

## Tethered Capsule Endoscope for Barrett's Esophagus Screening

**This technology is a tethered-capsule endoscope that observes Barrett's Esophagus, a pre-cancerous condition of the lower esophagus. The device is a capsule that scans the esophagus to detect a characteristic dark pink color indicative of BE when swallowed and positioned.**

### What is the Problem?

Barrett's Esophagus (BE) is a condition of the lower esophagus that is pre-cancerous- a precursor to cancer of the esophagus. The standard practice for diagnosing BE is using flexible endoscopy, often with the esophageal lumen filled with air. BE can occur without telltale symptoms, so mass screenings have been proposed as the only viable approach to identify the condition as early as possible to enable treatment and avoid the onset of or provide a curative therapy for the cancerous condition. However, the numbers of people that are likely candidates for esophageal screening and the current cost associated with the practice of flexible endoscopy performed by a physician compared to the reimbursement associated with such mass screenings make this solution currently impractical. A much more efficient and cost-effective approach for identifying people with BE.

### What is the Solution?

This disclosure is a proposed tethered-capsule endoscope for observing BE that is a less invasive and more affordable approach to diagnosis. A capsule is coupled to a tether that is manipulated to a desired location. The capsule is swallowed and positioned with the tether to enable the scanner in the capsule to scan a region of the esophagus above the stomach to detect a characteristic dark pink color indicative of BE. The light from the scan is processed immediately, which can give a diagnosis of BE. The capsule can also be used for diagnostic and/or therapeutic purposes in other lumens.

### What Differentiates it from Solutions Available Today?

Currently, only a doctor can perform an examination of the esophagus using a conventional flexible endoscope, and the procedure is thus relatively expensive. Images have to be processed by the doctor, adding to the cost. This scanning technique can be performed by a trained medical technician or nurse. The evaluation of images produced are automatically processed, allowing for the immediate evaluation of BE. This makes scanning for BE more affordable and accessible, and therefore more feasible to perform on large patient populations.

### Technology ID

BDP 8666

### Category

Device/Imaging  
Selection of Available  
Technologies

### Authors

Eric Seibel

### Learn more



## Patent Information:

[WO2009032016A1](#)

## References

1. Eric J Seibel, Robert E Carroll, Jason A Dominitz, Richard S Johnston, C David Melville, Cameron M Lee, Steven M Seitz, Michael B Kimmey(39508) , <https://pubmed.ncbi.nlm.nih.gov/18334395/>,  
Trans Biomed Engineering