

Media Backgrounder GI Genius™ intelligent endoscopy module

Colorectal Cancer in Canada

- Colorectal cancer is the third most common form of cancer in Canada with 26,300 cases diagnosed in 2019.¹
- Colonoscopies are the gold standard in diagnosing colorectal cancer
- Over a million screening colonoscopies are performed in Canada each year.

Computer-Aided Detection

Computer aided detection (CADe) is a class of Artificial Intelligence (AI) systems that provides decision support to physicians.

The GI Genius™ Endoscopy Module is in a subgroup of CAD implemented with “deep learning”, which relies on artificial networks modeled after and inspired by the concept of neurons and synapses in the brain.

- The module is powered by deep AI learning algorithms with 99.7% sensitivity rate with less than 1% false positive results.
- It enables clinicians to enhance their ability to detect colonic mucosal lesions (such as polyps and adenomas) that may go undetected.
- Detection of all colorectal polyps regardless of size, shape, or morphology can lead to better clinical outcomes for patients.²
- It can supplement procedures with real-time image analysis of any colonoscope video and notifies clinicians to the presence of lesions – including those with flat (non-polypoid) morphology – with a visual marker on-screen.



- This can increase diagnostic accuracy, improve efficacy rate of polyp detection, and reduce the risk of interval cancers which can occur between colonoscopies. As a colonoscopy is performed, the GI Genius™ system is scanning every frame of the procedure for abnormalities in milliseconds.

The Power of AI

The GI Genius™ Intelligent Endoscopy Module has learned to distinguish between normal (healthy) colon mucosa and potentially dangerous tissue regions, with the aim to direct the physician's attention to these suspect regions to minimize the danger of missing a lesion during a colonoscopy.



Artificial Intelligence (AI) software enhances the ability to detect colorectal cancer:

- Detects automatically in real time
- Detects colonic mucosal lesions (such as polyps and adenomas)
- Compatible with all major brands of endoscopic equipment
- Seamlessly integrates with existing workflow

Clinical Data

A recently released multicenter, randomized trial³ found computer-aided polyp detection (CADe) increases adenoma detection rates (ADR) versus high-definition (HD) colonoscopy alone. The trial, using colonoscopies performed by expert endoscopists in three Italian centers, found that CADe and HD together delivered a:

- 14% absolute increase in adenoma detection rate (ADR)
- 30% relative increase in ADR
- 46% relative increase in Adenomas per Colonoscopy (APC)
- 50% greater likelihood to detect multiple polyps
- 53% greater likelihood to detect polyps in the distal colon

References

1. Canadian Cancer Statistics Advisory Committee. *Canadian Cancer Statistics 2019*. Toronto, ON: Canadian Cancer Society; 2019. Available at: cancer.ca/Canadian-Cancer-Statistics-2019-EN.
2. Wang P, Berzin TM, Glissen Brown JR, et al. *Gut* 2019; 68:1813-1819.
3. Repici, A., Badalamenti, M., Maselli, R., et al. *Gastroenterology* 2020; <https://doi.org/10.1053/j.gastro.2020.04.062>.

