



DENTOALVEOLAR SURGERY

Patient information to assist informed consent

A variety of problems with the teeth, gum, jawbone and other bony or soft tissues of the mouth may require treatment by an oral and maxillofacial surgeon.

This is called dentoalveolar surgery. Alveolar bone is the bone that surrounds and supports the teeth. The following are common surgical procedures.

Extraction of a tooth or retained root

- extraction of a dead tooth (often weakened by large fillings) that may have had root canal treatment; typically in middle-aged or elderly people
- extraction of impacted or misplaced teeth (for the extraction of wisdom teeth, also called third molars, refer to the ANZAOMS patient education pamphlet “Wisdom teeth and what to do about them”, available from your oral and maxillofacial surgeon)
- removal of a retained tooth root.

The decision to have surgery

Dentoalveolar surgery is undertaken only after careful consideration and discussion with your oral and maxillofacial surgeon. The decision is yours and should not be rushed. If you are not certain about your surgeon’s advice, seek a second opinion from another surgeon.

Your dental and medical history

Tell your surgeon about problems you may have had with your health and teeth. This helps your surgeon plan the treatment. Information is confidential.

Important: Fill in all details on the sticker below.

DEAR SURGEON: After you discuss this pamphlet with your patient, fill in the information on this sticker, peel it off, and put it on the patient’s medical history or card. This will remind you and your patient that this pamphlet has been given to the patient. Some surgeons ask their patients to sign the sticker.

Aids to orthodontics

- surgery to help an unerupted tooth move into its normal position
- extraction of an erupted and normal tooth that is crowding other teeth or, in uncommon cases, one or more extra permanent teeth (supernumerary teeth)
- removal of an abnormal labial frenum, the fold of tissue connecting the middle of the upper lip with the gums.

Removal of cysts or other lesions

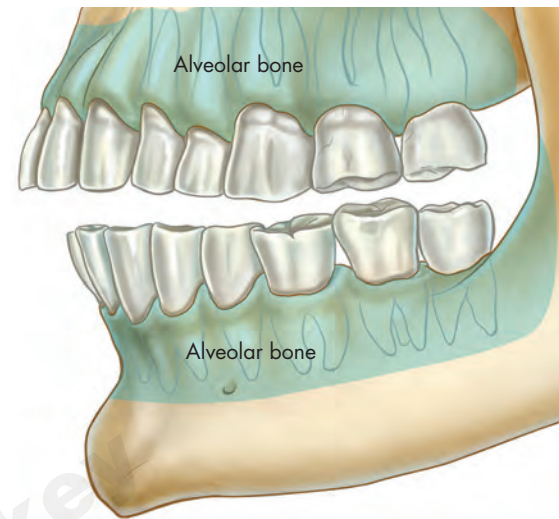
- removal of a fluid-filled sac (cyst) in the jawbone
- removal of a tumour, usually non-cancerous but sometimes cancerous.

Aid to root canal treatment

- removal of the tip of a root during root canal treatment (apicectomy) to treat or prevent a dentoalveolar abscess.

Oral pathology

- biopsy and surgical removal of abnormal tissue that is usually non-cancerous; in a few cases, the tissue may be cancerous.



ANATOMY OF ALVEOLAR BONE AND TEETH

Aids to fitting of partial or complete dentures

- removal of excess gum tissue or scar tissue on or around the dentoalveolar ridge
- removal of bony outgrowths from alveolar bone.

Medicines: Give your surgeon a list of ALL medicines you take or have taken recently. This includes bisphosphonate (a drug to treat bone conditions), the contraceptive pill, any blood thinner (including aspirin) and any over-the-counter medicine. Tell your surgeon if you have had any allergy or bad reaction to antibiotics or other medicine. This may affect treatment, including X-ray examinations, anaesthesia, pain relief, antibiotic drugs and other medicines, or whether surgery should be delayed.

X-ray examination: To plan the best treatment, your surgeon may need to take X-ray films of your teeth and jaws.

Pregnancy: Tell your surgeon if you are or may be pregnant.

Where to have the surgery: Your surgeon will advise you whether the procedure should be done in the surgery, a hospital or in a day-surgery clinic.

ASK YOUR SURGEON

This pamphlet provides general information. It does not replace advice from your surgeon and does not cover every aspect of this surgery. Read this pamphlet carefully, and save it for reference. This information will change with time, due to clinical research and new therapies. If you are not sure about the benefits, risks and limitations of surgery, your surgeon will be pleased to answer questions or concerns. If you have been referred by a prosthodontist, orthodontist or other dental or medical practitioner, your surgeon will report to the referring doctor about your treatment. Use this pamphlet only in consultation with your surgeon.

Consent form: If you decide to have treatment, your surgeon will ask you to sign a consent form. Before signing, read it carefully. If you have any questions, ask your surgeon.

Types of Dentoalveolar Procedures

Extraction of a tooth or retained root

As shown (right), your surgeon usually has to make an incision in the gums to remove the tooth or root. A small piece of bone may have to be removed to get to the tooth. The tooth may be divided into segments so it can be removed easily and safely.

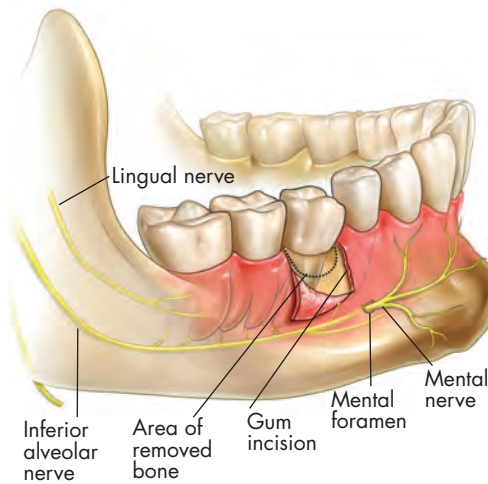
Some teeth are fairly easy to remove, while others can be difficult. Some demanding extractions may carry a significant risk of injury to nearby nerves.

Difficult extractions are usually due to:

- adjacent teeth having crowns or large fillings
- a tooth in an abnormal position that affects neighbouring teeth
- a major nerve near the tooth to be extracted
- roots that are large and curved, or that penetrate deeply into the jaw bone, or that have been root filled
- an unerupted or impacted tooth, or a tooth fused to the jawbone (ankylosis).

The incision in your gums may have to be closed with stitches.

After a tooth is extracted, nearby teeth often move out of their normal position and tilt into the gap. This can make chewing and biting difficult. It may also cause decay and gum disease around the tilted teeth because cleaning can be difficult. To prevent teeth from moving into the gap, a bridge, plate or dental implant may be necessary.



Every effort is made to preserve teeth because they function better than artificial teeth such as dentures, bridges or implants.

Teeth are extracted less frequently these days because:

- modern methods have improved the chances of saving a tooth, and
- retention of teeth is usually better than extraction.

However, extraction is sometimes the best treatment option. The aim is to achieve the best outcome over the long term, while giving you the most satisfactory function and appearance possible.

REASONS FOR EXTRACTION

- **Prevention of complications:** If badly diseased teeth are not extracted promptly, complications such as infection in other teeth or jawbone, or the spread of

infection through the blood stream to other parts of the body, may occur. This may seriously affect health.

- **To improve appearance:** As part of orthodontic treatment or a treatment plan to improve the appearance of teeth, your dentist or orthodontist may recommend removal of a tooth.

- **Extensive damage:** This may be due to decay, broken-down large fillings, or trauma.

- **Gum disease:** Due to poor dental hygiene and a build-up of plaque and calculus (tartar) on a tooth, gums may become inflamed and infected. If not treated promptly, gum disease is likely to damage the underlying bone and other tissues around the tooth root.

- **Supernumerary teeth:** Some people have one or more additional permanent teeth. They can become impacted, often causing pain, infection and damage to other teeth. A supernumerary tooth that is likely to interfere with orthodontic treatment is almost always removed.

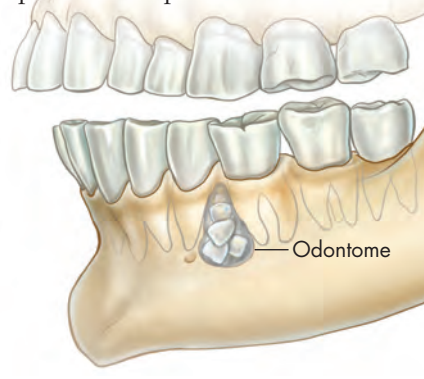
- **Tooth with no function:** A tooth without an opposing partner to grind against during chewing may be better removed.

- **Vertical cracks in a tooth root:** A root may shift and split, and crack upwards or downwards. If repair is not possible, extraction may be necessary.

- **Impacted or misplaced (ectopic) teeth**
- **Failed root fillings.**

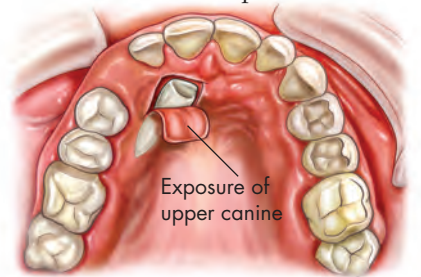
Removal of an odontome

An odontome is a malformed primitive tooth that did not develop properly. It often causes swelling, delayed eruption of nearby teeth, displacement of permanent teeth, and abnormal occlusion (bite). Once diagnosed, an odontome is usually removed as soon as practicable, depending on the age and oral development of the patient.



Exposure of a tooth

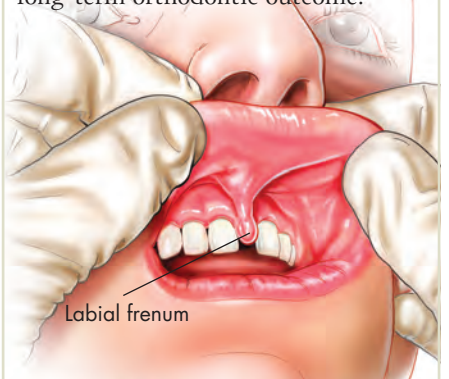
In children, unerupted teeth that become impacted usually need surgical exposure to help them erupt normally. Most commonly, the upper canines are the ones to cause problems. Other incisors or premolars can also become impacted. Bone and gum above the impacted tooth are removed so that the top of the impacted tooth can start to move normally. An orthodontic appliance may have to be fitted to assist the tooth into its normal position.



Removal of labial frenum (frenectomy)

An abnormally long labial frenum may cause a large gap between the two upper front teeth. The dense, fibrous tissue between the incisors may need to be surgically removed before orthodontic treatment begins.

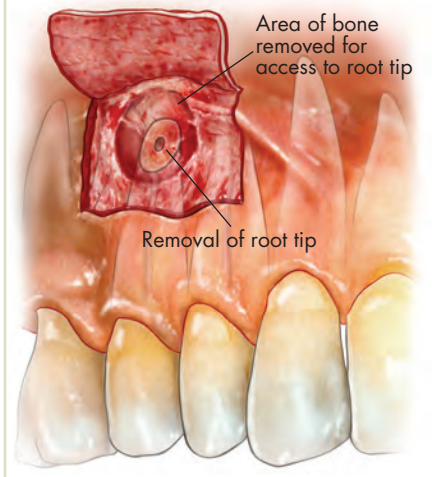
Frenectomy often improves the long-term orthodontic outcome.



Aid to root canal therapy

If nerve and pulp tissue die, an infection is likely to develop at the tip of the tooth root. This infection within the jawbone can cause loss of the tooth and other health problems, severe in some cases. Surgical removal of the root tip, called a root resection or apicectomy, can clear the infection and help save the tooth. Root resection is performed in conjunction with root canal treatment.

See “Root Canal Treatment”, a patient education pamphlet available from your dentist or endodontist.



Oral pathology

The surgeon may remove a small piece of abnormal tissue for analysis (biopsy). Using a variety of cutting instruments, the surgeon often takes the biopsy with the patient under a local anaesthetic in an outpatient clinic.

A pathologist can tell whether the tissue is non-cancerous (benign) or cancerous (malignant). The pathologist will send a report to the surgeon, who will discuss the findings and options for treatment with the patient. A second biopsy may be needed if results of the first biopsy are uncertain.

ANAESTHESIA

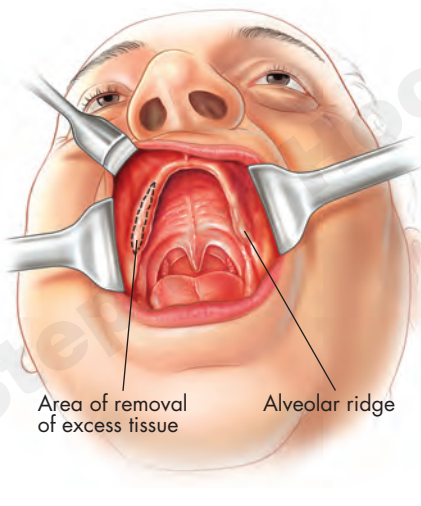
Depending on the surgery, your surgeon may recommend local anaesthesia (maybe with conscious sedation), intravenous sedation or general anaesthesia, which is given by a specialist anaesthetist. Modern anaesthesia is safe with few risks. Some people can have serious reactions to anaesthetic or sedative drugs. If you have ever had such a reaction, tell your surgeon. Before surgery, your surgeon or anaesthetist will give you instructions.

Aids to fitting of partial or complete dentures

In order to achieve a comfortable fit for dentures, surgery on one or both dentoalveolar ridges may be necessary. Surgery can:

- correct uneven or misshapen alveolar ridges caused by excess gum tissue, fibrous tissue, scar tissue or bony outgrowths
- remove lesions, cysts and other tissue abnormalities
- remove buried teeth, retained roots and bone fragments.

Correction of the dentoalveolar ridge typically requires cutting and removal of soft tissue or bone. While surgery can assist the fitting process, results may be limited in some people, particularly in elderly patients whose healing capacity may be reduced.



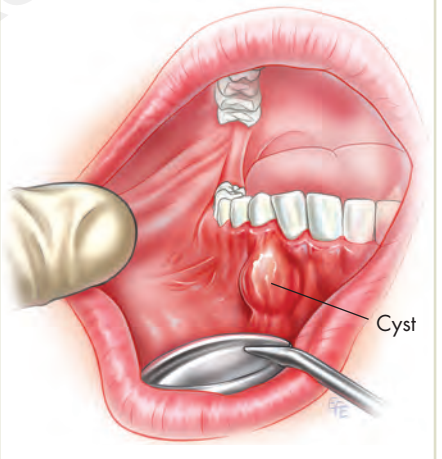
Cysts of the upper or lower jaw

These are fluid-filled sacs that can result in swelling, pain and infection. Some cysts become large and affect nearby healthy teeth. A cyst will not go away by itself. If it starts to cause problems, it is usually best to treat the cyst before symptoms get worse.

The aim of treatment is to get rid of the cyst so that bone grows into the empty space. The two most common surgical treatments are:

- enucleation – the cyst is opened and the lining of the cyst is removed
- marsupialisation – the cyst is opened and part of the lining is removed; a pouch is made so the remainder of the lining is continuous with the tissue inside the mouth.

While the surgeon makes every attempt to save teeth involved with the cyst, one or more teeth may have to be removed, depending on the size and location of the cyst.



After the surgery

You will have to rest for a while before you go home. When your surgeon is satisfied with your recovery, you can go home. A family member or friend should take you home after the surgery. Arrange this well in advance.

- Rest at home.
- Do not drive, engage in active exercise, or operate machinery.
- For at least the first day after surgery, do not brush teeth near the area of the surgery.
- Depending on the nature of the surgery, you may need to take time off work, school or other duties.
- Do not drink alcohol while taking pain relievers or antibiotics.
- Avoid hot food or drink. Eat soft foods such as soups, blended (pureed) vegeta-

bles and meats, and gelatine (jelly) for at least the first two days.

- To assist healing, do not smoke for at least two weeks. It is best to quit.
- Drink a lot of fluids.
- If stitches have been used to close an incision, do not disturb them. Some stitches dissolve after a few days. Other stitches will be removed by your surgeon.

Pain relief after surgery: Pain may be minor in some people and greater in others. Your surgeon will prescribe a pain reliever for you. If you are uncertain about the best pain-relief medicine for you, ask your surgeon. Pain usually starts to decrease after the second day. However, some people may still need pain relief after one week. If your pain does not improve, tell your surgeon.

Control of bleeding: Apply pressure over the area of bleeding by biting gently, but firmly, on a piece of cotton gauze. The pressure helps stop bleeding, and a blood clot forms. It is important not to disturb the area, or bleeding may start again. The

gums may ooze blood slightly for a day after surgery. Any bleeding should stop by the second day. If bleeding does not stop, contact your surgeon.

Swelling: Swelling almost always occurs after surgery and can vary from minor to

severe. Most swelling takes four to five days to go down. Swelling can be reduced by applying ice packs on the affected area.

Follow-up: A follow-up visit is important. Your surgeon will want to check on healing. Stitches may be taken out.

Possible complications of dentoalveolar surgery

As with all surgery, dentoalveolar surgery has risks, despite the highest standards of practice. If you have any concerns about possible complications, ask your surgeon.

It is not usual for a surgeon to dwell on every possible complication of any surgical procedure. However, it is important that you have enough information about possible side effects to weigh up the benefits and risks of surgery.

Any discussion of frequency of risks or benefits (for example, one patient in 100, or “rare” and so on) can only be estimates as the outcomes of clinical research can vary widely. Such outcomes can depend on many factors, such as the surgical methods, equipment, surgeons’ experience and data collection, among others.

The following possible complications are intended to inform and not to alarm. There may be others that are not listed.

Numbness or altered sensation

The treated area may be close to a major nerve. During surgery, the nerve may be damaged. This can cause numbness, tingling and loss of feeling in teeth, gums, cheeks, lips, chin, tongue and around the upper jaw and lower jaw. If injured, the nerve will usually heal. As it heals, the numbness and tingling go away; often this takes a few weeks. In some people, complete healing of the nerve may take six to 18 months. In rare cases, the nerve may not heal completely, and numbness or altered sensation may be permanent.

Nerve damage causing pain

In rare cases, an injured nerve may heal poorly, and pain may persist or recur without diminishing. This can happen even though the surgery was successful and all care was taken to avoid injury to major nerves. It is not known why some nerves react this way. The pain in these cases can sometimes be difficult to treat.

Dry socket

After removal of a tooth or retained root, a blood clot will form over the jawbone. This clot is important for healing and pain relief. If the clot is loosened, the bone will be exposed (“dry socket”). The

result is a throbbing pain that may last for many days. If you have pain like this, contact your surgeon.

■ To help prevent a dry socket, for the first day after surgery, do not rinse or spit with force. This can loosen the blood clot and may cause slow healing.

■ After the first day, rinse gently with warm salt water (one-half teaspoon in a cup). For the next two or three days, rinse gently every four hours or more often. This will help healing, reduce swelling and pain, and reduce the risk of infection.

■ For the first day after surgery, do not brush your teeth around the area of surgery. After the first day, brush gently.

■ Do not smoke or use tobacco.

Infection

An infection in the gum or bone is usually treated with an antibiotic. Tell your surgeon if you have ever had an allergic reaction to any antibiotic or other drug. Osteomyelitis is a serious inflammation and infection of the jawbone that can occur after dentoalveolar surgery. It may require hospitalisation in rare cases.

Endocarditis

For people with rheumatic heart disease, congenital heart defects, artificial heart valves or other specific heart problems, some dental treatments have been linked to a risk of endocarditis, an infection inside the heart. Surgeons take this risk into account in the treatment of patients who may be at risk.

Difficulty in opening the mouth

Pain or discomfort when opening the mouth is common after oral surgery. This usually settles in a few days as the swelling goes down.

Fever

Body temperature may be slightly higher after surgery. It should go back to normal after 12 to 24 hours. A fever that lasts longer may be an indication of infection or other problems; contact your surgeon.

Excessive bleeding (haemorrhage)

Rarely, haemorrhage may occur. It may be caused by too much exertion or by vomiting. It may be stopped by putting

gauze over the wound and applying pressure by biting gently on the gauze for 15 minutes. If severe bleeding does not stop, tell your surgeon at once.

Lip sores

Pressure on, or stretching of, the lip by surgical instruments may cause bruises or small sores. They usually heal well.

Damage to nearby tooth or fillings

When a tooth or retained root is removed, a nearby tooth or filling may be chipped or loosened. This is rare.

Vomiting

Some people may vomit when they are recovering from the anaesthetic.

Sinus problems

The roots of the upper teeth are close to the sinuses. In some cases, a sinus may be opened when a tooth or retained root is removed. The opening will usually heal quickly without infection. However, if an infection sets in or other problems start, more treatment may be necessary.

Weak jaw

Removal of an impacted tooth can cause the jawbone to become temporarily weaker. This is rare and usually occurs only in the elderly.

Temporomandibular joint (TMJ)

During difficult procedures, dislocation of the TMJ may occur in people predisposed to this problem. It can lead to severe pain and, in some cases, disability. If you have a history of dislocation of the TMJ or a temporomandibular disorder, tell your surgeon.

Costs of treatment

Costs will vary according to the extent of treatment. Ask your surgeon for an estimate. Extra costs will apply for additional treatments such as dental implants, bridges or dentures. It is best to discuss costs before and during treatment, rather than afterwards.

YOUR SURGEON