Understanding your Achalasia

Tests, treatments and diet

1st edition

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The inclusive singular pronoun "they" is used throughout this document for the purpose of inclusivity.

This content does not replace the recommendations, diagnoses or treatments given by your health care professional.

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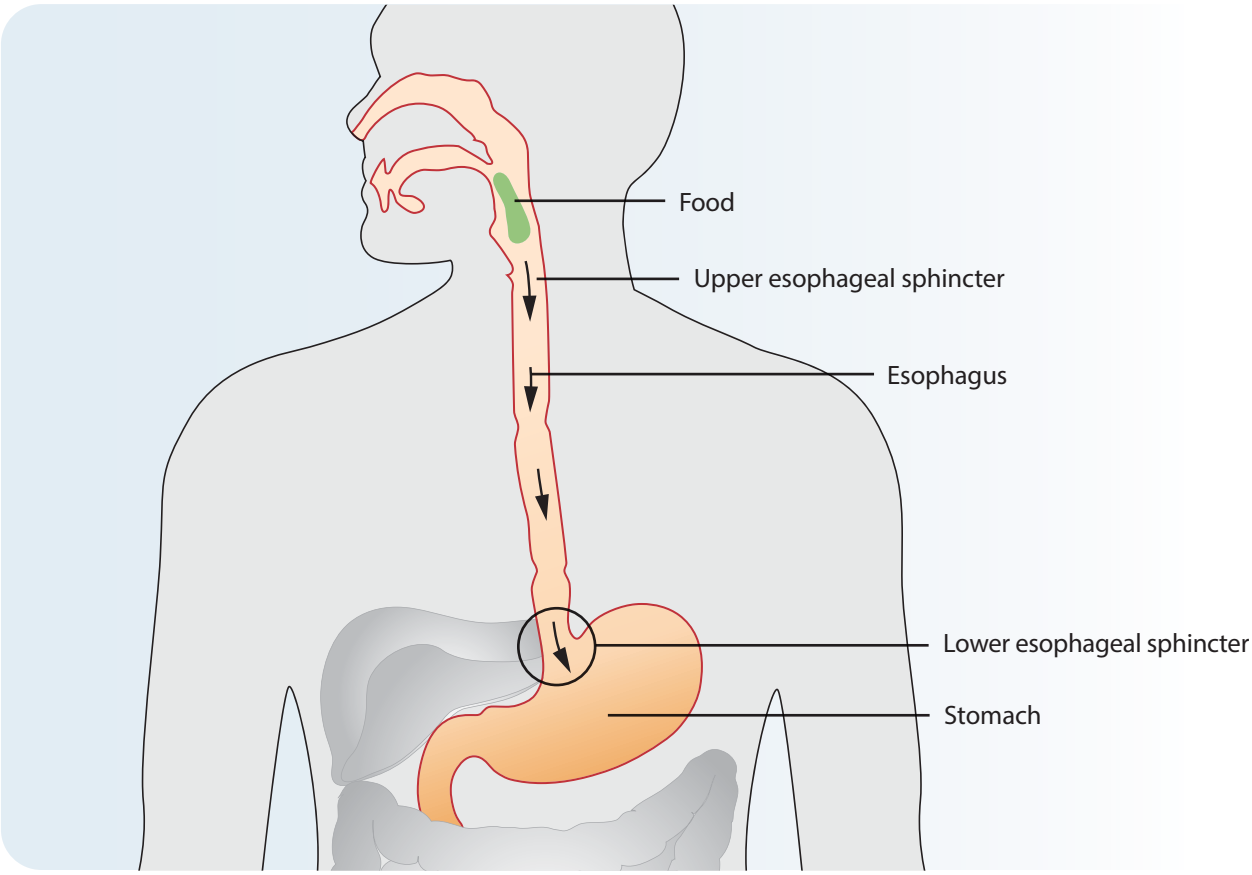
Introduction

You've been diagnosed with achalasia. This guide will help you understand what achalasia is, its symptoms and its treatments.

How does the digestive system work?

Many things happen when you eat without you even noticing. Right when you swallow a mouthful, a valve called the upper esophageal sphincter opens up to let the food through. The food then finds itself in a long tube, which is the esophagus. This tube uses muscle contractions to push food toward the stomach. These contractions are called peristalsis. There is a final valve between the esophagus and the stomach, which lets food through and stops it from coming back up. This valve is called the lower esophageal sphincter (hereafter called "sphincter").



Introduction

What is achalasia?

Achalasia is a disorder that affects the muscles in your esophagus. These muscles don't contract (there is no peristalsis) and the sphincter doesn't open wide enough to let food pass through to the stomach. Therefore, the esophagus cannot completely rid itself of food.

The cause of achalasia is still unknown.

There are 3 types of achalasia, and they're all related to a problem with relaxing the sphincter.

- Type 1: No peristalsis in the esophagus
- Type 2: Simultaneous contraction of the entire esophagus (panesophageal pressurization)
- Type 3: Severe spasms of the esophagus

What are the symptoms of achalasia?

Achalasia causes symptoms that may lower your quality of life.

- **Difficulty swallowing food (dysphagia)**: sensation of discomfort or blockage when swallowing (deglutition).
- **Bringing up undigested food (regurgitation)**: regurgitation may happen after meals or at night, when laying down.
- **Heartburn**: heartburn is due to the presence of undigested food in the esophagus. This symptom is often mistaken for gastroesophageal reflux disease.
- **Chest discomfort or pain**: cause of discomfort is often unknown. The pain may be due to spasms or stretching of the esophagus.

What are the possible complications?

The most common complications from achalasia are:

- Esophageal cancer
- Lung infections: stomach contents may enter the lungs and cause a type of pneumonia called aspiration pneumonia. There's an increased risk with frequent regurgitation, especially if it occurs at night.

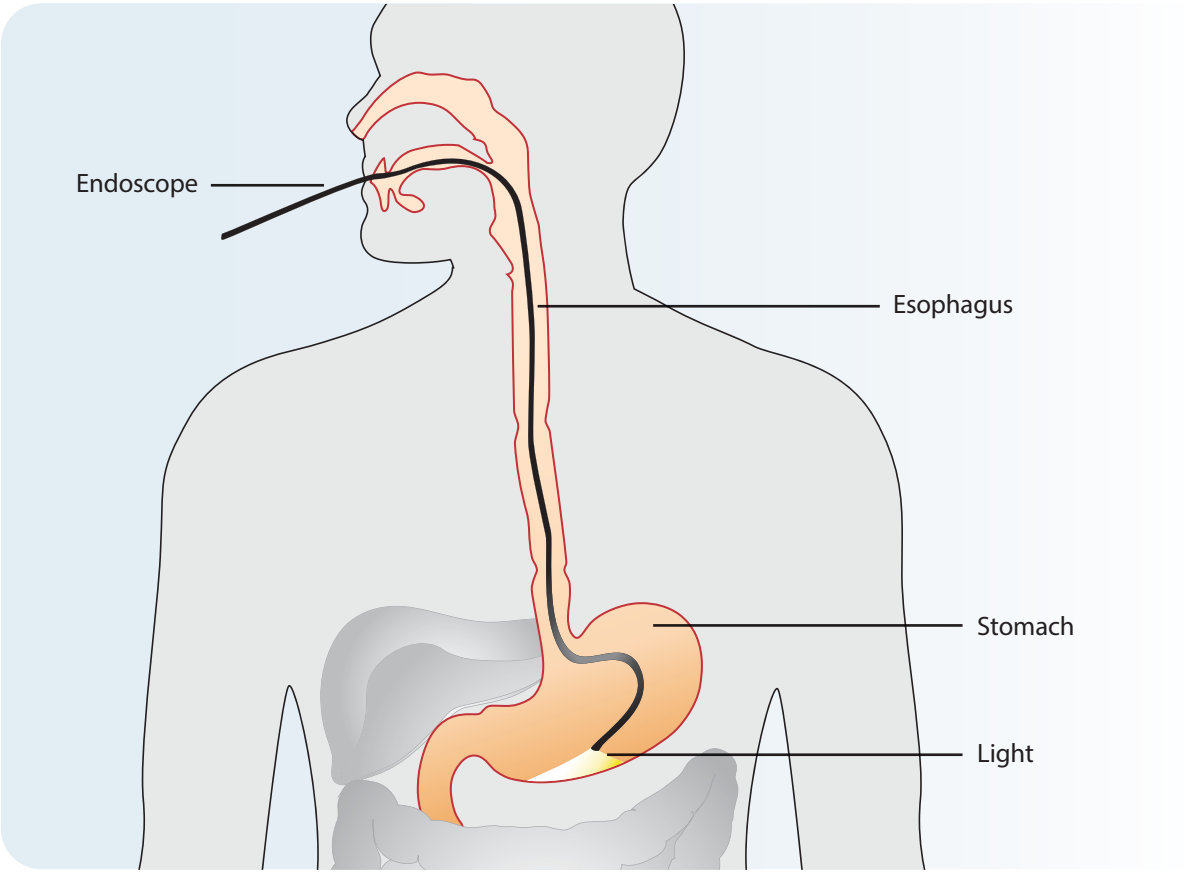
The risk of complications varies from one person to another depending on their health.

Tests and treatments

What tests are possible?

Gastroscopy

During this test, your surgeon introduces a tube with a camera through your mouth to see your esophagus and stomach. This exam ensures that there are no other causes for your symptoms. It allows the medical professional to assess the lining (mucosa) of the esophagus.



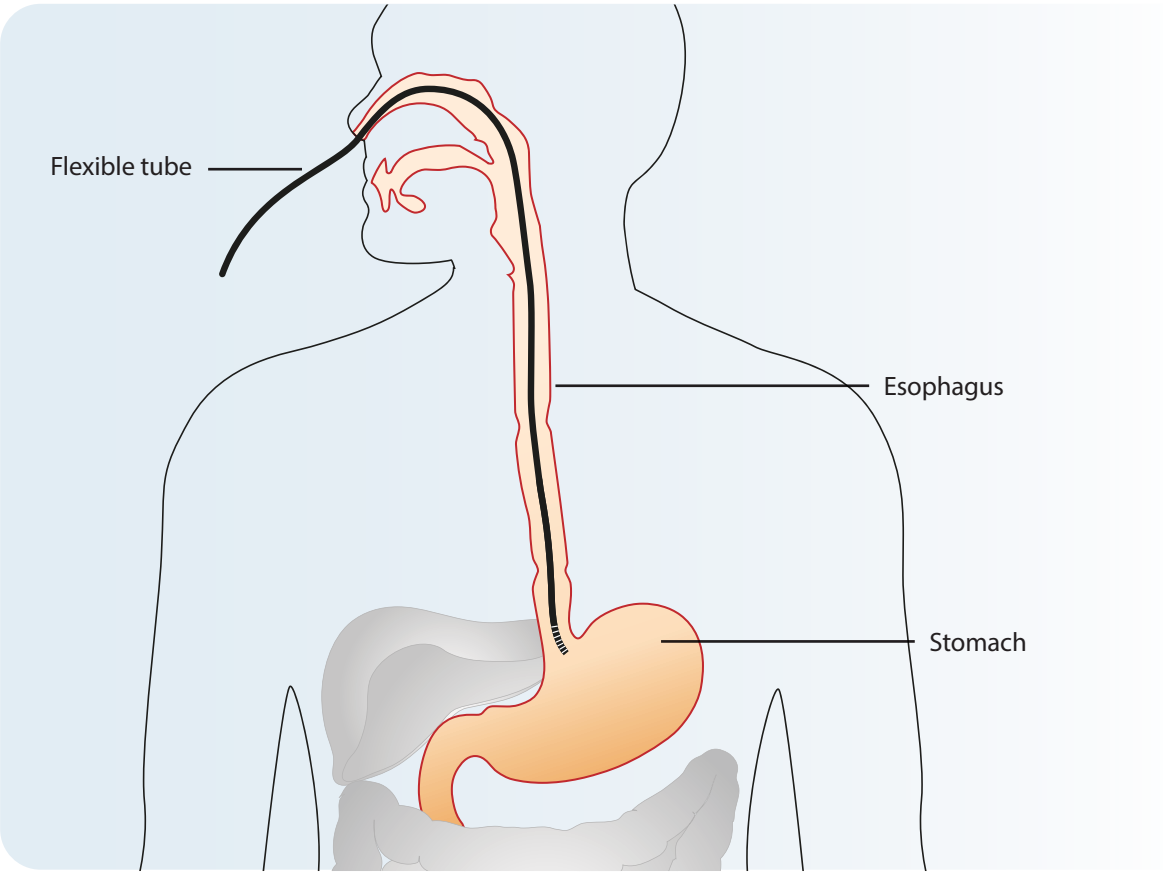
Upper gastrointestinal (GI) series

This test involves drinking a contrast medium and taking X-ray images of the esophagus. It allows the medical professional to assess the size and shape of your esophagus.

Tests and treatments

Esophageal manometry

This test involves inserting a small tube with pressure sensors through the nose all the way to the stomach. You are given a liquid to drink (juice). Sensors then analyze the esophagus' contractions and the sphincter's pressure.



EndoFLIP

This test is sometimes needed to confirm the results of an esophageal manometry. A small balloon is inflated at the sphincter to obtain a three-dimensional image of the esophagus.

Tests and treatments

What treatments are possible?

Your treatment depends on the type of achalasia you have and your general health. There are six available treatments, which are divided into two types: temporary and permanent. Temporary treatments include pharmacological and endoscopic methods. Permanent treatments include endoscopic and surgical methods. Your surgeon will discuss the pros and cons of each of these treatment options with you.

Pharmacological treatment

Medication

Some medications may ease the symptoms of dysphagia. They help relax the sphincter between the esophagus and the stomach. However, they have a limited effect and the side effects may be uncomfortable.

The most commonly prescribed medications are:

- Nifedipine (Adalat)
- Isosorbide dinitrate (Isordil)

Possible side effects of this medication are:

- headaches
- dizziness
- low blood pressure
- swelling of the legs (nifedipine only)

Temporary endoscopic treatment

Two procedures can be used to treat achalasia:

- Surgery (laparoscopy): performed from outside the esophagus using small cuts in the abdomen.
- Endoscopy (gastroscopy): performed inside the esophagus.

During an endoscopy, a long tube (endoscope) with a camera is used to examine or treat organs inside the body. When an endoscopy takes place in the esophagus, it's called a gastroscopy.

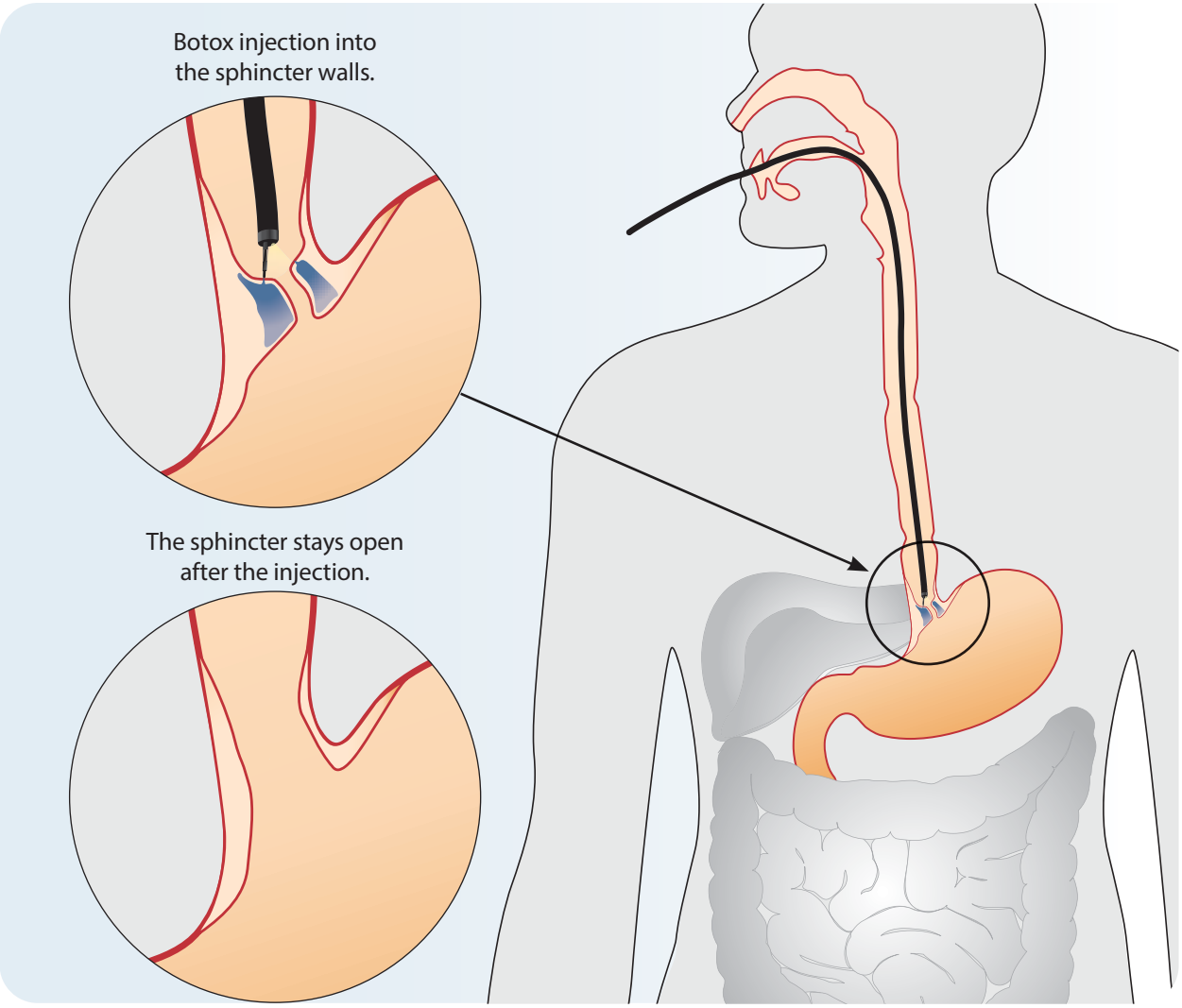
Tests and treatments

Botox injection

This procedure takes place during a gastroscopy. The surgeon injects botox in the sphincter using a needle. The botox allows the sphincter to stay open. The immediate results are excellent, put temporary. This treatment needs to be repeated every 3 to 6 months.

Botox injections are often offered when surgery is not possible.

The main side effect of the botox injection is a feeling of discomfort after the injection, which can last a few weeks. However, this side effect is rare.

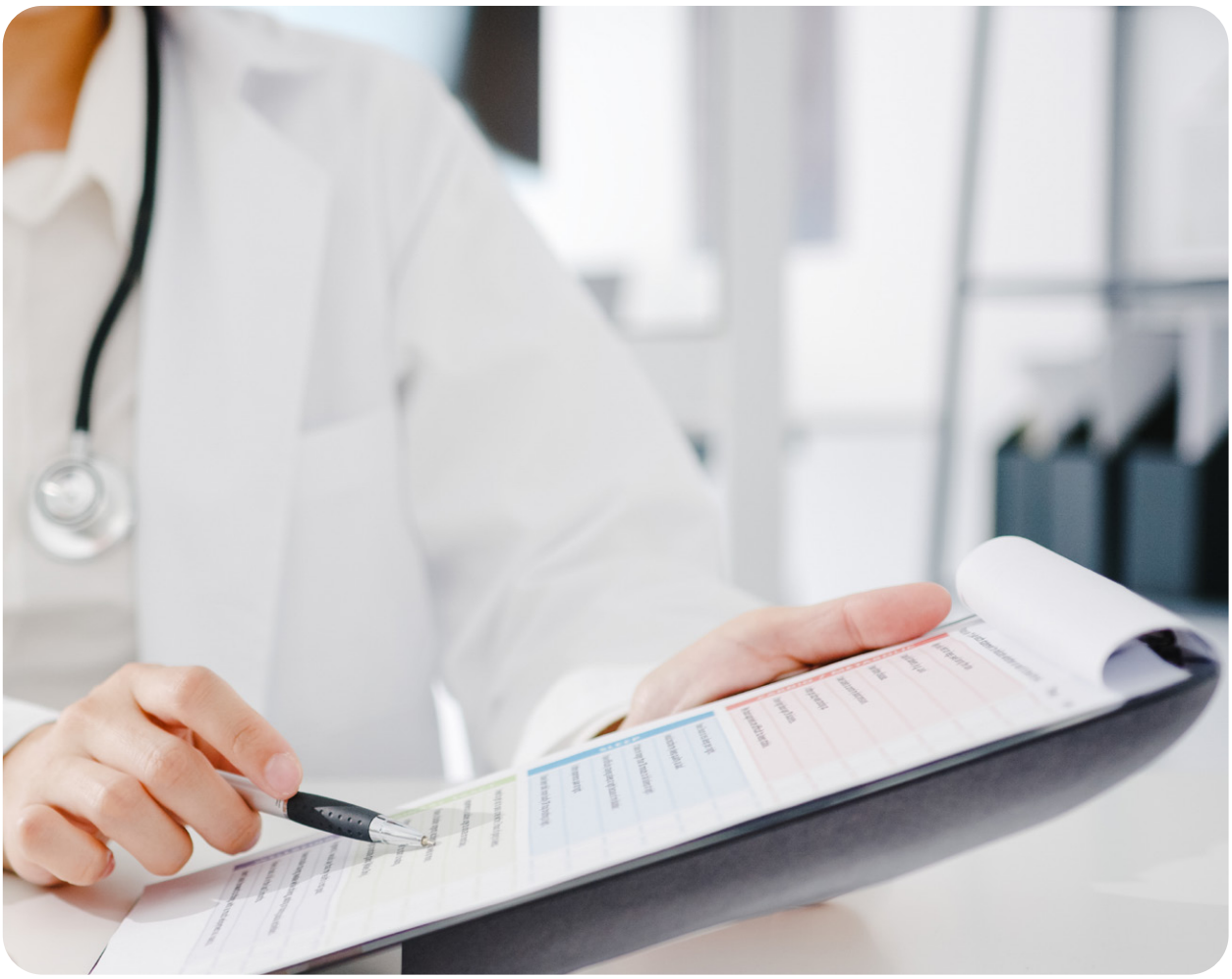


Permanent endoscopic or surgical treatments

Permanent treatments for achalasia use a technique called myotomy. It is a surgical procedure that cuts or tears the fibres of muscles in the esophagus, which allows these muscles to relax. This stops the sphincter from contracting, allowing the passage of food to the stomach. There are two types of techniques that may be used during a myotomy:

- controlled
- uncontrolled

The difference between these two techniques is in the level of control the surgeon has on how the muscle is torn. When a myotomy is controlled, the surgeon guides the tearing of the muscle. When a myotomy is uncontrolled, the tear forms on its own.



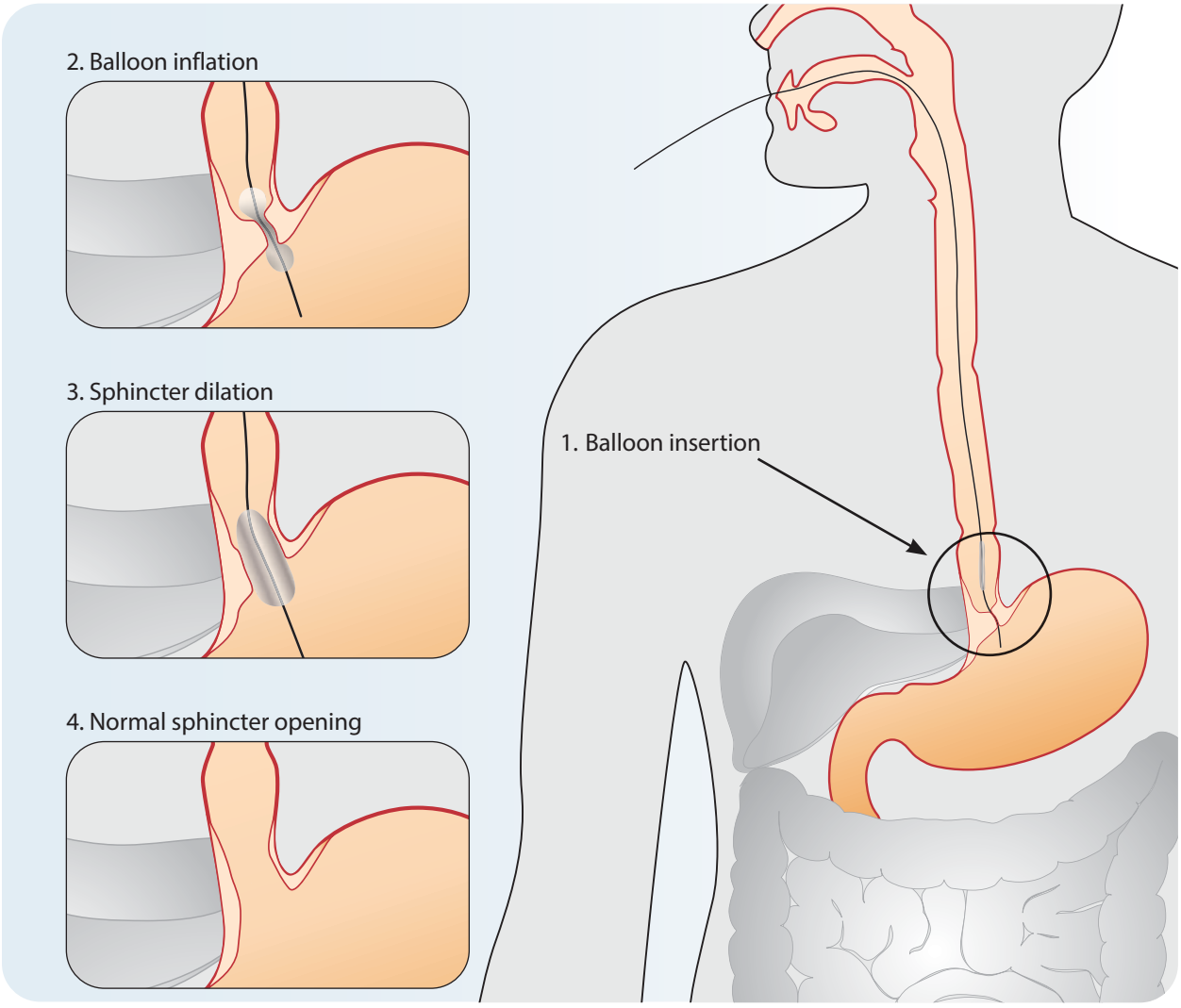
Tests and treatments

Esophageal dilation

This procedure is performed during a gastroscopy. The surgeon inserts a balloon in the esophagus and inflates it at the sphincter to open up the passage. As the balloon expands, the muscle fibres of the sphincter tear, an example of an uncontrolled technique. This tear keeps the sphincter open. In general, three dilation sessions (at different times) are needed to open the sphincter gradually.

The risks of this procedure are:

- Puncture (perforation) in the esophagus
- Bleeding
- Pain



Tests and treatments

Heller myotomy and anti-reflux surgery

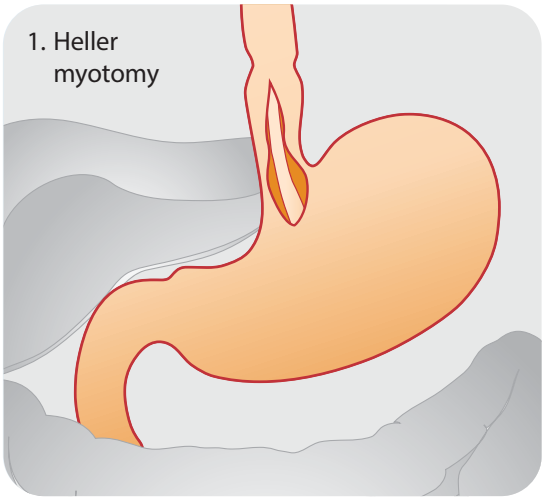
A Heller myotomy is a procedure that opens the sphincter so that it stays open and food can pass through. The surgeon accesses the sphincter muscle from outside of the esophagus (controlled). The procedure is performed under general anesthesia via laparoscopy.

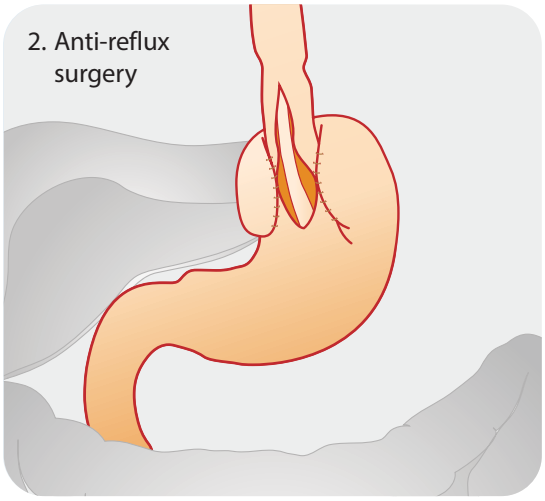
Opening the sphincter of the esophagus causes gastric reflux, i.e. the gastric content of the stomach comes back up into the esophagus. Depending on the severity of your achalasia, your surgeon may perform anti-reflux surgery (fundoplication). During this surgery, the stomach is folded around the esophagus, reducing the risk of gastric reflux. Anti-reflux surgery is done at the same time as the Heller myotomy.

It takes six weeks to recover from this surgery, longer than recovery from an endoscopic myotomy.

The risks of this procedure are:

- Bleeding
- Infection (from wounds, pneumonia)
- Blood clots in the lungs (pulmonary embolism)
- Blood clots in the legs (deep vein thrombosis)
- Puncture (perforation) in the esophagus
- Nerve injury (can slow food's progress from the stomach to the intestine)
- Neighbouring organ damage (spleen, liver)





Endoscopic myotomy

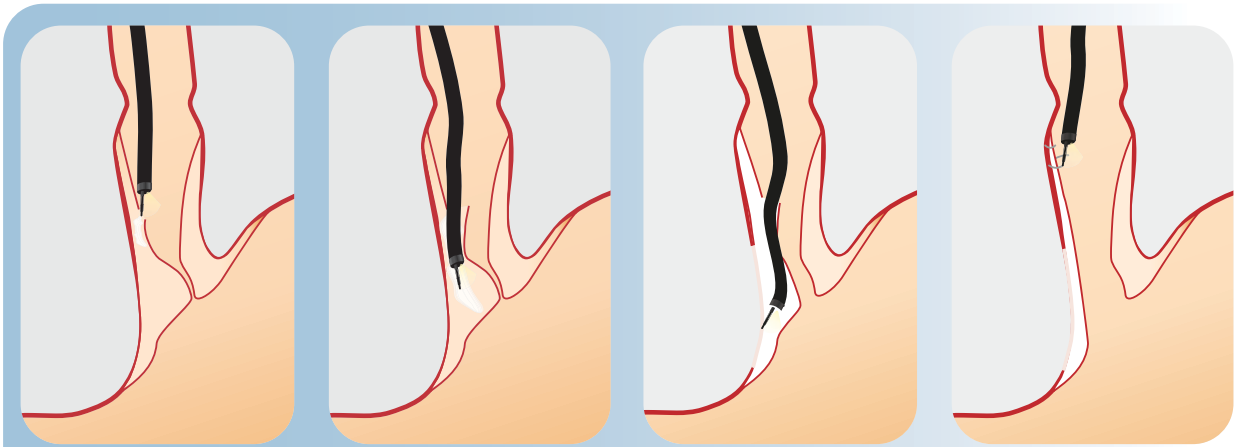
An endoscopic myotomy, commonly called POEM (Peroral Endoscopic Myotomy), is a procedure to allow the sphincter to stay open so that food can pass through. Unlike a Heller myotomy, a POEM is performed through the mouth. The surgeon accesses the sphincter muscle from inside the esophagus (controlled). You are asleep, under general anesthesia for this procedure. Anti-reflux surgery cannot be performed with this procedure. Therefore, there is more risk of gastroesophageal reflux.

It takes one to two weeks to recover from an endoscopic myotomy, which is a shorter recovery time than that of a Heller myotomy and anti-reflux surgery.

The risks of this procedure are:

- Perforation of the esophagus or stomach
- Pulmonary collapse (pneumothorax)
- Air trapped beneath the skin (subcutaneous emphysema)
- Heartburn (gastroesophageal reflux)
- Air in the abdomen (pneumoperitoneum)
- Bleeding

An endoscopic myotomy is a very efficient way of treating achalasia. Its results are better for treating type 1 and 3 achalasia than a Heller myotomy with anti-reflux surgery.



1. Incision at sphincter level

2. Creation of a descending tunnel in the stomach

3. Incision of the muscle

4. Closing of the incision

Tests and treatments

Esophagus removal (esophagectomy)

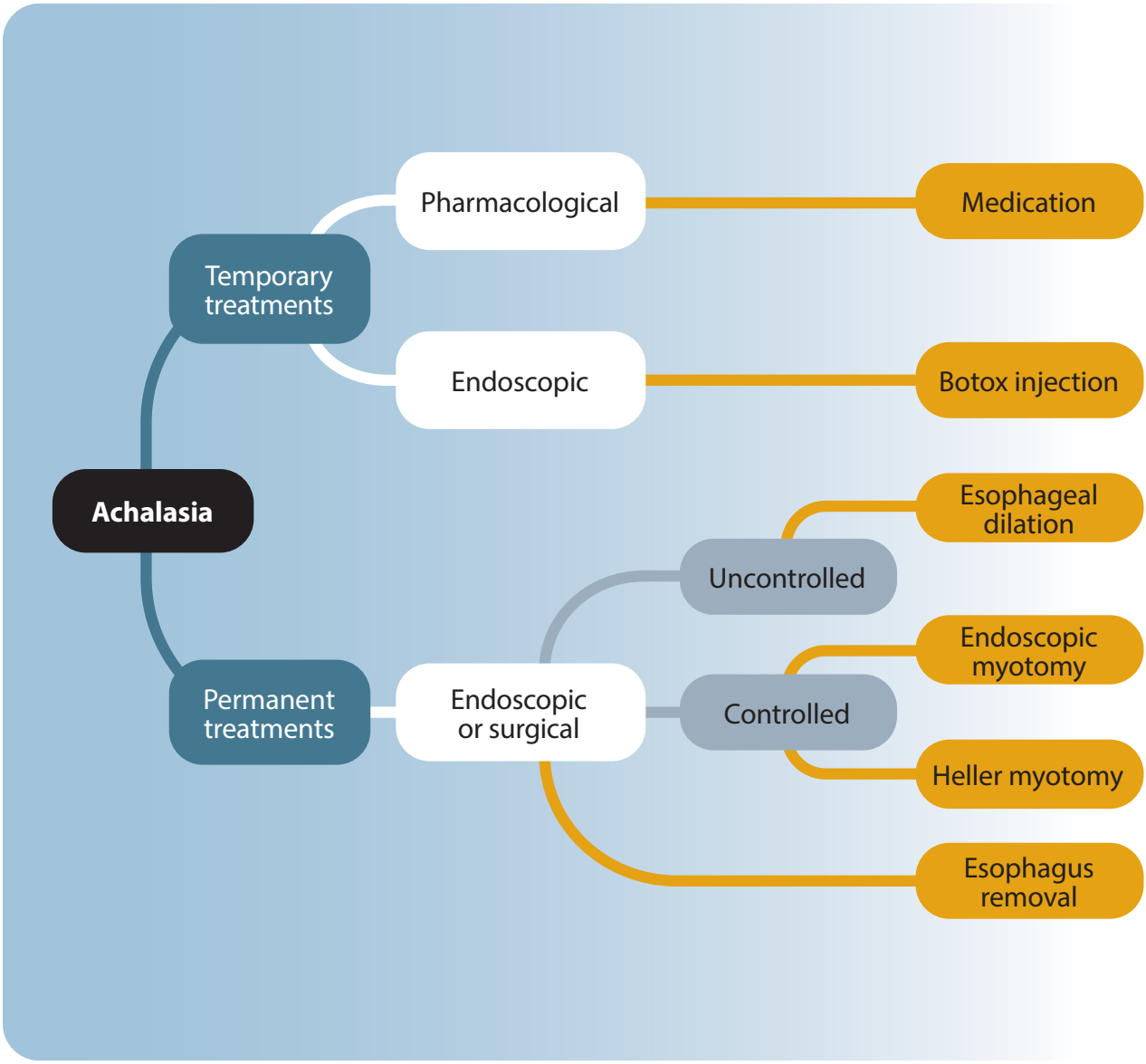
Esophagus removal is a surgery to remove all or part of the esophagus. With advanced achalasia, it is sometimes necessary to remove the esophagus completely. A complete guide is available on this surgery and will be given to you if necessary (see Useful resources).

Treatment summary and comparison tables

Treatment options to manage achalasia

There are 6 possible treatment options to manage achalasia. These treatments are divided into 2 types: temporary and permanent.

- The 2 temporary treatments are medications and botox injections.
- The 4 permanent treatments are esophageal dilation, endoscopic myotomy, Heller myotomy and esophagus removal.



Tests and treatments

Efficacy of myotomies according to achalasia type

	Type 1 achalasia	Type 2 achalasia	Type 3 achalasia
Esophageal dilation	Good	Good	Good
Heller myotomy	Very good	Excellent	Very good
Endoscopic myotomy	Excellent	Excellent	Excellent

Comparison between the two controlled techniques for myotomies

	Heller myotomy and anti-reflux surgery	Endoscopic myotomy
Approch	Via outside the esophagus (laparoscopy)	Via inside the esophagus (gastroscopy)
Gastroesophageal reflux after the operation	Less reflux	More reflux
Hospital stay period	Between 24 and 48 hours	24 hours
Recovery period	6 weeks	2 weeks

Diet

Do I need to adjust my diet before my treatment?

You need to adjust your diet according to your symptoms. If you feel that your esophagus is blocked, don't hesitate to change the texture of the foods you're eating. Choose foods with a softer texture. Some sticky foods like rice, fresh bread and peanut butter as well as some dry foods may be problematic. Alternating a little liquid with solid foods during meals can be a good strategy to help empty your esophagus.

What should I eat before a myotomy or removal of the esophagus?

You must eat liquid foods starting **3 days before your procedure or surgery**. This will make sure that no residual food remains in your esophagus.

Eat high-protein foods at every meal. A high-protein diet promotes better healing and recovery while reducing the risk of complications.

What is a liquid diet?

Here are some examples of foods allowed at each meal.

Breakfast

- High-protein milk (e.g. Natrel Plus 18 g of protein), soy beverage, smoothie made from greek yogurt or silken tofu, fruit juice, tea, herbal tea

Lunch and dinner

- Cream soup or soup made with high-protein milk, broth
- High-protein milk, fruit juice, tea, herbal tea

Snacks

- Ice cream, frozen yogurt or sorbet without pieces in it, smoothie

Any time

- Calorie supplements such as Ensure Max or Boost

Diet

Table of food textures

	Liquid	Puree	Soft	Foods to avoid
Fruits	• Fruit juice, no pulp • Fruit sorbet without seeds	• Pureed fruit without seeds (compotes) • Ripe mashed banana	• Ripe banana • Melon • Pear	• Fruit with seeds or pulp (e.g. oranges, grapefruit, apples, grapes)
Vegetables	• Cream of vegetable soup • Soup	• Pureed vegetables	• Vegetable soup • Well-cooked vegetables mashed with a fork • Ripe avocado	• Vegetable juice • Tomato • Tomato paste • Raw vegetables • Lettuce
Whole grains (or starches)	• Baby cereals or blended hot cereals (porridge, cream of wheat)	• Hot cereals (porridge, cream of wheat, baby cereals) • Pureed noodles with sauce • Pureed potatoes	• French toast, crepe, pancake, waffle • Pasta products with sauce • Well-cooked potatoes mashed with a fork • Cold cereals softened in milk (Corn Flakes, Rice Krispies • Soft cookies or cakes (oatmeal, molasses)	• Fresh bread • Toast • Couscous • Rice • Rusks

Diet

	Liquid	Puree	Soft	Foods to avoid
Dairy products	• Milk • Chocolate milk • Milk shake • Soya beverage • Ice cream • Frozen yogurt	• Yogurt without pieces • Smooth, milk-based pudding • Flan • Custard • Blancmange	• White sauce • Cottage cheese • Tapioca or rice pudding	• Cheese gratin
Protein	• Pasteurized liquid eggs in a carton	• Pureed meat, poultry or fish with sauce • Sandwich mix pureed with mayonnaise (e.g. Egg, ham, tuna, salmon, fish) • Seafood mousse	• Scrambled egg, soft-boiled egg, omelette • Oven-cooked fish, tinned fish • Ground meat or poultry with sauce • Boudin • Tofu • Saucy dishes (stews) • Chopped • sandwich mix with mayonnaise (e.g. egg, ham, tuna, salmon, fish)	• Hard-boiled egg • Peanut butter • Sandwich • Whole meat (e.g. steak, roast pork, chicken breast

Diet

What should I eat after a myotomy or removal of the esophagus?

A nutritionist or a member of your treatment team will let you know when you can resume eating. You'll start to advance through many phases of diets. Here is the order of the food texture phases through which you'll advance:

1. Liquid
2. Pureed
3. Soft

The duration of each of these stages varies depending on the type of procedure (endoscopic myotomy, Heller myotomy or removal of the esophagus). The nutritionist will explain how you'll advance during an appointment. They will also provide you with a detailed food guide.

Preparing for surgery
(myotomy or removal of the esophagus)

What is the pharmacist's role?

The pharmacist will analyze your file. They make sure that your medications can be crushed for six weeks after surgery (Heller myotomy, endoscopic myotomy or removal of the esophagus) since you cannot eat solid foods. The pharmacist may temporarily stop or modify your medication accordingly. They'll communicate with you before surgery to complete their analysis as needed.

While you're staying in the hospital, the pharmacist will explain the changes in your medication. They'll also explain how to take your medications before you leave.

How should I prepare for the surgery?

To ease your recovery at home, ask someone to bring you home after your surgery.

The preparation for surgery is similar whether you're preparing for an endoscopic myotomy or Heller myotomy with or without anti-reflux surgery. To learn about how to prepare for an esophagus removal, consult the guide *Mieux vivre ma chirurgie de l'œsophage* (in French only).

5 days before your surgery

Start gargling with Nystatin. You must take your last dose the day before the procedure, before bed.

3 days before your surgery

Start implementing a liquid diet

Important: If you do not comply with this guideline, the surgery will need to be cancelled and rescheduled.

The day before your surgery

Call 418 656-4870 between 3 p.m. and 4 p.m. to confirm the time of your surgery.

Start fasting at midnight: do not eat or drink.

Preparing for surgery
(myotomy or removal of the esophagus)

The day of your surgery

Take your stomach medication (e.g. Pantoloc, Dexilant) with water. Follow the instructions given to you for your other medications.

Avoid:

- Putting on perfume, deodorant, makeup, shaving cream or lotion on your skin.
- Using tampons if you are menstruating. Use sanitary towels instead.
- Wearing contact lenses.
- Wearing nail polish.

Go to the operating room, level 2 Pavilion C. Notify the doctor or nurse as soon as you arrive if:

- You have allergies or have had reactions to medications.
- You are pregnant or think you are pregnant.
- You are diabetic.
- You are taking blood-thinning medication (e.g. Aspirine, Coumadin, Eliquis, Xarelto, Plavix, Brilinta, Fragmin, Lovenox).

What should I bring to the hospital?

The day of your surgery, make sure you have:

- ✔ Your glasses or contact lenses and their case
- ✔ Your dentures and box (without water)
- ✔ Your toothbrush and toothpaste
- ✔ Your updated list of medications
- ✔ Your health insurance card
- ✔ Your Institute hospital card
- ✔ Your ventilation apparatus (CPAP), if you suffer from sleep apnea

Leave jewellery, money and other valuables at home. The Institute is not responsible for any loss or theft

Preparing for surgery
(myotomy or removal of the esophagus)

How is the surgery performed?

The nurse or doctor explains the surgery. Feel free to ask questions. A catheter is inserted into a vein in your arm to administer medication. You'll be asleep under general anesthesia for the surgery. A tube is then put in your throat to help you breathe during the surgery.

The surgery takes around 2 to 3 hours.

What happens after the surgery?

Once the surgery is over, you'll be taken by stretcher to the recovery room. Nurses will monitor you. When you wake up, a nurse will remove the tube in your throat. The tube may irritate your throat for anywhere between 24 and 48 hours. Promptly inform a nurse if you experience nausea or pain. It is important to avoid vomiting.

You will need to wait for the nurse's permission before you can start eating or drinking. You can, however, brush your teeth without swallowing any water.

You will need to stay at the hospital overnight.

The day after the surgery, you'll be examined to check for leakage and perforations.

Note

The product used during surgery may turn your urine green.

After your surgery

What should I expect at home after surgery?

Medication

For 6 weeks after surgery, all your medication will be either liquid, crushed or in open capsules.

- You'll need to take your medication to control gastroesophageal reflux (e.g. Pantoloc, Dexilant) for at least 6 months.

Do not take any anti-inflammatory medication for 3 days after surgery in order to lower the risk of bleeding. Unless otherwise advised by your treatment team, do not take:

- Ibuprofen (Motrin, Advil)
- Naproxen (Aleve)
- Acetylsalicylic acid (Aspirin)

Always use acetaminophen (Tylenol) for the first few days. If the pain persists or worsens, you can also take a narcotic analgesic (e.g. Dilaudid or Morphine) prescribed by your surgeon. When your pain lessens, stop using this analgesic. Short-term use of narcotics will not lead to addiction. Do not drive if you're taking narcotics. They can impair your reflexes and cause drowsiness.

Diet

You must follow your nutritionist's recommendations. All the information will be given to you during a meeting following your endoscopic treatment or surgery.

Light exercise

Gradually resume your activities the next day after returning home. Don't push yourself and don't lift anything heavier than 10 pounds (4.5 kilos) for six weeks.

Rest

When in bed, ensure that you are always laying down in a semi-seated position so that your upper body is elevated at a 30-degree angle (see Useful resources).

After your surgery

What symptoms should I watch out for?

Promptly seek medical attention or go to the nearest hospital **emergency** room if you experience one or more of these symptoms:

- Chest pain
- Unusual difficulty breathing
- Bleeding (vomiting blood, black stool)
- Fever with a temperature of over 38.0°C (101.4°F) lasting more than 24 hours
- Heartburn (nausea) lasting more than 24 hours
- Increased difficulty swallowing

What kind of follow-up care will I receive?

To learn more about follow-up care after an esophagus removal (esophagectomy), consult the guide *Mieux vivre ma chirurgie de l'œsophage* (in French only).

If you had an endoscopic myotomy or Heller myotomy, your follow-up care will be:

- A first follow-up appointment between 3 to 4 weeks after the surgery
- A second follow-up appointment 6 months after the surgery
- After the second appointment, an annual follow-up appointment

Achalasia is a chronic disorder, meaning that your esophagus will never be fully healed. You will therefore need follow-up care for life. Your specialist will tell you how often you should have follow-ups.

Endoscopic myotomy

If you've had an endoscopic myotomy, you'll need to have a pH meter test performed 6 months after surgery. A pH meter test measures the acidity of your esophagus. It allows for the need assessment for a medication to treat heartburn and stomach ulcers (e.g. Pantoloc, Dexilant).

Help and resources

Who do I need to contact to change my appointment or ask questions?

Contact the thoracic diagnostics clinic:

418 656-8711 ext. 5945
Monday to Friday, 8 a.m. to 4 p.m.

Useful resources

The Institute has published other educational documents. You can find them on our website: bibliotheque-patients.iucpq.qc.ca (in French only)

Here are some other documents that may also interest you (in French only):

- *Gastroscopie : Endoscopie digestive : information et préparation*
- *Mieux vivre ma chirurgie de l'œsophage*
- *Coussin pour positionnement au lit*
- *Reflux gastro oesophagien*

Enter the name of the document you would like to consult in the search bar.

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