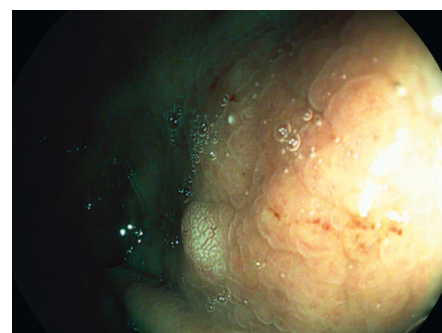
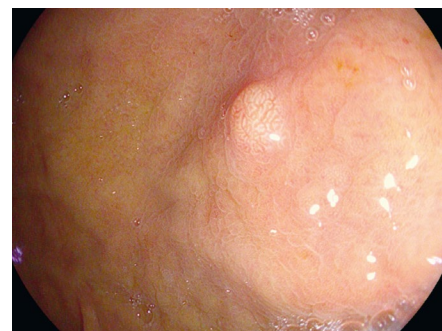


OPTIVISTA plus⁺

*A unique combination of optical and digital enhancements,
for improved in vivo diagnosis*

PENTAX
MEDICAL



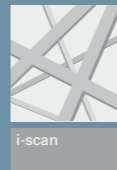
Courtesy of Dr. Federico Buffoli,
Cremona Hospital, Italy



A leap forward for *in vivo* histology with i-scan and i-scan OE, a unique combination of digital and optical enhancements

1

Enhanced detection



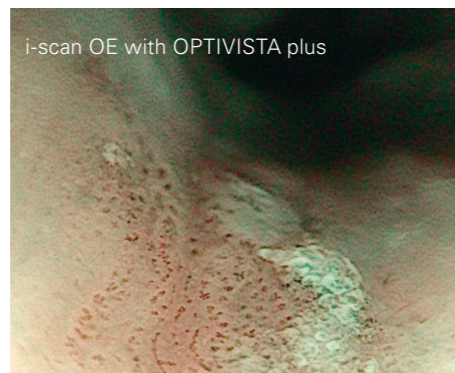
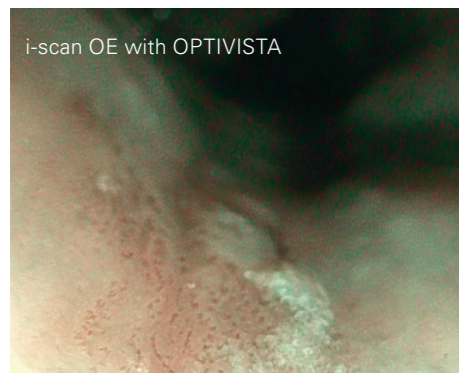
Sharp High-Definition image, combined with **i-scan imaging** and **excellent illumination** for a more detailed view of the mucosa and enhanced detection.

Made for you: the OPTIVISTA plus⁺

Further improved *in vivo* diagnosis for therapeutic guidance

PENTAX Medical is proud to introduce the new OPTIVISTA plus, the next generation processor that enhances the OPTIVISTA's already superb image quality and other capabilities.

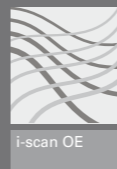
- OPTIVISTA plus supports the best clinical outcome by providing sharper, brighter image quality thanks to i-scan and i-scan OE.
- It supports diagnosis and case documentation, and guides treatment and therapeutic decisions through easier image capture and sharper than ever frozen images.
- It is an effective cross-segment investment due to its proven clinical characterization capabilities being expanded into pulmonology and ENT.



Courtesy of Dr. Fujishiro, The University of Tokyo Hospital, Japan

2

Improved *in vivo* diagnosis



A unique combination of **digital enhancement** (i-scan) and **optical enhancement** (i-scan OE) provides extra information for a more accurate *in vivo* diagnosis through improved vessel and mucosal pattern characterization.

3

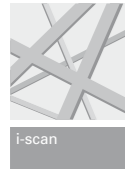
Powerful educational platform



The **TwinMode** is perfectly designed to demonstrate the appropriate interpretation of image enhancement endoscopy by providing simultaneous comparison of side by side endoscopic images.



The **integrated audio and HD+ video recorder** enables to collect and share the latest scientific findings from the endoscopy room with fellows and peers.

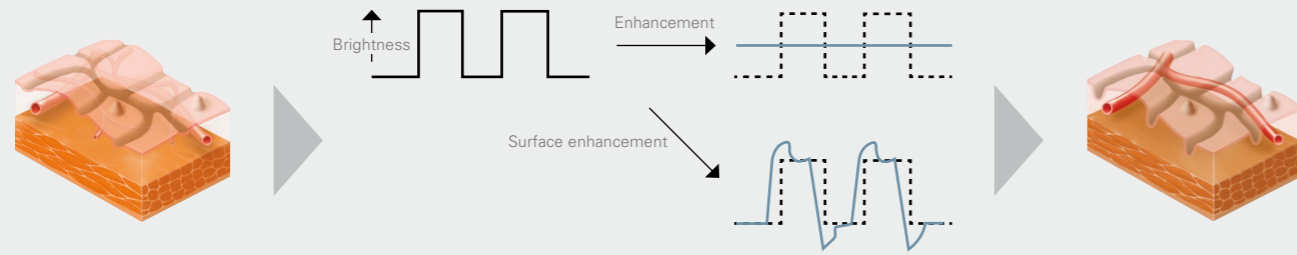


i-scan for enhanced detection and characterization

i-scan technology is a digital, image enhanced endoscopy (IEE) technology by PENTAX Medical. As a virtual chromo-endoscopy tool, i-scan provides an enhanced view of the mucosal structures and vascular patterns, supporting early detection, demarcation and characterization.

i-scan 1 (SE) for detection

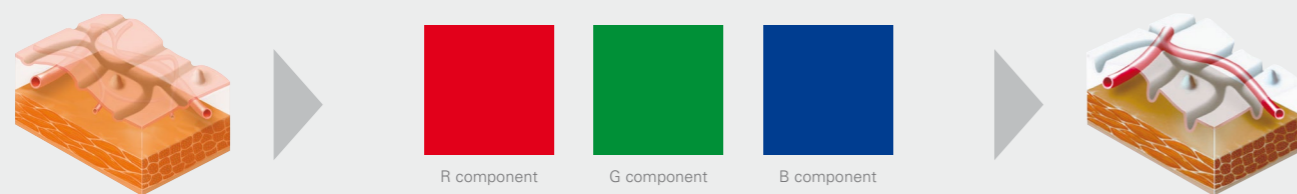
By enhancing the mucosal structure in a natural color tone, SE (Surface Enhancement) supports detection, especially of flat lesions by highlighting abnormalities.



With SE, the difference in luminance intensity between the pixels concerned and the surrounding pixels is analyzed and the edge components are enhanced. SE adjustment of the noise erasure function allows more evident enhancement of the edges, which corresponds to minor changes in structure.¹

i-scan 2 (TE) for pattern characterization

TE (Tone Enhancement) enhances the changes of vascular and mucosal structure with a color tone change, supporting pattern characterization.



The RGB components of an ordinary endoscope image are disintegrated into each component (R, G and B), and each component thus isolated is converted independently along the tone curve, followed by a reconstruction of the three components in one single image.¹

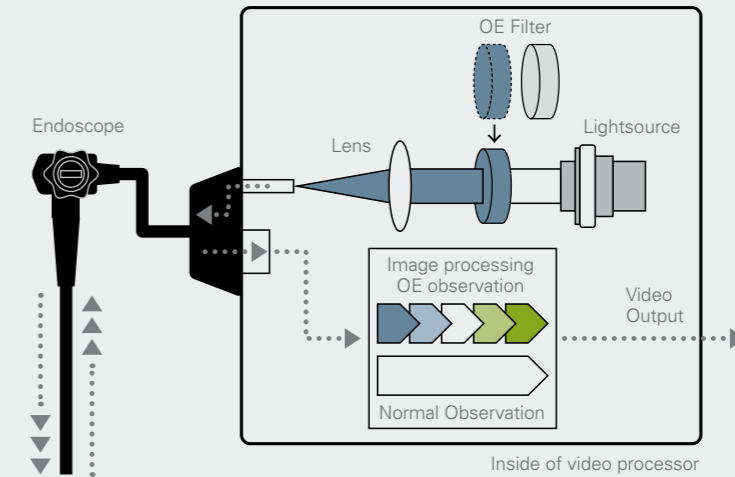
¹Kodashima et al.: Novel image-enhanced endoscopy with i-scan technology. World J Gastroenterol 2010



i-scan OE for vessel characterization

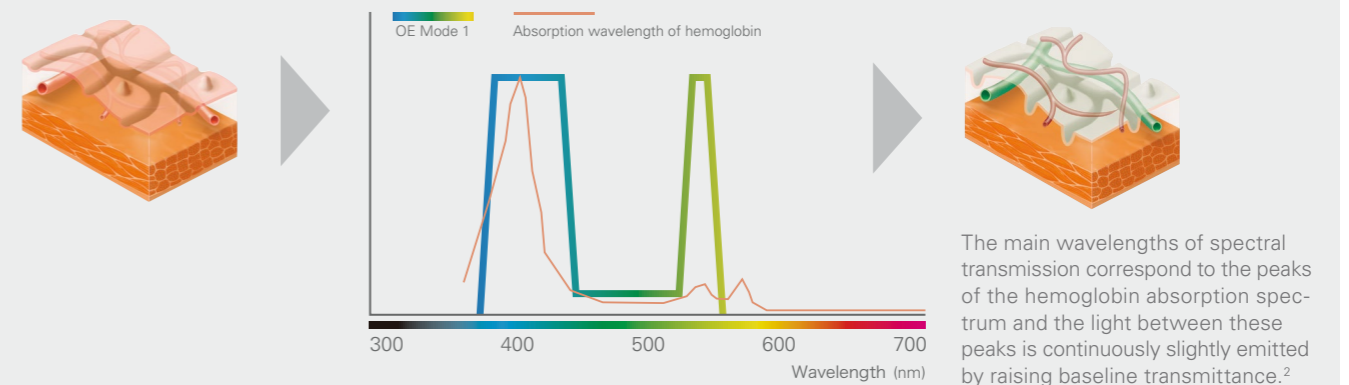
PENTAX Medical has recently developed the i-scan OE (Optical Enhancement), an optical filter that produces bandwidth-limiting light. When combined with image enhancement processing technology it clearly displays the surface structures of blood vessels, glandular ducts and mucosal membranes in higher contrasts than white light.

i-scan OE technology



i-scan 3 (OE) for vessel characterization

i-scan OE displays the surface structures of the blood vessels, glandular ducts and mucosal membranes in a color tone **and supporting vessel's characterization.**

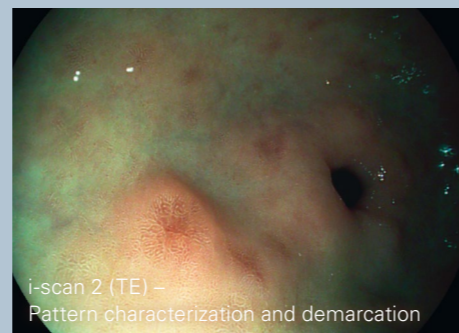


The main wavelengths of spectral transmission correspond to the peaks of the hemoglobin absorption spectrum and the light between these peaks is continuously slightly emitted by raising baseline transmittance.²

²K Mönkemüller et al.: Present and future perspectives of virtual chromoendoscopy with i-scan and optical enhancement technology. Digestive Endoscopy 2013; 26.



i-scan 1 (SE) - Detection



i-scan 2 (TE) - Pattern characterization and demarcation



i-scan 3 (OE) - Vessel characterization

Improved *in vivo* diagnosis
A unique combination of digital and optical enhancements

OPTIVISTA, a powerful educational platform

The OPTIVISTA EPK-i7010 video processor is a state-of-the-art educational tool with customizable functions operated easily by the touch screen, or via the endoscope buttons.

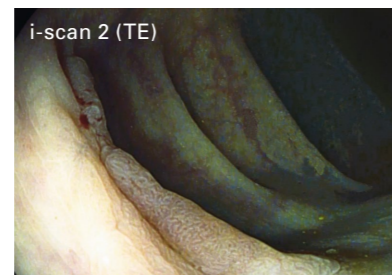


Teach and assess with the unique TwinMode

- TwinMode is useful in teaching the appropriate interpretation of image enhanced endoscopy, providing simultaneous comparison of side by side endoscopic images.
- Among experts, TwinMode is appreciated as an educational tool for non-experts
- in “building the bridge” between HD+ white light images and the different i-scan modes and findings.
- The simultaneous comparison of enhanced clinical images is useful in teaching the appropriate characterization of lesions.



Colon adenoma



Collect and share with the unique integrated video and audio recording

- The video recording function enables capture of HD+ video files through a USB storage device, for fast and easy sharing of findings with peers. Audio recording for video is captured through external microphone.
- Contributes to cost savings in the endo-scopy room by avoiding unnecessary external HD recording devices.
- For best image collection, the OPTIVISTA also incorporates freeze scan technology which automatically selects the sharpest picture.



Exchange and expand your knowledge of i-scan by visiting the i-scan website

www.i-scanimaging.com



OPTIVISTA plus A multifunctional platform across segments



1. VNL-J10

The new VNL-J10 series will provide support to both diagnostic as well as therapeutic procedures. The VNL product range can be used in a wide variety of applications in ENT such as FEES examinations and functional video stroboscopy examinations.

2. J10 - Pulmonology

The Video Bronchoscope EB-J10 product range offers sharp and clear High-Definition image quality, with unmatched ergonomic design and flexibility to ease operation in daily use.

3. GI i10

Slim caliber, bigger working channel and Close Focus, all combined in an i10 HD+ endoscope, the high performance endoscopes series, for the day-to-day advanced endoscopy practice.

4. 90i

With the 90i endoscope series, you can experience HD+ images combined with exceptional illumination, during routine examinations.

EC	REP
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