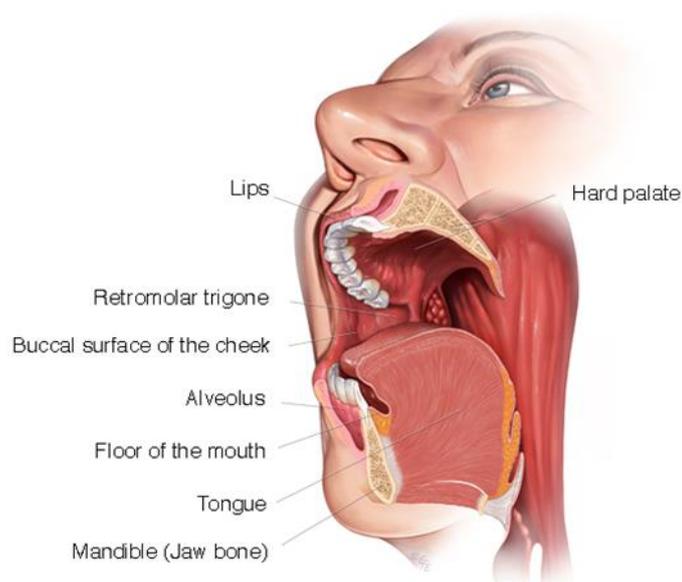


MANDIBULECTOMY

This information sheet aims to help you understand the operation, explains what is involved, what to expect after surgery and some of the potential complications. It may help answer some of your questions and help you think of questions to ask your surgeon, but is not meant to replace discussion between you and your [cancer care team](#).

AN OVERVIEW OF THE MANDIBLE

- The mandible is the lower jawbone. This is important for maintaining the shape of the face as well as providing a strong support for the teeth when you chew.
- The mandible has an important nerve (inferior alveolar nerve) running through the middle of it. This nerve gives feeling to the skin of your lower lip, chin and bottom teeth



WHAT IS MANDIBULECTOMY?

- A mandibulectomy is the removal of all or part of your lower jaw
- How much of your lower jaw is removed will depend on where your cancer is, and how large it is. If there are teeth in the involved area of the mandible, these will also need to be removed.
- There are two types of mandibulectomies:
 - Marginal mandibulectomy, where only a rim of the jawbone is removed under the cancer. Usually this does not need to be replaced with bone but may be covered by a flap of skin.
 - Segmental mandibulectomy, where the full thickness of the jawbone is removed where the tumour is located. This usually is replaced with bone from somewhere else in the body.
- If an entire segment of your jawbone needs to be removed and the full thickness of the jawbone is cut, reconstruction will be needed to help maintain your jaw's functions and a fairly normal outward appearance. Sometimes reconstruction is done in a later operation.
- Reconstruction usually involves flaps of skin, muscle, or bone, and often a metal plate is used to secure new bone in place. The new tissue helps to restore your speech, eating and normal appearance. Further information on different reconstructive surgeries is available on the website (see [soft tissue flap](#) and [bony free flaps](#)).
- Sometimes the lymph glands in the neck may need to be removed at the same time and this is called a neck dissection. Further information on [neck dissection](#) is available on the website.
- Often a tracheostomy is performed during the surgery to help with breathing after the operation until the swelling goes down. More information on [tracheostomy](#) is available on the [Beyond Five website](#).

WHY DO I NEED A MANDIBULECTOMY?

- Mandibulectomy is usually needed for patients who have a cancer growing into the jaw or very close to it. Sometimes part of the jaw needs to be removed for benign (non-cancerous) jaw tumours or if part of the bone has died as a side effect of radiation therapy (osteoradionecrosis).
- The cancer together with an area of surrounding normal-appearing tissue is removed to reduce the chance of any cancer cells being left behind.
- The tissue removed will be examined under the microscope by a specialist pathologist who will provide a detailed report on the cancer after a week or two.. This helps your cancer care team to accurately stage your cancer and to decide whether you need extra treatment to reduce the risk of the cancer coming back (adjuvant therapy). Further information about [staging of cancer](#) is available on the Beyond Five website.

HOW CAN I PREPARE FOR THE SURGERY?

Before the operation:

- You will need to fast (have nothing to eat or drink) for 6 hours before your operation (unless advised differently by your surgeon or anaesthetist) because a mandibulectomy is performed under a general anaesthetic (you will be asleep and will not remember what happens during the operation).
- Your surgeon will explain the details of your operation. Be sure to bring up any questions or concerns, and share your needs and wishes with your cancer care team (see box).
- You should speak to your doctor about how to manage aspects of your lifestyle, such as smoking, drinking alcohol and chronic conditions (e.g. diabetes and obesity) that may increase the risk of complications.

Possible questions that you may want to ask your cancer care team

- How long will it take before I can eat again?
- What kinds of food should I eat after the operation?
- Will I need a feeding tube?
- Will I need any teeth removed?
- What will replace the bone that is removed?
- Will I be able to wear a denture, what will hold the denture in (remaining teeth or implants) and how long will that take?

Additional questions are listed at the end of this factsheet.

- If you take blood thinning medication for a heart condition or blood clots (such as warfarin, Plavix, aspirin or Pradaxa[®]), make sure your surgeon is aware. Some of these medications need to be stopped more than a week before the operation. Sometimes a short-acting blood thinner (such as Clexane[®]) is used before and after the surgery.
- Depending on the extent of your mandibulectomy and the plans for reconstruction, you may need to see a specialist dentist before the operation. Dental implants may be planned and a mould may need to be taken of your mouth before your operation.
- Often some of your teeth will need to be removed at the time of the mandibulectomy. Further information about [dental extractions](#) is available on the website.
- Spend time planning how you can communicate with people after your surgery as you may not be able to speak normally in hospital straight away. It may be useful to use a pen and paper, an iPad/tablet or a mini white board in hospital. Check what the hospital has available or if you should take one of these with you.
- Talk to your surgeon and cancer care team about any likely side effects you can expect following the operation. Ask about any concerns with swallowing and speech and reconstructive surgery planned. You may find it useful to talk to a dietitian, speech pathologist or specialist head and neck nurse about these issues.

• Visit the [Beyond Five website](#) for further information on health professionals who may be part of your cancer care team

WHAT CAN I EXPECT DURING SURGERY?

The surgery will depend on the size of the cancer and if it has spread. The approach and the type of cut used by your surgeon will depend on the type of mandibulectomy you are having. There are three common approaches:

- Through the neck: A large cut in the neck is used to access the mandible. Usually the lymph glands are removed through the same cut.
- Through the lip: A cut in the neck is combined with a cut in the lower lip and chin.
- Through the mouth. Sometimes a cut is still required in the neck to remove the lymph glands.

The bone will be removed with a saw including the teeth that are held in place by the bone. The nerve that travels through the lower jaw responsible for feeling in the skin of the chin may need to be removed. Other areas, such as parts of the tongue, cheek or floor of the mouth, may also need to be removed, depending on where the cancer is.

Often lymph nodes (glands) in your neck may need removal (a neck dissection) to remove any glands affected by the cancer. You may want to download further information about neck dissection, which is available on the [Beyond Five website](#).

- You may also have reconstructive surgery to improve your appearance and help you regain speech and your ability to chew. Reconstruction may involve bone and skin flaps and skin grafts to rebuild the lower jawbone and tissue nearby. A metal plate is often used to hold the bone in place and dental implants may be used to restore your teeth but often this is planned at a later stage. You may want to download further information about bone and skin flaps, and skin grafts, which is available on the [Beyond Five website](#).
- During the operation, you may have a tube inserted into your windpipe (tracheostomy). You may want to download further information about tracheostomy, which is available on the [Beyond Five website](#).
- A Feeding tube is often used to deliver nutrition to patients after surgery. In most cases, a feeding tube is only required for a short time until you can eat again. You may want to download information about feeding tubes, which is available on the [Beyond Five website](#).

WHAT CAN I EXPECT AFTER SURGERY?

- After the operation, once you are fully awake, you will be moved to a bed in the hospital or intensive care unit and will be closely monitored during your recovery.
- You may have some surgical drains coming from the area of the operation to allow blood or lymphatic fluid to escape and prevent swelling. These will usually be removed before you go home but it may be possible to go home with the drains if you are ready.
- Your anaesthetist and surgical team will give you medicine to help control any pain and nausea after the operation. Stitches and dressings will be checked and changed or removed. You may want to download further information about pain management, which is available on the [Beyond Five website](#).
- It is likely that your lip and chin will feel numb after the operation. This will create several challenges:

- It will be difficult to know if you have placed a cup or straw in the right spot to drink
- You won't know if food or liquids are hot or cold (you could burn yourself)
- You may find that you dribble when you eat and drink, which can be embarrassing
- A tracheostomy in the windpipe will be in place until swelling subsides and breathing is safe. You may want to download further information about tracheostomy , which is available on the [Beyond Five website](#).
- You may have a drip in your arm to give you fluid until you are able to drink and a feeding tube to keep your body healthy and promote healing until you are able to eat and drink by mouth. If you have had reconstructive surgery, a feeding tube may be required for about one week.
- A urinary catheter may be in place to allow urine to drain freely from the bladder for collection.
- For reconstructive surgery, there will be frequent monitoring to check that the blood supply is good. This is usually done every hour for the first couple of days. You will need to sleep with your head upright to reduce swelling and not on your side to avoid pressure on the reconstruction. If there are signs of a blockage in the blood supply, you will need to return to the operating rooms to attempt to un-block the blood vessels. Sometimes this is not possible and the flap will need to be replaced.
- The length of recovery and the time you spend in hospital will depend on the extent of the operation. Usually this is about 2 weeks if you have undergone reconstructive surgery.

WHAT ARE THE RISKS?

All operations carry some risks such as blood clots, wound infections, bleeding, chest infection, adverse reactions to anaesthetic, and other complications. These risks will be explained by your cancer specialist and anaesthetist. Most people will not experience any serious complications from their surgery and you should discuss these with your surgeon.

Your doctor will explain details of the operation, general risks and side effects of the operation, they may recommend:

- stopping smoking before the operation
- stopping blood thinners (e.g. aspirin) before surgery to reduce the risk of bleeding
- a blood thinner (called heparin) may be injected before and after surgery to reduce the risk of blood clots
- antibiotics to reduce to risk of wound infection
- early mobilisation to reduce the risk of blood clots and chest infection
- special stockings to reduce the risk of blood clots.

Risks specific to mandibulectomy include:

- **Abnormal opening or fistula:** If the seal separating the mouth and neck breaks down, saliva may leak causing an infection. This can be a very serious complication and might require opening a wound to allow it to drain or another operation to fix the seal.
- **Bleeding:** Bleeding after mandibulectomy is uncommon. There is a small chance of major bleeding that might need an urgent return for surgery to stop the bleeding and even a blood transfusion.
- **Flap failure:** If a flap repair is performed, the blood supply to the flap needs to be monitored closely. If there are signs of a blockage in the blood supply, you will need to return to the operating rooms to un-block the blood vessels. Sometimes this is not possible and the flap will need to be replaced.
- **Non-union:** The reconstructed jawbone may not join back together properly. This may require more surgery if the bone is not stable.
- **Malocclusion:** The upper and lower teeth may not meet together in the correct position when chewing. This may be able to be corrected by an orthodontist with braces.
- **Loss of teeth,** particularly next to where the bone was cut.
- **Plate complications:** Problems such as infected plates, plates becoming visible or plate breakage may occur. This usually requires removal of the plates.
- **Osteonecrosis:** The death of some of the bone may occur, this is more likely in patients who have had radiation therapy after the surgery or if a bone graft was used instead of a bone flap. This is because a bone flap has its own blood supply.
- **Infection:** Bacteria can cause an infection in the face or neck wounds after the surgery. Antibiotics are given during surgery but infections can still happen. This might require opening part of the wound to allow any pus to drain out. For information about the side effects of the rest of the surgery you are having for your particular cancer and questions to ask your doctor refer to the [Beyond Five website](#).

WHAT ARE THE SIDE-EFFECTS AND HOW CAN I MANAGE THESE?

As with all operations, a mandibulectomy may lead to a number of side effects. You may not experience all of the side effects. Speak with your doctor if you have any questions or concerns about treatment side effects.

Common Side effects after mandibulectomy include:

- **Nausea:** General anaesthetic may cause nausea. This will settle down soon after the operation and can be treated with medications.
- **Pain:** Pain is a common side effect of the operation. Your anaesthetist will give you pain medicine during the operation to keep you comfortable when you wake up, and you may continue on pain medicines to ensure pain is under control. Ensure you take pain relief medications as prescribed by your doctor and speak to your cancer care team if the pain is not under control, gets worse or if the medication causes any side effects. You may want to download further information about [pain management](#), which is available on the [Beyond Five website](#).
- **Changes in eating and speaking:** A mandibulectomy will affect how clearly you look, speak, chew and swallow depending on the extent of the operation. Breathing and feeding tubes may be used to help breathing and receiving nutrition, especially soon after the operation. It may be useful to have a tablet/portable device or pen and paper to write down what you want to say. Other allied health professions may be able to provide assistance needed to help with your eating and speaking during recovery.
 - Speech pathologist will assess any difficulties with your speech and eating and help you to manage these.
 - Dietitian can help to adjust diet so that the right amount of nutrition can still be taken, even with trouble swallowing
 - Psychologist may help with dealing with appearance and social issues related to speaking and eating
- **Difficulty wearing a denture:** After removing the lower jaw bone it may be difficult to wear a denture. Often a specialist dentist, called a prosthodontist will need to spend time discussing the options available to you. This may be a long and complex process.
- **Nerve damage:** The skin around your lip, chin and jaw may be numb after the surgery. This may persist for several months or may be permanent. Sometimes other important nerves need to be removed with the tumour that may affect your speech, swallowing and feeling in your tongue.

- **Changes in appearance:** Your appearance may change and it may be hard to accept. Seek support from the cancer care team, and family and friends. Contacting other patients may also assist.

It may help to make contact with other patients who have had this surgery or a support group. Hearing how others have coped with this surgery and the adjustments needed can help you have a positive attitude and realistic expectations. Your health care team can help with making these contacts, in person or online.

BEFORE I GO HOME?

- Any particular instructions for [wound care](#) or medications will be provided to you before you go home. You may want to download further information about wound care on the [Beyond Five website](#).
- Your doctor may prescribe pain medications to help relieve pain following the operation. Ensure you take the pain relief medications as prescribed by your doctor and speak to your cancer care team if the pain is not under control, gets worse or if the medication causes any side effects. You may want to download further information about pain management, which is available on the [Beyond Five website](#).
- You will be assessed by the team involved in your care before you go home and follow-up will be arranged with your surgeon and GP.
- After a mandibulectomy, follow-up may also be arranged with other allied health professionals that may assist you with supportive care, it may include a speech pathologist, dietitian, dentist, radiation specialist (if radiation therapy is needed) and any specialists involved in further reconstruction or a replacement prosthesis for the mouth.
- Your recovery at home may vary and you should allow time for your body to recover and heal. With major surgery, this can be slow and you may feel tired or lack energy. Regular follow-up helps to assess your progress.

Symptoms to watch for after discharge from hospital

- **Significant swelling:** There may be some mild swelling after the operation. This is normal and may last for some weeks. However, if this becomes very noticeable and painful, contact the surgeon, your family doctor or the hospital.
- **Discharge from the wound:** If the wound becomes red, hot and starts to discharge you may have an infection and should contact the surgeon or your family doctor, as you may need antibiotics. If your wound discharges a clear fluid this may just be saliva.
- **Fever:** If you develop a fever contact your surgeon or your family doctor.
- **Bleeding:** Contact your surgeon or seek emergency medical care if there is bleeding from the site of surgery.

WILL I NEED ANY OTHER TREATMENT?

This depends on the nature and extent of your cancer.

- Head and neck cancers often require treatment with more than one form of therapy to reduce the risk of the cancer recurring. Many patients need radiation therapy after surgery, and sometimes also require chemotherapy.
- Your cancer care team will be able to discuss the likelihood of needing further treatment before your surgery.

FOLLOW-UP CARE

- After your surgery, you will continue to have regular follow-up visits with your specialist doctor.
- You will have follow-up with the speech pathologist to help with your speech.
- A dietitian may assist with swallowing or eating difficulties.
- A dentist or prosthodontist will assist with ongoing dental care and any further dental replacement.
- Other referrals will be arranged as needed with other health professionals to assist you with any other difficulties or supportive care.
- Any additional reconstruction, cosmetic procedures or treatments that you may need are planned after discharge. This enables time for you to recover from the initial surgery, to get results of the pathology that examined the tissue removed at surgery, and to make the arrangements for any additional treatment or next steps.

QUESTION TO ASK YOUR DOCTOR

- What type of cancer do I have? Where is it located?
- What are the risk factors for this disease?
- What lifestyle changes (diet, exercise) do you recommend I make?
- What are the chances that the surgery will cure the cancer?
- What will happen if I don't have the surgery?
- How much will the operation cost? Will my health insurance cover it?
- What are the possible side effects of treatment? How can they be prevented or controlled?
- Will I have a scar?
- Will I be able to lead a normal life?
- When will I get the pathology results?
- What follow up tests will I need?
- Am I suitable for any clinical trials?

For further information about surgery for cancer and what to expect, you can also refer to [Understanding Surgery: A guide for people with cancer, their families and friends](#).

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