



ANAL FISTULA

By: Rommel Luis C. Israel III

ANAL FISTULA

- **also known as fistula-in-ano,**
- **A small channel that connects the rectum to the outer skin of the buttocks**

Reference: Chandler, Brian (2017, June 9). A Complete Guide to Anal Fistulas: Symptoms, Causes & Treatment Options [Web log post]. Retrieved February 8, 2020, from <https://www.adlermicromed.com/anal-fistula/>.

ANAL FISTULA

- a small tunnel that develops between the end of the bowel and the skin near the anus
- usually the result of an infection near the anus causing a collection of pus in the nearby tissue
- As pus drains away, it leaves a small channel behind. Anal fistulas can cause unpleasant symptoms.

ANAL FISTULA

- **In most cases, it results from an anal gland infection.**

ANATOMY AND PHYSIOLOGY OF THE ANUS

ANUS

- It is the opening of the end of the gastrointestinal tract ends
- It starts at the bottom of the rectum, the last portion of the large intestine
- ❖ The anorectal line separates the anus from the rectum.

Reference: Picture Of The Anus. (2020). Retrieved February 11, 2020, from <https://www.webmd.com/digestive-disorders/picture-of-the-anus#1>.

ANATOMY AND PHYSIOLOGY OF THE ANUS

FASCIA

- A tough tissue that surrounds the anus and attaches it to nearby structures

EXTERNAL SPHINCTER ANI

- Circular muscles that form the wall of the anus and hold it closed.

GLANDS

- Release fluid into the anus to keep its surface moist.

ANATOMY AND PHYSIOLOGY OF THE ANUS

LEVATOR ANI

- A plate-like band of muscles that surrounds the anus
- It forms the floor of the pelvis

- ❖ A network of veins lines the skin of the anus

Reference: Picture Of The Anus. (2020). Retrieved February 11, 2020, from <https://www.webmd.com/digestive-disorders/picture-of-the-anus#1>.

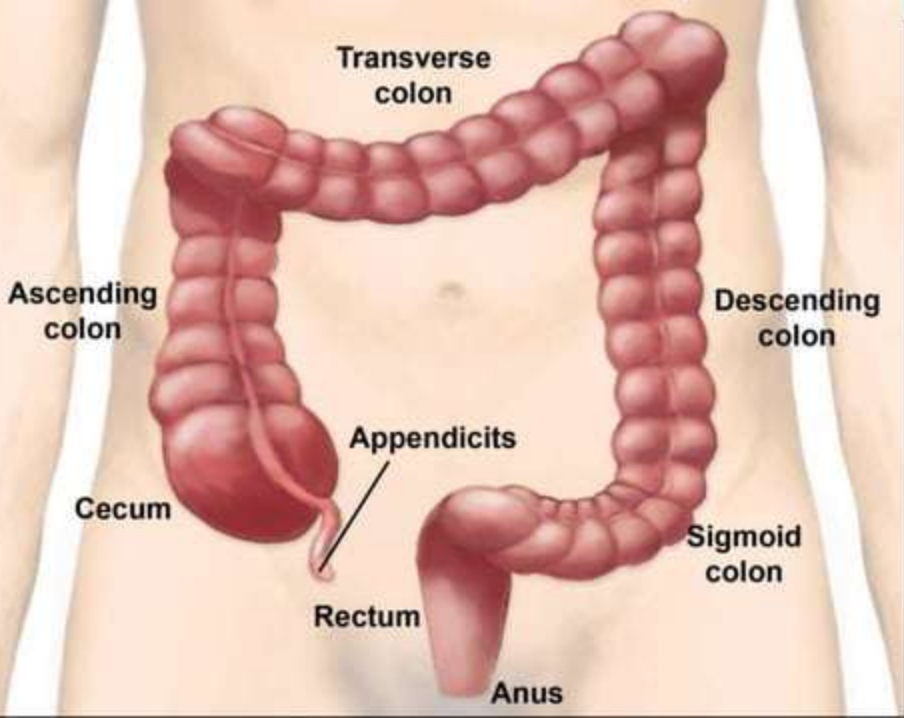


Image from:

<https://s3.amazonaws.com/classconnectny/317/flashcards/1222517/qa-image001/12063000531030185A.jpg>

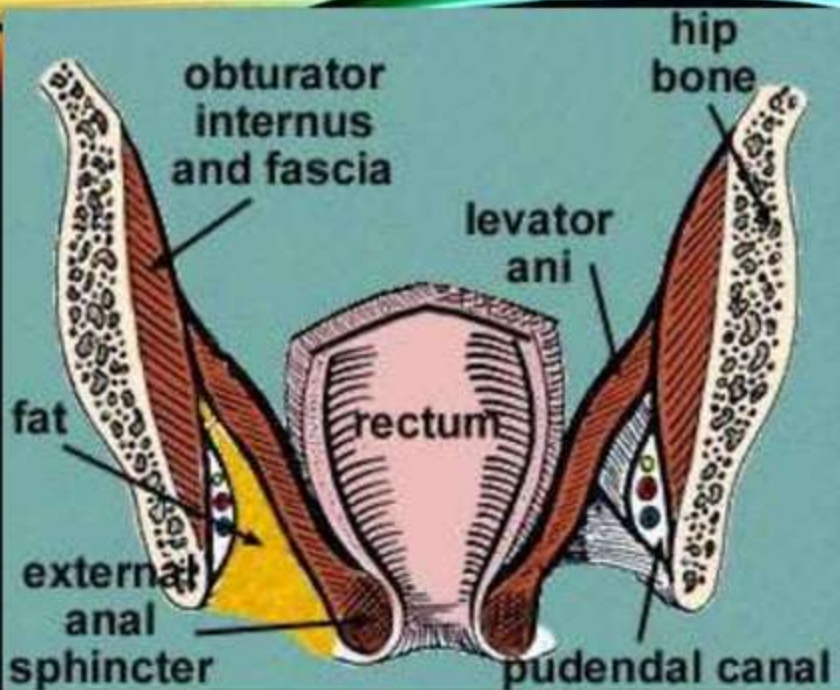


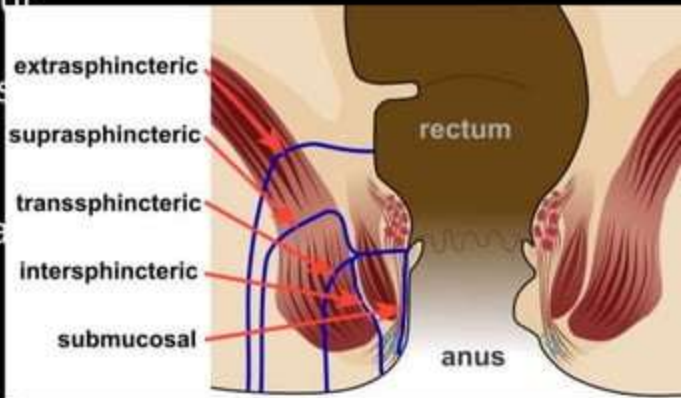
Image from:

<http://www.wesnorman.co.uk/images/anatomy/anglesection.jpg>

PARK'S CLASSIFICATION SYSTEM'S FOUR DISTINCT TYPES

Park's classification system's four distinct types:

1. Inter-sphincteric fistula (most common)
2. Trans-sphincteric fistula
3. Supra-sphincteric fistula (least common)
4. Extra-sphincteric fistula



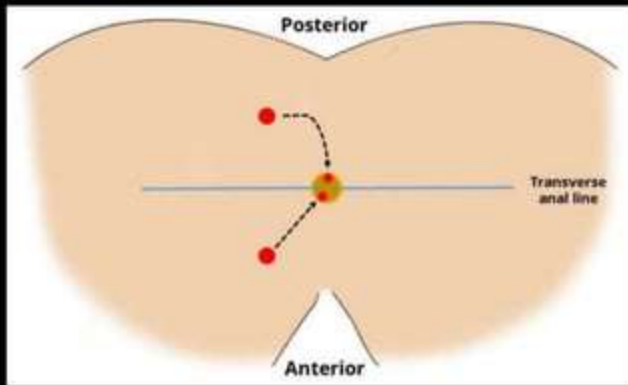
Reference: Hunt, Will (2020). Anal Fistula. Retrieved February 8, 2020, from <https://teachmesurgery.com/general/anorectal/anal-fistula/>.

Image from: Hunt, Will (Composer). (2020, January 13). Diagram highlighting the positions and nomenclature for anorectal fistulae [Web Photo]. Retrieved February 9, 2020, from <https://teachmesurgery.com/general/anorectal/anal-fistula/>.

Can be used clinically to predict the trajectory of a fistula tract, depending on the location of the external opening:

1. External opening posterior to the transverse anal line – fistula tract will follow a curved course to the posterior midline
2. External opening anterior to the transverse anal line – fistula tract will follow a straight radial course to the dentate line

THE GOODSALL RULE



RISK FACTORS

In a case-control study result: the risks of developing anal fistula are lifestyle factors and certain medical conditions. The following are independent risk factors:

- ✓ **body mass index of >25.0 kg/m²,**
- ✓ **high daily salt intake,**
- ✓ **history of diabetes,**
- ✓ **hyperlipidemia,**

Reference:

Risk Factors For Anal Fistula: A Case-control Study. (2014). Retrieved February 14, 2020, from <https://www.ncbi.nlm.nih.gov/pubmed/24452294>.

RISK FACTORS

- ✓ **dermatosis,**
- ✓ **anorectal surgery,**
- ✓ **history of smoking and alcohol intake, sedentary lifestyle,**
- ✓ **excessive intake of spicy/greasy food,**
- ✓ **very infrequent participation in sports, and**
- ✓ **prolonged sitting on the toilet for defecation.**

Reference:

Risk Factors For Anal Fistula: A Case-control Study. (2014). Retrieved February 14, 2020, from <https://www.ncbi.nlm.nih.gov/pubmed/24452294>.

ETIOLOGIC FACTORS

- **A typical consequence of perianal abscess (over 90% secondary to a perianal fistula).**
- **Other risk factors:**
 - a) Inflammatory bowel disease – Crohn's disease or ulcerative colitis**
 - b) Systemic diseases – Tuberculosis, diabetes, HIV**
 - c) History of trauma to the anal region**
 - d) Previous radiation therapy to the anal region**

Reference: Hunt, Will (2020). Anal Fistula. Retrieved February 8, 2020, from <https://teachmesurgery.com/general/anorectal/anal-fistula/>.

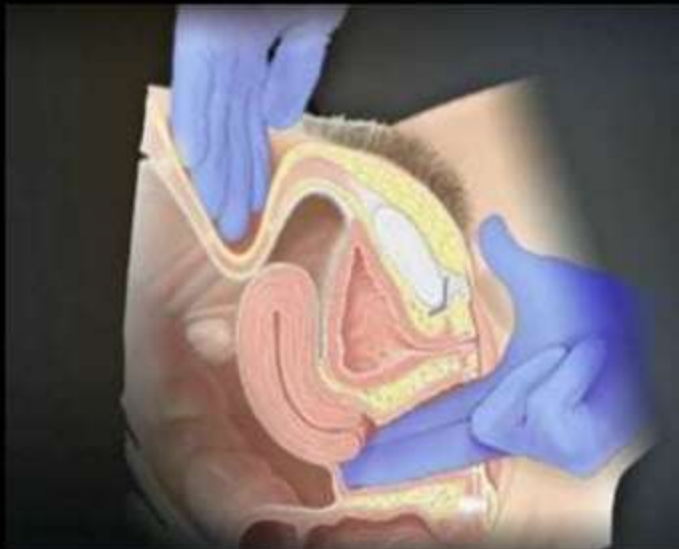
WHAT CAUSES ANAL FISTULA?

- **ANAL GLANDS** make fluid.
- They get blocked or clogged sometimes.
 - there's bacteria build up creating a swollen pocket of infected tissue and liquid (abscess) that eventually grow if not treated
 - Eventually, making its way to the outside creating a hole in the skin somewhere near the anus to drain the gunk inside it.
- ❖ **FISTULA**- the tunnel that connects the gland to that opening.

ANUS TEST

PHYSICAL EXAMINATION

- The physician inspects the outside of the anus
- inserts a gloved finger inside the anus to feel the abnormal areas



ANUS TEST

SIGMOIDOSCOPY

- **An endoscope* is inserted into the anus and moved into the colon.**
- **Sigmoidoscopy can only reach part of the colon for viewing.**

***Flexible tube with a lighted camera at the tip**

SIGMOIDOSCOPY

Image From:

<https://i450v.alamy.com/450v/adw0h5/sigmoidoscopy-procedure-colon-colorectal-cancer-examination-adw0h5.jpg>



Sigmoidoscope

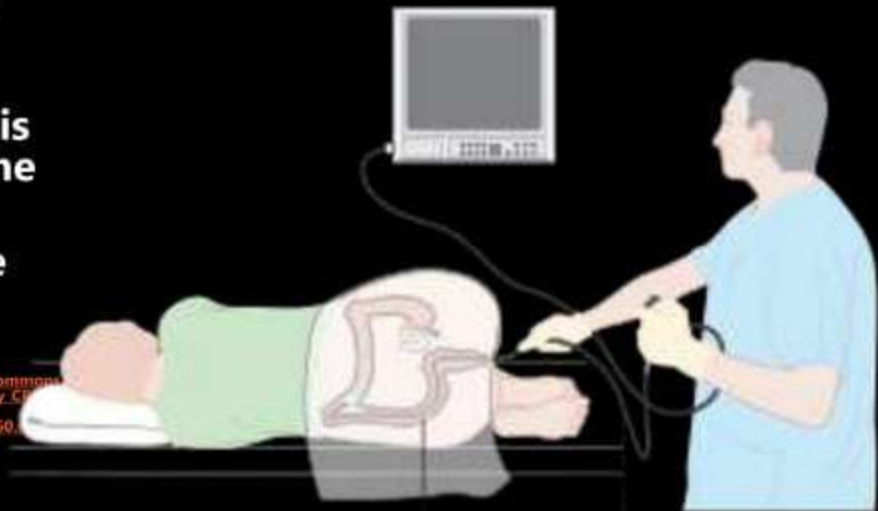
ANUS TEST

COLONOSCOPY

- An endoscope is inserted into the anus
- Viewing of the entire colon

Image from:

https://upload.wikimedia.org/wikipedia/commons/4/47/Diagram_showing_a_colonoscopy_C11yq/319px:Diagram_showing_a_colonoscopy_CRUK_060



Large bowel (colon)

Colonoscopy

ANUS TEST

If it is potentially complicated or in an unusual place, these tools may also be used:

DILUTED METHYLENE BLUE DYE

- **Injected into a fistula**

FISTULOGRAPHY:

- **Injection of a contrast solution into a fistula and then X-raying it.**

MAGNETIC RESONANCE IMAGING

Reference: Anal Fistula. (2019). Retrieved February 14, 2020, from <https://colorectalsurgery.ucsf.edu/conditions--procedures/anal-fistula.aspx>.

TREATMENT

For a simple fistula that isn't too close to your anus, the doctor will cut open the skin and muscle surrounding the tunnel

- allows the opening to heal from the inside out**
- He may use a plug to close the fistula**

❖ This simple medical procedure is usually done in a Surgeon's office.

Reference:

What Is An Anal Fistula?. (2020). Retrieved February 14, 2020, from <https://www.webmd.com/digestive-disorders/anal-fistula-overview#2>.

TREATMENT

It is delicately performed to reduce the risk of affecting bowel emptying

- ✓ **due to the anal fistulas' proximity to the anal sphincter muscles.**
- ✓ **It is attempted with as little impact as possible on the sphincter muscles.**
- ✓ **It usually depends on the fistula's location and complexity, and the strength of the patient's sphincter muscles.**

FISTULOTOMY

- ✓ **Surgeon first probes to find the fistula's internal opening**
- ✓ **the tract is cut open, scraped, its contents are flushed out, then its sides are stitch to the sides of the incision in order to lay open the fistula.**

Reference: Anal Fistula. (2019). Retrieved February 14, 2020, from <https://colorectalurgery.usf.edu/conditions--procedures/anal-fistula.aspx>.



ARTERIOVENOUS FISTULA OPERATION

Image from:

<https://thumbs.dreamstime.com/b/arteriovenous-fistula-operation-surgical-team-do-45731065.jpg>

TREATMENT

FISTULOTOMY

- ✓ For a more complicated fistula (i.e. horseshoe fistula, where the tract extends around both sides of the body and has external openings on both sides of the anus), it is treated by laying open just the segment where the tracts join and the remainder of the tracts are removed.
- ✓ The surgery may be performed in more than one stage if a large amount of muscle must be cut. The surgery may need to be repeated if the entire tract can't be found.

Reference: Anal Fistula. (2019). Retrieved February 14, 2020, from <https://colorectalsurgery.ucsf.edu/conditions--procedures/anal-fistula.aspx>.

TREATMENT

ADVANCEMENT RECTAL FLAP

- ✓ The surgeon may core out the tract
- ✓ cut a flap into the rectal wall to access and remove the fistula's internal opening
- ✓ stitches the flap back down
- ❖ This is often done to reduce the amount of sphincter muscle to be cut.

Reference: Anal Fistula. (2019). Retrieved February 14, 2020, from https://colorectalsurgery.ucsf.edu/conditions/_procedures/anal-fistula.aspx.

TREATMENT

SETON PLACEMENT

A seton (silk string or rubber band) is used to either:

- ✓ **Create scar tissue around part of the sphincter muscle before cutting it with a knife**
- ✓ **Allow the seton to slowly cut all the way through the muscle over the course of several weeks**
- ❖ **The seton may also aid in the drainage of the fistula**

Reference: Anal Fistula. (2019). Retrieved February 14, 2020, from <https://colorectalaburgery.ucsf.edu/conditions-procedures/anal-fistula.aspx>

SETON

Image from:

<https://openi.nlm.nih.gov/imgs/512/98/3548146/PMC3548146/jksc-28-309-g007.png>



TREATMENT

FIBRIN GLUE OR COLLAGEN PLUG

In some cases, fibrin glue, made from plasma protein, may be used to seal up and heal a fistula as opposed to cutting it open.

- ✓ The glue is injected through the external opening after clearing the tract and stitching the internal opening closed.
- ✓ A plug of collagen protein may also be used to seal and close the fistula tract

Reference: Anal Fistula. (2019). Retrieved February 14, 2020, from <https://coloradohealth.org/conditions-procedures/anal-fistula.aspx>.

REFERENCE

Chandler, Brian (2017, June 9). A Complete Guide to Anal Fistulas: Symptoms, Causes & Treatment Options [Web log post]. Retrieved February 8, 2020, from <https://www.adlermicromed.com/anal-fistula/>.

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Anal Fistula. (2020). Retrieved February 8, 2020, from <https://www.mayoclinic.org/diseases-conditions/anal-fistula/symptoms-causes/syc-20352871>.

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Picture Of The Anus. (2020). Retrieved February 11, 2020, from <https://www.webmd.com/digestive-disorders/picture-of-the-anus#1->.

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Anal Fistula. (2019). Retrieved February 14, 2020, from <https://colorectalsurgery.ucsf.edu/conditions--procedures/anal-fistula.aspx>.

Risk Factors For Anal Fistula: A Case-control Study. (2014). Retrieved February 14, 2020, from <https://www.ncbi.nlm.nih.gov/pubmed/24452294>.