

Dosing and Timing Chart on How to Use Indocyanine Green (ICG) by Procedure Pediatric Procedures



PROCEDURE / DISEASES	PURPOSE	INJECTION TYPE	TYPICAL DILUTION*	USUAL DOSAGE (AMOUNT)*	INJECTION TIME	FIRST ICG DETECTION	ICG DURATION	NOTES
Angiography & Perfusion Assessment <ul style="list-style-type: none"> • Skin and soft tissue • Intestinal perfusión • Organ ischemia 	Visualize blood flow to area of interest	#Intravenous	<25kg: 0.5 mg/ml	<25kg: 0.1 mg/kg	Real time, as desired	Within seconds	Minutes	Speed of uptake in first few seconds can be important. Can be redosed if needed
Extrahepatic Biliary Tree <ul style="list-style-type: none"> • Cholecystectomy • Choledochalcyst • Portoenterotomy 	Bile duct identification	#Intravenous	>25kg: 2.5 mg/ml	>25kg: 5 mg (2 ml)	Between 45 minutes and 2 hours prior to induction	With exposure of hepatocystic triangle	Hours	Time in advance decreases liver background signal to allow focus on ducts
Liver Tumor <ul style="list-style-type: none"> • Hepatoblastoma 	Tumor visualization and margin assessment	#Intravenous	Standard (2.5mg/ml)	0.5 mg/kg	72 to 96 hours prior to surgery	As needed	Stable during surgery	Tumors remain fluorescent after normal liver has fully excreted
Sarcomas & Other Tumors <ul style="list-style-type: none"> • Ewing Sarcoma • Osteosarcoma • Rhabdomyosarcoma • Sacrococcygeal teratoma 	Tumor visualization and margin assessment	#Intravenous		4 mg/kg	24 hours prior to surgery			Variable per tumor biology and pretreatment necrosis, relies on enhanced permeability and retention effect
Pulmonary Metastasectomy <ul style="list-style-type: none"> • Hepatoblastoma • Wilms tumor • Sarcomas 	Metastasis identification	#Intravenous		0.5mg/kg if liver primary; 4mg/kg all others				Can be missed if deeper than 1 cm in lung parenchyma
Sentinel Lymph Node Biopsy <ul style="list-style-type: none"> • Melanoma • Rhabdomyosarcoma 	Identification of SLN	4-quadrant dermal (skin lesions) or subcutaneous (other tumors)	1.25mg/ml	1.25mg (1 ml) per quadrant	At start of procedure	5-10 minutes in expected nodal basin	Stable during surgery	Can be paired with radiotracer

ICG, indocyanine green; SNL, sentinel lymph node

#All intravenous administrations should be followed by routine saline flush. This is particularly important if visualization is anticipated to be immediate.

*2.5 mg/ml is standard dilution from lyophilized ICG. For 0.5 mg/ml, mix 2 ml standard dilution with 8 ml sterile water. For 1.25 mg/ml mix even parts standard dilution and sterile water.

**For children >25kg if weight based is desired for angiography or cholangiography: $\text{Weight (kg)} / 27 = \# \text{ mL of standard dilution } 2.5\text{mg/mL}$; corresponds to 0.09mg/kg

DISCLAIMERS:

- The above dosage and timing information have been collated from worldwide surgeons expert in these procedures and is based on their recommendations
- All intravenous administrations should be followed by routine saline flush, this is particularly important if visualization is anticipated to be immediate
- All dosages have been adjusted to the U.S. recommended dilution of 25mg of ICG in 10mL of sterile water.
- Approval for listed indications may vary according to country

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