



DOSING AND TIMING CHART ON HOW TO USE INDOCYANINE GREEN (ICG) BY PROCEDURE

PROCEDURE	PURPOSE	INJECTION TYPE	USUAL DOSAGE	INJECTION TIME	FIRST ICG DETECTION	ICG DURATION	CAMERA REQUIREMENTS	NOTES
Cholecystectomy	Bile duct visualization	Intravenous	0.05 mg/kg or 2.5 mL	Recommended: At least 45 min before procedure	After Calot triangle is exposed	Remains visible during surgery	Laparoscope, NIR camera	Reflux maneuver Visualize cystic duct
Colorectal Resection	Perfusion assessment	Intravenous	3 - 3.5 mL + 10 cc saline flush	Intraoperatively	30 - 60 sec after injection	Arterial & venous phase, min	Laparoscope, or handheld NIR camera	Evaluate resection margin
Liver Segmentation	Visualize liver segments	Positive staining technique: inject into portal branch	0.025 - 0.25 mg/mL (0.25 - 2.5 mg/10mL)	Prior to hepatic dissection	Several seconds after injection	Remains stable during surgery	Laparoscope, or handheld near infrared (NIR) camera	Portal branch punctured under ultrasound- guidance
		Negative staining technique: Intravenous	2.5 mg per body	After closure of portal pedicle	Several sec after injection	Remains stable during surgery	Laparoscope, or handheld NIR camera	Clamp liver segment
Liver Cancer	Visualization of primary & metastatic liver tumors	Intravenous	0.5 mg/kg	2-7 days before surgery	Real time during hepatectomy procedures	Remains stable during surgery	Laparoscope, or handheld NIR camera	Hepatocellular carcinoma shows cancerous fluorescence signals. Metastatic tumors show rim fluorescence signals
Esophagectomy	Gastric conduit perfusion evaluation	Intravenous	3 mL + 10cc saline flush	Intraoperatively	30-60 sec after injection	Arterial & venous phase: min	Laparoscope, or handheld NIR camera	Evaluate perfusion of anastomotic margins

PROCEDURE	PURPOSE	INJECTION TYPE	USUAL DOSAGE	INJECTION TIME	FIRST ICG DETECTION	ICG DURATION	CAMERA REQUIREMENTS	NOTES
Ureter Localization	Visualization of ureters	Cystoscopic-guided retrograde intraureteral ICG	2.5mg/mL 2mL per ureter	Prior to pelvic dissection	During pelvic dissection	Remains stable during surgery	Laparoscope or handheld NIR camera	Ureteral catheter advanced or tip into orifice
Thyroidectomy	Visualization of parathyroid glands	Intravenous	0.2 - 1mL + 10cc saline flush	After thyroid gland dissection		Min	Open procedure	Check perfusión of parathyroid glands
Parathyroid-ectomy	Visualization of parathyroid adenomas	Intravenous	0,2 - 1mL + 10cc saline flush	After identificdation of suspected parathyroid adenoma	30 sec	Min	Open procedure	Adenoma identification
Colorectal & Gastrointestinal Carcinoma	Visualization of lymphatic drainage & SNL	Peritumoral area	0.5 - 1mL on each tumor quadrant	Preoperatively or intraoperatively	Abdominal cavity visualized	Remains stable during surgery; Slowly diffuses through lymphatics	Laparoscope or handheld NIR camera	Esophageal LN mapping: create & inject into bleb to prevent too deep injection. Gastric LN mapping during gastrectomy: peritumoral injection 24 hrs prior for lymphadenectomy, intraoperative injection for SLN mapping
Lymphedema	Lymph vessel evaluation	Subcutaneous into bilateral interdigit hand or foot	0.1 -0.2 mL (2.5 mg/mL)	At time of lymph vessel evaluation	Min after	Hrs	Handheld or on free arm NIR camera	

PROCEDURE	PURPOSE	INJECTION TYPE	USUAL DOSAGE	INJECTION TIME	FIRST ICG DETECTION	ICG DURATION	CAMERA REQUIREMENTS	NOTES
Cervical/ Endometrial Cancer	Visualize lymphatic drainage & SNL	Cervical submucosa and deep into stroma (1cc each)	1mL at quadrants 3 and 9 (2.5 mg/mL)	Prior to dissection & insertion of uterine manipulator	At start of procedure	Remains stable during surgery; Slowly diffuses through lymphatics	Laparoscope, or handheld NIR camera	Total 4cc
Vulvar Cancer	Visualize lymphatic drainage & SNL	Peritumoral	1 mL	At start of procedure	Min after injection	Remains stable during surgery; Slowly diffuses through lymphatics	Handheld NIR camera	
Breast Cancer	Visualization of lymphatic drainage & SNL	Subcutaneous into periareolar region in each quadrant	1 mL (2.5mg/mL)	At start of procedure	5-10 min after injection	Remains stable during surgery; Slowly diffuses through lymphatics	Laparoscope, or handheld NIR camera	
Immediate Breast Reconstruction	Mastectomy skin perfusion assessment	Intravenous	3 mL (2.5 mg/mL) + 10 cc saline flush	Before, during and after reconstruction	45 sec after injection	Arterial & venous phase. Mins	Handheld or on free arm NIR camera	Adjunct to clinical assessment
Melanoma	Identification of SNL	Intradermal	0.1 -0.2 mL (2.5 mg/mL)	5 min prior to manipulation of skin site	Skin: immediate Node: 5 -10 min	Hrs	Handheld or on free arm NIR camera	Inject ICG prior to local anesthetic injection

NIR, near infrared; ICG, indocyanine green; LN, lymph node; SNL, sentinel lymph node; Min, minutes; Sec, seconds; Hrs, hours

DISCLAIMERS:

- The above dosage and timing information have been collated from worldwide surgeons expert in these procedures and is based on their recommendations and is not evidence-based.
- All dosages have been adjusted to the U.S. recommended dilution of 25mg of ICG in 10mL of sterile water.
- Doses are device-dependent.
- Approval for listed indications may vary according to country.

FOR ANY QUESTIONS ABOUT THE DOSING CHART, PLEASE CONTACT ISFGS AT ADMIN@ISFGS.ORG