

19. **PREPECTORAL VERSUS SUBPECTORAL DIRECT-TO-IMPLANT-BASED BREAST RECONSTRUCTION: A META-ANALYSIS OF 3851 PATIENTS.**

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<https://www.youtube.com/watch?v=0JIMP5Fyl7s&t=4621s>

INTRODUCTION: The subpectoral direct-to-implant (SP-DTI) surgical technique is the standard and most common for breast reconstruction which could reduce implant visibility and palpability, and it manipulates the pectoralis major muscle with some post-operative complications such as muscle spasm, animation deformities, and pain while the prepectoral direct-to-implant (PP-DTI) approach leaves the muscle intact. Therefore, we conducted this meta-analysis to assess the efficacy and safety of the PP-DTI procedure after mastectomies compared to the standard breast reconstruction. **METHODS:** We performed a comprehensive search for the following databases: PubMed, Cochrane (Medline), Web of Science, and Scopus. All studies published in English till February 2022 were included. These include randomized and non-randomized clinical trials comparing Operation Time, Duration of Hospitalization (DOH), Breast Animation Deformity (BAD), Implant loss, Wound infection and dehiscence, seroma as well as post-operative pain. The study's quality will be assessed according to the Cochrane risk-of-bias tool for randomized trials (RoB2) and the ROBINS-I risk of bias tool to assess non-randomized studies of interventions. **RESULTS:** There were 28 comparative studies including 3851 patients carried out breast reconstruction surgeries. Post-operative complications were comparable between the two groups as follows: implant loss (OR 1.17, 95% CI [0.71-1.94]), wound dehiscence (OR 0.76, 95% CI [0.43-1.32]), wound infection (OR 1.09, 95% CI [0.78-1.53]), and seroma (OR 0.78, 95% CI [0.56-1.09]). The PP-DTI group was significantly less likely to develop BAD compared to SP-DTI group (OR 0.02, 95% CI [0.00-0.12]). Patients undergoing PP-DTI reconstruction had significantly reduced postoperative pain (SMD -0.55, 95% CI [-0.78 - -0.32]). Operation time and DOH were significantly lower among PP-DTI group ((SMD -0.35, 95% CI [-0.61 - -0.08]), (SMD -0.89, 95% CI [-1.48 - -0.30], respectively)). **CONCLUSION:** Following mastectomy, PP-DTI breast reconstruction significantly reduced post-operative pain, BAD, DOH, intra-operative time compared with SP-DTI reconstruction, although there was no significant difference in complication rate. A PP-DTI is a simple and safe alternative to the subpectoral technique allowing early discharge and improving patient's quality of life. Future well-designed multicenter randomized controlled trials that compare two approaches and discuss the cost-effectiveness are needed.

Key words: PP-DTI; SP-DTI; Meta-analysis; Cosmetics.