

# Osseointegrated Orbital Reconstruction: A 24-year experience

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**Purpose:** Osseointegrated implants have been used for craniofacial prosthetic reconstruction since 1979.<sup>1</sup> Since then, they have been used for prosthetic rehabilitation of a variety of facial defects. The authors sought to review long-term results of osseointegrated orbital reconstruction at the Institute for Reconstructive Sciences in Medicine (iRSM).

**Methods:** 26 patients have undergone osseointegrated orbital prosthetic (OOP) reconstruction at the iRSM since 1990. A retrospective chart review was performed to determine demographics, skin reactions and implant failures. 7 patients are deceased, therefore a satisfaction survey was sent to the remaining 19 patients. Patient satisfaction was assessed through a questionnaire used in previous osseointegration studies.<sup>2</sup> Multivariate binary logistic regression analysis was performed to assess the relationship between smoking, age, gender, and prior radiation treatment with the occurrence of a skin reaction and implant failure. A Chi-square test was used to assess the relationship between implant position within the orbit and development of a skin reaction or implant failure.

**Results:** The most common indication for reconstruction was oncologic, followed by traumatic and congenital. Patients received an average of 5.8 implants during the course of treatment. The average follow-up time was 10.6 years with a range of 6 months to 24 years. A statistically significant correlation was found between skin reaction and age ( $p=0.022$ ), with younger patients more likely to develop a reaction. When assessing implant failure, no variables in our model were significant for predicting failure of osseointegration. Overall, there were 39 failures out of 155 osseointegrated implants, for a success rate of 74.8%. There was no relationship between skin reaction or implant failure compared to implant position within the orbit. Survey responses were received from 11 of 19 patients, for a response rate of 58%. 82% of patients rated their prosthesis as comfortable and 91% reported good self-confidence with the prosthesis. 91% of patients were overall satisfied with their prosthesis, despite 55% of patients who felt that they had a skin reaction.

**Conclusions:** There are minimal contraindications for consideration of OOP reconstruction. Patients find the prosthesis comfortable to wear, report increased self-confidence and are happy with their choice to have undergone reconstruction. Prosthetic reconstruction using osseointegrated implants is a good option for reconstruction of the orbit.

## REFERENCES

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