

# Perioperative Immunonutrition in Elderly Patients Undergoing Total Hip and Knee Arthroplasty: Impact on Postoperative Outcomes

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## Objective:

To evaluate if post-operative outcomes in patients (ages 60+) having elective hip or knee replacement can be improved with perioperative oral immunonutrition (IM) supplementation.

## Methods:

Observational cohort study retrospectively comparing a study group that received supplementation (n=1,617) with an unsupplemented historical control (n=1,398). The study group was provided with IM containing supplemental L-arginine, n-3 fatty acids and dietary nucleotides (oral IMPACT®\*) at preoperative clinic appointments, and instructed to consume one serving 3 times a day for 5 days before and after surgery. The study group reported their intake of IM via a form reviewed at hospital admission, and ≥ 50% compliance of IM was an inclusion criterion. All subjects received the surgery center’s fast-track enhanced recovery protocol (ERP). Primary outcomes were length of stay (LOS) in hours and presence of infectious complications (surgical site or prosthetic joint infection).

## Results:

- Data from all patients showed 81% were women and mean age was 72.6 +/- 6.9 years.
- Hip to knee surgery ratio was 41:59 for the IM group and 36:64 for the control group (p=0.006).
- IM group reported a shorter average LOS in hours (32 vs. 56; p<0.001), and other outcome means are described below.

Outcomes	IM (n=1617)	Control (n=1398)	p
Infectious cx (%)	2.2	4.6	<0.001
Noninfectious cx (%)	2.8	5.4	<0.001
Transfusion (%)	6.4	21.5	<0.001
CRP (mean mg/dL)	37.5	83.2	<0.001
Mortality 90-day (%)	0.2	0.6	0.110

*Adapted from Table 4*

- **After adjustment for variables,**
  - IM supplementation was found associated with reducing the risk of infectious complications by 55% (odds ratio [OR], 0.45; 95% CI, 0.30-0.68; p<0.001).
  - IM supplementation was found associated with reducing the risk of noninfectious complications by 50% (odds ratio [OR], 0.50; 95% CI, 0.33-0.76; p<0.001).

## Conclusion:

- Adding perioperative IM to an ERP for orthopedic surgery in elderly patients was associated with a one-day reduction in LOS.
- Although risk of mortality did not differ, the risk of surgical site and/or prosthetic joint infection was also shown to be halved in association with the adjunct of IM.

Study Summary Prepared by Nestlé Health Science; April 2021.

The complete study can be accessed at: <https://aspenjournals.onlinelibrary.wiley.com/doi/full/10.1002/jpen.2028>

\*IMPACT Advanced Recovery® is the oral form of IMPACT® formula offered in the United States.