

## Let's Be Clear

Elevating the Standard of Endoscopy



### EDOF

The Phenomenon  
of Full Focus



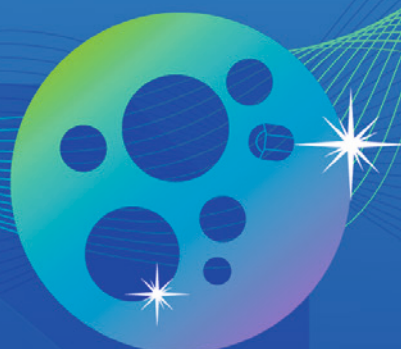
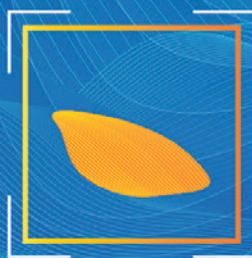
### RDI

The Safeguard for  
Endoscopic Therapy

**TXI**  
The New  
White Light



**ENDO-AID CADe**  
The [AI]d  
in Endoscopy



# Let's Be Clear: Elevating the Standard of Endoscopy

EVIS X1

EVIS X1

As the world leader in gastrointestinal endoscopy\*, we are proud to present our most advanced endoscopy system.

EVIS X1 introduces a range of new, easy-to-use technologies that aim to revolutionize the way gastrointestinal disorders can be detected, characterized and treated.

We want to support every endoscopist. In every procedure. Every day.



## Let's Be Clear: Contributing Towards a World Without Colorectal Cancer

EVIS X1 aims to decrease CRC mortality through providing every endoscopist with expert, innovative and proven tools to help facilitate accurate screening, early detection and effective treatment.

For every 1% increase in the adenoma detection rate (ADR), there is a 3% decrease in the CRC risk. Therefore, higher detection rates and accurate diagnosis can help reduce the number of deaths from CRC.<sup>1</sup>

#LetsFightCRC

\*More than 70% global market share in gastrointestinal endoscopic equipment as of March 2019

1 Corley, D.A.; Jensen, C.D.; Marks, A.R.; et al. Adenoma Detection Rate and Risk of Colorectal Cancer and Death. N Engl J Med. 2014; 370: 1298-1306. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4036494/>





# TXI: The New White Light

## Texture and Color Enhancement Imaging (TXI)

Early detection is critical for cancer prevention and decreasing mortality.<sup>1</sup> However, precursor lesions are often tiny and easy to overlook.

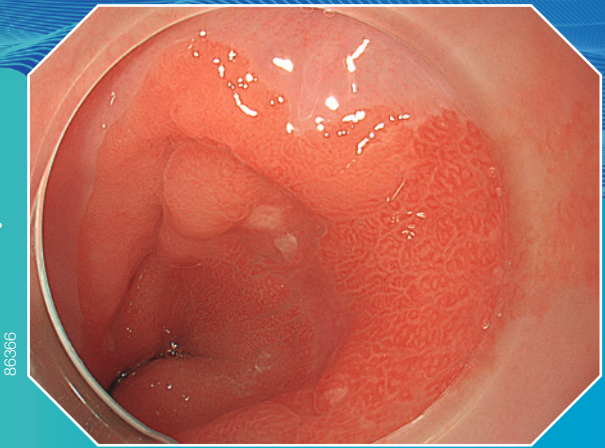
TXI technology aims to enhance the visibility of potentially suspicious tissue, which includes inflammations, flat or depressed lesions, using a white-light imaging effect that improves the color, structure and brightness.

By supporting better visibility of potential lesions, TXI aims to contribute to higher detection rates.



## TXI Texture and Color Enhancement Imaging

The incoming image is split and the texture and brightness are enhanced before the separate images are merged back together. Additional color enhancements are made to more clearly define subtle tissue differences.



White Light



TXI

<sup>1</sup> American Cancer Society. Colorectal Cancer Facts & Figures 2017-2019; p 15; available at <https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/colorectal-cancer-facts-and-figures/colorectal-cancer-facts-and-figures-2017-2019.pdf>.



# ENDO-AID CAdE: The [AI]d in Endoscopy

Welcome to the Future

An increase in the adenoma detection rate (ADR) has a positive impact on the prevention of colorectal cancer (CRC).<sup>1</sup> We are convinced that applications powered by artificial intelligence (AI) will effectively contribute to an increase in the ADR. Therefore, EVIS X1 introduces AI to endoscopy.


With ENDO-AID CAdE, EVIS X1 provides real-time support in the detection of lesions during colonoscopy. ENDO-AID CAdE is a computer-aided detection application that uses AI to suggest the potential presence of lesions such as colonic polyps, malignant neoplasms and adenomas.

By supporting the identification of lesions, ENDO-AID CAdE aims to increase the adenoma detection rate.<sup>2</sup> Consequently, the intention is to increase the quality of CRC screening and its preventive efficacy against CRC.



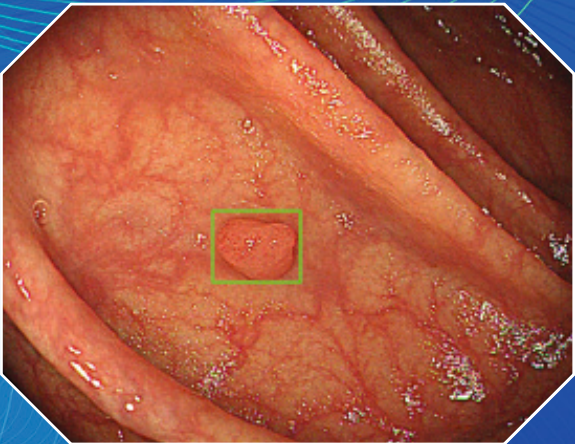
In AI, we recognize the power of elevating endoscopic imaging to uncharted levels. Considering ENDO-AID CAdE as a first step, we are planning additional AI-powered applications for image detection and characterization.





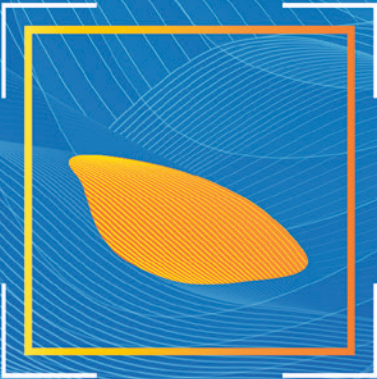
90779

White Light



90780

ENDO-AID CAdE with marker



## ENDO-AID CAdE

### Computer-Aided Detection

ENDO-AID CAdE runs on the Olympus Intelligent Platform.\* When a lesion appears on the screen, the system can alert the endoscopist virtually in real time thanks to a sophisticated application powered by AI.

1 Corley, D.A.; Jensen, C.D.; Marks, A.R.; et al. Adenoma Detection Rate and Risk of Colorectal Cancer and Death. N Engl J Med. 2014; 370: 1298-1306. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4036494/>  
2 Compared to WLI without CAdE.  
\* Endoscopy CAD system OIP-1



# NBI: The Power of Accurate Diagnosis

## Narrow Band Imaging (NBI)

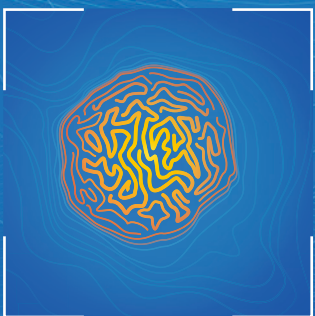
Accurate optical diagnosis is important when assessing lesions to determine potential histology, confirm the lateral extent, and thereby guide therapy decisions and suitable patient surveillance intervals.

NBI is a powerful and proven optical technology that allows for a reliable optical diagnosis of all major indications in the gastrointestinal tract.<sup>1-8</sup>

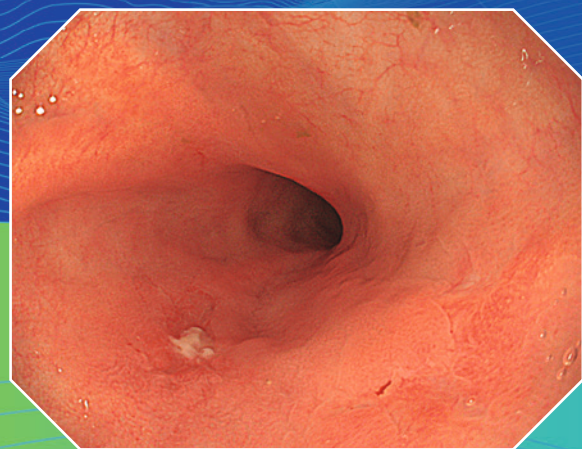


### NBI Narrow Band Imaging

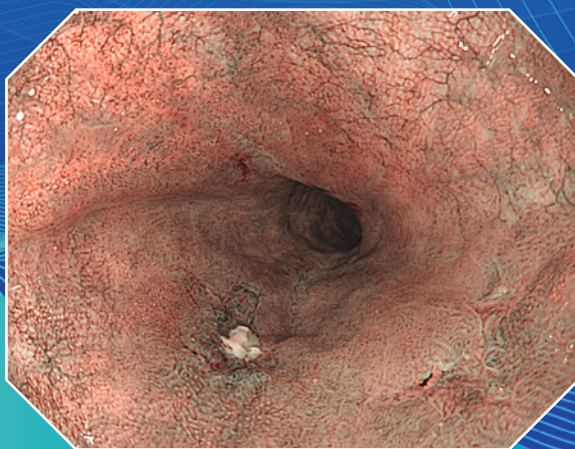
Utilizing specific blue and green wavelengths absorbed by hemoglobin, NBI creates a strong contrast between vessels and surrounding mucosa.<sup>9</sup> This facilitates the visibility of highly vascularized areas, blood vessel patterns and surface structures that are predictive for distinct histopathologies.<sup>10-13</sup>



85676



White Light



NBI



85666

#### Efficient lesion management strategies that are empowered by NBI include:

- Targeted biopsies in the upper gastrointestinal tract.<sup>2,5</sup>
- Easier decision-making for suitable endoscopic resection techniques.<sup>4,5</sup>
- Potentially avoiding histological assessment of low-risk lesions<sup>6-8</sup> (e.g. diminutive rectosigmoid polyps under the resect and discard paradigm).

1 Sharma et al. Gastroenterology. 2016 Mar; 150(3): 591-8.  
2 Thosani et al. Gastrointest Endosc 2016 Apr; 83(4): 684-698.e7.  
3 Kaise et al. Endoscopy 2009 Apr; 41(4): 310-5.  
4 Yao et al. New Challenges in Gastrointestinal Endoscopy 2008, pp 169-176.  
5 Pimentel-Nunes et al. Endoscopy 2019; 51: 365-388.  
6 Dayyeh et al. Gastrointest Endosc. 2015 Mar; 81(3): 502.e1-502.e16.  
7 Kaminski et al. Endoscopy. 2014 May; 46(5): 435-49.

8 National Institute for Health and Care Excellence (NICE). 2017; Diagnostics guidance [DG28]; available at <https://www.nice.org.uk/guidance/dg28>.  
9 Gono et al. J Biomed Opt. 2004 May-Jun; 9(3): 568-77.  
10 Inoue et al. Annals of Gastroenterology 2015; 28, 41-48 (Esophagus - SCC).  
11 Sharma et al. Gastroenterology. 2016 Mar; 150(3): 591-8.  
12 Yao. Ann Gastroenterol. 2013; 26(1): 11-22.  
13 Hewett et al. Gastroenterology 2012; 143, 599-607.



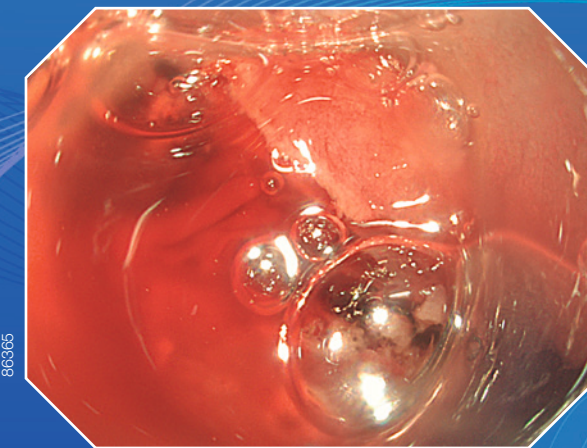
# RDI: The Safeguard for Endoscopic Therapy

## Red Dichromatic Imaging (RDI)

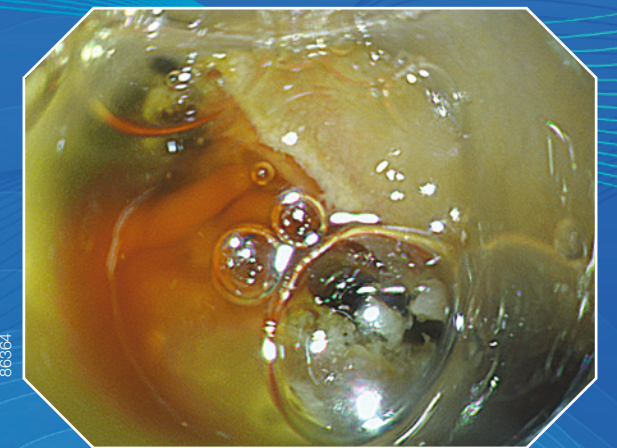
Gastrointestinal bleeding is a serious challenge, involving considerable mortality of 5-15% and high management costs.<sup>1,2</sup> Consequently, prevention of complications is crucial.

RDI is designed to enhance the visibility of deep blood vessels and bleeding sources.

Easier identification of bleeding spots makes hemostasis quicker and easier. This helps to reduce the stress of the physician during endoscopic therapy.



White Light



RDI



## RDI Red Dichromatic Imaging

RDI works by employing specific green, amber and red wavelengths. The latter two penetrate deep into the mucosa, enabling the visualization of deep blood vessels. In case of acute bleeding, RDI increases the contrast between highly concentrated and diluted blood, thereby clearly visualizing the bleeding point.

1 Lanas et al. Am J Gastroenterol 2009; 104: 1,633-1,641. 2 Parker et al. J Med Econ 2011; 14: 279v-287.



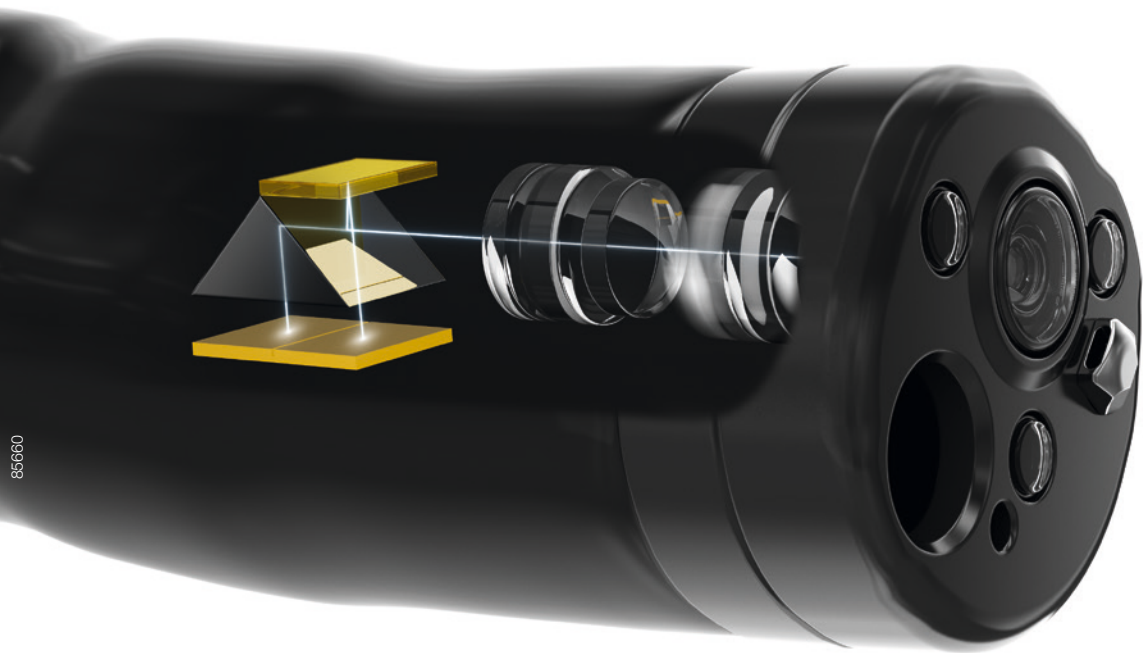
# EDOF: The Phenomenon of Full Focus

## Extended Depth of Field (EDOF)

Sharp endoscopic images support accurate results in detection, diagnosis and treatment. However, the gastrointestinal tract poses challenges in keeping an endoscopic image stable and in focus.

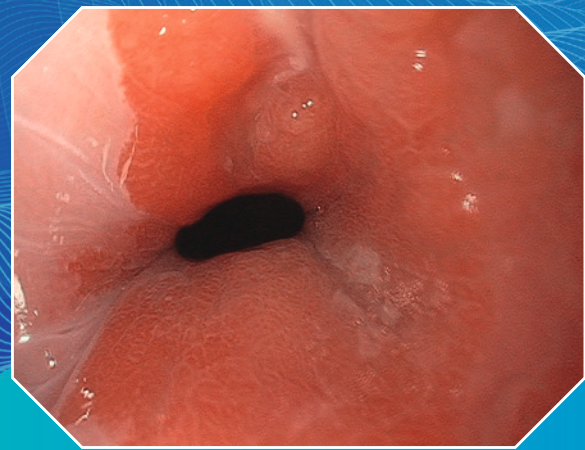
EDOF allows precise observations through continuous broad focus and seamless magnification. At the same time, the established Dual Focus function provides high magnification, which can be activated by the push of a button.

This improved visibility and continuously sharp image is developed to reduce the necessity for focal adjustments and to help make endoscopy more convenient. It may even contribute to easier identification and a more confident abnormality diagnosis.

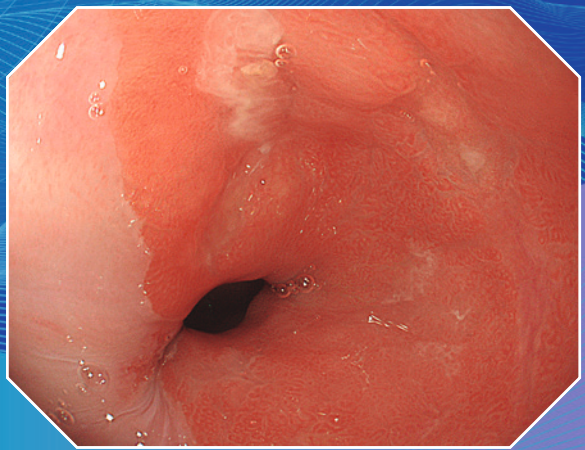


### EDOF Extended Depth of Field

Light entering the scope's objective lens is split into two separate beams, with different focal ranges, by the new optical unit. The beams are then simultaneously projected onto an image sensor. The EVIS X1 video system center combines the pictures to generate a single image with an extremely wide depth of field.



GIF-HQ190



GIF-EZ1500



## Let's Be Clear: A Unified Platform with Broad Compatibility

## Two Worlds Become One

**One box fits all: EVIS X1 combines advanced knowledge, experience and innovation into one endoscopic system.**

With newly established cross-compatibility between formerly two separate systems, our range of products can be combined to provide an extended portfolio of endoscopes for special procedures — expanding the possibilities for every endoscopist.

**EVIS LUCERA**  
**ELITE**

EVIS EXERA III

## EVIS X1 –





# Let's Be Clear: Elevating the Standard of Endoscopy

**EVIS X1 provides a combination of diagnostic and therapeutic innovation, alongside proven technologies to streamline and improve endoscopic procedures and scope handling.**



## **5 LED Spectrum Technology**

The EVIS X1 video system center contains five LEDs that are combined to produce different observation modes. It includes an amber LED tailored by Olympus, enabling the visualization capabilities of the RDI mode.



## **ErgoGrip — Improved Control Section**

The lightweight and more ergonomic ErgoGrip is designed to increase user comfort, operability and user experience especially during lengthy therapeutic interventions.



## **Touch Panel**

The EVIS X1 video system center can be operated from a touch panel on the front of the unit, allowing users to initiate all procedures and settings and to control the image data from one device.



## **Dual Focus — Two-Stage Optical Lens Technology**

Allows switching from normal focus to near focus mode with a single button, to conduct close examination of mucosal tissue and capillary networks.



## **Pre-Freeze Function — Updated Algorithm**

Analyses previous images to obtain a clear visual record of the procedure in the shortest possible time (this is an updated algorithm from EVIS EXERA III/EVIS LUCERA ELITE).



## **Water Jet**

Improves the accuracy of observations and efficiency of treatment by easily removing mucus and other residues in the investigated intestinal areas.



## **RIT (Responsive Insertion Technology)**

Combines PB (Passive Bending), HFT (High Force Transmission) and variable stiffness to improve ease of insertion and operator control.



## **Scope Guide**

Provides a real-time, three-dimensional view of the shape of the colonoscope during a procedure.



## **One-Touch Connector**

Allows connection to the processor in one step.

 **[www.olympus.eu/evisx1](http://www.olympus.eu/evisx1)**

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