



# Indocyanine Green Fluorescence Imaging-Guided Laparoscopic Surgery- any place in colorectal operations?

**Alaa El-Hussuna**

(M.B.Ch.B, M.Sc.,Ph.D.)

*Associate professor of surgery (Denmark)*

*Leader of **OpenSourceResearch** organisation*

*Chairperson **European Society of Colo-Prctology's** cohort studies committee*

*Member of surgical steering committee in **European Crohn Colitis Organisation***

 **YouTube** Dr. Alaa El-Hussuna

 **LinkedIn** alaael-hussuna

 **@AlaaEl\_Hussuna**





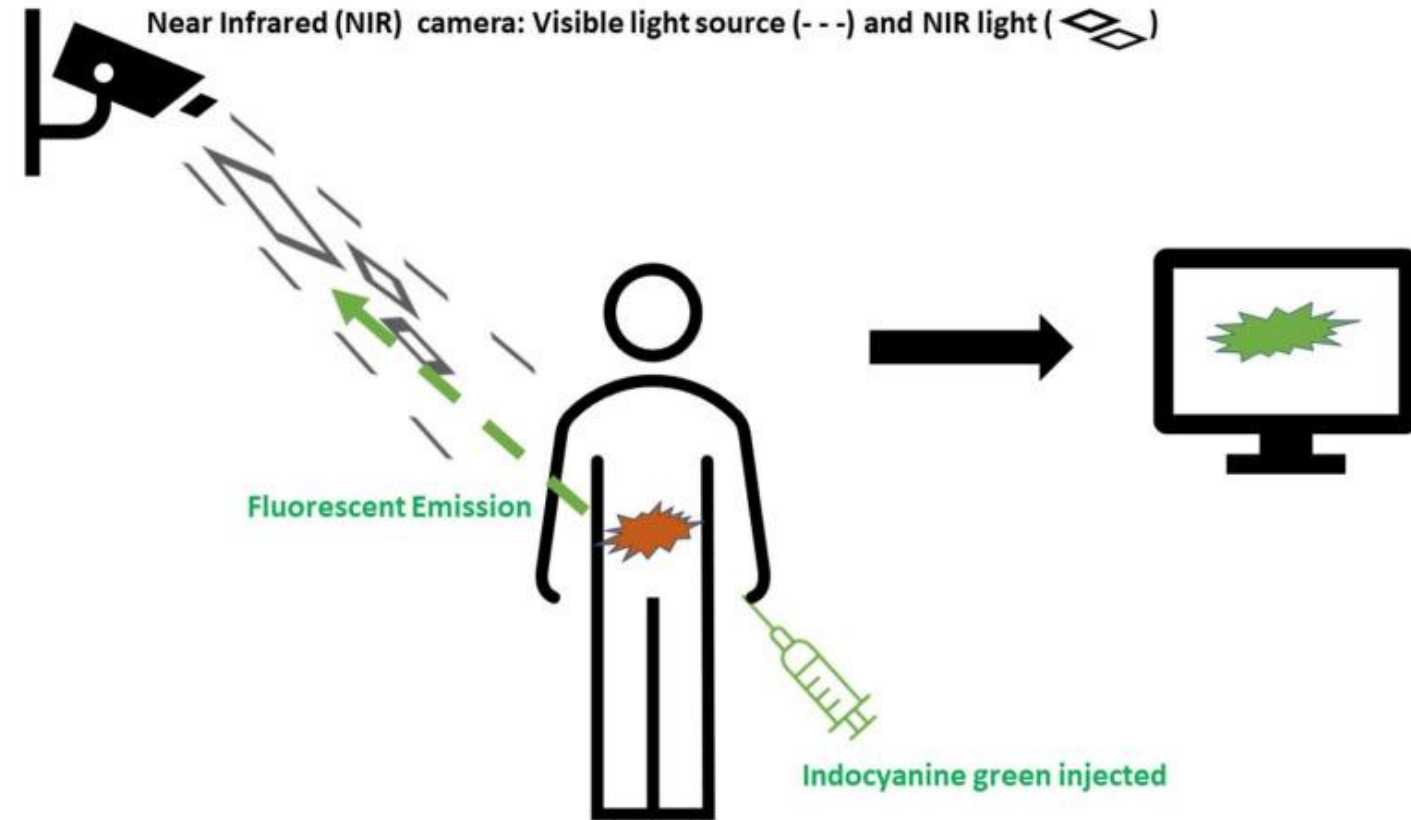
# No Disclosures





# ICG Background

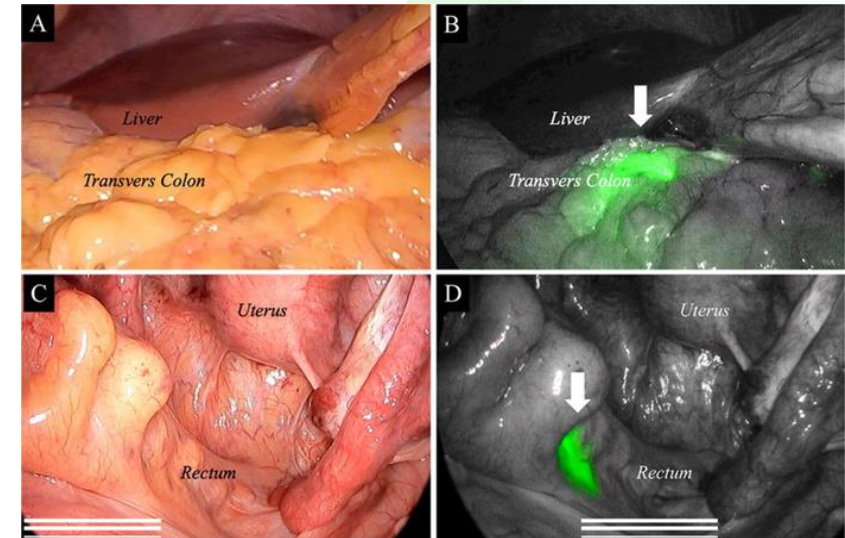
- Water-soluble dye that binds with plasma proteins. Metabolized solely through the liver
- Half-life depends on liver function (typically 3–4 min)
- Time to reach the nearest lymph nodes (15 min)
- Administered IV, SC or into the ureteral system





# ICG uses in colorectal surgery

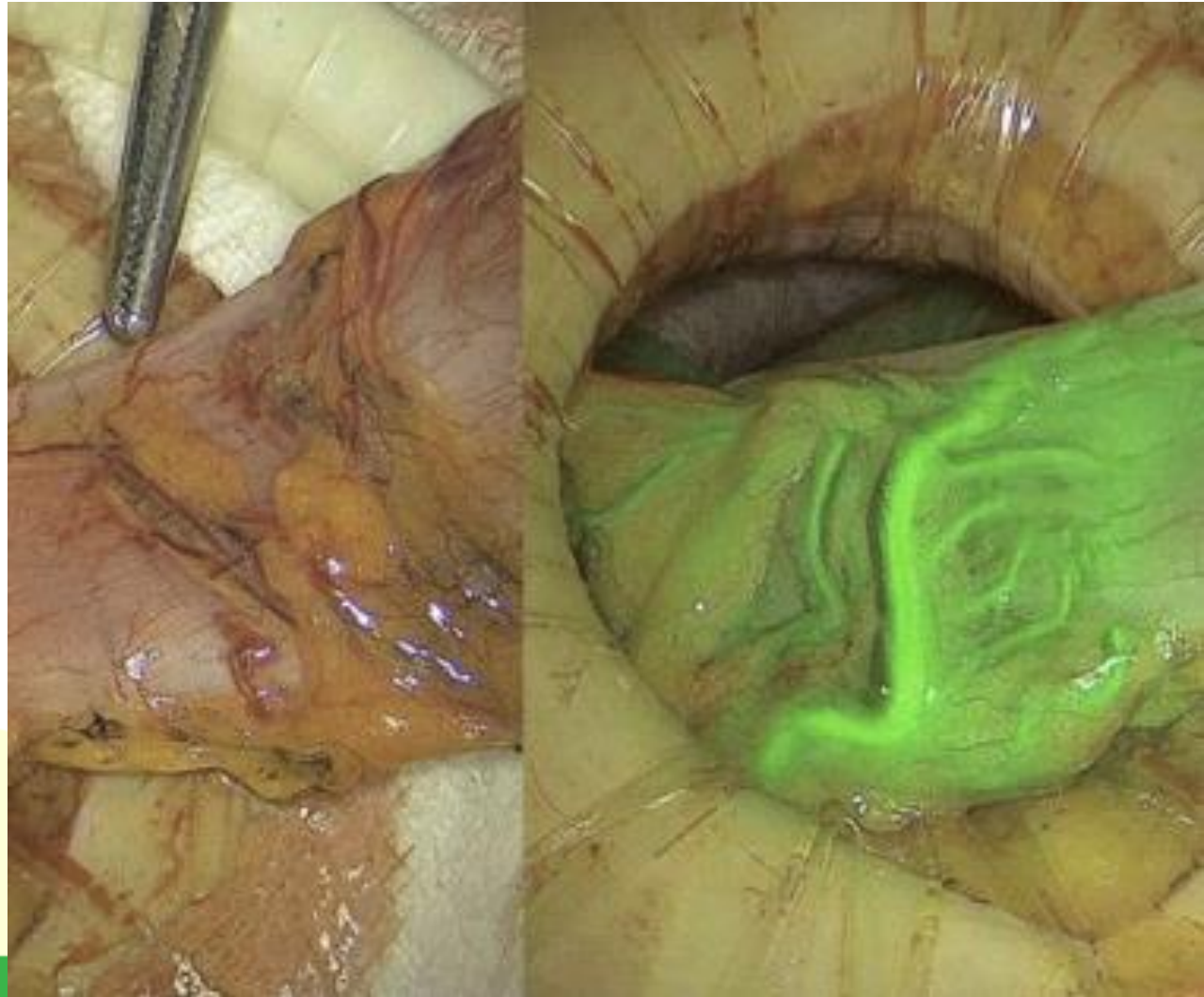
- Perfusion assessment
- Intraoperative ureteral visualization
- Sentinel node identification & lymphatic drainage visualization
- Assessment of peritoneal & hepatic metastases





# Assessment of **anastomosis** perfusion

- Conflicting evidence. Why?
- Subjective assessment
- Software attempted but need standardization
- Perfusion Assessment in Ileal Pouch-Anal Anastomosis (IPAA). Maybe?

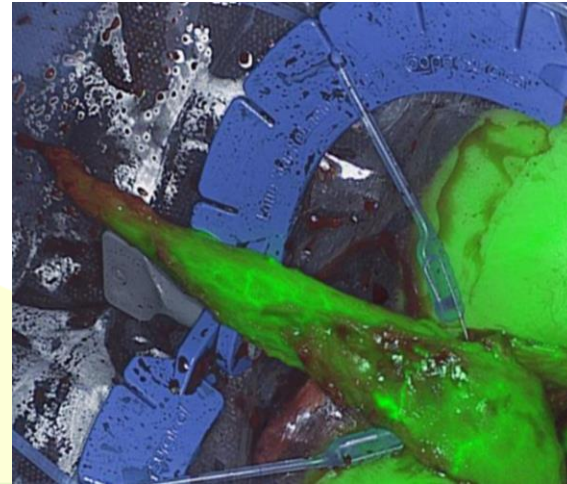




# Perfusion assessment of flaps

- Pedicled Omentoplasty in salvage surgery for pelvic sepsis
- Gracilis Muscle Interposition in complex perianal fistulae
- Anal Advancement Flaps in complex perianal fistula

Case series with high bias





# Tumor Assessment and **lymphatic mapping**

## Tumor visualization and localization

Discrepancies in tumor location between endoscopic & intraoperative findings

**But**

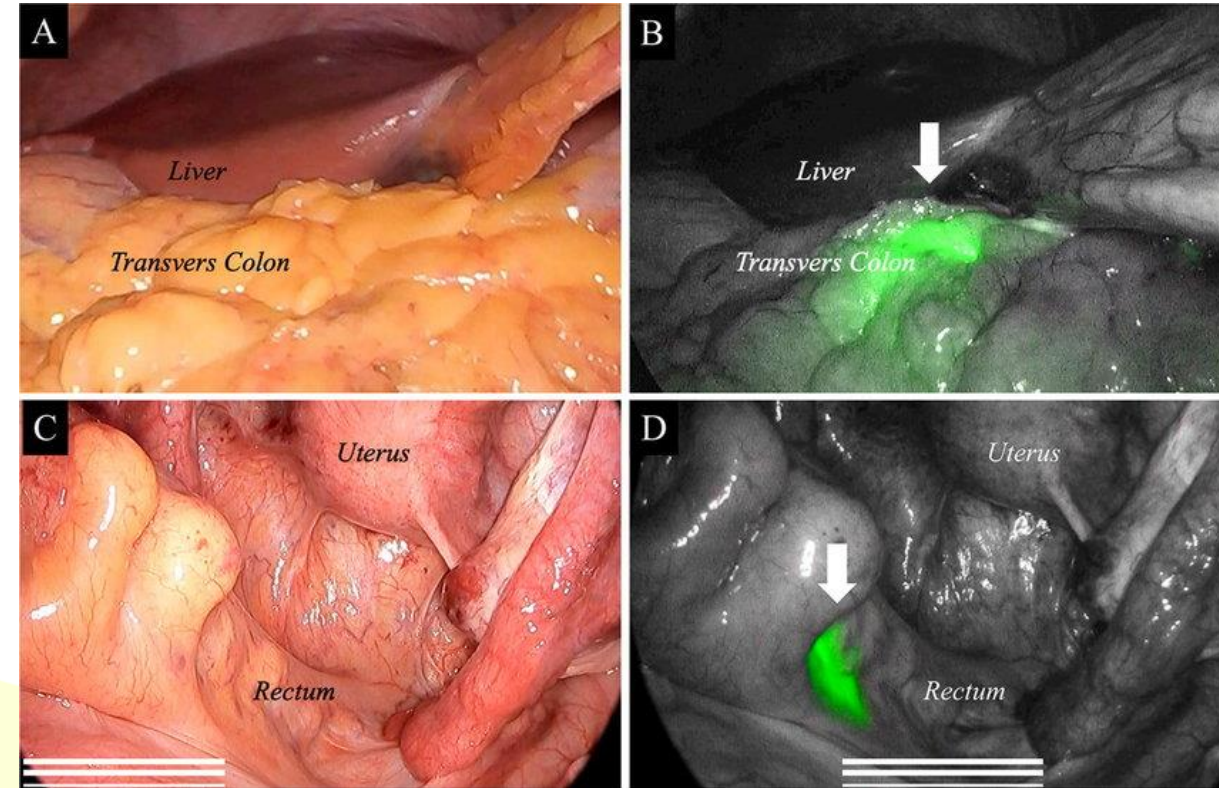
Small sample, case reports and no standardization

## Lymphatic Mapping

Sentinel LN

**But**

Effective in early (not advanced) colorectal cancer because tumor metastasis might 'silence' the lymph nodes and lymphatic drainage





# Vital Structures Assessment

## Intraoperative Ureteral Assessment (cystoscopic

ureteral stenting and the injection of ICG dye)

**But**

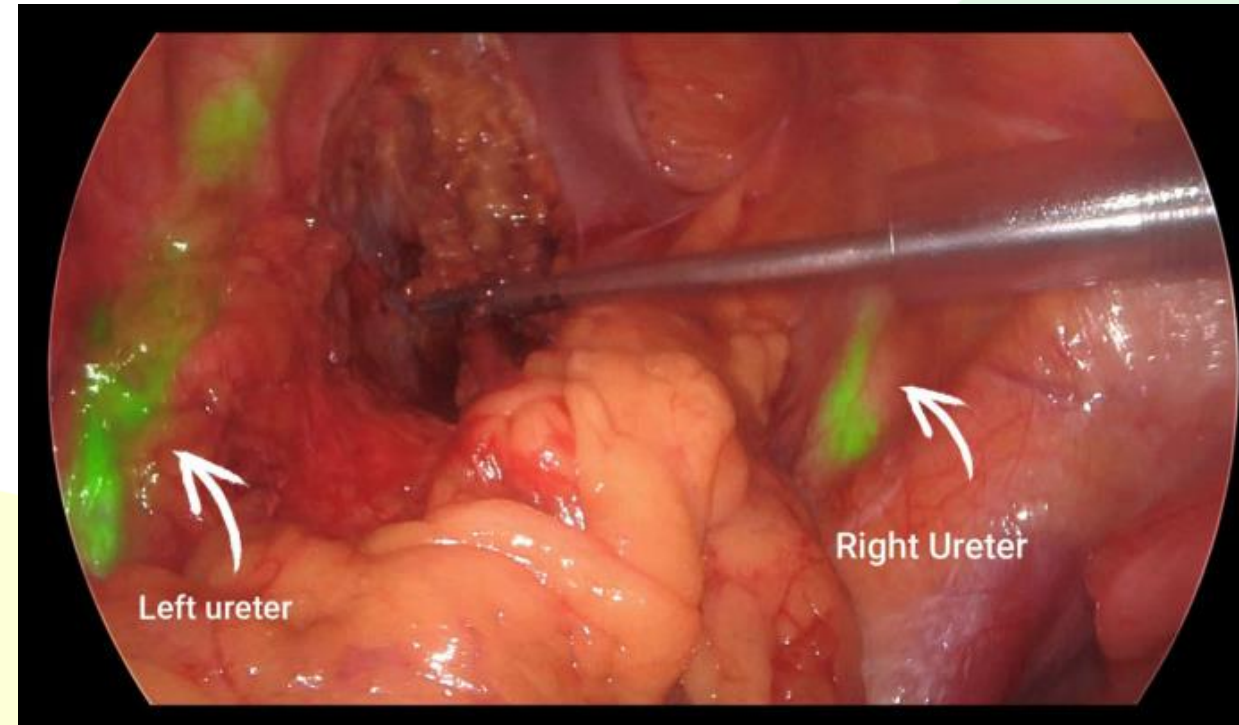
ureteral stenting and its potential complications

## Intraoperative Nerve Assessment in pelvic dissection

Improve functional outcome

**But**

Few reports







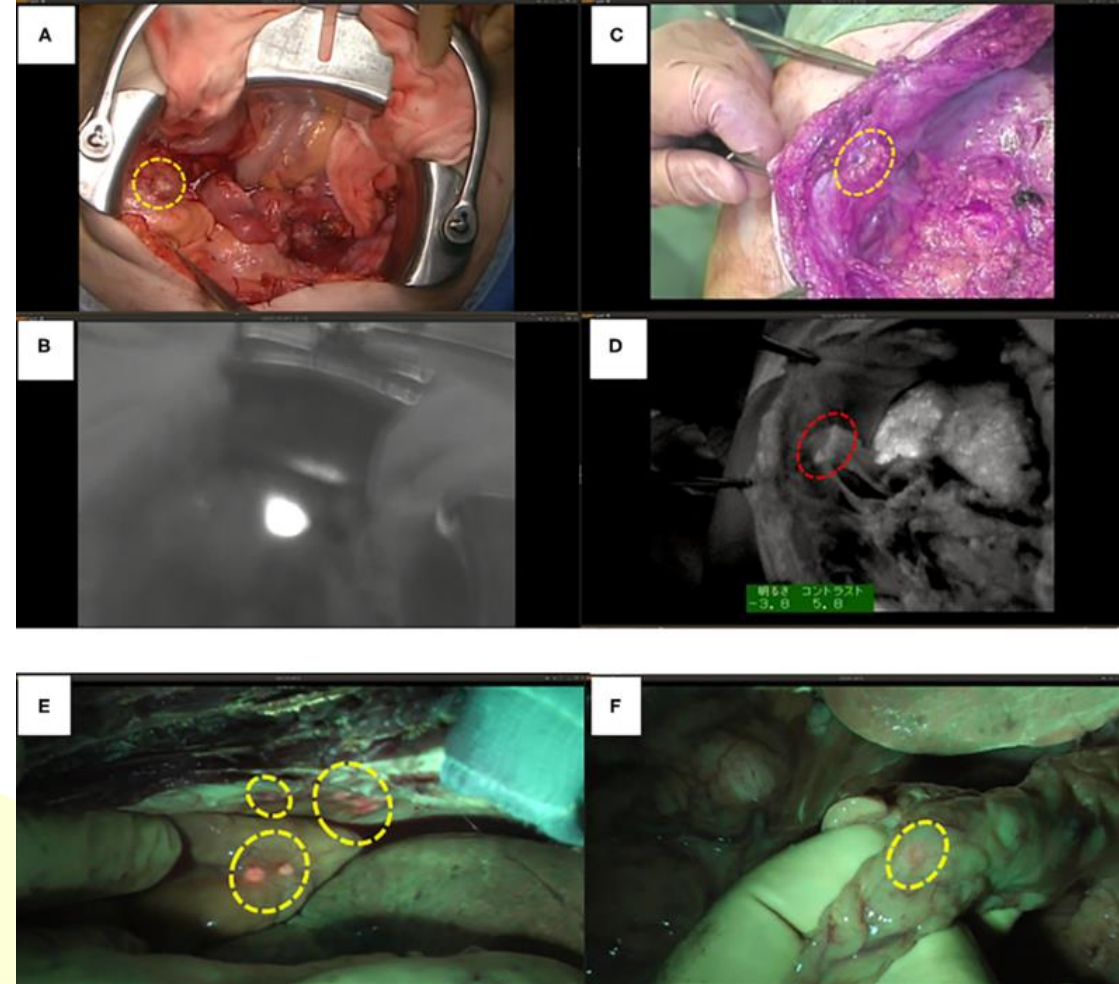
# Distant Disease Assessment

## Peritoneal Metastases Assessment

For cytoreduction and intraperitoneal hyperthermic chemotherapy

## Liver Metastases Assessment

1/3 of patients undergoing the curative resection of colorectal hepatic metastases will have R1 resections (<1 mm resection margin) or residual disease.





Admission for surgery

Patient related factors (e.g., age, co-morbidity, performance, BMI, smoking, alcohol...etc)

Disease related factors (e.g., type of cancer, disease activity index in IBD, disease, response to medical treatment ...etc)

Pre-operative optimization (e.g. nutrition, correction of anemia, physical exercise, medications, ...etc)



Surgical team related factors (e.g., skills, coordination, performance, tools, operation theatre ...etc)

Surgery related factors (e.g., type of resection, extent of resection, blood loss, anastomosis, operation time, ...etc)

Intra-operative physiological changes (e.g., type of anesthesia, blood gas, venous pressure...etc)



Post-operative complications (e.g., anastomotic leak, pneumonia, thrombo-embolic, ileus ...etc)

Enhanced recovery after surgery (e.g., nutrition, mobilization, pain control, laxatives, thrombo-prophylaxis ...etc)

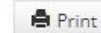
Post-operative monitoring (e.g., blood investigations, physiological function, microbial profile ...etc)

Discharge after surgery





## ESCP Thessaloniki 25-27 September 2024



ESCP's 19th Scientific and Annual Conference will take place in Thessaloniki, Greece from 25-27 September 2024 at the Thessaloniki International Exhibition & Congress Centre (TIF HELEXPO SA).

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Registration for ESCP 2024 is open. There's still time to register and save on your seat!

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Watch below to see what you can expect during #ESCP24 and join us as expert speakers from across the world share the latest evidence-based research.

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### Conference & Events

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### Key Dates

**11 April 2024, 23:59 CEST**

Deadline for abstract submission

**26 June 2024, 23:59 CEST**

Deadline for early bird registration

**11 September 2024, 23:59 CEST**

Deadline for regular registration

**25 - 27 September 2024**

Conference takes place

RESULTS OF THE EUROPEAN  
**INTACT** TRIAL COMPARING  
ICG WITH WHITE LIGHT  
LAPAROSCOPY TO PREVENT  
ANASTOMOTIC LEAK  
FOLLOWING RECTAL CANCER  
SURGERY

# Take home Message

- It might be promising but
- Subjective assessment
- Poor evidence
- Lack of standardization
  
- Better research





# OpenSourceResearch

Implementing information technologies  
in medical research

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- **Identify** challenges in traditional research
- **Seek** solutions based on information technologies
- **Implement** information technologies in medical research





# More about Innovation in **Surgery?**



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