Title: Patients Undergoing Shoulder Surgery Demonstrate High Interest In Perioperative Nutrition But Report Limited Confidence Regarding Implementation

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Introduction: Proper nutrition is an often-overlooked component of bodily healing following invasive orthopaedic surgery. Nutritional optimization with adequate intake of protein, vitamins, and minerals has demonstrated post-surgical benefits in enhancing wound healing, preserving muscle mass, and enhancing immune function.[1,2] Yet, preoperative nutrition is rarely discussed with patients, and patient perspectives on nutrition in the shoulder surgery population is unclear. Research on patients undergoing orthopaedic surgery has also revealed that up to 50% of hospitalized patients suffer from some form of preoperative malnutrition, which predisposes them to surgical site infection, longer hospital stays, and increased cost of care.[3] While these statistics make clear the potential impact of implementing a defined preoperative diet plan for surgical populations, its true effectiveness may be better estimated by first surveying patient perspectives on preoperative nutrition and their willingness to make dietary changes if recommended by their surgeon. The purpose of this study is to gauge patients' understanding and beliefs regarding preoperative nutrition.

Material & Methods: This single institution prospective observational survey study including adult patients (≥18 years old) scheduled for shoulder surgery, including rotator cuff repair, labrum repair, SLAP repair, biceps tenodesis, Bankart repair, hemiarthroplasty, reverse total shoulder arthroplasty, and anatomic total shoulder arthroplasty. Patients completed a 15-item questionnaire preoperatively assessing their nutritional attitudes, knowledge, and dietary behaviors.

Results: Among 90 patients surveyed, 52.2% underwent rotator cuff repair, 27.8% reverse total shoulder arthroplasty, 12.2% anatomic total shoulder arthroplasty, 2.2% SLAP repair, 2.2% biceps tenodesis, 2.2% hemiarthroplasty, 1.1% labrum repair, and 0% Bankart repair. This cohort was comprised of 58.9% male patients, 53.3% aged 50–69, 51.1% with college or graduate education, and most patients (65.1%) engaging in moderate exercise or physical activity 2-3 times per week. Most respondents agreed that nutrition is important for surgical recovery (77.8%) and valued it both before and after surgery (67.4%). While 44.4% planned to take supplements without guidance, only 38.9% and 28.9% strongly agreed they knew which foods or supplements to use, respectively. A nutrition plan was believed to be beneficial by 77.5%, and 67.8% reported they would adhere to a surgeon-recommended plan with 64.4% indicating strong family support to adhere to this guidance on nutrition.

Discussion: Patients scheduled for shoulder surgery display a positive attitude toward preoperative nutrition plans. However, there is a gap between patient perception of nutritional importance and implementation perioperatively, with fewer than 50% of patients having plans to supplement their nutrition and less than 40% reporting confidence in which supplements or foods to use. Our findings demonstrate that patients recognize their potential for improving postoperative recovery and desire for nutritional guidance from their healthcare provider, indicating a need for formal support in constructing individual diet plans and making nutritious advances.

References

1. Hirsch KR, Wolfe RR, Ferrando AA. Pre- and Post-Surgical Nutrition for Preservation of Muscle Mass, Strength, and Functionality Following Orthopedic Surgery. *Nutrients*. 2021;13(5):1675. doi:https://doi.org/10.3390/nu13051675
2. Seth I, Lim B, Cevik J, et al. Impact of nutrition on skin wound healing and aesthetic outcomes: A comprehensive narrative review. *JPRAS Open*. 2024;39(39):291-302. doi:https://doi.org/10.1016/j.jpra.2024.01.006
3. Williams DGA, Wischmeyer PE. Perioperative Nutrition Care of Orthopedic Surgery Patient. *Techniques in Orthopaedics*. 2020;35(1):15-18. doi:https://doi.org/10.1097/bto.0000000000000412

Figure 1. Preoperative nutrition survey responses.