

Bone Grafting - Oral & Maxillofacial Surgery

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Bone Grafting - Oral & Maxillofacial Surgery

What Is Bone Grafting?

Bone grafting is a surgical procedure that rebuilds or augments areas of the jawbone that have lost volume or density. When significant bone loss has occurred - whether from tooth extraction, trauma, disease or congenital conditions - an oral and maxillofacial surgeon can transplant bone material to restore the jaw's structure, function and form.

At Collins Street Specialist Centre, our oral and maxillofacial surgeons manage the most complex bone grafting cases, including large-volume defects, jaw reconstruction following tumour removal, and extensive pre-implant augmentation where standard approaches may not be sufficient.

When Might You Need Bone Grafting?

You may be referred for bone grafting by an oral and maxillofacial surgeon if you have:

- **Significant jawbone loss** following tooth extraction, particularly if teeth have been missing for an extended period
- **Insufficient bone volume** to support dental implants, where standard grafting by a periodontist may not be adequate
- **Jawbone defects** resulting from trauma, disease or previous surgery
- **Bone loss from cysts or tumours** that have been surgically removed
- **Facial deformity** requiring reconstruction of the jaw or mid-face
- **Cleft palate or craniofacial conditions** requiring bone augmentation
- **Preparation for orthognathic surgery** where additional bone support is needed
- **Severe atrophy of the jaw** from long-term denture wear

How Does OMS Bone Grafting Differ from Periodontal Bone Grafting?

While periodontists perform bone grafting as part of implant placement and periodontal treatment (typically smaller, localised grafts), oral and maxillofacial surgeons manage the more complex cases. These include large-volume reconstruction, grafts involving donor sites from other parts of the body (such as the hip, tibia or skull), and cases requiring general anaesthesia or hospital-based procedures.

At Collins Street Specialist Centre, periodontists and oral surgeons collaborate closely, ensuring each patient receives the most appropriate level of care for their specific situation.

What to Expect

Initial Consultation

Your oral and maxillofacial surgeon will conduct a thorough assessment, including:

- Clinical examination of the affected area - **3D imaging** using our Planmeca ProMax 3D Max to precisely map bone volume, density and anatomy - **Digital treatment planning** with coDiagnostiX software to simulate the grafting procedure and predict outcomes - Discussion of graft material options and surgical approach - Medical history review and anaesthesia planning

Types of Bone Graft

Your surgeon will recommend the most appropriate graft material based on the size and location of the defect:

- **Autogenous grafts** - Bone harvested from another site in your own body (the gold standard for large defects). Common donor sites include the chin, back of the jaw (ramus), hip (iliac crest) or tibia
- **Allograft** - Processed donor bone from a tissue bank, suitable for moderate defects
- **Xenograft** - Bone material derived from animal sources (typically bovine), processed to ensure biocompatibility
- **Synthetic bone substitutes** - Biocompatible materials such as hydroxyapatite or tricalcium phosphate that encourage your body to generate new bone

The Procedure

Depending on the complexity, bone grafting may be performed under local anaesthesia with sedation, or under general anaesthesia in a hospital setting. Your surgeon will:

1. Access the defect site through a carefully planned incision
2. Prepare the recipient area to encourage blood supply and integration
3. Place the graft material, shaping it to restore the desired contour
4. Secure the graft with titanium screws, plates or membranes as needed
5. Close the site with sutures designed to protect the graft during healing

For autogenous grafts, a second surgical site will be prepared to harvest the donor bone. Your surgeon will discuss this in detail during your consultation.

Healing Period

Bone grafts typically require **four to nine months** to integrate fully with your natural bone. During this time, your body gradually replaces the graft material with new, living bone - a process called remodelling. Progress is monitored through follow-up imaging.

Recovery and Aftercare

Recovery varies depending on the extent of the grafting procedure:

- **Swelling and discomfort** are normal for the first few days and can be managed with prescribed medication and cold compresses
- **Soft diet** is recommended for two to four weeks
- Avoid disturbing the surgical site - no vigorous rinsing, spitting or using straws in the early days
- **Smoking must be avoided** as it significantly impairs bone healing and graft integration
- Follow-up appointments will monitor healing and graft integration
- Once integration is confirmed through imaging, you may proceed to the next phase of treatment (such as dental implant placement)

Why See an Oral and Maxillofacial Surgeon?

Oral and maxillofacial surgeons bring a unique combination of dental and medical training to bone grafting procedures - typically 15 to 17 years of continuous study, including degrees in both dentistry

and medicine plus specialist surgical training. This dual qualification is particularly important for complex grafting because:

- They can manage cases requiring general anaesthesia and hospital-based procedures
- They have extensive training in harvesting bone from donor sites throughout the body
- They understand the broader medical implications of bone loss and reconstruction
- They can manage complications including nerve injury, sinus involvement and infection
- They coordinate reconstruction with other surgical and dental specialists

Our Specialists

****A/Prof Patrishia Bordbar**** - Specialist Oral and Craniomaxillofacial Surgeon. Clinical Associate Professor at the University of Melbourne and Past President of ANZAOMS, A/Prof Bordbar has extensive experience in complex bone reconstruction, including craniofacial and cleft palate cases. She utilises digital and virtual surgical planning for precise graft placement. Consultant Surgeon at the Royal Children's Hospital and Western Hospital Melbourne.

****Dr Ricky Kumar**** - Specialist Oral and Maxillofacial Surgeon. With fellowship training at the Royal Children's Hospital Melbourne and Oxford University Hospitals, Dr Kumar brings expertise in complex reconstructive procedures. He holds dual qualifications in medicine and dentistry.

Please note: Dr Kumar's availability should be confirmed at the time of booking.

Related Treatments

- [Dental Implants - Surgical Placement](/oral-maxillofacial-surgery/dental-implants/) - Implants often follow bone grafting once integration is complete
- [Bone Grafting - Periodontics](/periodontics/bone-grafting/) - For smaller, localised grafts as part of implant or periodontal treatment
- [All-on-4 Implants](/prosthodontics/all-on-4/) - Full arch rehabilitation that may require bone augmentation
- [Facial Trauma Reconstruction](/oral-maxillofacial-surgery/facial-trauma/) - Bone grafting as part of post-trauma repair
- [Oral Pathology](/oral-maxillofacial-surgery/oral-pathology/) - Reconstruction following cyst or tumour removal

At Collins Street Specialist Centre, all bone grafting procedures are performed by Dental Board-registered specialist oral and maxillofacial surgeons. To verify a practitioner's specialist registration, visit the [AHPRA Register of Practitioners](https://www.ahpra.gov.au/Registration/Registers-of-Practitioners.aspx).