

Preoperative Weight Loss before Total Joint Arthroplasty Using a Remote Dietitian and Mobile App: A Multicenter Randomized Control Trial

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INTRODUCTION: Many surgeons recommend weight loss for patients with obesity before total joint arthroplasty (TJA), but few studies have evaluated weight loss interventions. This study was the first to assess a preoperative weight loss intervention using a remote dietitian (RD) and mobile application.

METHODS: This multicenter, randomized controlled trial included 69 subjects with a body mass index (BMI) 40-47 kg/m² undergoing evaluation for primary total hip or knee arthroplasty from 2020-2023. The mean age was 60 years, 68% were female, and mean BMI was 44 kg/m². Controls (n=34) received standard care including physical therapy and nutrition referrals. Intervention subjects (n=35) completed video calls with RDs using a mobile app for 12 weeks preoperatively. Weights and surveys were collected at baseline and 12 weeks with 87% follow up. Weight loss, patient-reported outcomes, complications, revisions, and reoperations were compared. Mean follow up after surgery was 1 year.

RESULTS:

Intervention subjects lost more weight (-9.1 pounds vs. -4.4 pounds, p=0.19) and had larger decreases in BMI (-1.4 kg/m² vs. -0.8 kg/m², p=0.31) compared to controls. Intervention subjects had higher odds of achieving a BMI<40 kg/m² (OR=2.3, p=0.41). There were no significant differences between groups in mean change in Hip disability and Osteoarthritis Outcome Score, Knee Injury and Osteoarthritis Outcome Score, or Lower Extremity Activity Scale. At baseline, only 11% had seen a dietitian in the last 3 months. Most (83%) intervention subjects felt video calls were helpful. The only complication was a patella fracture in the control group, and there were no revisions or reoperations.

DISCUSSION AND CONCLUSION: A preoperative weight loss intervention using an RD and mobile app is feasible and favorable. While intervention subjects lost more weight and were more likely to achieve a BMI<40 kg/m², differences were not statistically significant. However, RDs and mobile apps may address gaps in access to obesity treatment for patients anticipating TJA.