What is Barrett’s Esophagus?

Barrett’s esophagus is a condition in which healthy cells in the esophagus turn into unhealthy ones. The esophagus is the tube that carries food from the mouth to the stomach. When acid from the stomach comes up into the esophagus, it can cause damage to its lining. Barrett’s esophagus affects more than 3.3 million adults in the United States¹ and it is the primary cause of esophagus cancer. This cancer may be prevented if unhealthy cells are found and treated before they turn into cancer.

There are three types of Barrett’s esophagus.

1. **Intestinal Metaplasia (IM)** – The normal lining of the esophagus has been injured and the tissue resembles red intestinal lining rather than the normal pink lining of the esophagus.

2. **Low-grade Dysplasia (LGD)** – The tissue cells are larger than the cells in intestinal metaplasia (grade 1) and the cell pattern is abnormal.

3. **High-grade Dysplasia (HGD)** – Tissue cells are very disorganized, large and multi-layered. This is the most severe form of Barrett’s esophagus.

Source: Mayo Foundation for Medical Education and Research.
Cryoablation is a process that applies extreme cold to unwanted human tissue, causing it to freeze and die.

- Cryoablation is safe.², ³, ⁴
- Patients report they have less pain after cryoablation.³
- Cryoablation removes unhealthy cells without damaging healthy tissue.⁴, ⁵
- Many patients prefer the option of freezing instead of burning unhealthy cells.⁶

Cryoablation gets rid of unhealthy, diseased or damaged tissue by freezing it away. For this procedure, the doctor puts a balloon into the esophagus through an endoscope—a medical tube with a camera at its end that goes into the mouth and down towards the stomach—allowing the doctor to reach and see the esophagus.

Once inside the esophagus, the doctor will fill the balloon with air until it touches the sides of the esophagus. Next, the doctor sprays cold nitrous oxide (N₂O) into the balloon to freeze the unhealthy cells. The nitrous oxide stays in the balloon, but the unhealthy cells just outside the balloon will freeze and die.

**What is Cryoablation?**

**Alternative Treatment Options for Barrett’s Esophagus**

There are other treatment options your doctor may have considered, including radiofrequency ablation (RFA) and endoscopic mucosal resection (EMR). RFA and EMR differ from cryotherapy in that RFA uses heat to burn unwanted tissue cells, and EMR cuts damaged tissue from the lining of the esophagus. Each treatment has different effects and you can discuss with your doctor why he or she has recommended cryotherapy for you. In some cases, your doctor may recommend a combination of treatments.
The C2 CryoBalloon™ Ablation System is designed to work with the endoscope your doctor is already using for your care. The system uses the process of cryoablation (see previous page). Through a C2 CryoBalloon™, your doctor can apply nitrous oxide spray directly to the unwanted tissue in the esophagus.

Before the cryoablation procedure, your doctor will select the C2 CryoBalloon™ shape and size that will work best for you. It will also be decided whether the cold spray should be targeted to one spot (Fig. 1) or if the spray should go all the way around the inside of the esophagus (Fig. 2).

Figure 1: This C2 CryoBalloon™, the focal ablation balloon, allows the doctor to target the cold spray to one spot.

Figure 2: This C2 CryoBalloon™, the circumferential ablation balloon, allows the doctor to target the cold spray all the way around the inside of the esophagus.
**Before Treatment with the C2 CryoBalloon™ Ablation System**

Your doctor will give you instructions about what you can and cannot eat before your treatment. Your doctor will likely tell you to stop eating altogether for some time before the procedure. It is important that you follow these instructions and any other instructions your doctor gives you.

**Step 1: Position the C2 CryoBalloon™**

![Diagram of endoscope and esophagus]

Your doctor will put the C2 CryoBalloon™ into the endoscope to reach the unhealthy cells.

Next, your doctor will inflate the C2 CryoBalloon™ with air until it touches the sides of your esophagus.
**Step 2: Ablate Unwanted Tissue**

Using a handheld controller, your doctor will start the spray of nitrous oxide to cool the surface of the balloon. The nitrous oxide stays in the balloon. The surface of the balloon comes into contact with the unhealthy cells, causing them to freeze and die.

The ablation seen here is using the focal ablation balloon catheter and the doctor is targeting the cold spray to one specific area.

The ablation seen here is using the circumferential ablation balloon catheter and the doctor is targeting the cold spray all the way around the inside of the esophagus.
**Step 3: Remove the CryoBalloon™**

Your doctor will deflate the C2 CryoBalloon™ and take it out of the endoscope.

**After Treatment with the C2 CryoBalloon™ Ablation System**

In general, cryotherapy causes less post-procedural pain than other ablation methods. Nevertheless, it is possible you may experience one or more of the following symptoms after your treatment: mild difficulty or pain with swallowing, fever, sore throat, chest discomfort, nausea or vomiting. If you experience any of these symptoms, you should expect that they will continually improve each day after your treatment. However, if you are experiencing any severe symptoms please contact your doctor.

In order to continue your care at home, please use the medicine prescribed by your doctor as directed and follow other discharge instructions provided by your doctor.
REFERENCES


