

# CT Liver Protocol

GE- 6007

## Maximum CTDI 75

Indication: Liver Mass, Hemangioma, Cirrhosis, Hepatocellular carcinoma (HCC), Hyper vascular mets

- Hepatocellular Carcinoma
- Focal Nodular Hyperplasia (FNH)
- Liver Adenoma
- Cirrhosis
- Hepatitis C
- Jaundice (not restricted jaundice)
- Liver Tumor as a general diagnosis

PT Prep: NO Oral  
IV contrast – Yes (follow MCR IV contrast dosing guidelines)

Series 1: Scouts AP & LAT – Supine “O” at Xiphoid Process S20 to I400

Series 2: **Unenhanced** – Scan from Diaphragm through Liver

	<b>750 HD (128) CT2</b>	<b>Optima 660 OVIC</b>	<b>VCT 64 CT3</b>	<b>Optima 660 CT1</b>
Noise Level	15.86	16.97	15.86	11.60
Interval	2.5 mm	2.5 mm	2.5 mm	2.5 mm
Axial/Helical Thickness	2.5 mm	2.5 mm	2.5 mm	2.5 mm
Pitch	0.984:1	0.984:1	0.984:1	0.984:1
Speed mm/rotation	39.37	39.37	39.37	39.37
Detector Rows				
Detector Configuration				
Beam Collimation	40 mm	40 mm	40 mm	40mm
KV/mA	Auto mA – if large pt. use manual & maximize mA	Auto mA – if large pt. use manual & maximize mA	Auto mA – if large pt. use manual & maximize mA	Auto mA – if large pt. use manual & maximize mA
Scan Type	Helical Full 0.5 sec	Helical Full 0.5 sec	Helical Full 0.5sec	Helical Full 0.5 sec

Original Date: 4-8-04

Approved by: Dr. Songmen, MCR

Revised Date: 11/9/04, 1/11/10, 9/16/10, 12/8/10, 04/17/13, 12/15/2015, 2/27/18, 07/27/21, 1/30/24

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Series 3: **Enhanced Arterial Phase – IV contrast per MCR contrast dosing guidelines @ 3cc/sec**

**Delay: 35 seconds – Scan from diaphragm through Liver**

	<b>750 HD (128) CT2</b>	<b>Optima 660 OVIC</b>	<b>VCT 64 CT3</b>	<b>Optima 660 CT1</b>
Noise Level	15.86	15.86	15.86	11.60
Interval	2.5 mm	2.5 mm	2.5 mm	2.5 mm
Axial/Helical Thickness	2.5 mm	2.5 mm	2.5 mm	2.5 mm
Pitch	0.984:1	0.984:1	0.984:1	0.984:1
Speed mm/rotation	39.37	39.37	39.37	39.37
Detector Rows				
Detector Configuration				
Beam Collimation	40 mm	40 mm	40 mm	40mm
Kv/mA	Auto mA – if large pt. use manual & maximize mA	Auto mA – if large pt. use manual & maximize mA	Auto mA – if large pt. use manual & maximize mA	Auto mA – if large pt. use manual & maximize mA
Scan Type	Helical Full 0.5 sec	Helical Full 0.5 sec	Helical Full 0.5sec	Helical Full 0.5 sec

Series 4: **Portal Venous Phase**

**Delay: 70 seconds – Scan from diaphragm through Liver**

	<b>750 HD (128) CT2</b>	<b>Optima 660 OVIC</b>	<b>VCT 64 CT3</b>	<b>Optima 660 CT1</b>
Noise Level	15.86	15.86	15.86	11.60
Interval	2.5 mm	2.5 mm	2.5 mm	2.5 mm
Axial/Helical Thickness	2.5 mm	2.5 mm	2.5 mm	2.5 mm
Pitch	0.984:1	0.984:1	0.984:1	0.984:1
Speed mm/rotation	39.37	39.37	39.37	39.37

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**Maximum CTDI 75**

Detector Rows				
Detector Configuration				
Beam Collimation	40 mm	40 mm	40 mm	40mm
KV/mA	Auto mA – if large pt. use manual & maximize mA	Auto mA – if large pt. use manual & maximize mA	Auto mA – if large pt. use manual & maximize mA	Auto mA – if large pt. use manual & maximize mA
Scan Type	Helical Full 0.7 sec	Helical Full 0.5 sec	Helical Full 0.5sec	Helical Full 0.5 sec

Series 5: Delayed venous phase 4 min delay  
**Delay: 240 seconds** – Scan from top of diaphragm through liver

	<b>750 HD (128) CT2</b>	<b>Optima 660 (32) OVIC</b>	<b>Optima 660 CT1</b>	<b>VCT 64 CT3</b>
Noise Level	15.00	12.00	11.60	11.60
Interval	2.5 mm	2.5 mm	2.5 mm	2.5 mm
Axial/Helical Thickness	2.5 mm	2.5 mm	2.5 mm	2.5 mm
Pitch	0.984:1	0.984:1	0.984:1	0.984:1
Speed mm/rotation	39.37	39.37	39.37	39.37
Detector Rows				
Detector Configuration				
Beam Collimation	40 mm	40 mm	40 mm	40 mm
KV/mA	Auto mA – if large pt. use manual & maximize mA	Auto mA – if large pt. use manual & maximize mA	Auto mA – if large pt. use manual & maximize mA	Auto mA – if large pt. use manual & maximize mA
Scan Type	Helical Full 0.8 sec	Helical Full 0.8sec	Helical Full 0.8 sec	Helical Full 0.8 sec

**Series 6: ADDITIONAL – For KNOWN or SUSPECTED Cholangiocarcinoma**  
**Delay: 10 minutes Post injection** – Scan from diaphragm through Liver

	<b>128 slice</b>	<b>32 slice w/ASIR</b>	<b>64 slice</b>	<b>64 slice w/ASIR 30%</b>
Noise Level	15.86	16.36	15.86	11.60
Interval	2.5 mm	2.5 mm	2.5 mm	2.5 mm
Axial/Helical Thickness	2.5 mm	2.5 mm	2.5 mm	2.5 mm
Pitch	0.984:1	0.984:1	0.984:1	0.984:1
Speed mm/rotation	39.37	39.37	39.37	39.37

Original Date: 4-8-04

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Detector Rows				
Detector Configuration				
Beam Collimation	40 mm	40 mm	40 mm	40mm
KV/mA	Auto mA — if large pt. use manual & maximize mA	Auto mA — if large pt. use manual & maximize mA	Auto mA — if large pt. use manual & maximize mA	Auto mA — if large pt. use manual & maximize mA
Scan Type	Helical Full 0.5 sec	Helical Full 0.5 sec	Helical Full 0.5sec	Helical Full 0.5 sec

**Networking/ PACs:** Send scouts  
 Send series 2-5 Standard Soft Tissue Algorithm. (Send series 6 if done)  
 Send series 4 in Bone Algorithm 5 x 5  
 Recon and send series 3 lung images in Lung Algorithm 5 x 5  
 Recon and send MPR of all series in Standard Algorithm  
 Record DLP in PACS comments