



PICCOLO

PICCOLO brings together European scientists and clinicians to create an endoscope probe to better diagnose bowel polyps and early colon cancer.

Advanced technology

The proposed compact, hybrid and multimodal photonics endoscope is based on Optical Coherence Tomography (OCT) and Multi-Photon Tomography (MPT) combined with novel red-flag fluorescence technology and automated image analysis for in-vivo diagnosis and clinical decision support.

This innovative endoscope will provide high-resolution information, giving details of the structural changes occurring at the cellular level.

Improved diagnosis

By combining the outstanding structural information from OCT with the precise structural and functional information from MPT, the new endoscope will provide gastroenterologists with immediate and detailed in-situ identification of colorectal neoplastic lesions and facilitate accurate and reliable in-vivo diagnostics, with additional grading capabilities for colon cancer as well as in-situ lesion infiltration and margin assessment.

This will significantly impact clinical practice allowing in vivo optical biopsy assessment via the automatic analysis of images.

Patient and surgeon benefits

Early, accurate diagnosis and precise intervention can increase cure rates by up to 90%.

The new endoscope aims to provide:

- 3D images to diagnose non-cancerous polyps, pre-cancerous polyps and early colon cancers
- non-destructive real-time imaging under tissue surface to identify internal polyp structure
- valuable information as to the polyp type

This will lead to:

- fewer invasive surgery procedures
- less discomfort for patients
- less time necessary for accurate diagnosis
- reduced costs through compact instrumentation

Outlook

PICCOLO will provide a new approach in colon cancer detection, and in time, the new image based diagnosis methods could be applied to diseases in other organs of the body.

The team aim to have the first prototype ready in 2018 with clinical trials to begin around 2020.

Website: www.piccolo-project.eu

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PICCOLO consortium

The PICCOLO consortium comprises the whole value chain including pre-clinical and clinical partners, technology providers, photonics SMEs and endoscopy market leader company. The project will permit these companies to enhance their competitiveness and leadership in the diagnostics sector as well as exploiting new market opportunities.

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