Treating Salivary Gland Cancer

If you've been diagnosed with salivary gland cancer, your cancer care team will discuss your treatment options with you. It's important to weigh the benefits of each treatment option against the possible risks and side effects.

How is salivary gland cancer treated?

Common treatment options for salivary gland cancer include:

- Surgery for Salivary Gland Cancer
- Radiation Therapy for Salivary Gland Cancer
- Chemotherapy for Salivary Gland Cancer
- Targeted Drug Therapy for Salivary Gland Cancer
- Immunotherapy for Salivary Gland Cancer

Common treatment approaches

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.

- Treatment Options by Stage of Salivary Gland Cancer

Who treats salivary gland cancer?

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, immunotherapy, and targeted drug therapy·
- A **plastic surgeon**: a doctor who specializes in reconstructing or repairing parts of the body
- An **oral and maxillofacial surgeon:** a dental surgeon who treats diseases of the mouth, teeth, and jaws
- A **neurologist**: a doctor who specializes in diseases of the brain and nervous system

Many other specialists may be involved in your care as well, including physician assistants, nurse practitioners, nurses, nutr/GS57k4z3cg 1 0 0 1 72 495.32 Tm s495.32 Tm 0 0 0 5lm

Surgery for Salivary Gland Cancer

that perform a lot of head and neck cancer surgeries, tend to live longer. Because of this and the complex nature of these operations, it's very important to have a surgeon and cancer center with experience treating these cancers.

Surgery is often the main treatment for salivary gland cancers. Your cancer will probably be treated with surgery if the doctor believes that it can be removed

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 of the facial muscles, some ability to taste, the ability to make tears and saliva, and some aspects of sensation of the skin on the same side of the face) passes through the gland. For these operations, a 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 unharmed and does not affect facial movement, taste, or sensation.

If your cancer has spread deeper, 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 what can be done to repair the nerve and treat side effects caused when the nerve is removed. 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

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

Damage to the facial nerve: 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. You might also have trouble closing your eyes completely on that side which can lead to dry eyes. This might be treated with eye drops, eye patches, or artificial tears. 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 heal over time and the facial nerve function usually returns over a few months. If the facial nerve does not start working after a certain period of time, there are some types of surgery that might help, such as nerve grafting. It is a good idea to ask about possible treatments for this side effect.

Frey syndrome: 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.

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

Change in how you look: Depending on the extent of the surgery, your appearance may be changed as a result. 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. This can help you prepare for them. Your doctor can also give you an idea about what corrective options might be available afterward, such as **skin grafts**, **nerve grafts**, and **reconstructive surgery**.

Lymph node removal (neck dissection)

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. Surgery to remove lymph nodes might be called a **lymph node dissection**, **lymphadenectomy**,or **neck dissection**.

and can heal over time. Nerves heal slowly and the weakness of the shoulder and lower lip may go away after a few months. If a nerve is removed as part of a radical neck dissection or because of involvement with tumor, the weakness will be permanent.

After any neck dissection procedure, physical therapy can help improve neck and shoulder movement.

Sentinel lymph node biopsy

Sentinel lymph node mapping[3] and biopsy has become a common way to find out whether cancer has spread to the lymph nodes. It may be used in certain types of salivary gland cancer and can help keep you from needing a neck dissection. This procedure can find the lymph nodes that drain lymph fluid from the salivary gland where the cancer started. Since these lymph nodes are usually the first place cancer will go, they are taken out and checked for cancer during the surgery. If no cancer cells are found, the other lymph nodes can be left alone. If cancer cells are found in them, a more complex neck dissection is usually needed.

Sentinel lymph node biopsy should only be done at treatment centers by doctors with a lot of experience in the technique.

Supportive surgery

Feeding tubes

Sometimes, if salivary gland cancer has spread widely to nearby tissues, these cancers may keep you from swallowing enough food to stay well nourished. This can make you weak and make it harder to complete treatment. Sometimes the treatment, such as extensive surgery, can make it hard to eat.

A **gastrostomy tube (G-tube)** is a feeding tube that's put through the skin and muscle of your abdomen (belly) and right into your stomach. Sometimes this tube is placed during an operation, but often it's put in endoscopically. While you are sedated (using drugs to put you in a deep sleep), the doctor puts a long, thin, flexible tube with a camera on the end (an endoscope) down the throat to see inside the stomach. The feeding tube is then guided through the endoscope and to the outside of the body. When the feeding tube is placed through endoscopy, it's called a **percutaneous endoscopic gastrostomy, or PEG tube**. Once in place, it can be used to put liquid nutrition right into the stomach. As long as they can still swallow normally, people with these tubes can eat normal food, too.

PEG tubes can be used for as long as needed. Sometimes these tubes are used for a short time to help keep you healthy and fed during treatment. They can be removed when you can eat normally.

If the swallowing problem is likely to be only short-term, another option is to place a **nasogastric feeding tube (NG tube)**. This tube goes in through the nose, down the esophagus, and into the stomach. Again, special liquid nutrients are put in through the tube. Some people dislike having a tube coming out of their nose, and prefer a PEG tube.

In any case, the patient and family are taught how to use the tube. After you go home, home health nurses usually visit to make sure you are comfortable with tube feedings.

More information about Surgery

For more general information about surgery as a treatment for cancer, see Cancer Surgery[4].

To learn about some of the side effects listed here and how to manage them, see Managing Cancer-related Side Effects[5].

Hyperlinks

1. www.cancer.org/healthy/stay-away-from-tobacco/guide-quitting-smoking.html
2. www.cancer.org/cancer/salivary-gland-cancer/about/what-is-salivary-gland-cancer.html
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5. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html

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Radiation Therapy for Salivary Gland Cancer

Studies have shown that people with squamous cell cancers of the head and neck who are treated at centers that treat a lot of head and neck cancers with radiation, tend to live longer. Even though salivary gland cancers are rarely squamous cell cancers, they are not common and the operations tend to be complicated. Given this, it's important to go to a cancer center and radiation oncologist who have experience treating these cancers.

Radiation therapy uses high-energy x-rays or particles to destroy cancer cells or slow their growth. It can be used in many ways to treat salivary gland cancer:

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
- As the **main treatment** (alone or with chemotherapy) or if a person can't have (or doesn't want) surgery
  After surgery, also called **adjuvant radiation**, (alone or with chemotherapy) to try

to ask for medicine to help them relax during the treatment. Sometimes, the mask can be adjusted so that it is not too constricting. Discuss your options with your radiation oncologist. You might also be fitted for a bite block that you hold in your mouth during treatment.

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 and each treatment lasts only a few minutes. The setup time – getting you into place for treatment – often takes longer.

Types of external beam radiation therapy (EBRT)

There are more advanced EBRT techniques that help doctors focus and aim the radiation more precisely.

Three-dimensional conformal radiation therapy (3D-CRT) uses special computers to precisely map the location of the tumor. Several radiation beams are then shaped and aimed at the tumor from different directions, which makes it less likely to damage the normal tissues it passes through. The beams come together at the tumor to give a higher dose of radiation there.

Intensity modulated radiation therapy (IMRT) is an advanced form of 3D-CRT. It uses a computer-driven machine that moves around the patient as it delivers radiation. Along with 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.

Proton beam radiation therapy focuses beams of protons instead of x-rays on the cancer. Unlike x-rays, which go through the patient and expose tissues to radiation both before and after they hit the tumor, protons only travel a certain distance, so the tissues behind the tumor are exposed to very little radiation. Even the tissues in front of the tumor see less radiation than the tumor itself. This means that proton beam radiation can deliver radiation to the cancer while doing less damage to nearby normal tissues. Because there are so many critical structures close by, proton beam radiation can be used to treat certain salivary gland tumors. Proton therapy can be a safe option in certain cases when using x-rays is not.

Proton therapy is not widely available in the United States. Proton therapy might also not be covered by all insurance companies at this time.

Fast neutron beam radiation uses a beam of high-energy neutrons instead of using x-rays. 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. There is only one neutron therapy center in the United States at this time.

Treatment schedules for external beam radiation therapy (EBRT)

Standard EBRT for salivary gland cancers is usually given in daily fractions (doses) 5 days a week for about 6 to 7 weeks. But sometimes other schedules might be used:

- **Hyperfractionation** radiation is a slightly lower radiation dose given more than once a day (for example, twice a day for 7 weeks).
- **Accelerated fractionation** radiation is the standard dose of radiation given each day but over a shorter time (5 to 6 weeks) instead of the usual 7 weeks (for example, radiation is given 6 days a week over 5 weeks instead of the standard 5 days a week for 7 weeks).
- **Hypofractionation** radiation is a slightly higher radiation dose given each day to lessen the number of treatments (for example, a higher radiation dose is given each day for 6 weeks, not the standard 7 weeks).

Possible side effects of radiation therapy for salivary gland cancer

If you are going to get radiation therapy, it's important to ask your doctor about the possible side effects so you know what to expect.

Short-term side effects of radiation therapy

Radiation to the cheek, mouth, and throat area can cause several short-term side effects[3] depending on where the radiation is aimed and can include:

- Skin changes like a sunburn or suntan in the treated area
- Loss of taste
- Redness, soreness, or even pain in the mouth and throat
- Dry mouth
- Trouble swallowing
- Feeling tired
- Open sores in the mouth and throat
- Hoarseness

Often these go away over time after treatment ends.

Long-lasting or permanent side effects of radiation therapy

Poor nutrition and trouble swallowing: Many people treated with radiation to the salivary gland area have painful sores in the mouth[4] and throat that can make it very hard to eat and drink. This can lead to weight loss[5] and poor nutrition. The sores heal with time after the radiation ends, but some people continue to have problems swallowing[6]long after treatment ends because of the tightening of the muscles caused by radiation. **Ask your speech pathologist about swallowing exercises you can do to help keep those muscles working and increase your chance of eating normally after treatment.** Liquid feeding through a tube placed into the stomach might be needed. (See Surgery for Salivary Gland Cancer for more on tube feedings.)PS G 1 w 0 0.20 0 1 72 6

Hearing loss: The nerves or organs that help you hear can be damaged by radiation. You might be asked to see an audiologist (a person who specializes in hearing) to test your hearing before and after treatment to watch for any signs of hearing loss.

Thyroid problems: Radiation might damage your thyroid gland. Your doctor will do blood tests regularly to see how well your thyroid is working. Some people might need to take pills to replace thyroid hormone at some point if the thyroid gland is not working well.

Lymphedema: Some people treated with radiation therapy might be at risk of developing lymphedema[8] in the head and neck areas that were treated. These areas can become swollen and firm. This can be worse if the person also had surgery. Sometimes, medicines, physical therapy, or massage therapy might be helpful.

Damage to the carotid artery: Radiation to the neck area might increase a person's risk of stroke many years after treatment. This might be because of health problems that were already present before radiation such as narrowing of the artery or an increase in plaques both of which can decrease blood flow. People who smoke are also damaging their arteries. Because of this some doctors might order regular ultrasounds for you after treatment, to keep an eye on the arteries.

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 lessen many of them, so be sure to discuss any problems with your cancer care team.

More information about radiation therapy

To learn more about how radiation is used to treat cancer, see Radiation Therapy[9].

To learn about some of the side effects listed here and how to manage them, see Managing Cancer-related Side Effects[10].

Hyperlinks

1. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html
2. www.cancer.org/healthy/stay-away-from-tobacco/guide-quitting-smoking.html
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Chemotherapy for Salivary Gland Cancer

Clinical trials are being done to look more at using chemoradiation to treat unresectable (cannot be removed by surgery) salivary gland cancers .

How is chemotherapy given?

Chemo drugs for salivary gland cancer are usually given by mouth or into a vein (IV) as an infusion over a certain period of time. This can be done in a doctor's office, infusion center, or in a hospital setting.

Often, a slightly larger and stronger IV[2] is required in the vein system for chemo. These IVs are known as central venous catheters (CVCs), central venous access devices (CVADs), or central lines. They are used to put medicines, blood products, nutrients, or fluids right into your blood. They can also be used to take blood for tests. There are different kinds of CVCs. The most common types are the port and the PICC line.

Chemotherapy is given in cycles: the drug or a combination of drugs is given on a set schedule, followed by a rest period. Common schedules of chemo cycles can be once a week, once every 3 weeks, or once every 4 weeks. The schedule depends on the drugs used. The chemo schedule repeats to start the next cycle.

Chemo drugs used to treat salivary gland cancer

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

- Cisplatin
- Mitoxantrone
- Doxorubicin (Adriamycin)
- Epirubicin (Ellence)
- Cyclophosphamide (Cytoxan)
- Paclitaxel (Taxol)
- Docetaxel (Taxotere)
- 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 and because there are different types of salivary gland cancers, no large studies have been done to prove one chemo plan is better than the others. The best way to use chemotherapy to treat salivary gland cancer is not clear. New chemo drugs and combinations of drugs are being studied in

clinical trials[3].

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 used. Common side effects include:

- Hair loss
- Mouth sores
- Loss of appetite
- Nausea and vomiting
- Diarrhea or constipation

Chemo can affect the blood-producing cells of the bone marrow, which can lead to:

- 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)

Along with the risks above, some side effects are seen more often with certain chemo drugs. For example:

- Cisplatin and paclitaxel can cause **nerve damage** (neuropathy[4]). This can sometimes lead to hearing loss or problems in the hands and feet such as pain, burning or tingling sensations, sensitivity to cold or heat, or weakness. In most cases, this gets better or goes away once treatment stops, but it can last a long time in some people.
- Cisplatin can also hurt the **kidneys**. To help prevent kidney damage, intravenous (IV) fluid is given before and after each dose.

You should report any problems you have while getting chemo to your medical team, so that they can be treated right away.

There are often ways to lessen these side effects, and they usually go away over time after treatment ends. Be sure to ask your doctor or nurse what can be done to help reduce side effects, and let them know when you do have side effects so they can be managed . For example, drugs can be given to help prevent or reduce nausea and vomiting. In some cases, the doses of the chemo drugs may need to be lowered or treatment may need to be delayed or stopped to keep the effects from getting worse.

More information about chemotherapy

For more general information about how chemotherapy is used to treat cancer, see Chemotherapy[5].

To learn about some of the side effects listed here and how to manage them, see Managing Cancer-related Side Effects[6].

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5. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/chemotherapy.html
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TRK inhibitors

Some salivary gland cancers have changes in one of the *NTRK* genes. This gene change causes them to make abnormal TRK proteins, which can lead to abnormal cell growth and cancer. This gene change is more often seen in **secretory salivary gland cancers**.

Larotrectinib (Vitrakvi) and **entrectinib (Rozlytrek)** are drugs that target the TRK proteins. These drugs can be used first to treat advanced salivary gland cancers with *NTRK* gene changes.

These drugs are taken as pills, once or twice a day.

Common side effects of TRK inhibitors include muscle and joint pain, cough, dizziness, fatigue, nausea, vomiting, constipation, fever, abdominal pain, and diarrhea.

More information about targeted therapy

To learn more about how targeted drugs are used to treat cancer, see Targeted Cancer Therapy52Ct 12 Tf2 Tf 0 0 0 rg /GS 438.77 l S 0 G 1 w 0 0.94. 123h2rgetem .2rg2

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Immunotherapy for Salivary Gland Cancer

Autoimmune reactions: These drugs remove one of the protections on the body's immune system. Sometimes the immune system starts attacking other parts of the

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Treatment Options by Stage of Salivary Gland Cancer

The treatment options for salivary gland cancer depend largely on the type[1] and stage[2] (extent) of the cancer. But other factors, such as the grade of the cancer (how likely it is to grow and spread); and a person's overall health, can also be important.

Since salivary gland cancers are rare and can be hard to treat, clinical trials[3] might be a good option to think about.

Stage I

These cancers are small and still just in 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 might 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, if the edges of the removed area have cancer cells (a sign that some cancer might have been left behind), or if the cancer is invading (growing into) nearby nerves.

Stage II

Stage II salivary gland cancers are larger but are still just in 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

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

Because these cancers are rare and can be hard to treat, taking part in a clinical trial[5] is a good option.

Treatment of recurrent salivary gland cancer

Cancer is called **recurrent** if it comes back after treatment. Cancer can come back locally (in or near the same place it started) or distantly (spread to organs such as the lungs or liver).

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

If the cancer recurs locally and is thought to be resectable (able to be removed completely), surgery is usually the treatment of choice. This is often followed by radiation therapy if it wasn't given before.

If the cancer returns in the area where it started (local) but is not resectable, radiation therapy may be an option. Chemotherapy (chemo) might be used along with the radiation or by itself (especially if radiation therapy was already used the first time).

Salivary gland cancers that come back in distant parts of the body are usually treated with chemo or targeted drug therapy. In some cases, other treatments such as surgery or radiation might be used to help relieve symptoms from the spread of the cancer or to treat a small number of tumors that might be growing in certain organs like the lungs. If the cancer is growing very slowly, it may be watched and treated only if it starts to cause problems.

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