

## **Dilute Povidone-Iodine Solution Prevents Intraoperative Contamination of Sterile Water Basins During Total Joint Arthroplasty**

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**Introduction:** Periprosthetic joint infection (PJI) is a major complication of total joint arthroplasty (TJA). The intraoperative splash basin has been found to be a potential source of contamination. Although consensus recommendations against the use of the splash basin have been made, splash basin use continues to be taught and utilized in practice. This study aims to investigate the effect of dilute betadine addition to the sterile water contents (0.02% solution) of the splash basin on contamination rates. This intervention could preserve the functionality and preferential use of the splash basin.

**Methods:** Patients undergoing primary TJA were enrolled in a randomized controlled trial with assignment to either the intervention/betadine group, in which dilute betadine was added to the standard sterile water (SW) splash basin, or the control/standard SW group. For a total cohort of 104 patients, a 120mL aliquot sample of basin fluid was collected at incision (“pre-procedure”) and closure (“post-procedure”). Samples were cultured and monitored for 48 hours for growth, with further testing as necessary to identify microbial speciation.

**Results:** Of the final 100 post-procedure samples, 0 (0.0%) were positive in the betadine group, while there were 23 (47.9%) positive samples in the SW group ( $p < 0.001$ ). Of the positive cultures in the SW group, the most common species grown were coagulase-negative *Staphylococcus*, *Corynebacterium*, and *Micrococcus*.

**Conclusions:** In conclusion, treating sterile water splash basins with dilute povidone-iodine (0.02% solution) eliminates intraoperative contamination of splash basins in TJA procedures. This intervention is simple, low cost, and readily implementable, making it a reasonable addition to TJA protocols.