Treating Salivary Gland Cancer

This information represents the views of the doctors and nurses serving on the American Cancer Society’s Cancer Information Database Editorial Board. These views are based on their interpretation of studies published in medical journals, as well as their own professional experience.

The treatment information in this document is not official policy of the Society and is not intended as medical advice to replace the expertise and judgment of your cancer care team. It is intended to help you and your family make informed decisions, together with your doctor.

Your doctor may have reasons for suggesting a treatment plan different from these general treatment options. Don’t hesitate to ask him or her questions about your treatment options.

General treatment information

After cancer is diagnosed and staged, your cancer care team will discuss your treatment options (choices) with you. Depending on your situation, you may have different types of doctors on your treatment team:

- An **otolaryngologist** (also known as an *ear, nose, and throat*, or **ENT doctor**): a surgeon who treats certain diseases of the head and neck
- A **radiation oncologist**: a doctor who treats cancer with radiation therapy
- A **medical oncologist**: a doctor who treats cancer with medicines such as chemotherapy

Many other specialists may be involved in your care as well, including physician assistants, nurse practitioners, nurses, nutrition specialists, speech therapists, occupational therapists, social workers, and other health professionals.

Common treatment options for salivary gland cancer include:
Surgery
Radiation therapy
Chemotherapy

Sometimes more than one type of treatment is used.

Which treatment option(s) might be best for you depends on many factors, including the type, grade, and stage of the cancer; your overall health; the chances of curing the disease; the impact of the treatment on functions like speech, chewing, and swallowing; and your own personal preferences.

It’s important to discuss all of your treatment options as well as their possible side effects with your treatment team to help make the decision that best fits your needs. If there’s anything you don’t understand, ask to have it explained. (See What Should You Ask Your Doctor About Salivary Gland Cancer? for some questions to ask.)

If time permits, getting a second opinion from a doctor experienced with salivary gland cancer is often a good idea. It can give you more information and help you feel more confident about the treatment plan you choose.

The next few sections describe the types of treatments used for salivary gland cancer. This is followed by a description of the most common approaches used based on the stage of the cancer, and information on treatment options for recurrent salivary gland cancer.

Surgery for Salivary Gland Cancer

Surgery is often the main treatment for salivary gland cancers. Your cancer will probably be treated with surgery if the doctor believes that he or she can remove it completely (that is, if the cancer is resectable). Whether or not a cancer is resectable depends largely on how far it has grown into nearby structures, but it also depends on the skill and experience of the surgeon. Being treated by a surgeon who has treated many patients with salivary gland cancer gives you the best chance of having your cancer removed completely. This, in turn, gives you the best chance of being cured.

In most cases, the cancer and some or all of the surrounding salivary gland will be removed. Nearby areas of soft tissue may be removed as well. If the cancer is high grade (more likely to grow and spread quickly) or if it has already spread to lymph nodes, the surgeon will usually remove lymph nodes from the same side of the neck in an operation called a neck dissection (described below).
Before surgery, ask your surgeon exactly what will be done during the operation, what the goals of the surgery are, whether there are other options, and what side effects you can expect.

The type of surgery will depend on which salivary gland is affected.

**Parotid gland surgery**

Most salivary gland tumors occur in the parotid gland. Surgery here is complicated by the fact that the facial nerve, which controls movement on the same side of the face, passes through the gland. For these operations, an incision (cut) is made in the skin in front of the ear and may extend down to the neck.

Most parotid gland cancers start in the outside part of the gland, called the superficial lobe. These can be treated by removing only this lobe, which is called a superficial parotidectomy. This usually leaves the facial nerve intact and does not affect facial movement.

If your cancer has spread into deeper tissues, the surgeon will remove the entire gland. This operation is called a total parotidectomy. If the cancer has grown into the facial nerve, it will have to be removed as well. If your surgeon has mentioned this surgery as a possibility, ask about operations to repair the nerve and ways to treat side effects caused by removing the nerve. If the cancer has grown into other tissues near your parotid gland, these tissues might also need to be removed.

**Submandibular or sublingual gland surgery**

If your cancer is in the submandibular or sublingual glands, the surgeon will make a cut in the skin to remove the entire gland and perhaps some of the surrounding tissue or bone. Nerves that pass through or near these glands control movement of the tongue and the lower half of the face, as well as sensation and taste. Depending on the size and location of the cancer, the surgeon may need to remove some of these nerves.

**Minor salivary gland surgery**

Minor salivary gland cancers can occur in your lips, tongue, palate (roof of the mouth), mouth, throat, voice box (larynx), nose, and sinuses. The surgeon usually removes some surrounding tissue along with the cancer. The exact details of surgery depend on the size and location of the cancer.
Possible risks and side effects of salivary gland surgery

All surgery has some risks, including complications from anesthesia, bleeding, blood clots, and infections. These risks are generally low but are higher with more complicated operations.

For any salivary gland cancer surgery, the surgeon may need to cut through your skin or your mouth. Most people will have some pain after the operation, although this can usually be controlled with medicines.

If your facial nerve is damaged during surgery, you might lose control of your facial muscles on the side where the surgery was done. That side of your face may droop. If the injury to the facial nerve is related to retraction (pulling) of the nerve during surgery and/or swelling from the operation, the damage might just be temporary.

Sometimes, nerves cut during surgery grow back abnormally and become connected to the sweat glands of the face. This condition, called Frey syndrome or gustatory sweating, results in flushing or sweating over areas of your face when you chew. Frey syndrome can be treated with medicines or with additional surgery.

Damage to other nerves in the face or mouth might cause problems with tongue movement, speech, or swallowing.

Depending on the extent of the operation, your appearance may be changed as a result of surgery. This can range from a simple scar on the side of the face or neck to more extensive changes if nerves, parts of bones, or other structures need to be removed.

It’s important to talk with your doctor before the surgery about what changes in appearance or other side effects you might expect, to help prepare you for them. He or she can also give you an idea about what corrective options might be available afterward, such as reconstructive surgery.

Lymph node removal (neck dissection)

Surgery to remove lymph nodes is called a lymph node dissection or lymphadenectomy. Salivary gland cancers sometimes spread to lymph nodes in the neck (cervical lymph nodes), and these may need to be removed as a part of treating the cancer. This is called a neck dissection.

A neck dissection may be done if:
• Lymph nodes in the neck are enlarged (as felt by physical exam or seen on a CT or MRI scan)
• A PET (positron emission tomography) scan suggests the lymph nodes may contain cancer
• The cancer is high grade (looks very abnormal under the microscope) or has other features that mean it has a high risk of spreading

The lymph nodes that are removed are looked at under the microscope to see if they contain cancer cells. Removing the lymph nodes can help ensure all of the cancer is removed. It can also be important for staging and deciding on the need for further treatment.

There are many types of neck dissections, but their major purpose is to remove lymph nodes that might contain cancer. In doing this, the surgeon may need to remove connective tissue, muscles, nerves, and blood vessels from one side of your neck. This type of surgery is usually done through an incision (cut) across the side of the neck, but sometimes a longer incision going down the neck might be needed.

**Possible risks and side effects of lymph node removal**

The general risks with a neck dissection are similar to those with any other type of surgery, including problems with anesthesia, bleeding, blood clots, infections, and poor wound healing. Most people will have some pain after the operation, although this can usually be controlled with pain medicines.

Because this surgery can affect nerves that run through the neck, it can sometimes lead to ear numbness, weakness in raising your arm above your head, and weakness of the lower lip. These may get better with time. You can be helped by physical therapists who can teach you exercises to improve your neck and shoulder movement.

For more general information on surgery, see [Cancer Surgery](#).

• [References](#)

[See all references for Salivary Gland Cancer](#)

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Radiation Therapy for Salivary Gland Cancer

Radiation therapy uses high-energy x-rays or particles to destroy cancer cells or slow their growth.

Radiation therapy may be used:

- As the main treatment (alone or with chemotherapy) for some salivary gland cancers that can’t be removed by surgery because of the size or location of the tumor, or if a person can’t have (or doesn’t want) surgery
- After surgery (alone or with chemotherapy) to try to kill any cancer cells that might have been left behind, if the cancer has a higher chance coming back
- In people with advanced salivary gland cancer to help with symptoms such as pain, bleeding, or trouble swallowing

External beam radiation therapy, which focuses radiation from outside the body on the cancer, is the type of radiation therapy used most often to treat salivary gland cancer.

Before your treatments start, the radiation team will take careful measurements to determine the correct angles for aiming the radiation beams and the proper dose of radiation. This may take a couple of hours or more on the first visit.

Most often, radiation treatments are given 5 days a week for 6 or 7 weeks. The length of treatment might be shorter if it’s only being used to relieve symptoms from cancer spread.

Getting radiation treatment is much like getting an x-ray, but the radiation dose is stronger and aimed more precisely at the cancer. The procedure itself is painless. Each treatment lasts only a few minutes, but the setup time – getting you into place for treatment – takes longer.

In recent years, doctors have found that newer forms of radiation therapy may work better than the standard treatment.

**Accelerated hyperfractionated radiation therapy:** In this approach, radiation is given twice a day over a shorter total length of time.

**Three-dimensional conformal radiation therapy (3D-CRT):** 3D-CRT uses the results of imaging tests such as MRI and special computers to precisely map the location of the
tumor. Several radiation beams are then shaped and aimed at the tumor from different directions. Each beam alone is fairly weak, which makes it less likely to damage normal tissues, but the beams converge at the tumor to give a higher dose of radiation there.

**Intensity modulated radiation therapy (IMRT):** IMRT is an advanced form of 3D therapy. It uses a computer-driven machine that actually moves around the patient as it delivers radiation. In addition to shaping the beams and aiming them at the tumor from several angles, the intensity (strength) of the beams can be adjusted to limit the dose reaching the most sensitive nearby normal tissues. This may let the doctor give a higher dose to the tumor. Many major hospitals and cancer centers now use IMRT as the standard way to deliver external beam radiation.

**Fast neutron beam radiation:** Instead of using x-rays, neutron radiation therapy uses a beam of high-energy neutrons. Neutrons are neutral particles in atoms. Some studies have suggested that this type of radiation may be more effective, but it may also lead to more side effects. Neutron therapy machines are available in only a handful of cancer centers in the United States at this time.

**Possible side effects**

Radiation therapy may cause sunburn-like skin changes, nausea, vomiting, and fatigue. Often these go away after treatment.

Radiation therapy of the salivary glands can cause specific problems, because important structures in the head and neck might also get some radiation during treatment. The most common side effect is reduced saliva, which can lead to a dry mouth. Radiation can also cause a sore throat, sores in the mouth and throat, hoarseness, trouble swallowing, temporary loss of taste, bone pain, and bone damage. Radiation can make tooth problems worse, too. Most doctors advise that you have your teeth checked by a dentist before starting radiation therapy to the head or neck area. In some cases, the dentist may even recommend removing some teeth before treatment to lessen the chance you will have problems later.

For most major salivary gland cancers, radiation is only given to the side of the face and neck with the cancer, which reduces the risk of serious long-term side effects. But in rare instances, both sides of your face and neck might need to be treated with radiation. This may damage other salivary glands, resulting in permanently dry mouth. This often causes problems with eating and swallowing and can lead to tooth decay.

Some of the damage to the salivary glands may be lessened if a drug called amifostine (Ethyol®) is given before each radiation treatment. This drug can be hard to tolerate, so
Radiation therapy might also damage your thyroid gland, which might not show up until months or even years later. Blood tests to check thyroid function will be done during follow up (after treatment is complete). Some patients might need to take pills to replace thyroid hormone at some point.

It’s important to discuss the possible side effects of radiation therapy with your doctor before starting treatment, and to make sure everything is being done to try to limit these side effects as much as possible. If you do have side effects, there are ways to relieve many of them, so be sure to discuss any symptoms with your cancer care team.

For more information on radiation therapy, see Radiation Therapy.

- References

See all references for Salivary Gland Cancer

Chemotherapy for Salivary Gland Cancer

Chemotherapy (chemo) is treatment with anti-cancer drugs that are given into a vein or by mouth. These drugs enter the bloodstream and reach all areas of the body, making this treatment useful for cancers that have spread beyond the head and neck. Some chemo drugs may also make cancer cells more vulnerable to radiation.

Chemo is not often used to treat salivary gland cancers. Some doctors may use it along with radiation therapy to try to make the radiation more effective, but it’s not yet clear how helpful this is. More often, chemo is used in patients whose cancer has spread (metastasized) to distant organs and in patients whose cancers could not be controlled by surgery and radiation therapy. Chemo sometimes shrinks tumors in these patients, but it’s not likely to cure this type of cancer.
Doctors give chemo in cycles, with each period of treatment followed by a rest period to give the body time to recover. Chemo cycles generally last about 3 to 4 weeks. Chemo is often not recommended for patients in poor health, but advanced age by itself is not a barrier to getting chemo.

Some of the chemo drugs used to treat salivary gland cancers include:

- Cisplatin
- Carboplatin
- Doxorubicin (Adriamycin®)
- 5-fluorouracil (5-FU)
- Cyclophosphamide (Cytoxan®)
- Paclitaxel (Taxol®)
- Vinorelbine (Navelbine®)
- Methotrexate

These drugs may be used alone, but are more often given in combinations of 2 or more drugs. Because salivary gland cancers are not common, no large studies have been done to prove one regimen is better than the others. The situation is also complicated by the fact that there are different types of salivary gland cancers. New chemo drugs and combinations of drugs are now being studied in clinical trials.

**Possible side effects of chemotherapy**

Chemo drugs attack cells that are dividing quickly, which is why they work against cancer cells. But other cells in the body, like those in the bone marrow (where new blood cells are made), the lining of the mouth and intestines, and the hair follicles, also divide quickly. These cells are also likely to be affected by chemo, which can lead to side effects.

The side effects of chemo depend on the type and dose of drugs given and the length of time they are taken. These side effects can include:

- Hair loss
- Mouth sores
- Loss of appetite
- Nausea and vomiting
- Diarrhea or constipation
- Increased chance of infections (from having too few white blood cells)
- Easy bruising or bleeding (from having too few blood platelets)
- Fatigue (from having too few red blood cells)
There are often ways to lessen these side effects, and they usually go away after treatment is finished. Be sure to ask your doctor or nurse about medicines to help reduce side effects, and let him or her know when you do have side effects so they can be managed effectively. For example, drugs can be given to help prevent or reduce nausea and vomiting.

Some drugs can have other side effects. For example, cisplatin, carboplatin, and paclitaxel can damage nerves (called neuropathy). This can sometimes lead to hearing loss or symptoms in the hands and feet such as pain, burning or tingling sensations, sensitivity to cold or heat, or weakness. In most cases this improves or goes away once treatment stops, but it can last a long time in some people. You should report this to your medical team, as well as any other side effects while getting chemo, so that they can be treated right away. In some cases, the doses of the chemo drugs may need to be reduced or treatment may need to be delayed or stopped to prevent the effects from getting worse.

For more information on chemo, see Chemotherapy.

- References
  See all references for Salivary Gland Cancer

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**Treatment Options by Stage of Salivary Gland Cancer**

The treatment options for salivary gland cancer depend largely on the stage (extent) of the cancer. But other factors, such as the grade of the cancer (how likely it is to grow and spread quickly) and a person’s overall health, can also be important.

**Stage I**

These cancers are small and still within the salivary gland. If you have stage I salivary gland cancer, your doctors will probably recommend surgery to remove the cancer and
part or all of the salivary gland.

**Radiation therapy** may be advised after surgery if you have an intermediate- or high-grade cancer or an adenoid cystic carcinoma, if the cancer could not be removed completely, or if the edges of the removed area contain cancer cells (a sign that some cancer may have been left behind).

### Stage II

Stage II salivary gland cancers are larger but are still confined within the salivary gland. They are also treated mainly with **surgery**, but it may be more extensive (covering a wider area) than for stage I cancers. The surgeon may also remove lymph nodes in your neck on the same side to see if they contain cancer.

**Radiation therapy** may be given after surgery if your cancer is intermediate- or high-grade or an adenoid cystic carcinoma, if the cancer could not be removed completely, or if the edges of the removed specimen contain cancer cells. There is a greater chance that some cancer may have been left behind than with stage I cancers.

Radiation therapy might be an option as the main treatment if surgery would result in serious problems with eating, speech, or appearance, or for people who refuse surgery. But it’s not clear if this offers the same chance to cure the cancer as surgery, so not all doctors agree that this is a good approach for stage II cancers.

### Stage III

These cancers are even larger and/or have started to grow outside the salivary gland. They might have also reached lymph nodes in the neck.

Doctors generally recommend extensive **surgery** (removing the salivary gland containing the tumor, nearby tissues, and all lymph nodes in your neck on the same side) if it’s possible. For low-grade tumors with no concerning features, this might be the only treatment needed if all of the cancer is removed. But in many cases, surgery is followed by **radiation therapy**. **Chemotherapy** (chemo) may be added as well, but it’s not clear how helpful this is. This is still being studied.

Radiation therapy (with or without chemo) may be used as the main treatment if surgery is not a good option (for example, if surgical removal of the cancer would cause serious problems with eating, speech, or appearance).

### Stage IV
Stage IV salivary gland cancers are very hard to cure, particularly if the cancer has spread to distant organs.

Some of these cancers might be treated with surgery if the doctor feels all of the cancer can be removed. (This would be followed by radiation therapy and possibly chemo.)

But most often, radiation therapy is used as the main treatment in this situation to try to shrink the tumor(s) and relieve pain, bleeding, or other symptoms. This may be combined with chemo. If the cancer has spread to other parts of the body, chemo may shrink or slow the growth of the cancer for a time and may help relieve symptoms.

Because these cancers can be hard to treat, taking part in a clinical trial of newer treatments may be a good option.

- References
  See all references for Salivary Gland Cancer

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Treatment of Recurrent Salivary Gland Cancer

Cancer is called recurrent if it comes back after treatment. Recurrence can be local (in or near the same place it started) or distant (spread to organs such as the lungs or liver).

If cancer returns after treatment, the choices available depend on the location and the extent of the cancer and what treatment was used the first time around. It’s important to understand the goal of further treatment – whether it’s to try to cure the cancer or to help relieve symptoms – as well as the likelihood of benefits and risks.

If the cancer is thought to be resectable (able to be removed completely), surgery is usually the treatment of choice when possible. This is often followed by radiation therapy if it wasn’t given before.
If the cancer returns in the area where it started but is not resectable, radiation therapy may be an option. Chemotherapy (chemo) may be used along with the radiation or by itself (especially if radiation therapy was already used as part of the initial treatment).

Cancers that come back in distant parts of the body are usually treated with chemo. In selected cases, other treatments such as surgery or radiation therapy may be used to help relieve symptoms from the spread of the cancer. Because these cancers can be hard to treat, clinical trials of newer treatment approaches may be a good option.

- References

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