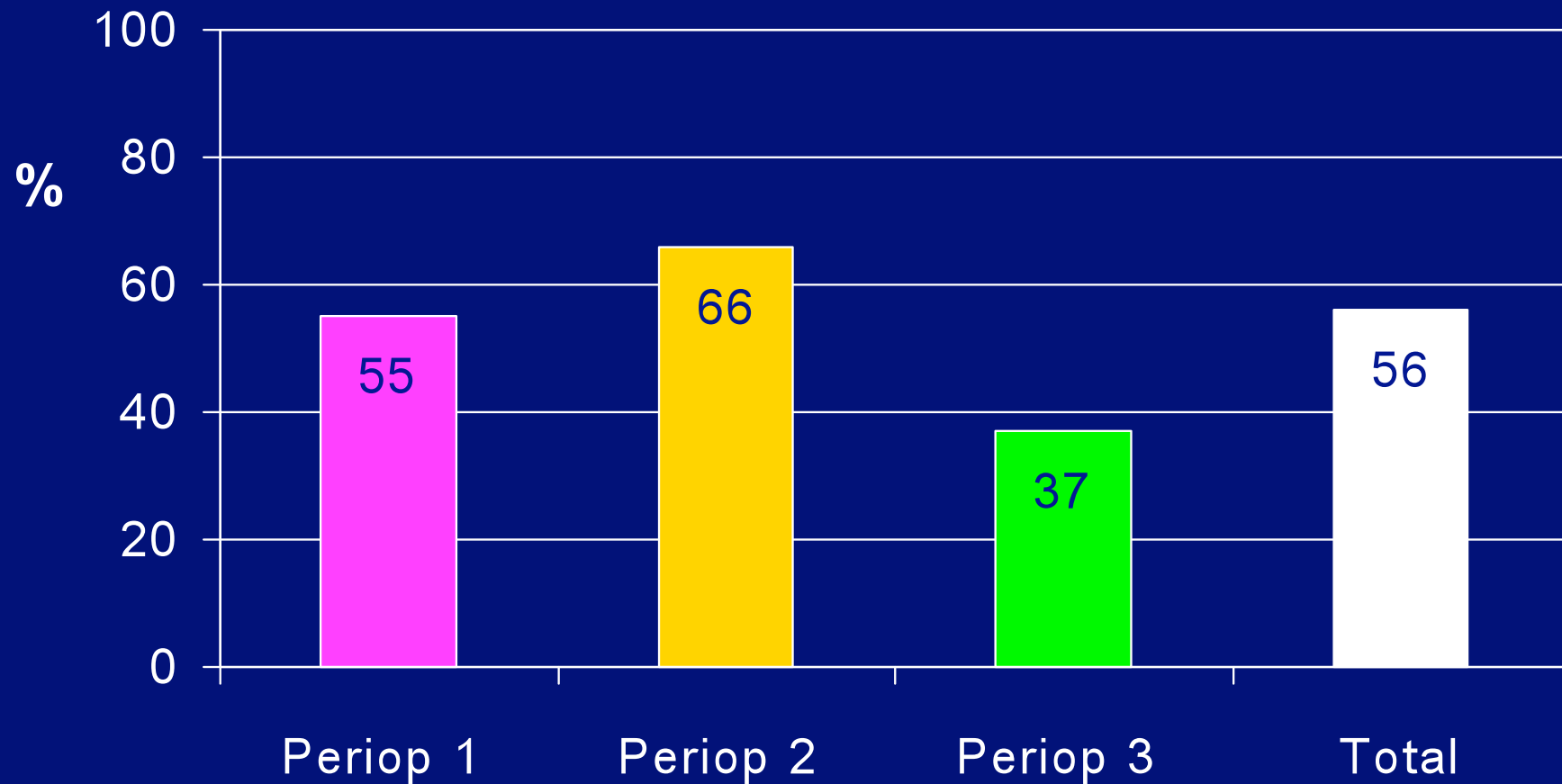
# Age moyen



# Sexe (%)

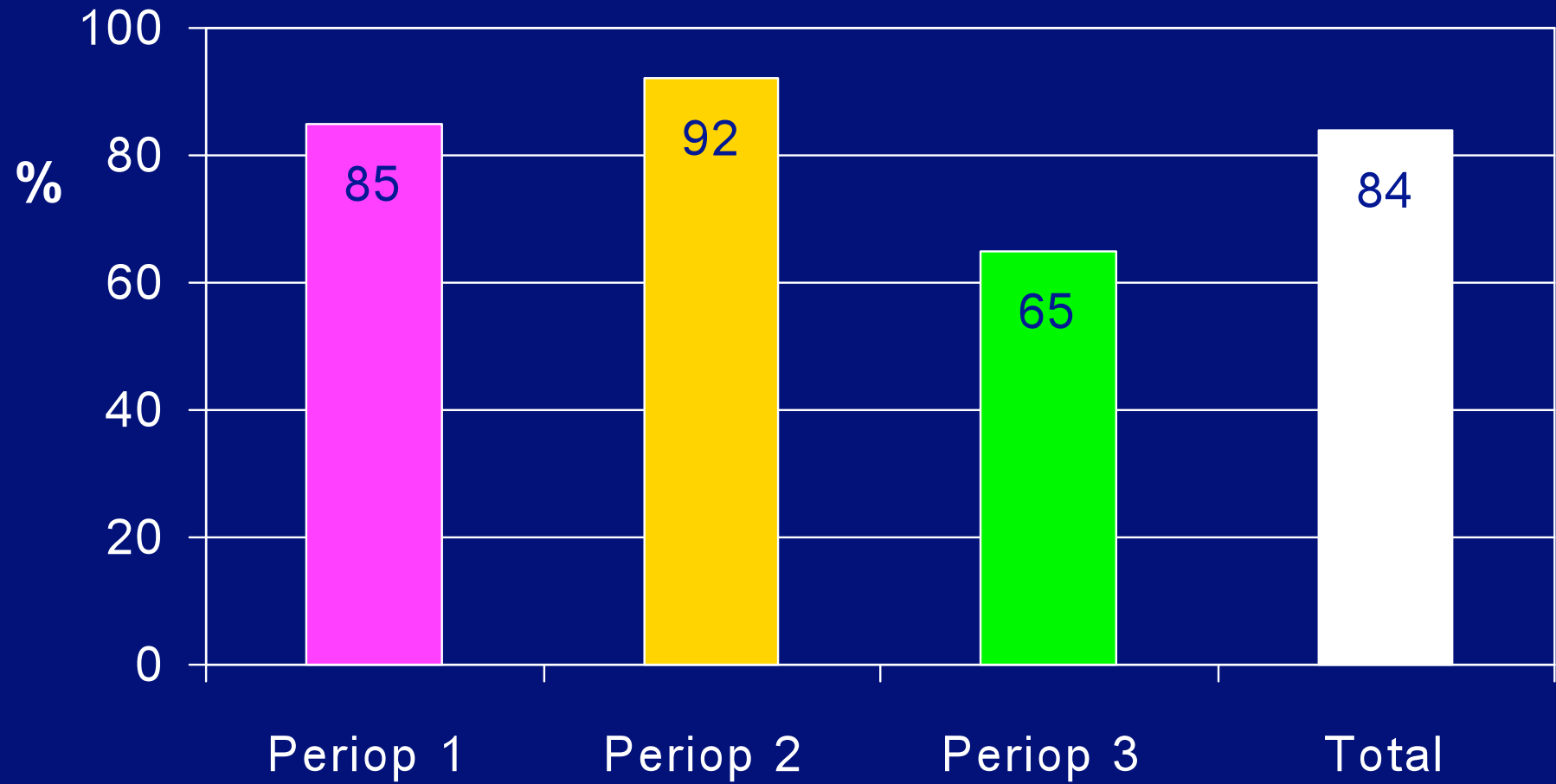


# Lavement mécanique de l'intestin

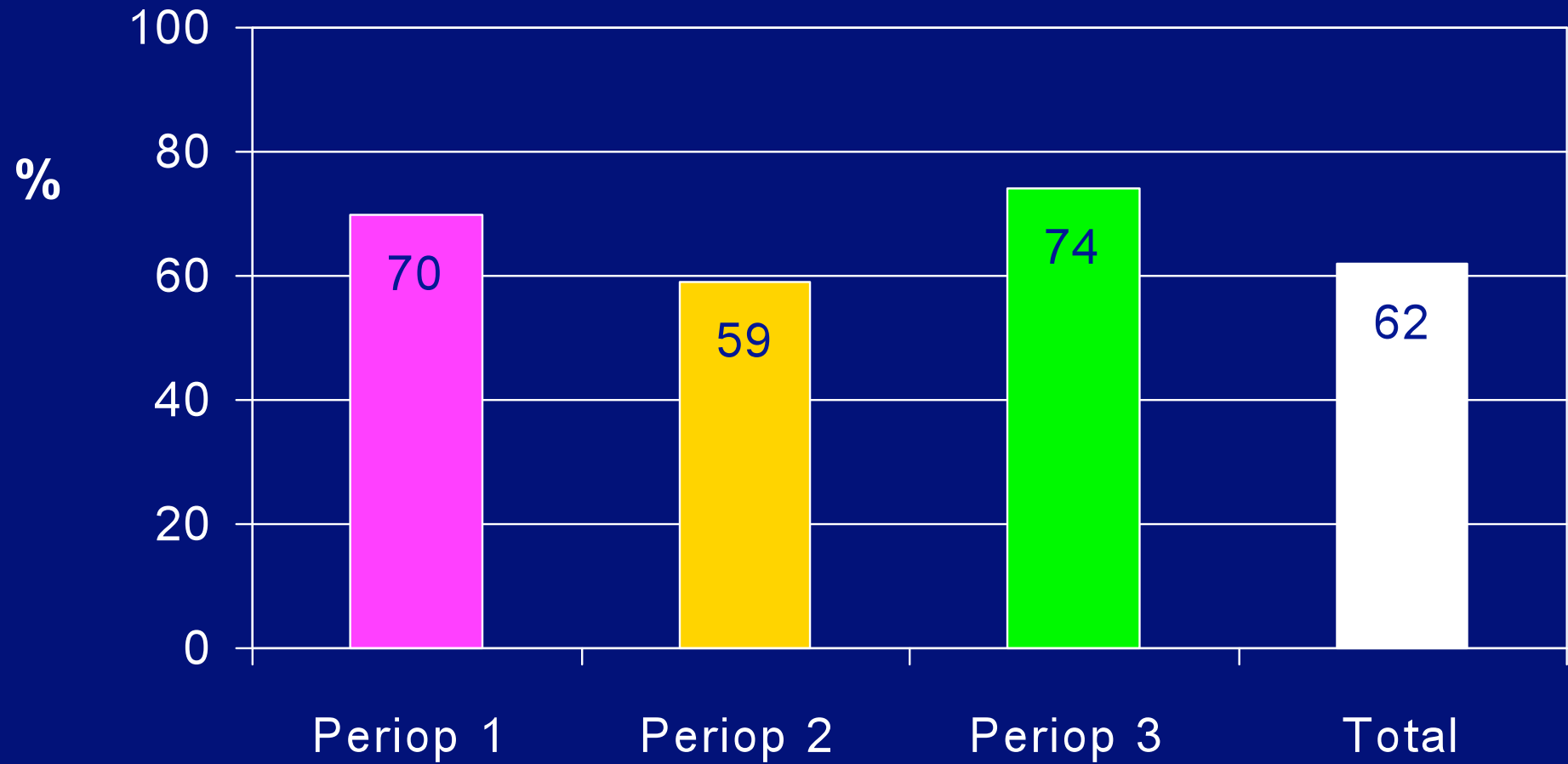




# Sonde gastrique

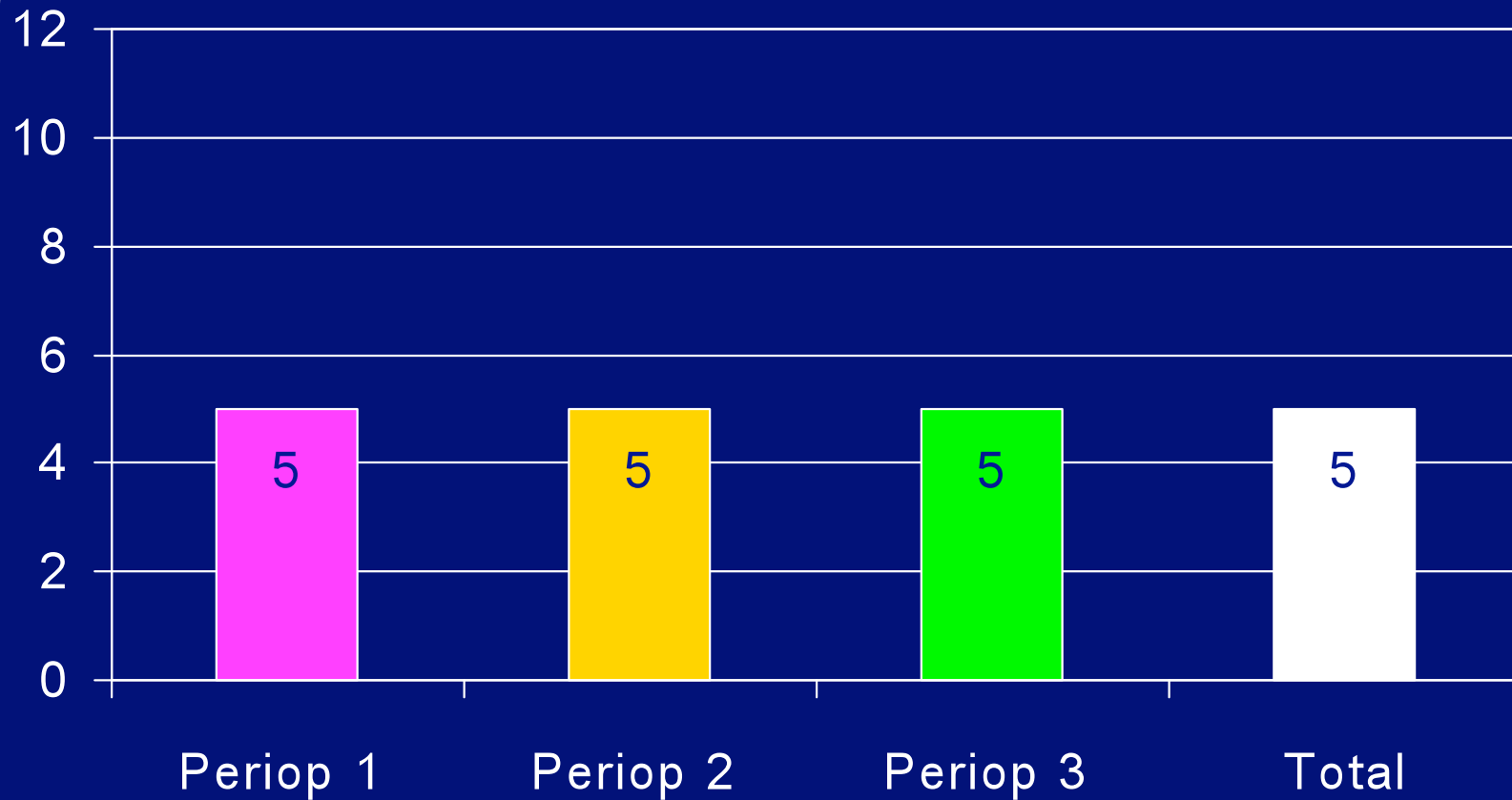


# Analgesie épidurale



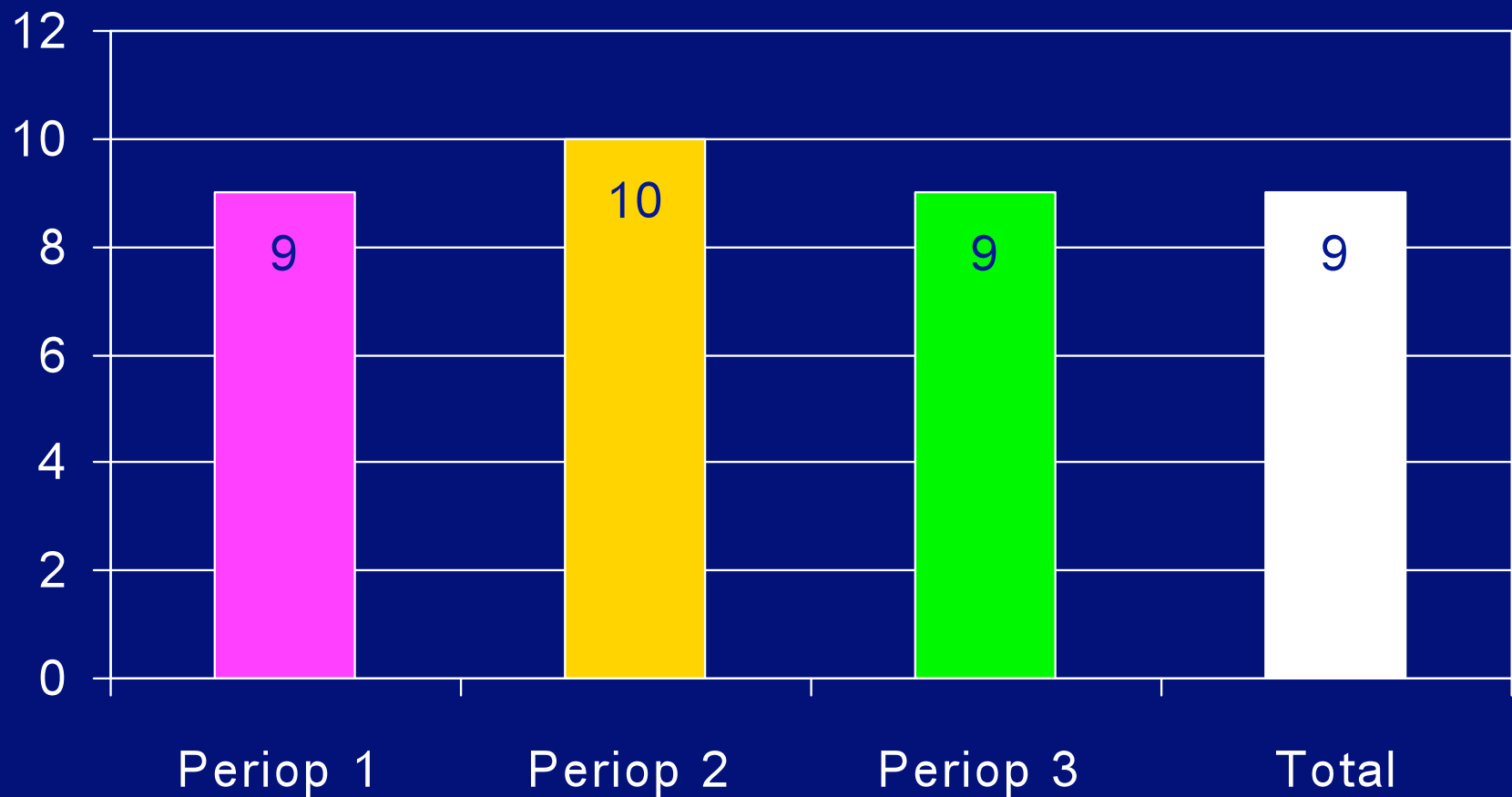
# Début de nutrition normale

Jours Postopératifs  
(médian)

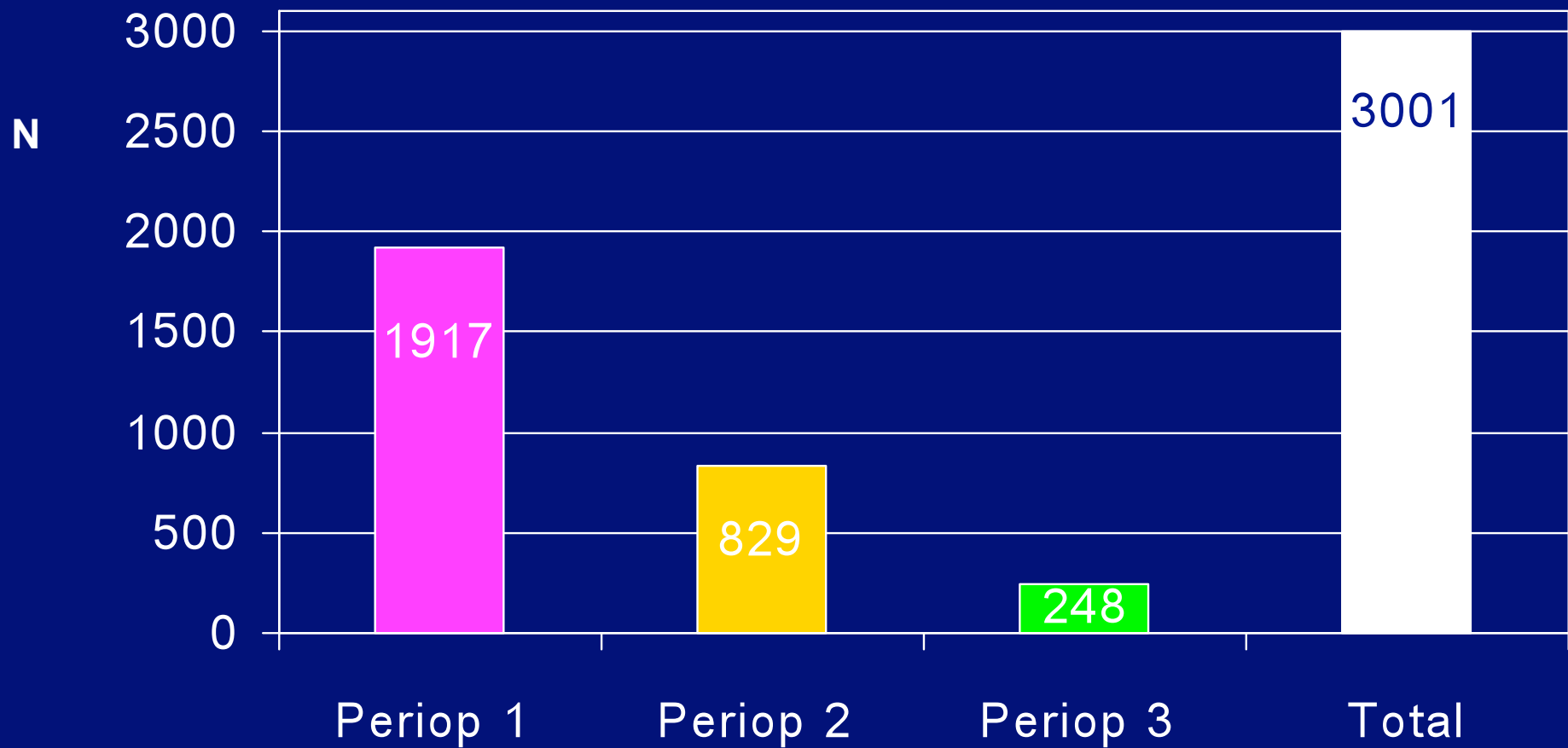


# Séjour dans l'hôpital

Jours Postopératifs  
(médian)



# Mesurage au fin du projet

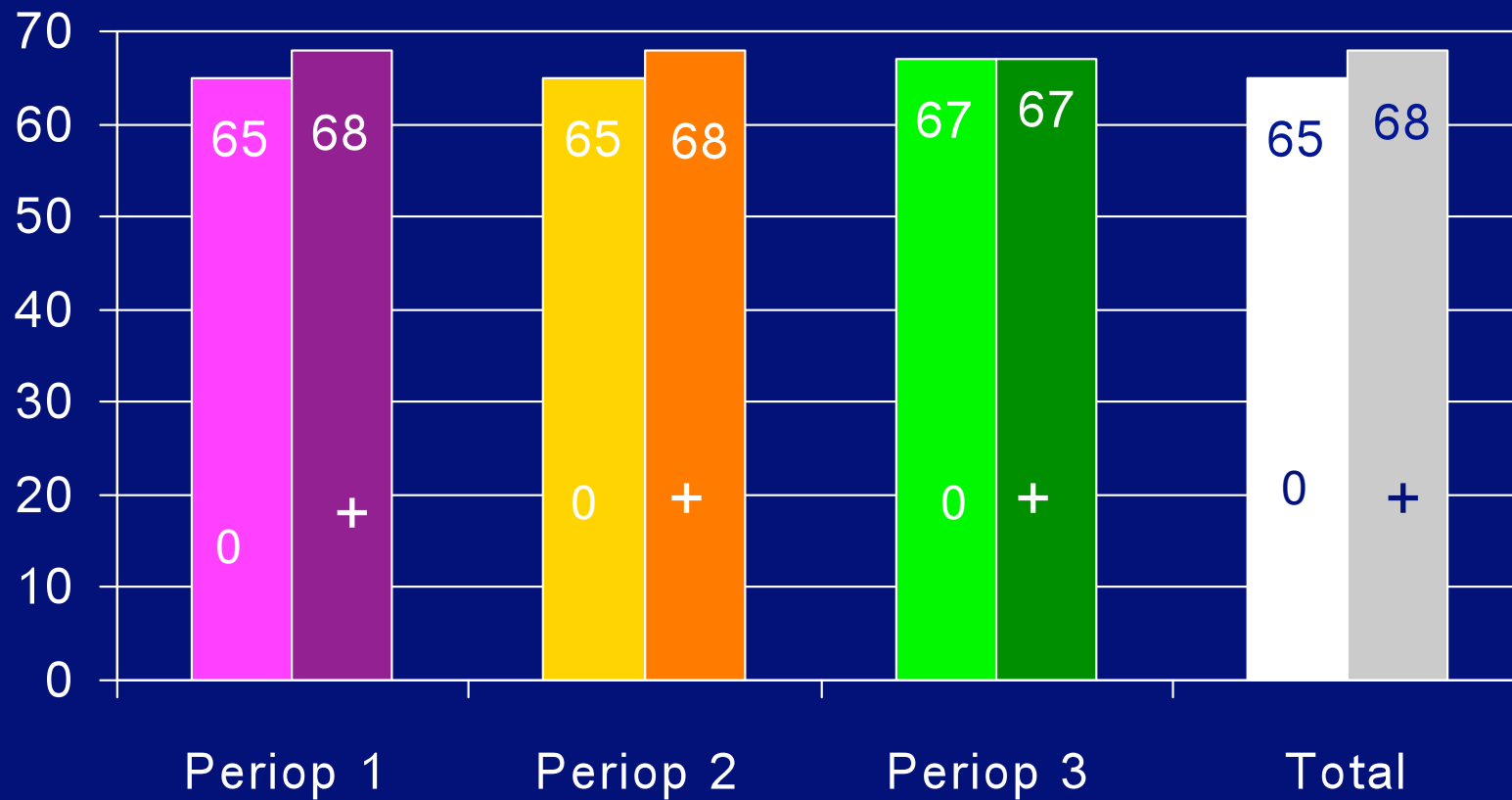


# Age moyen

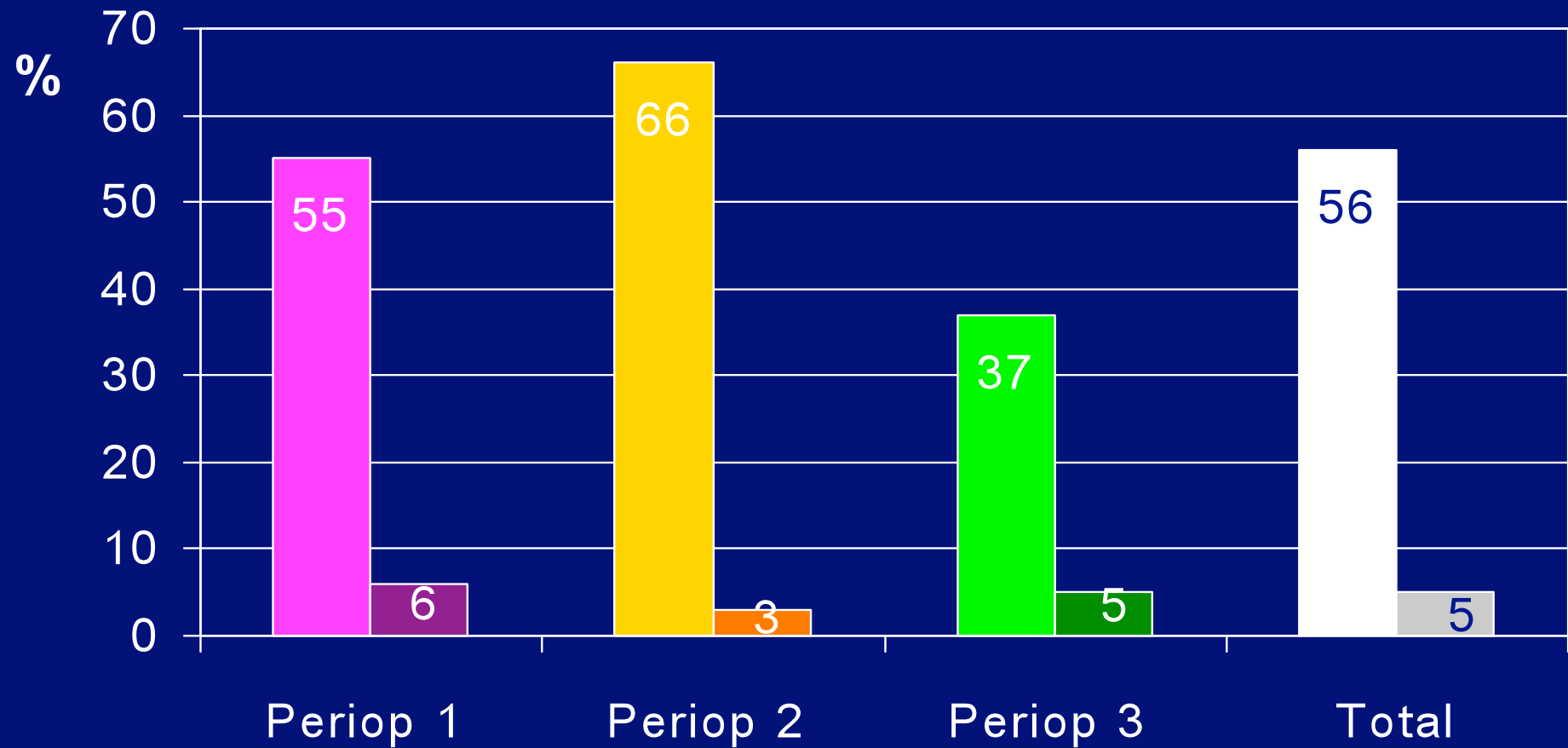
Années

0 = début

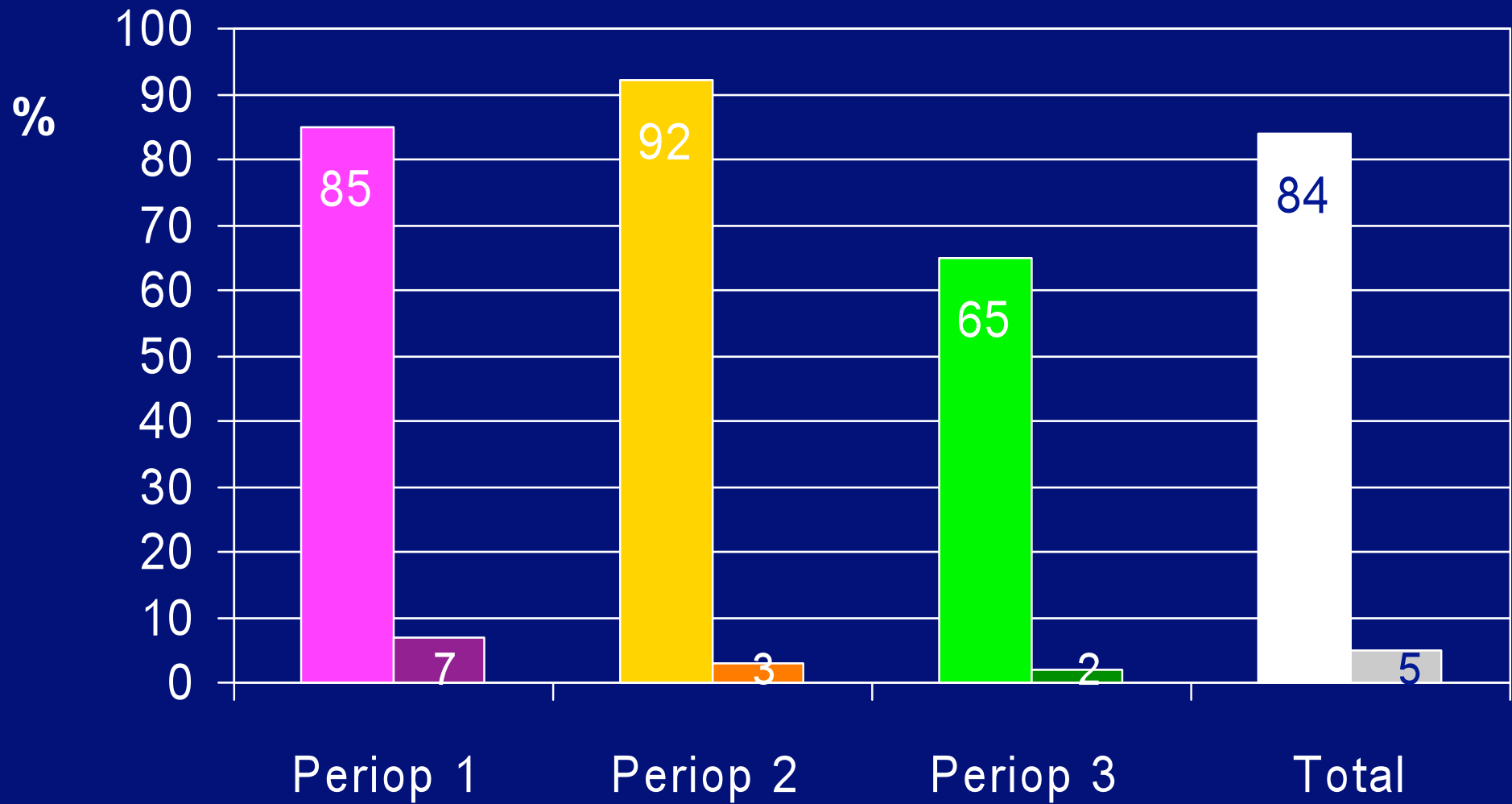
+ = fin



# Lavement mécanique de l'intestin

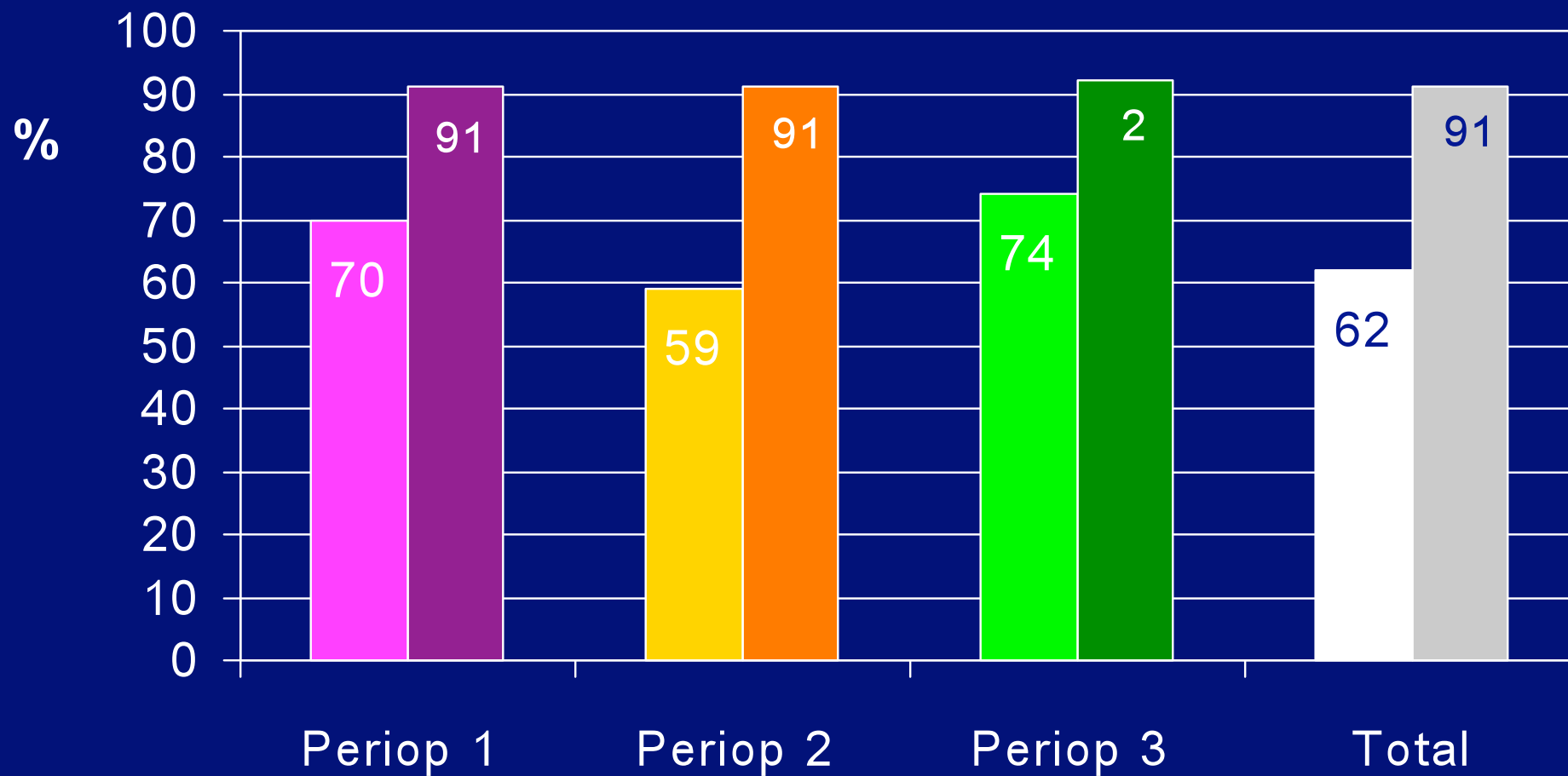


# Sonde gastrique



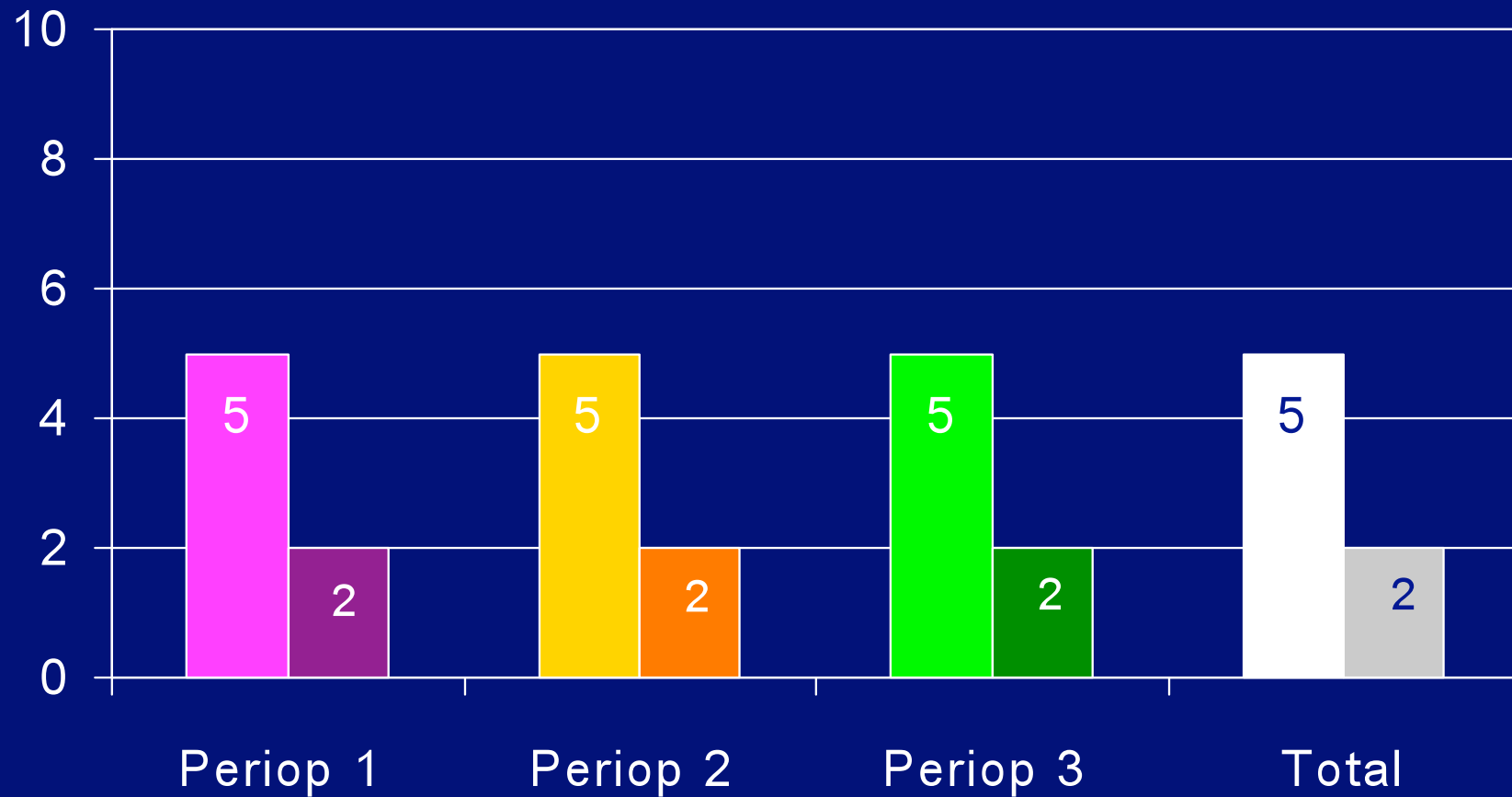


# Analgesie epidurale



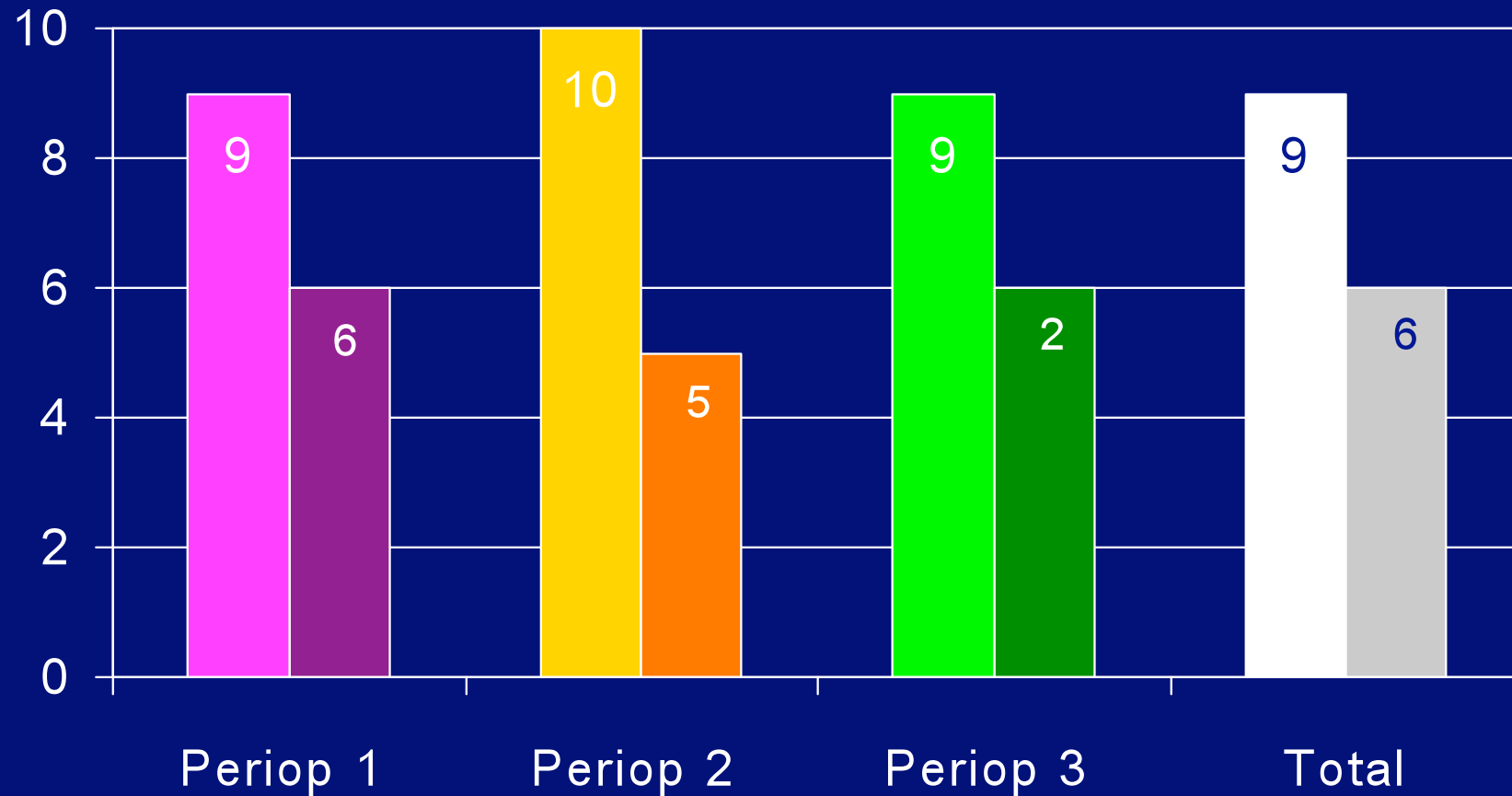
# Début de nutrition normale

Jours  
postopératifs



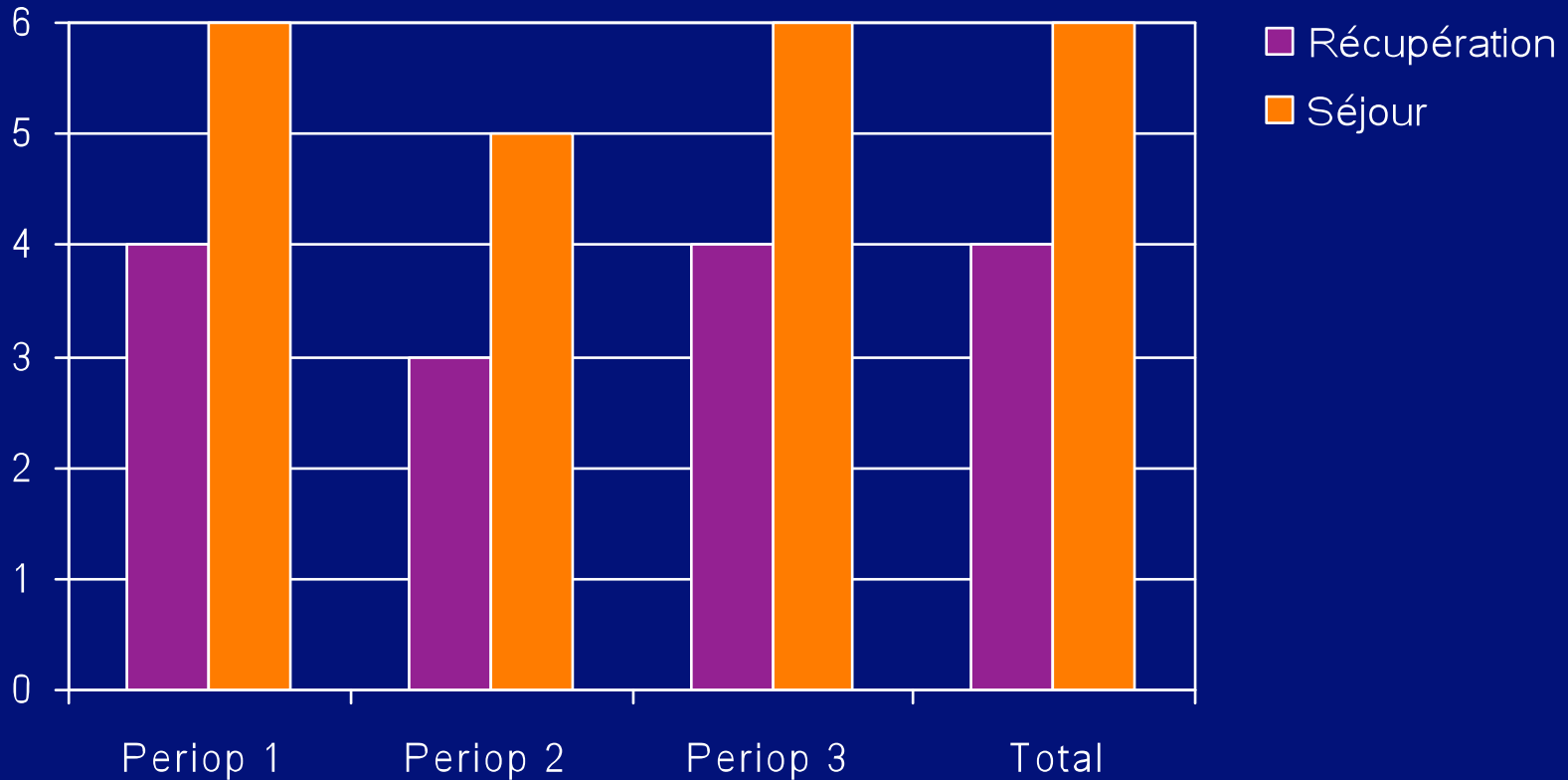
# Séjour dans l'hôpital

Jours Postopératifs  
(médian)



# Récupération versus Jours dans l'hôpital

Jours Postopératifs  
(médian)



# ERAS RCT's

**Table 1**

Quality assessment and study design.

RCT	No of patients		No of patients		Age (years), median (range)		Follow-up (days)	Consecutive series of patients	Allocation concealment	Method of randomization described and appropriate	Blinding	Description of dropouts and withdrawals	Jadad score
	Randomized	Analysed	ERAS	Traditional care	ERAS	Traditional care							
Anderson et al. <sup>19</sup>	30	25	14	11	64 (55-68)	68 (65-75)	30	Yes	Unclear	Yes	Not blinded	Yes	3
Delaney et al. <sup>20</sup>	64	64	31	33	50.6 ± 16.9 (mean ± sd)	41.9 ± 13.3 (mean ± sd)	30	Yes	Unclear	Yes	Not blinded	No	2
Gatt et al. <sup>21</sup>	44	39	19	20	67 (59-76)	67 (60-73)	30	Yes	Unclear	Yes	Not blinded	Yes	3
Khoo et al. <sup>22</sup>	81	70	35	35	69.3 (46-88)	73 (46-85)	30	Yes	Maintained	Yes	Not blinded	Yes	3
Muller et al. <sup>3</sup>	156	151	76	75	62 (27-91)	59 (39-89)	30	Yes	Unclear	Yes	Not blinded	Yes	3
Serclova et al. <sup>4</sup>	105	103	51	52	33 (20-66)	36 (18-68)	30	Yes	Maintained	Yes	Not blinded	Yes	3

# Durée du séjour dans l'hôpital

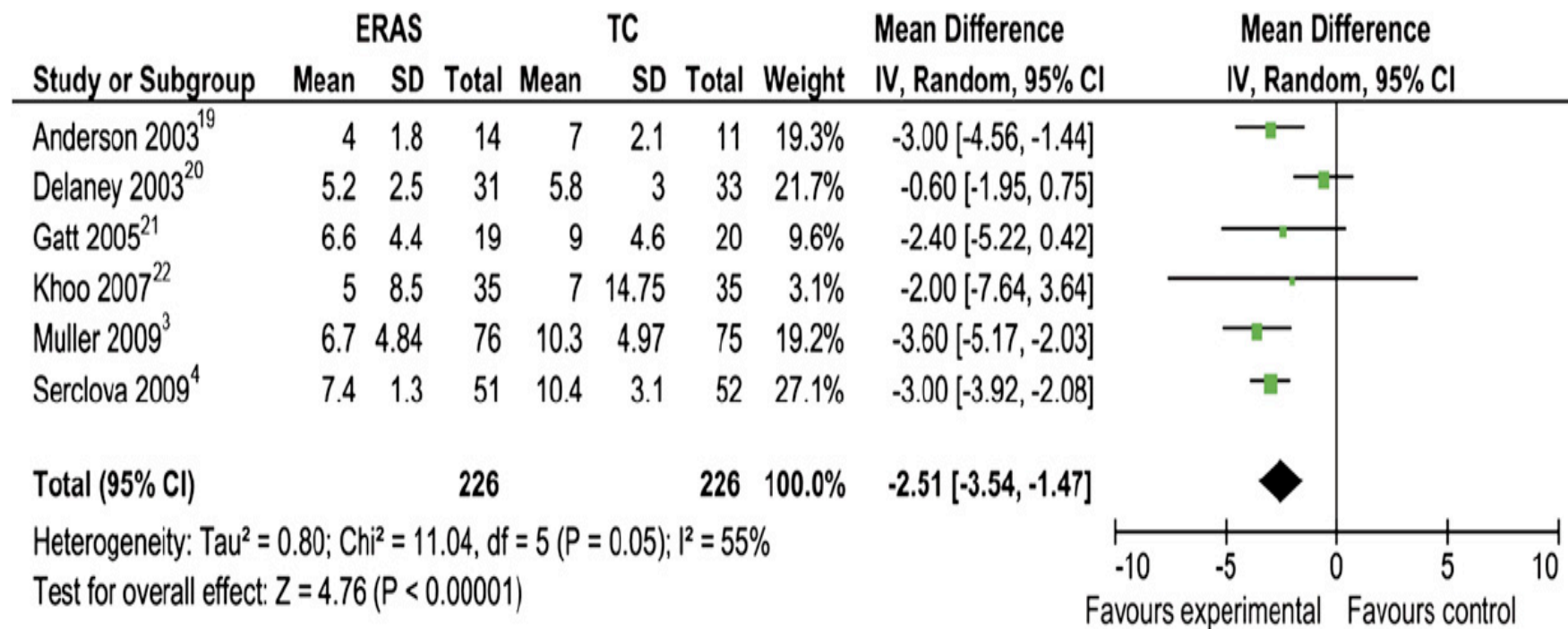


Fig. 2. Forest plot of comparison: Length of hospital stay (days). [ERAS = enhanced recovery after surgery (experimental group); TC = traditional care (control group)].

# Elements included

**Table 2**  
Summary of ERAS elements included in the RCTs.

Study	Preoperative					Perioperative					Postoperative						
	Preoperative counselling	Preoperative feeding	Synbiotics	No bowel preparation	No premedication	Fluid restriction	Perioperative high O <sub>2</sub> concentrations	Active prevention of hypothermia	Epidural analgesia	Short/transverse incisions	No routine use of NG tubes	No routine use of drains	Enforced postoperative mobilization	Enforced postoperative oral feeding	No systemic morphine use	Standard laxatives	Early removal of bladder catheter
Anderson et al <sup>18</sup>	✓	✓	✓	✓			✓		✓	✓	✓	✓	✓	✓			
Delaney et al <sup>19</sup>	✓										✓		✓	✓			
Gatt et al <sup>20</sup>	✓	✓	✓	✓			✓		✓	✓	✓	✓	✓	✓			
Khoo et al <sup>21</sup>	✓					✓			✓		✓		✓	✓			✓
Muller et al <sup>3</sup>	✓	✓		✓		✓			✓		✓	✓	✓	✓			
Serclova et al <sup>4</sup>	✓	✓		✓		×			✓		✓	✓	✓	✓			

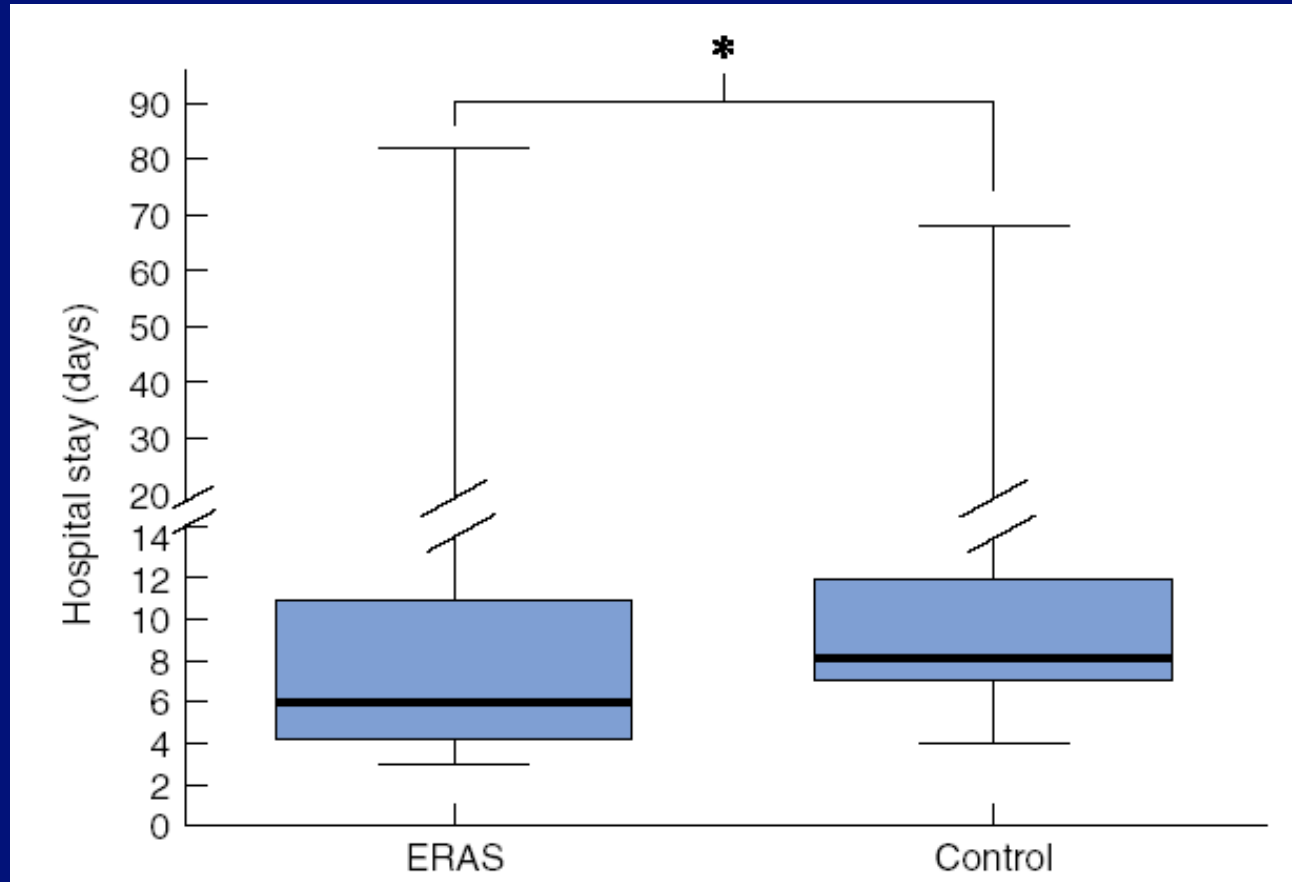
Elements included in the study (✓); Elements not included in the study (×); Blank boxes indicate unknown data.

# Est-ce qu'il y a un rôle additionnel pour la chirurgie laparoscopique dans le contexte d'un programme ERAS?

- Seulement 2 RCTs
- Basse et al, Ann Surg 2005
  - Séjour dans l'hôpital median 2 jours, chaque groupe
- King et al, BJS 2006/ Int J Colorectal Dis
  - Séjour médian 2.5 days plus court dans la groupe laparoscopique
  - 40 vs 18 patients, un seul chirurgien



# Expérience initiale avec chirurgie hépatique



**Fig. 1** Total length of hospital stay, including readmissions, in Enhanced Recovery After Surgery (ERAS) and control groups.

# Durée de séjour avant, pendant et après le protocole ERAS en chirurgie hépatique

