

OLYMPUS

High-Definition Narrow Band Imaging

Sample Clinical Images: Colon and Esophagus



Table of Contents

- What is Narrow Band Imaging (NBI) 3
- Benefits of using NBI in the colon. 4
- NBI International Colorectal Endoscopic (NICE) Classification 6
- Colon Clinical Images 8
 - NICE Type 1 Polyp 8
 - NICE Type 2 Polyp 16
- Esophagus Clinical Images 26
 - Regular Vascular Patterns 26
 - Irregular Vascular Patterns 29
- Olympus NBI Compatible GI Endoscopes 30
 - Colonoscopes 30
 - Gastrosopes 31
 - Duodenoscope 32

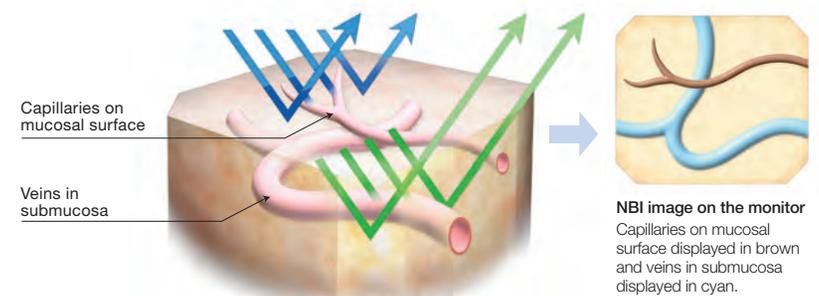
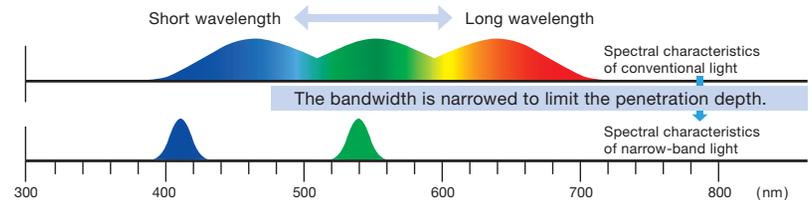
Narrow Band Imaging (NBI)

What is Narrow Band Imaging (NBI)?

NBI is an optical imaging technology that enhances the visibility of vessels and other structures on or near the mucosal surface. The gastrointestinal tract is mainly composed of blood vessels and mucosa. NBI, which is strongly absorbed by hemoglobin and penetrates only the surface of tissues, is ideal for enhancing the contrast between the two. NBI works by filtering the white light into specific light wavelengths that are absorbed by hemoglobin and penetrate only the surface of human tissue. As a result, under NBI, capillaries on the mucosal surface are displayed in brown and veins in the submucosa are displayed in cyan on the monitor.

Additionally, with 1080 effective scanning lines of picture information, HDTV delivers picture quality that is more than twice that of conventional TV. Increased pixel density produces a smooth, clear picture where remarkable detail and natural colors are unmarred by the pixelation seen in lower-resolution images.

Penetration Depth of Light According to Wavelength



Benefits of using NBI in the colon

When used with Olympus 190 Series Endoscopes



DISTINGUISHABLE
DIFFERENCES

Narrow Band Imaging assists an experienced endoscopist employing a validated polyp classification system such as the NBI International Colorectal Endoscopic (NICE) classification with **high confidence, in distinguishing diminutive adenomatous polyps from non-adenomatous polyps during colonoscopy.**

↑ HIGH
CONFIDENCE
PREDICTIONS

In a randomized clinical trial, endoscopists using near focus mode colonoscopes with NBI were more likely to make **high confidence predictions** of diminutive polyp histology than those using standard focus colonoscopies.

Experienced endoscopists using Narrow Band Imaging demonstrated **93% sensitivity** (89-96%, 95% Confidence Interval, 59-98% range) in predicting adenomatous histology of diminutive polyps during colonoscopy when made with high confidence.

93%
SENSITIVITY

Narrow Band Imaging-assisted endoscopists have achieved **>90% agreement with pathological analysis** in assigning post-polypectomy patient surveillance intervals following colonoscopy.

GREATER THAN
90%
AGREEMENT WITH
PATHOLOGICAL
ANALYSIS

85%
SPECIFICITY

Endoscopists using Narrow Band Imaging demonstrated **85% specificity** (74-92%, 95% Confidence Interval, 44-99% range) in predicting adenomatous histology of diminutive polyps during colonoscopy when made with high confidence.



Narrow Band Imaging has met the American Society for Gastrointestinal Endoscopy (ASGE) Preservation and Incorporation of Valuable Endoscopic Innovations (PIVI) thresholds for real-time assessment of diminutive colorectal polyps by expert endoscopists when optical biopsy assessment was made with high confidence.

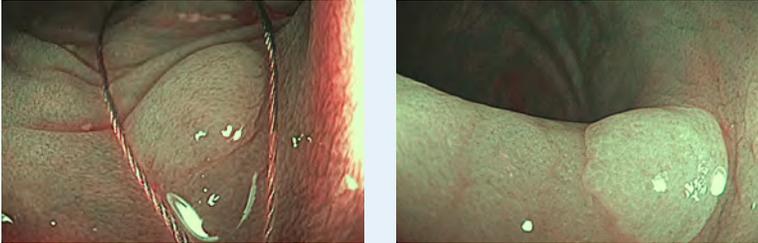
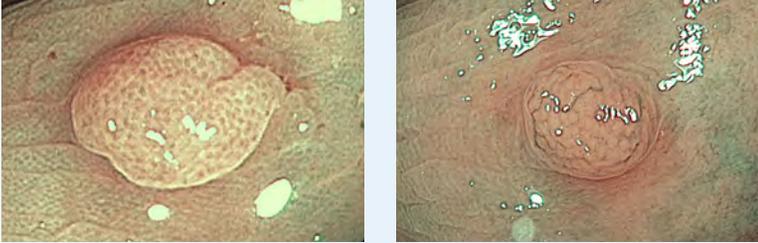
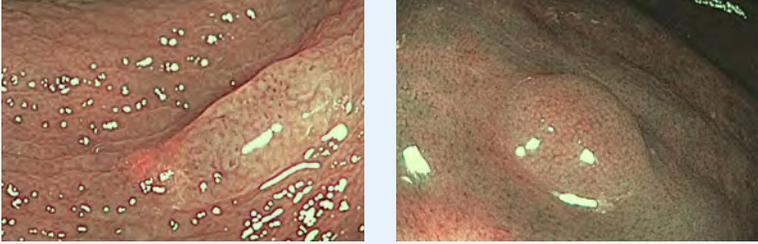
Experienced endoscopists using Narrow Band Imaging demonstrated **>90% Negative Predictive Value** in predicting adenomatous histology of diminutive polyps during colonoscopy when made with high confidence.

GREATER THAN
85%
NEGATIVE
PREDICTIVE
VALUE

Data held on file with Olympus

NBI International Colorectal Endoscopic (NICE)

Classification

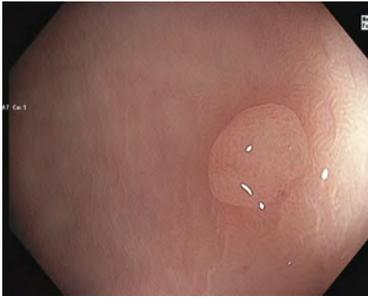
	Type 1	Type 2
Color	<p>Same color or lighter in color than background</p> 	<p>Browner relative to background</p> 
Vessels	<p>None, or isolated lacy vessels coursing across the lesion</p> 	<p>Brown vessels surrounding white structures</p> 
Surface Pattern	<p>Dark or white spots of uniform size, or homogenous absence of pattern</p> 	<p>Oval, tubular or branched white structures surrounded by brown vessels</p> 
Most Likely Pathology	<p>Hyperplastic or Sessile Serrated Lesion (SSL)*</p>	<p>Adenoma</p>

Notes:

- NBI is not intended to replace pathology as means of diagnosis.
- All Images were taken using NBI.
- Chart has been created for illustrative purposes only and all assessments were made by experts.

Colon

NICE Type 1 Polyps



White Light



NBI



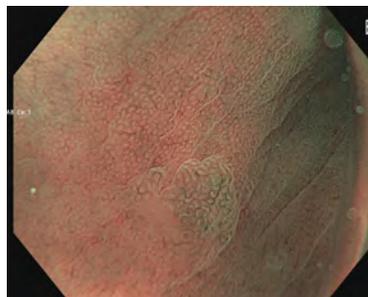
White Light



NBI

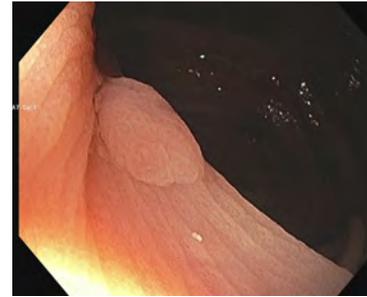


White Light

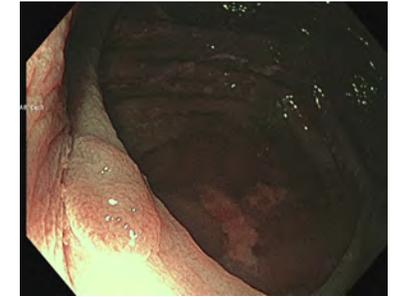


NBI

NICE Type 1 Polyps



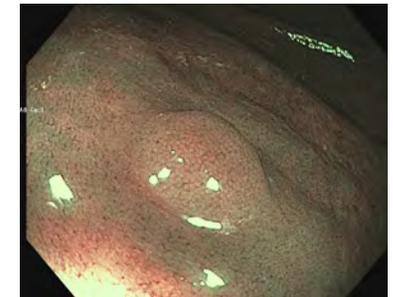
White Light



NBI



White Light



NBI



White Light



NBI

OLYMPUS **CONTINUUM**

If you wish to learn more Olympus offers Virtual education for the in use NBI and the NICE classification on **Olympus Continuum**.

OLYMPUS **CONTINUUM**

If you wish to learn more Olympus offers Virtual education for the in use NBI and the NICE classification on **Olympus Continuum**.

NICE Type 1 Polyps



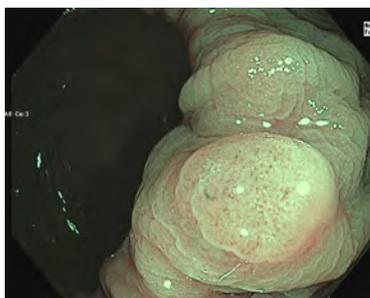
White Light



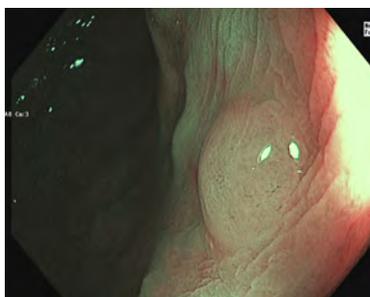
NBI



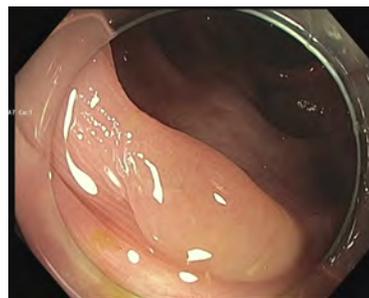
White Light



NBI



NICE Type 1 Polyps



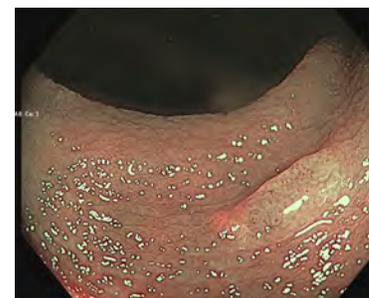
White Light



NBI



White Light



NBI



OLYMPUS **CONTINUUM**

If you wish to learn more Olympus offers Virtual education for the in use NBI and the NICE classification on **Olympus Continuum**.

OLYMPUS **CONTINUUM**

If you wish to learn more Olympus offers Virtual education for the in use NBI and the NICE classification on **Olympus Continuum**.

NICE Type 1 Polyps



White Light



NBI



White Light



NBI



NICE Type 1 Polyps



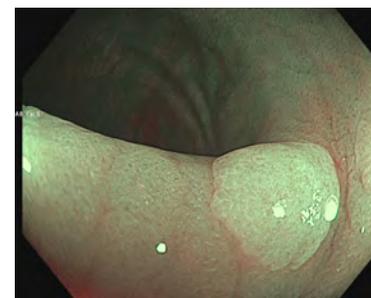
White Light



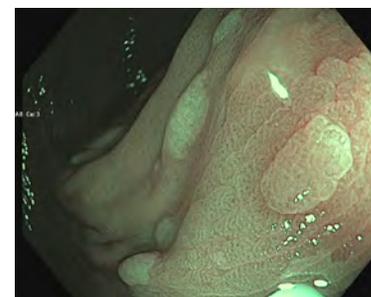
NBI



White Light



NBI



OLYMPUS CONTINUUM

If you wish to learn more Olympus offers Virtual education for the in use NBI and the NICE classification on **Olympus Continuum**.

OLYMPUS CONTINUUM

If you wish to learn more Olympus offers Virtual education for the in use NBI and the NICE classification on **Olympus Continuum**.

NICE Type 1 Polyps



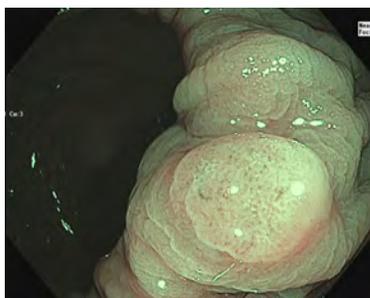
White Light



NBI



White Light



NBI

NICE Type 1 Polyps



White Light



NBI



White Light



NBI

OLYMPUS **CONTINUUM**

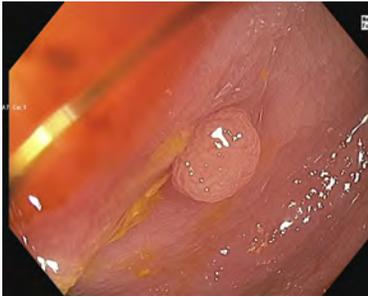
If you wish to learn more Olympus offers Virtual education for the in use NBI and the NICE classification on **Olympus Continuum**.

OLYMPUS **CONTINUUM**

If you wish to learn more Olympus offers Virtual education for the in use NBI and the NICE classification on **Olympus Continuum**.

Colon

NICE Type 2 Polyps



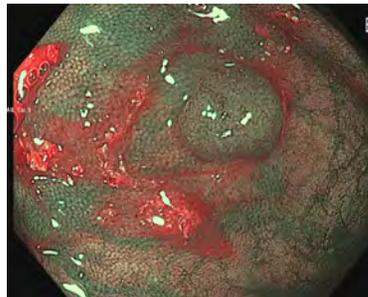
White Light



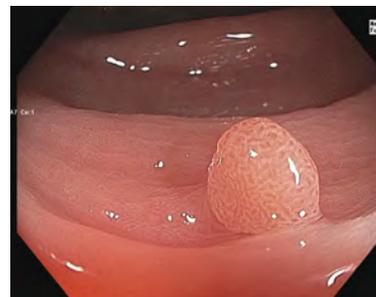
NBI



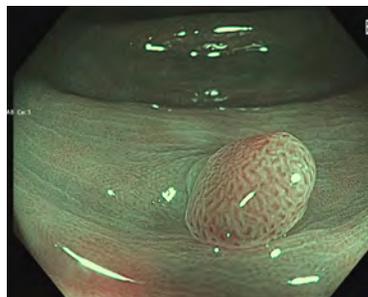
White Light



NBI

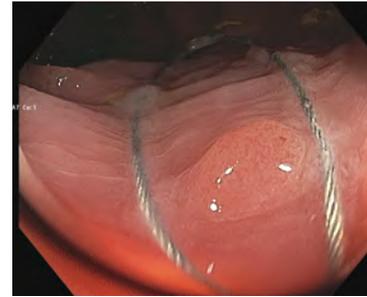


White Light

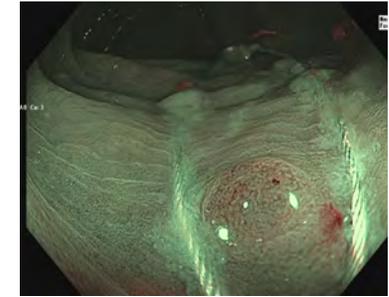


NBI

NICE Type 2 Polyps



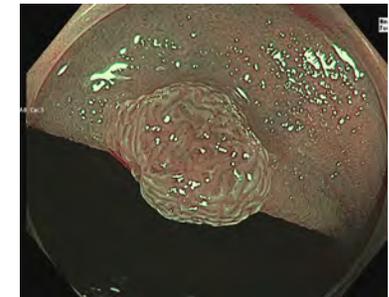
White Light



NBI



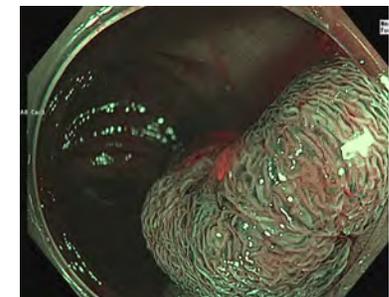
White Light



NBI



White Light



NBI

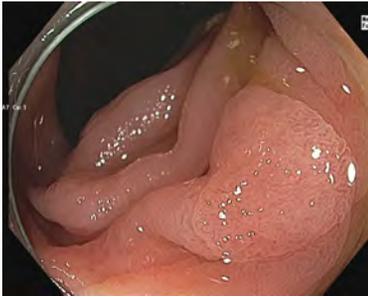
OLYMPUS CONTINUUM

If you wish to learn more Olympus offers Virtual education for the in use NBI and the NICE classification on **Olympus Continuum**.

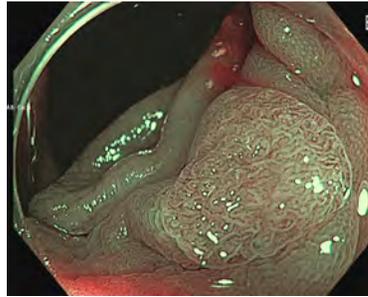
OLYMPUS CONTINUUM

If you wish to learn more Olympus offers Virtual education for the in use NBI and the NICE classification on **Olympus Continuum**.

NICE Type 2 Polyps



White Light



NBI

NICE Type 2 Polyps



White Light



NBI



White Light



NBI



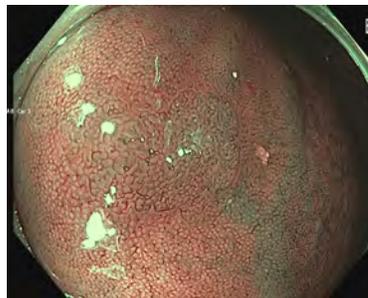
White Light



NBI



White Light



NBI



White Light



NBI

OLYMPUS CONTINUUM

If you wish to learn more Olympus offers Virtual education for the in use NBI and the NICE classification on **Olympus Continuum**.

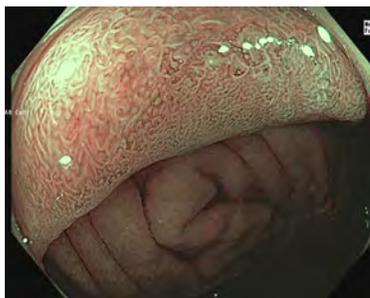
OLYMPUS CONTINUUM

If you wish to learn more Olympus offers Virtual education for the in use NBI and the NICE classification on **Olympus Continuum**.

NICE Type 2 Polyps



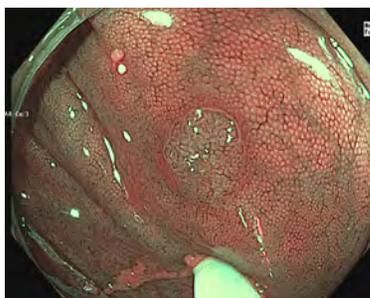
White Light



NBI



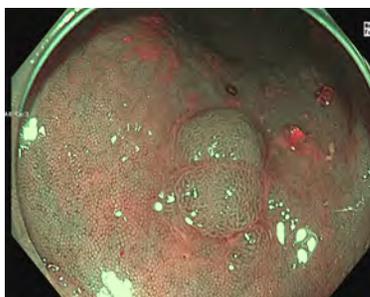
White Light



NBI



White Light



NBI

NICE Type 2 Polyps



White Light



NBI



White Light



NBI



White Light



NBI

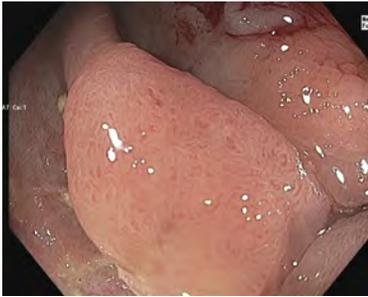
OLYMPUS CONTINUUM

If you wish to learn more Olympus offers Virtual education for the in use NBI and the NICE classification on **Olympus Continuum**.

OLYMPUS CONTINUUM

If you wish to learn more Olympus offers Virtual education for the in use NBI and the NICE classification on **Olympus Continuum**.

NICE Type 2 Polyps



White Light



NBI

NICE Type 2 Polyps



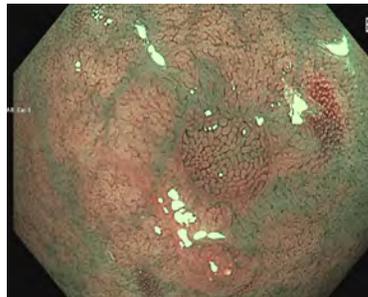
White Light



NBI



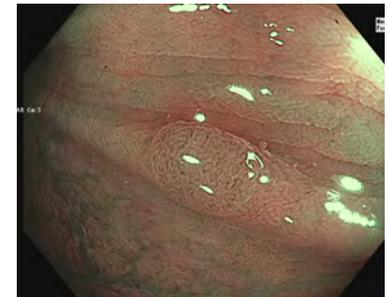
White Light



NBI



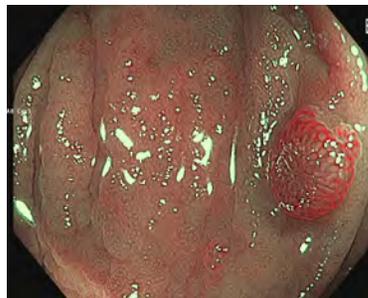
White Light



NBI



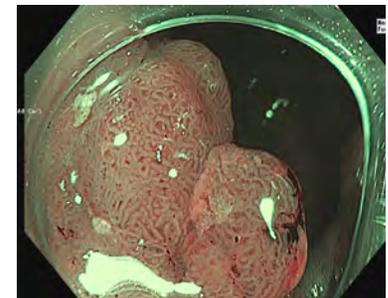
White Light



NBI



White Light



NBI

OLYMPUS CONTINUUM

If you wish to learn more Olympus offers Virtual education for the in use NBI and the NICE classification on **Olympus Continuum**.

OLYMPUS CONTINUUM

If you wish to learn more Olympus offers Virtual education for the in use NBI and the NICE classification on **Olympus Continuum**.

NICE Type 2 Polyps



White Light

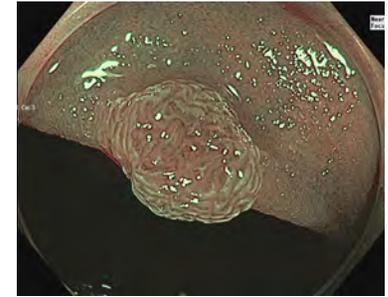


NBI

NICE Type 2 Polyps



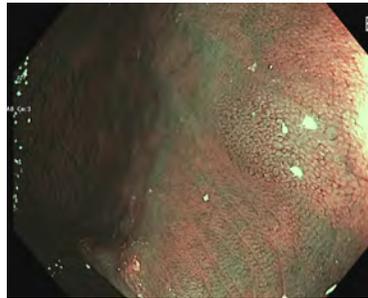
White Light



NBI



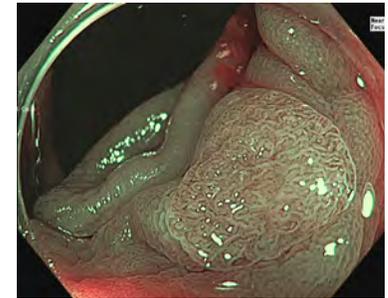
White Light



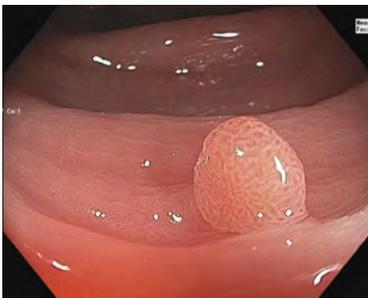
NBI



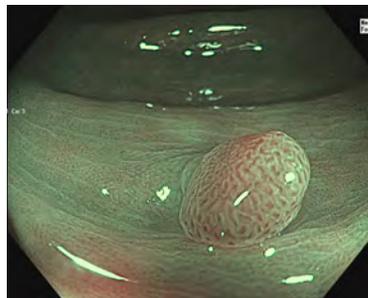
White Light



NBI



White Light



NBI



White Light



NBI

OLYMPUS CONTINUUM

If you wish to learn more Olympus offers Virtual education for the in use NBI and the NICE classification on **Olympus Continuum**.

OLYMPUS CONTINUUM

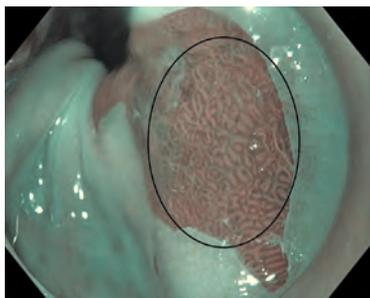
If you wish to learn more Olympus offers Virtual education for the in use NBI and the NICE classification on **Olympus Continuum**.

Esophagus

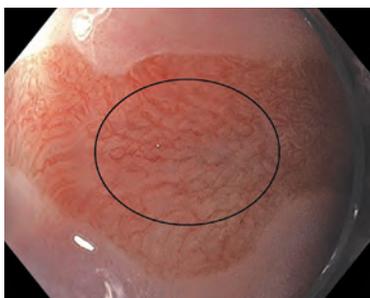
Regular Vascular Patterns



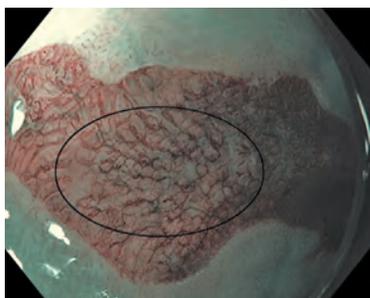
White Light



NBI

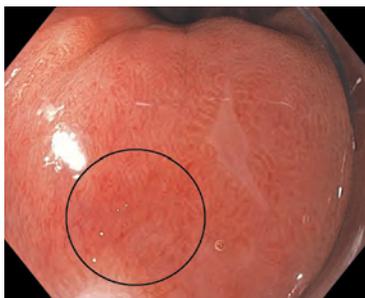


White Light

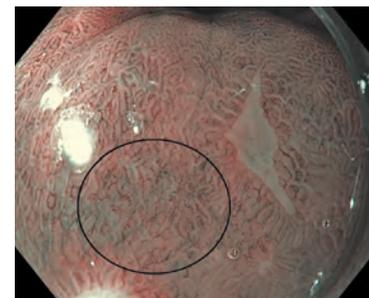


NBI

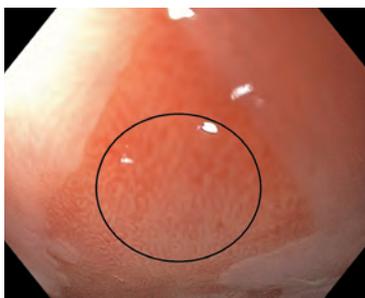
Regular Vascular Patterns



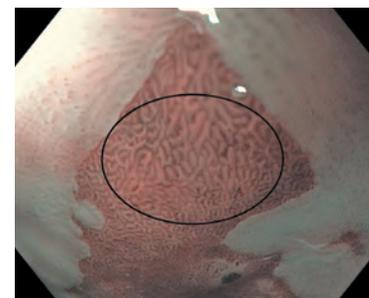
White Light



NBI



White Light



NBI

OLYMPUS CONTINUUM

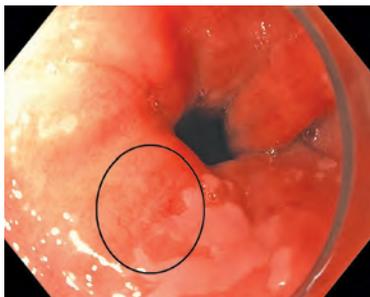
If you wish to learn more Olympus offers Virtual education for the in use NBI and the NICE classification on **Olympus Continuum**.

OLYMPUS CONTINUUM

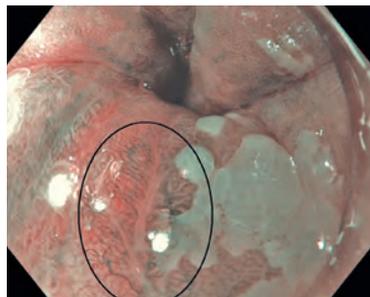
If you wish to learn more Olympus offers Virtual education for the in use NBI and the NICE classification on **Olympus Continuum**.

Esophagus

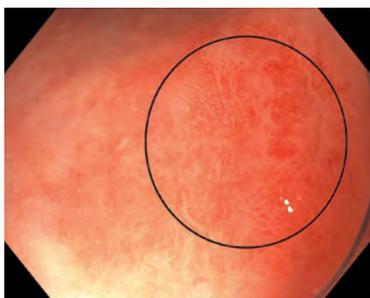
Regular Vascular Patterns



White Light



NBI

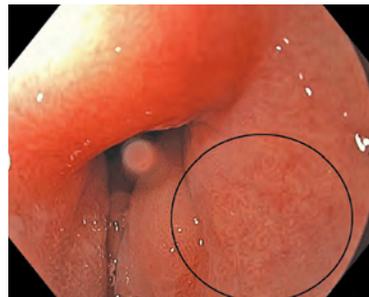


White Light

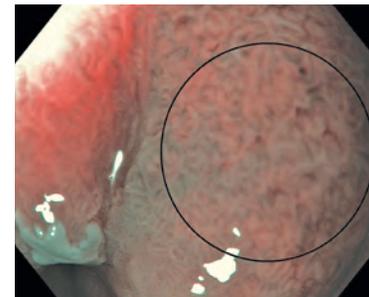


NBI

Irregular Vascular Patterns



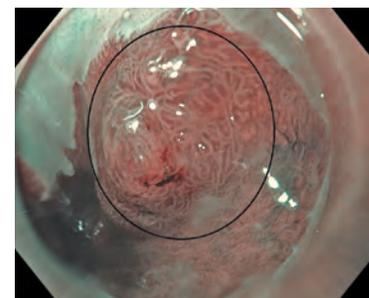
White Light



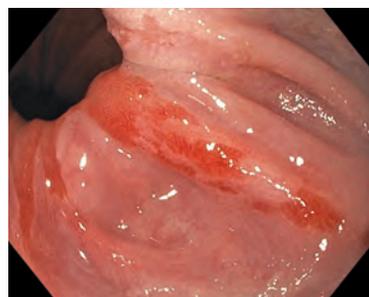
NBI



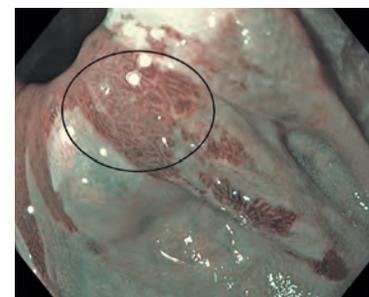
White Light



NBI



White Light



NBI

OLYMPUS CONTINUUM

If you wish to learn more Olympus offers Virtual education for the in use NBI and the NICE classification on **Olympus Continuum**.

OLYMPUS CONTINUUM

If you wish to learn more Olympus offers Virtual education for the in use NBI and the NICE classification on **Olympus Continuum**.

NBI Compatible GI Endoscopes Currently Offered

Colonoscopes

- **CF-HQ190L/I – Dual Focus Endoscope**

The EVIS EXERA III CF-HQ190L/I colonovideoscope utilizes an advanced Dual Focus optical system and NBI to produce clear, bright images for observation. Unique Responsive Insertion Technology (RIT) ensures ease of insertion and excellent scope handling during a complete colonoscopy.

- **PCF-HQ190L/I – Dual Focus Endoscope**

The EVIS EXERA III PCF-H190L/I colonovideoscope provides the same 170° field of view as the larger CF scope. This wide view, combined with a Dual Focus optical system and NBI produces clear, bright images for observation, all in a slim design.

- **PCF-H190TL/I**

The EVIS EXERA III PCF-H190L/I colonovideoscope provides the same 170° field of view as the larger CF scope. This wide view, combined with HDTV and NBI, enables closer, more detailed examination during colonoscopy, all in a slim design.

- **PCF-PH190L/I**

The EVIS EXERA III PCF-PH190L/I colonovideoscope delivers HDTV image quality and Narrow Band Imaging (NBI) for enhanced visualization in an ultra-slim scope. An outer diameter of only 9.7 mm along with Responsive Insertion Technology (RIT) helps ease insertion.

NBI Compatible GI Endoscopes Currently Offered

Gastrosopes

- **GIF-HQ190**

The EVIS EXERA III GIF-HQ190 gastroscope includes an array of advanced features to support both upper and intra-operative endoscopy. NBI delivers significantly increased brightness, providing twice the viewable distance. Dual Focus functionality delivers the optimal depth of field at the touch of a button.

- **GIF-H190**

The EVIS EXERA III GIF-H190 gastroscope provides great image quality and maneuverability in a slim design. HDTV clarity along with NBI deliver enhanced visualization and a water jet channel helps enable clearer observation during procedures.

- **GIF-XP190N**

The EVIS EXERA III GIF-XP190N gastroscope delivers excellent image quality and illumination, enhanced NBI capabilities, and a wide 140° field of view. Its 5.4 mm outer diameter makes the GIF-XP190N a powerful tool for diagnostic endoscopy whenever an ultra-slim scope is needed.

- **GIF-1TH190**

The EVIS EXERA III GIF-1TH190 gastroscope is designed for image guided therapy. The scope's HDTV image quality is a first for a single-channel therapeutic gastroscope, while the NBI capability may aid in the interpretation of mucosal morphology, vascular patterns, and blood vessel appearance in patients with Barrett's esophagus. The slimmer 10.0 mm distal end is smaller than the predecessor.

Olympus Endoscopes

NBI Compatible GI Endoscopes Currently Offered

Duodenoscope

- **TJF-Q190V**

The TJF-Q190V utilizes a square image shape and 15° backward viewing for expanded field of view and improving cannulation efficiency. NBI is significantly brighter and provides contrast, which may aid in the interpretation of mucosal and vascular patterns of the papilla. Reliable locking guidewire facilitates and secure short guidewire locking with dual system at distal end. High Force Transmission enables a 1:1 transfer of pushing and rotating forces to the distal end of the duodenoscope, improving ergonomics and scope responsiveness.