

What is the role of nutritional optimization in the treatment of nonunions?

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Outline

- Fracture nonunion poses a physical, emotional and financial burden to the patient highlighting the importance of a well-coordinated/effective post-traumatic reconstructive treatment plan for failure of bone healing.
- Nonunion reconstruction is a “pseudo-elective” procedure and host optimization is integral to promote success with regards to osseous union and avoidance of local and systemic complication.
- In addition to optimization of chronic medical and psychological conditions, avoidance of negative social behaviors (ie alcoholism, tobacco abuse), nutritional health should be accomplished prior to nonunion surgery.
- Malnutrition will compromise results after nonunion surgery predisposing the patient to wound healing complication/infection, continued nonunion as well as systemic complication.
- The pre-operative work-up for malnutrition includes both history and laboratories.
- There should be consideration towards usage of a pre-habilitation program for the “at-risk” patient with delayed or established nonunion prior to operative intervention which includes nutritional counseling/supplementation when deemed necessary.
- Clinical outcome data demonstrates that nutritional optimization during the peri-operative period leads to best outcomes.
- Immunonutrition (arginine +/- glutamine, nucleotides, and omega-3 fatty acids) is a specific nutritional program designed to promote best clinical outcomes for the surgical patient.
- The Pittsburgh experience with nutritional supplementation for both the geriatric and young (high energy) populations has proved beneficial for the fracture patient.

1. Moloney G, Kano D, Tarkin IS. Malnutrition is Associated with Nonunion, Infectious Complications and Mortality after Geriatric Distal Femur Fracture. *American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting* San Diego, California October 2017
2. Greco N, Tarkin IS, Moloney G. Does nutritional prehabilitation decrease complications in staged tibial pilon fracture surgery? *American Academy of Orthopedic Surgeons (AAOS) Annual Meeting* New Orleans, Louisiana March 201

