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## About Anal Cancer

Get an overview of anal cancer and the latest key statistics in the US.

### Overview and Types

If you've been diagnosed with anal cancer or are worried about it, you likely have a lot of questions. Learning some basics is a good place to start.

- [What Is Anal Cancer?](#)

### Research and Statistics

See the latest estimates for new cases of anal cancer and deaths in the US and what research is currently being done.

- [Key Statistics for Anal Cancer](#)
  - [What's New in Anal Cancer Research?](#)
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## What Is Anal Cancer?

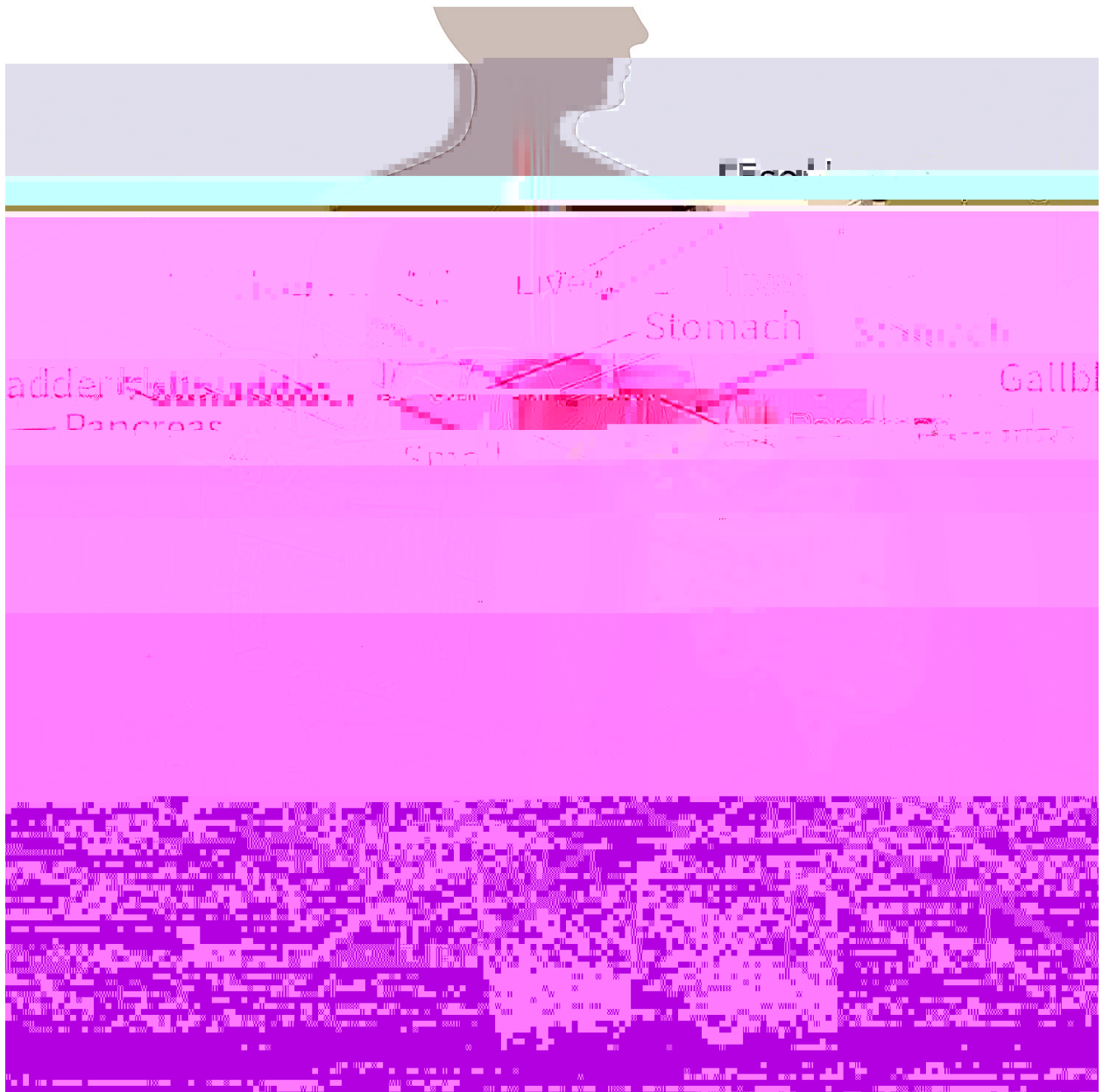
- [Normal structure and function of the anus](#)
- [Types of anal cancer](#)
- [Anal conditions that are pre-cancer](#)
- [Benign anal tumors](#)

Anal cancer is a type of cancer that starts in the anus. Cancer starts when cells in the body begin to grow out of control. To learn more about how cancers start and spread, see [What Is Cancer?](#)<sup>1</sup>

## Normal structure and function of the anus

The anus is the opening at the lower end of the intestines. It's where the end of the intestines connect to the outside of the body.

As food is digested, it passes from the stomach to the small intestine. It then moves from the small intestine into the main part of the large intestine (called the *colon*). The colon absorbs water and salt from the digested food. The waste matter that's left after going through the colon is known as *feces* or *stool*. Stool is stored in the last part of the large intestine, called the *rectum*. From there, stool is passed out of the body through the anus as a bowel movement.



**Gastrointestinal system (GI system)**



### Structures of the anus

The anus is connected to the rectum by the *anal canal*. The anal canal has two ring-shaped muscles (called *sphincter muscles*) that keep the anus closed and prevent stool from leaking out. The anal canal is about 1-1/2 to 2 inches (about 3 to 5 cm) long and goes from the rectum to the *anal verge*. The anal verge is where the canal connects to the outside skin at the anus. This skin around the anal verge is called the *perianal skin* (previously called the *anal margin*).

The inner lining of the anal canal is the *mucosa*. Most anal cancers start from cells in the mucosa. Glands and ducts (tubes leading from the glands) are found under the mucosa. The glands make mucus, which acts as a lubricating fluid.

The cells of the anal canal change as they go from the rectum to the anal verge:

- Cells above the anal canal (in the rectum) and in the part of the anal canal close to the rectum are shaped like tiny columns.
- Most cells near the middle of the anal canal are shaped like cubes and are called *transitional cells*. This area is called the *transitional zone*.

- About midway down the anal canal is the *dentate line*, which is where most of the anal glands empty mucus into the anus.
- Below the dentate line are flat (squamous) cells.
- At the anal verge, the squamous cells of the lower anal canal merge with the skin just outside the anus. This skin around the anal verge (called the *perianal skin* or the *anal margin*) is also made up of squamous cells, but it also contains sweat glands and hair follicles, which are not found in the lining of the lower anal canal.

## Types of anal cancer

**Anal cancers are often divided into 2 groups based on where they start:**

- Cancers of the anal canal (above the anal verge)
- Cancers of the perianal skin (below the anal verge) – previously called *cancers of the anal margin*

Sometimes, treatment may be different, depending on where the cancer is located. But anal cancers can sometimes extend from one area into the other, so it's hard to know exactly where they started.

### Squamous cell carcinoma

Most (nearly 9 out of 10 cases) anal cancers in the United States are squamous cell cancer. These tumors start in the squamous cells that line most of the anal canal and the anal margin.

Squamous cell cancers in the anal canal have grown beyond the surface and into the deeper layers of the lining.

Squamous cell cancers of the anal margin (perianal skin) can be treated as an anal cancer or like [squamous cell cancer of the skin](#)<sup>2</sup>. It is important to see an expert if you are diagnosed with perianal cancer to determine the best course of treatment.

**The anal cancer information here focuses mainly on anal squamous cell carcinoma since it is the most common type of anal cancer.**

### Rare types of anal cancers





## **Anal warts**





Czito BG, Ahmed S, Kalady MF, and Eng C. Chapter 64: Cancer of the anal region. In: DeVita VT, Lawrence TS, Rosenberg SA, eds. *DeVita, Hellman, and Rosenberg's Cancer: Principles & Practice of Oncology*. 11th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2019.

Fields AC, Goldberg J, Senturk J, Saadat LV, Jolissaint J, Shabat G, et al. Contemporary Surgical Management and Outcomes for Anal Melanoma: A National Cancer Database Analysis. *Ann Surg Oncol*. 2018;25(13):3883-3888. doi: 10.1245/s10434-018-6769-y. Epub 2018 Sep 12.

Goodman KA, Kachnic LA, Czito BG. Chapter 76: Cancer of the anal canal. In: Niederhuber JE, Armitage JO, Doroshow JH, Kastan MB, Tepper JE, eds. *Abeloff's Clinical Oncology*. 6th ed. Philadelphia, Pa. Elsevier: 2020.

National Comprehensive Cancer Network. NCCN Clinical Practice Guidelines in Oncology: Anal Carcinoma. V.1.2020. Accessed at [www.nccn.org/professionals/physician\\_gls/pdf/anal.pdf](http://www.nccn.org/professionals/physician_gls/pdf/anal.pdf) on March 24, 2020.

Ryan DP and Willett CG. Classification and epidemiology of anal cancer. Goldberg RM, ed. UpToDate. Waltham, MA: UpToDate Inc. <https://www.uptodate.com> (Accessed on March 26, 2020.)

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## Key Statistics for Anal Cancer

risk is higher in people with certain [risk factors](#)<sup>1</sup> for anal cancer.

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## What's New in Anal Cancer Research?



now being used in people with advanced anal cancer that has grown during at least one prior chemotherapy treatment. Different kinds of immunotherapy drugs are also being studied as an option for treating anal cancers that have not spread to distant organs but cannot be removed with surgery or that have not spread but are at high risk of coming back after chemoradiation and surgery. Another area of research is the combination of immunotherapy with chemotherapy.

## Radiation therapy

Radiation therapy is a common treatment for anal cancer. Doctors are looking at ways to give external radiation including proton therapy more accurately and effectively to decrease the effects on normal healthy tissues. Other research is being done to learn about the possible benefits of combining chemotherapy with internal radiation therapy (brachytherapy) to treat anal cancer that has come back or gotten worse.

Combining lower doses of chemotherapy with radiation is another area of interest. Giving lower doses of chemo with radiation might help lessen side effects while still shrinking the cancer. Different drug combinations with radiation are being tested in clinical trials.

## HPV vaccines

[HPV vaccines](#)<sup>8</sup> are recommended for children and certain young adults to help prevent HPV infection that can cause some types of cancer, but the vaccines don't treat HPV infections that people already have. Doctors are looking at whether HPV vaccines might be used to help treat high-grade pre-cancers and keep them from becoming cancer especially in people with HIV. These vaccines may help the immune system attack pre-cancers and even cancers that contain HPV.

## Hyperlinks

1. [www.cancer.org/cancer/managing-cancer/making-treatment-decisions/clinical-trials.html](http://www.cancer.org/cancer/managing-cancer/making-treatment-decisions/clinical-trials.html)
2. [www.cancer.org/cancer/risk-prevention/hpv.html](http://www.cancer.org/cancer/risk-prevention/hpv.html)
3. [www.cancer.org/cancer/types/anal-cancer/causes-risks-prevention/what-causes.html](http://www.cancer.org/cancer/types/anal-cancer/causes-risks-prevention/what-causes.html)
4. [www.cancer.org/cancer/screening.html](http://www.cancer.org/cancer/screening.html)
5. [www.cancer.org/cancer/risk-prevention/infections/hiv-infection-aids.html](http://www.cancer.org/cancer/risk-prevention/infections/hiv-infection-aids.html)

