

## REFERENCE: Protocol Choice by Indication **Multiphase + Malignancy-Specific**

This is a summary document to reference for clarification regarding appropriate protocols, laid out by indication for exam and cancer type.

The information contained is the same as that on each specific protocol.

### ROUTINE ABDOMEN/PELVIS:

- PV at 70 sec
- *No need for delay with trauma*

### DELAY TIMING:

- **Late Arterial Phase:** BOLUS TRACKING on descending aorta just above hiatus, start scan 15 seconds after ROI exceeds 150 HU
  - ONLY if scanner is NOT able to perform bolus tracking, use 40 sec
- **Routine Portal Venous Phase:** 70 sec
- **Adrenal Venous Phase:** 75 sec
- **Late Venous Phase:** 90 sec, use in:
  - CT Enterography for anemia
  - CTA Abd/Pel for Mesenteric ischemia, GIB, endograft
- **Delayed Venous Phase:** 120 sec, use in:
  - Nephrographic Renal
- **5-Minute Delay Phase:** 300 sec, use in:
  - Liver 3-phase and 4-phase
  - Unless concern for cholangiocarcinoma, then 10-minute delay
- **15-Minute Delay Phase:** 900 sec, use in:
  - Multiphase adrenal

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## SPECIFIC INDICATIONS: LIVER + PANCREAS

### LIVER

Note #1: MR is preferred if possible

Note #2: No 2-phase liver protocol

#### **3 phase (Arterial, PV, 5-minute delay)**

- **New** indeterminate liver lesion (without history of liver dysfunction or cirrhosis), including (but not limited to):
  - Adenoma
  - FNH
  - Hypervascular metastatic disease (includes: thyroid, melanoma, choriocarcinoma)

- Cholangiocarcinoma (with 10-minute delay)
- **Follow-up** for previously characterized liver lesions, including (but not limited to):
  - HCC (*without history of prior TACE or ablation – new HCC or hx TACE/Ablation, use 4-phase, as below*)
  - Adenoma
  - FNH
  - Known hypervascular metastatic disease (without prior ablation; includes: thyroid, melanoma, choriocarcinoma)
  - Cholangiocarcinoma (with 10-minute delay)
- Cirrhosis **follow-up** (with prior 4-phase available on PACS)

#### **4 phase (NC, Arterial, PV, 5 minute delay)**

- New indeterminate liver lesion with history of hepatocellular dysfunction or cirrhosis
- New possible HCC
- Baseline cirrhosis
- Follow-up HCC status post TACE or ablation
- Follow-up metastatic disease post ablation

#### **SPECIAL NOTES for clarification:**

- **Hypervascular metastases, as above:**
  - New and follow-up (without prior ablation): 3-phase liver
  - Follow-up with prior ablation: 4-phase liver
- **Cholangiocarcinoma, as above:**
  - New and follow-up: 3-phase liver with 10-minute delay

#### **PANCREAS**

- **First time/elevated lipase/rule out pancreatitis**
  - Routine CT Abd/Pel (PV 70 sec, single phase)
- **Chronic Pancreatitis**
  - Routine CT Abd (PV 70 sec, single phase)
- **Pancreatic mass evaluation (solid or cystic) or pancreas protocol ordered by GI or other subspecialist**
  - 3-phase pancreas (NC, A, V)
  - Note: MR is preferred if possible
- **Follow-up acute pancreatitis to assess for pancreatic hemorrhage or necrosis:**
  - 3-phase pancreas (NC, A, V)

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## **PROTOCOL BY CANCER TYPE**

#### **LIVER**

##### **HCC:**

- New: 4-phase liver
- Follow-up **without** TACE or ablation: 3-phase

- Follow-up **with** TACE or ablation: 4-phase

**Cholangiocarcinoma:**

- Initial & follow-up: 3-phase liver

**Carcinoid:**

- Initial & follow-up (if no prior ablation): 3-phase liver (A, V, D)
- Follow-up + prior ablation: 4-phase liver (NC, A, V, D)

**Other Neuroendocrine:**

- Initial & follow-up (if no prior ablation): 3-phase liver (A, V, D)
- Follow-up + prior ablation: 4-phase liver (NC, A, V, D)

**Choriocarcinoma:**

- Initial & follow-up (if no prior ablation): 3-phase liver (A, V, D)
- Follow-up + prior ablation: 4-phase liver (NC, A, V, D)

**Thyroid:**

- Initial & follow-up (if no prior ablation): 3-phase liver (A, V, D)
- Follow-up + prior ablation: 4-phase liver (NC, A, V, D)

**Melanoma:**

- Initial & follow-up (if no prior ablation): 3-phase liver (A, V, D)
- Follow-up + prior ablation: 4-phase liver (NC, A, V, D)

**PANCREAS** (solid or cystic mass)

- 3-phase pancreas

**RENAL**

Note: MR is preferred if possible

**NEW indeterminate renal mass**

- 3-phase renal (NC, A, V 120 s)

**Known, routine follow-up (with or without medical treatment)**

- Routine CT Abd Pel (PV 70s, single phase)

**S/p total nephrectomy**

- Routine CT Abd Pel (PV 70s, single phase)

**S/p partial nephrectomy**

- 3-phase renal (NC, A, V 120s)

**S/p surgery with KNOWN residual tumor**

- 3-phase renal (NC, A, V 120s)

**S/p cryoablation or radiofrequency ablation**

- 3-phase renal (NC, A, V 120s)

### **BLADDER**

- Routine CT Abd/Pel (PV 70s, single phase), unless otherwise specified by ordering provider
- IVP only if specified by ordering urologist to look for upper tract disease

### **ESOPHAGEAL**

- Routine CT Abd/Pel (PV 70s, single phase) + **250 mL water** just before scanning

### **STOMACH**

- Routine CT Abd/Pel (PV 70s, single phase), *no need for multiphase*
- Supine position

### **UROTHELIAL**

- CT Urogram/IVP

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## **OTHER: BOWEL**

### **Inflammatory Bowel Disease (CT Enterography, single phase)**

- **Arterial (Enteric) Phase:** BOLUS TRACKING on descending aorta just above diaphragmatic hiatus, start scan 20 seconds after ROI exceeds 150 HU.
  - ONLY IF scanner is NOT able to perform bolus tracking, use 45 second delay

### **Anemia of unknown etiology (CT Enterography, 2 post-contrast phases)**

- **Arterial (Enteric) Phase:** BOLUS TRACKING on descending aorta just above diaphragmatic hiatus, start scan 20 seconds after ROI exceeds 150 HU.
  - ONLY IF scanner is NOT able to perform bolus tracking, use 45 second delay
- **Late Venous Phase:** 90 second delay

### **Mesenteric Ischemia, Acute GI Bleed, Post- Endograft or Vascular Surgery (CTA: NC, arterial, late venous)**

- **Non-contrast**
- **Arterial Phase:** BOLUS TRACKING on descending aorta just above hiatus, start scan when ROI exceeds 100 HU.
  - ONLY IF scanner is NOT able to perform bolus tracking, use 30 second delay
- **Late Venous Phase:** 90 second delay