

Study Protocol: Effect of Prune on Fracture Healing in Men and Women With a Wrist Fracture

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Objectives: Prune has been shown to be beneficial in several chronic conditions including cardiovascular disease, cancer, and osteoporosis. Specifically, daily fresh prune consumption may increase serum values of bone formation as well as protect and improve values of bone mineral density. However, the effect of prune on fracture healing has not been investigated. The objective of this study is to determine the efficacy of prune in enhancing distal radius fracture healing.

Methods: A total of 50 men and women between the ages of 50 to 85 years, body mass index (BMI) range of 18.5–35.0 kg/m², with a confirmed, closed, distal radius fracture will be recruited for this study. Three fracture types included are listed from least to most severe: extra-articular; non-comminuted, intra-articular; and comminuted, intra-

articular. Participants will be randomly assigned to one of two groups: 1) 100 g daily of prune + standard of care (500 mg Calcium and 400 IU Vitamin D, twice daily; providing a total of 1000 mg Calcium and 800 IU Vitamin D) or 2) standard of care alone (500 mg Calcium and 400 IU Vitamin D, twice daily) daily for 12 weeks. Radius Union Scoring System (RUSS) for rate of healing will be assessed using anteroposterior and lateral X-ray. Additionally, range of motion (ROM), handgrip strength, and pain and functionality (via QuickDASH, the Veterans Rand 12-Item Health Survey (VR-12), and the Visual Analog Scale for Pain (VAS Pain)) will be assessed. For continuous variables (e.g., serum analyses), two-way mixed ANOVAs will be performed. For dichotomous variables, c² tests will be performed to compare proportions between groups. For ordinal variables, Kruskal-Wallis H tests will be performed to compare ranking. Significance will be set at $P \leq 0.05$. The findings of this study will further our understanding of the role of prune on fracture healing.

Results: N/A

Conclusions: N/A

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