



## Redefining Endoscopes as Surgical Robots A New Clinical Paradigm

Dr Kevin Koh  
Founder & CEO

## Let's talk about colorectal cancer.

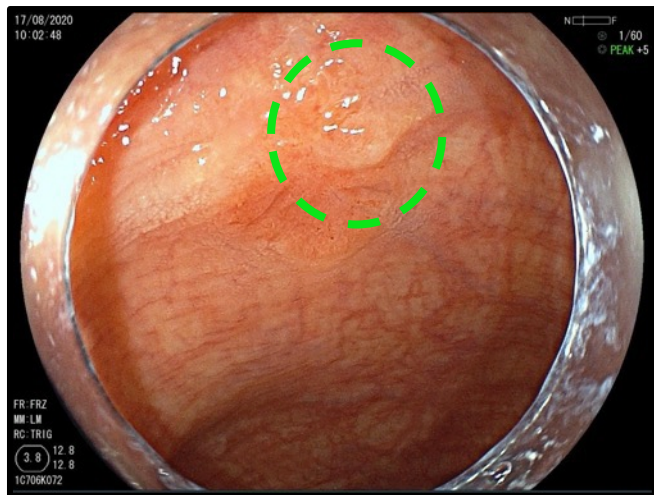
The world's 3<sup>rd</sup> most common cancer:

2020: ~1.9M new cases, ~930K deaths

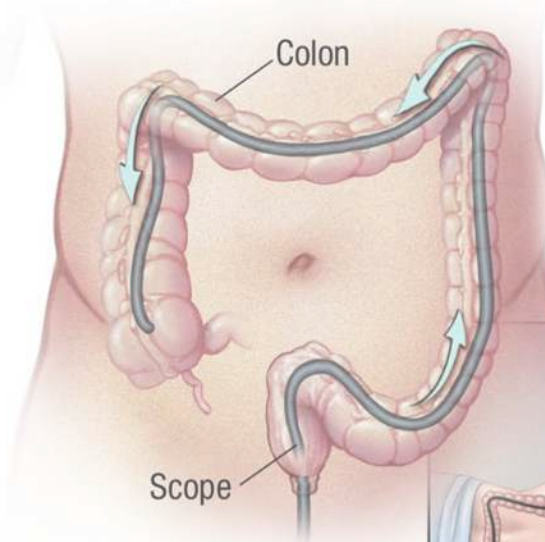
2040: ~3.2M new cases, ~1.6M deaths



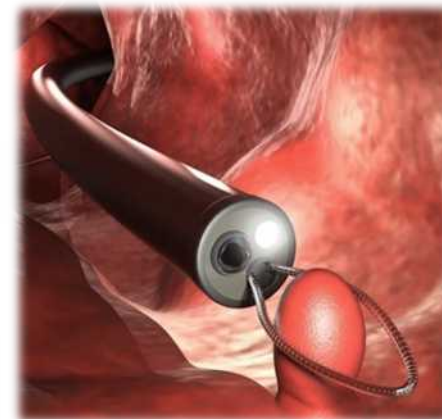
## Regular colonoscopy (EMR) works well for smaller colorectal polyps.



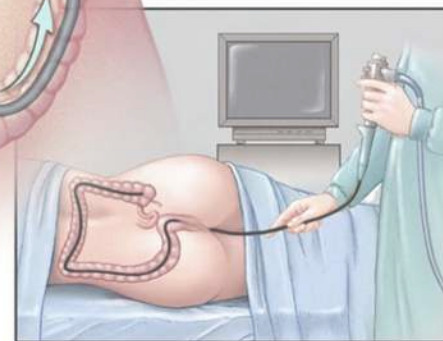
Small colorectal polyp (~5 - 6mm)



Colonoscopy



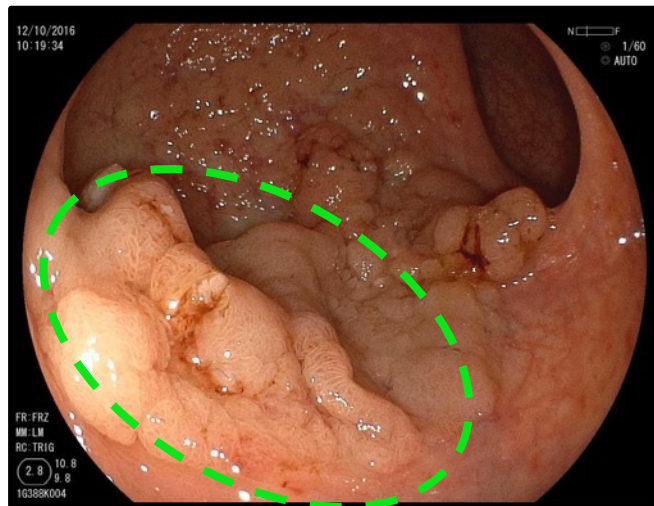
EMR\*



© Mayo Clinic

\*EMR: Endoscopic Mucosal Resection

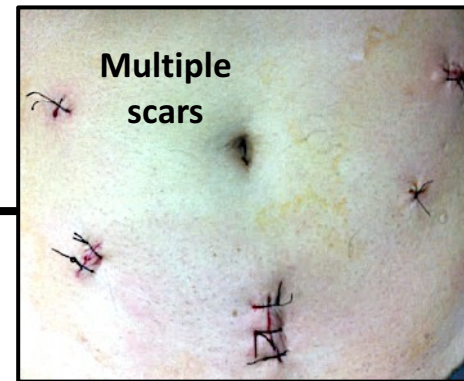
For larger colorectal cancers, more invasive techniques like laparoscopy or open surgery are required.



Larger colorectal cancers (> 20mm)



Laparoscopy



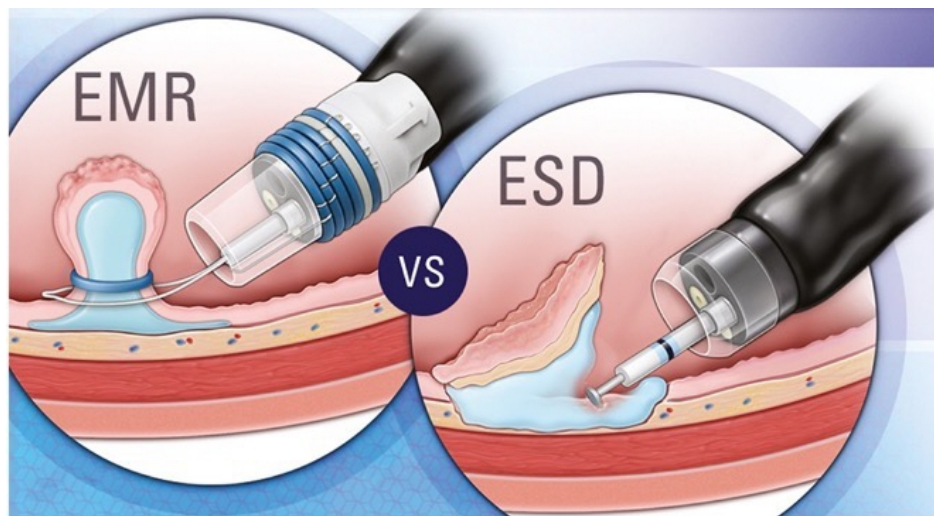
Open surgery





## Can larger colorectal cancers be removed by regular colonoscopy?

**Yes** – by an advanced procedure known as **Endoscopic Submucosal Dissection (ESD)**.



**However, there are huge barriers to adoption**

- Expert skills needed
- Long training times
- Steep learning curves

**How do we overcome this major skills gap?**

EMR: Endoscopic Mucosal Resection

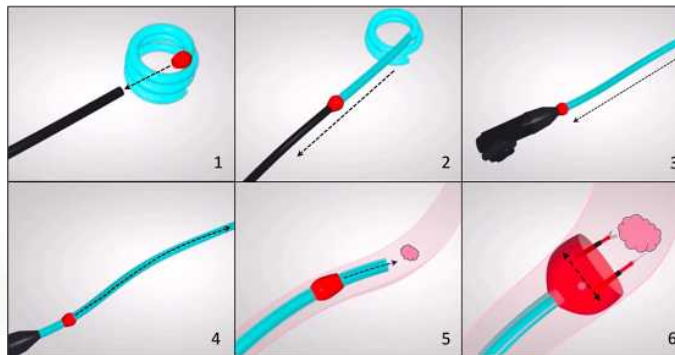
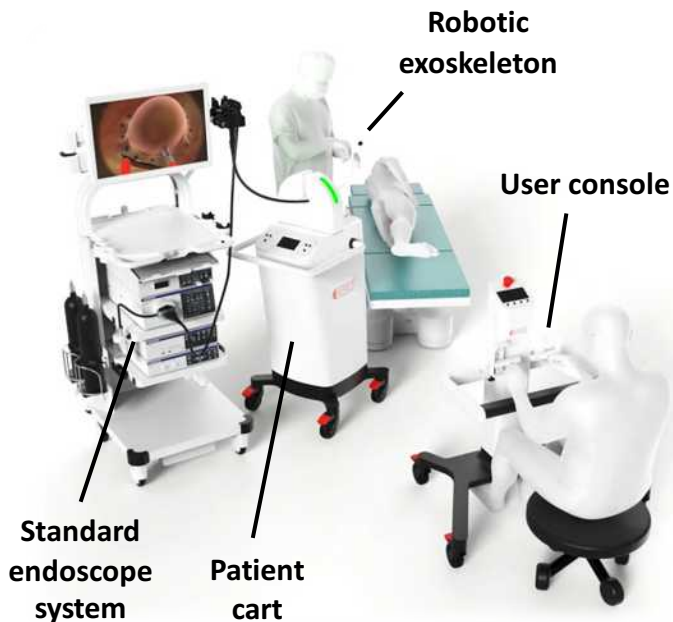
ESD: Endoscopic Submucosal Dissection

**With surgical robotics – by boosting skills, precision and dexterity of the user.**

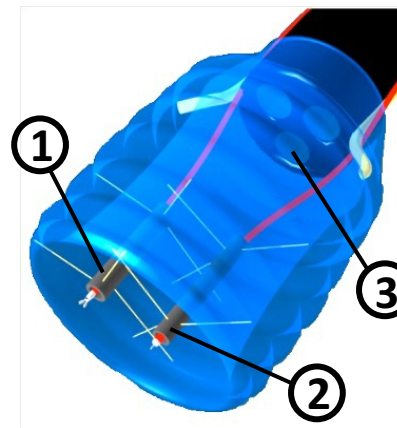


- Not a re-invention of the endoscope
- A cost-effective robotic add-on to any endoscope on the market
- Uses existing endoscopic tools with added robotic precision

**With ERES™, any endoscope is transformed into a high precision surgical robot.**

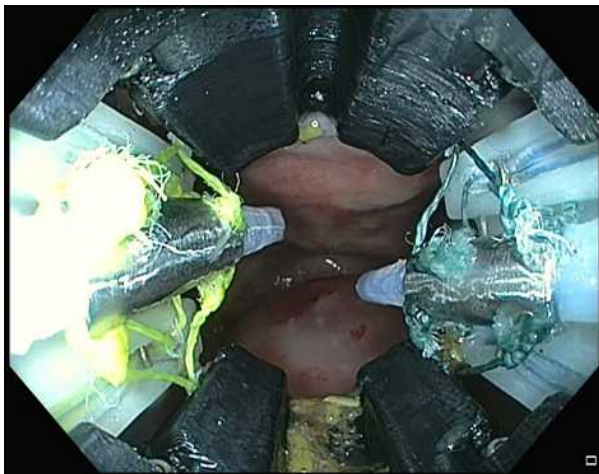


Concept video of robotic exoskeleton being deployed

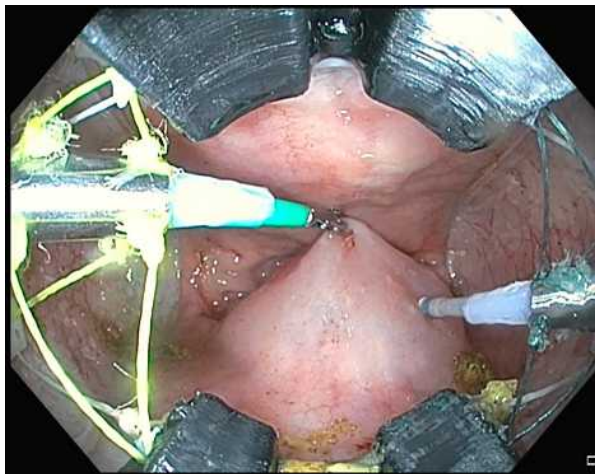


ERES™ brings a total of 3 arms to any advanced procedure

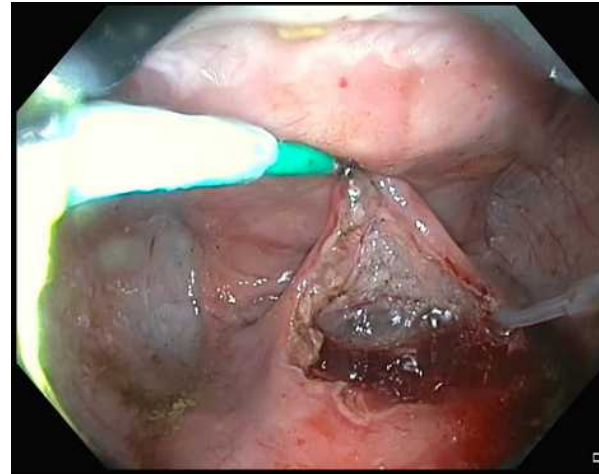
**Multiple animal trials successfully performed, showing effectiveness at removing larger colorectal tissues via robotic ESD (1).**



Opening of ERES™ exoskeleton and insertion of endoscopic tools



Start of robotic ESD\* showing grasper and electrocautery knife in use



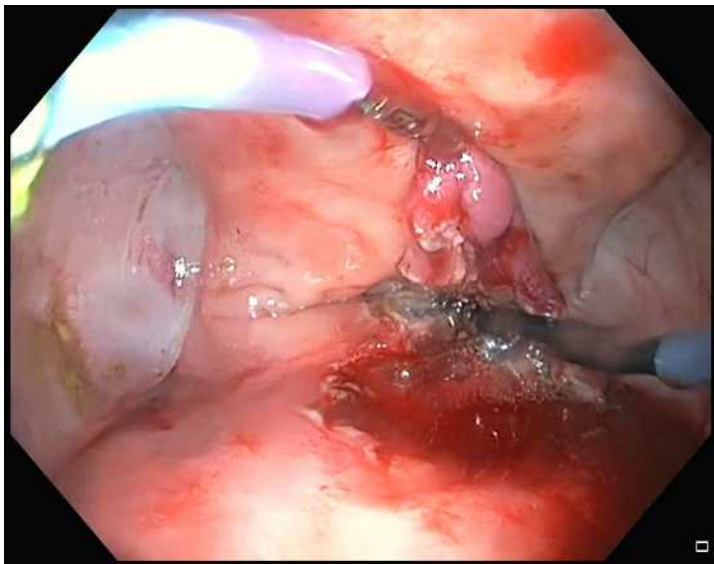
Robotic ESD\* in progress with large lateral incision performed

\*ESD: Endoscopic Submucosal Dissection

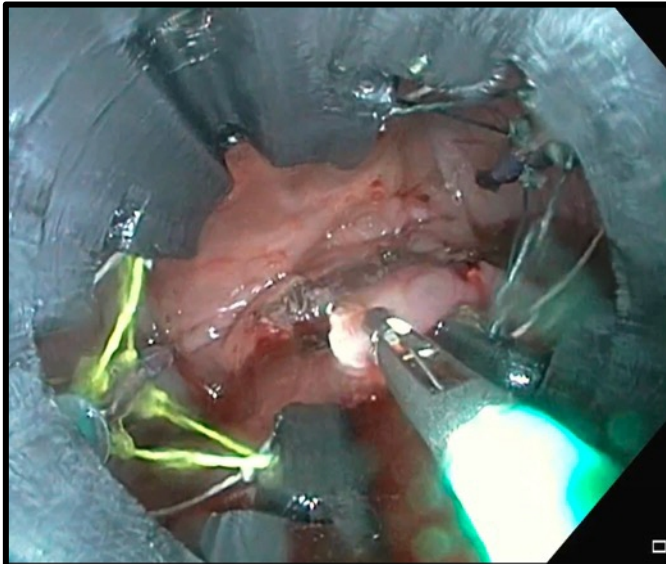
**ERES™ 2023 prototype**



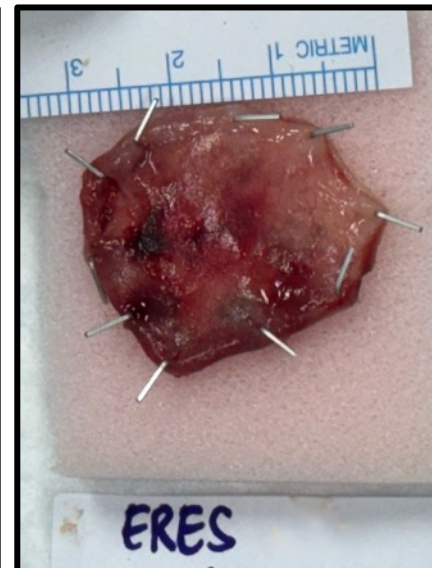
**Multiple animal trials successfully performed, showing effectiveness at removing larger colorectal tissues via robotic ESD (2).**



Robotic ESD\* successfully completed with colon tissue completely removed



Excised rectal tissue retrieved through endoscope's native channel



~30 mm sized rectal tissue excised via ESD

\*ESD: Endoscopic Submucosal Dissection

**ERES™ 2023 prototype**

**Multiple animal trials successfully performed, showing effectiveness at removing larger colorectal tissues via robotic ESD (3).**



**To be the strategic enabler of advanced endoscopic surgeries in our target markets.**



**USA, China, Japan, Korea, Singapore**



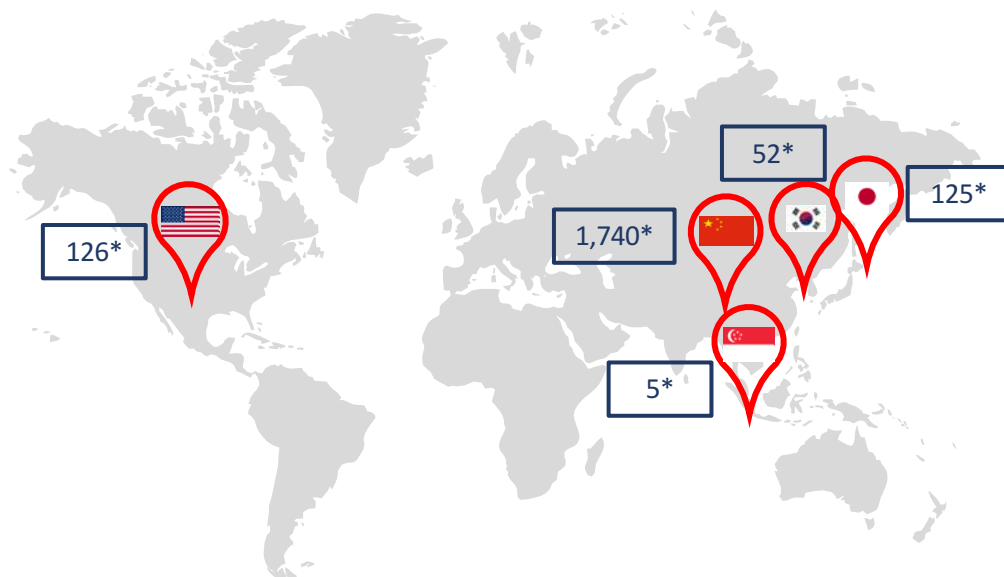
Total Addressable Market by 2030:  
**USD 13.1B**



Regulatory clearances expected in 2028  
(FDA 510k, HSA & NMPA)



**Reimbursement for ESD** is available in  
all 5 target markets



\*No. of annual ESD procedures forecasted in 2030 (in '000)

# Experienced team with proven track records to bring ERES™ to market.

## Management Team



**Kevin Koh, PhD**  
Founder & CEO

VIVO Surgical Beyond Surgery  
Imperial College London



**Richard Lieu, MSc**  
Head of Technology

VIVO Surgical Beyond Surgery  
Singapore General Hospital SingHealth



**Justin Lau, MSc**  
Senior Staff Engineer

VIVO Surgical Beyond Surgery  
ETH zürich



**David Noonan, PhD**  
Technical Advisor

PHILIPS  
AURIS™  
MOON SURGICAL



**Yasushi Takigawa, MBA**  
Commercial Advisor

Boston Scientific  
Advancing science for life™  
AIM  
AI Medical Service



**Alok Mishra, MBA**  
Commercial Advisor

Johnson & Johnson  
MEDICAL DEVICES COMPANIES  
DukeNUS  
Medical School

## Clinical Advisory Board



**Dr Chris Khor, MBBS**  
Clinical Advisor

Singapore General Hospital SingHealth  
DukeNUS  
Medical School



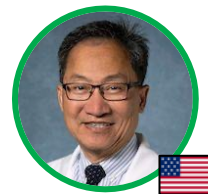
**Dr Yutaka Saito, MD**  
Clinical Advisor

国立がん研究センター  
National Cancer Center Japan  
WEO  
World Endoscopy Organization



**Dr Zhou Pinghong, MD**  
Clinical Advisor

中山大学  
Zhongshan Hospital  
中山医院



**Dr Simon Lo, MD**  
Clinical Advisor

Cedars Sinai



**Incoming MD**  
Clinical Advisor

June/July 2025



**Travis Covington**  
Technical Advisor

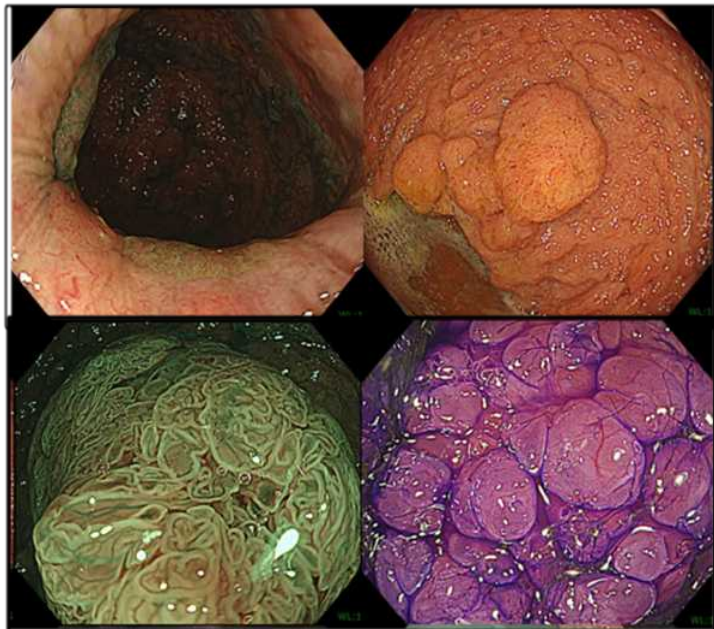
AURIS™  
Johnson & Johnson  
MedTech

## External Advisor



## Remember him?

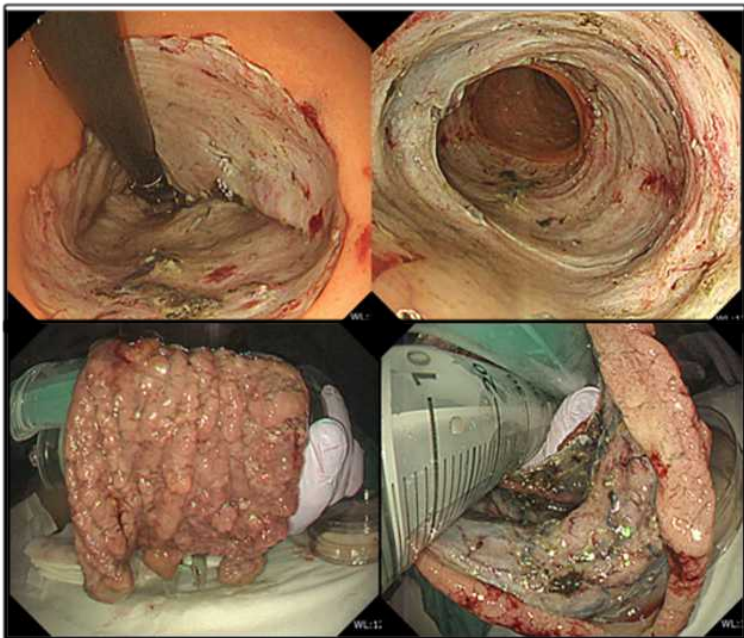
Actual 80 year old patient with early cancer in the anal-recto-sigmoid region – 20cm diameter



Endoscopy images here and next slide courtesy of Dr Yutaka Saito  
Director of Endoscopy Centre & Chief of Endoscopy Division  
National Cancer Center Japan



## A new lease of life with ESD!



Large cancer removed via ESD\* – no invasive surgery, no colectomy, and no stoma bag required.

Let's empower every endoscopist with ERES™ to replicate this success!



\*ESD: Endoscopic Submucosal Dissection

## Other portfolio news

## KLARO® – redefining the surgical environment with optimal lighting from within.

- A surgical lighting device for deep-cavity open surgery applications
- Co-developed with Singapore General Hospital, National Cancer Centre Singapore and Panasonic Lighting (Europe)
- USA market entry commenced in Q1 2025, currently commercially distributed in Asia & Europe
- FDA (II) registered, CE Mark (IIa) certified and HSA (II) approved, amongst others





## ENLYT® – purpose-built for screening and imaging from a global health perspective.

- A portable nasopharyngoscope for screening and imaging applications
- Clinical trials successfully completed at Duke University Hospital (USA) as part of an NIH R01 grant.
- Partnering with multiple international health systems and international NGOs for commercial rollout:
  - Screening of nasopharyngeal cancer (primary care)
  - Pre- and post-surgical ENT imaging (ward based)
  - Post-stroke dysphagia imaging (aged care homes)
  - Emergency imaging (emergency depts & ambulances)



**Thank you!**

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WIPO Global Awards 2024 Winner

Johnson & Johnson Innovation - JLABS Singapore Resident

SLINGSHOT 2024 Top 10 Global Healthcare Startup

MedTech Innovator APAC 2023 Top 4 Grand Finalist

Mount Sinai Elementa Labs Incubatee

US National Institutes of Health R01 Grant Awardee

