

**ABSTRACT TITLE:** Pre-op Nutrition: Making an "Impact"

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**Background/Introduction:** For pre-operative total joint replacement patients, does the use of an immunonutrition supplement with arginine, omega-3 fatty acids, and dietary nucleotides reduce the length of stay, the risk of inpatient medical complications and readmissions within 90 days post-operatively compared with those who do not receive the nutritional supplement? Malnourished patients are more likely to have complications, spend more days in the hospital and cost more per stay. Malnourished patients are 5-7 times more likely to develop wound complications. (Annals of Translation Medicine 2015)

**Methods:** 77 total joint replacement patients who drank the nutritional supplement pre-operatively (experiment group) were compared with 77 total joint replacement patients who did not drink the nutritional supplement (control group). Patients who did not drink the immunonutrition supplement were chosen to be evaluated based on: The same type of joint replacement surgery, the same quarter of the year, the same surgeon, the same pre-operative ASA (American Society of Anesthesiologists) score, and an age within five years of a patient who drank the nutritional supplement.

**Results:** Average length of stay was 2.41 days in the control group, and 2.26 days in the experiment group. Surgical site infection rate was 1.30% (1 surgical site infection) in the control group, while the experiment group did not have any surgical site infections. The readmission rate within 90 days was 12.99% (10 readmissions) in the control group and 10.39% (8 readmissions) in the experiment group. Of note, when evaluating all Sanford Sioux Falls total joint patients within the same time frame compared to national averages, the overall average length of stay in patients is 2.33 days (3.96 days nationally), the surgical site infection rate was 0.94% (0.68%-2.0% nationally), and the 90 day readmission rate is 8.03% (8.6%-9.7% nationally).

**Conclusions:** When comparing patients who drank the immunonutrition supplement with those who did not, the overall outcomes were positive. The blend of arginine, omega-3 fatty acids, and dietary nucleotides has proven to support the immune system with the nutritional needs prior to an elective surgery. With encouraging outcomes thus far, the CJS team will continue to gather and analyze data on this topic as this product allowed for increased reimbursement and decreases institution cost, which is crucial as elective joint replacement surgeries are under consideration for bundled payments. We recognize that patients who are more concerned with their health and overall healthier pre-operatively may be more apt to purchase the supplement. The capability to record patient names who purchase the supplement was recently obtained which allows for more accurate follow-up to evaluate the amount consumed pre-operatively and the 90-day outcomes.

**References:** Eka A, Chen AF. Patient-related medical risk factors for periprosthetic joint infection of the hip and knee. *Annals of Translational Medicine*. 2015;3(16):233. doi:10.3978/j.issn.2305-5839.2015.09.26.