

➤ **Define SmartPrep**

SmartPrep is a feature that allows real-time monitoring of IV Contrast enhancement in one particular section of anatomy that is in the area of interest. The contrast flow is monitored by Low-Dose scans until the contrast enhancement reaches the preferred point and the operator initiates the scan prescription.

➤ **Enter the SmartPrep Rx**

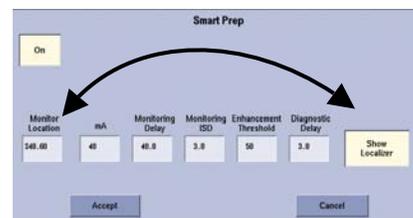
- Set up the exam Rx as usual
- Be sure to click the contrast indicator ON
- Click on [SmartPrep Rx] and set to ON



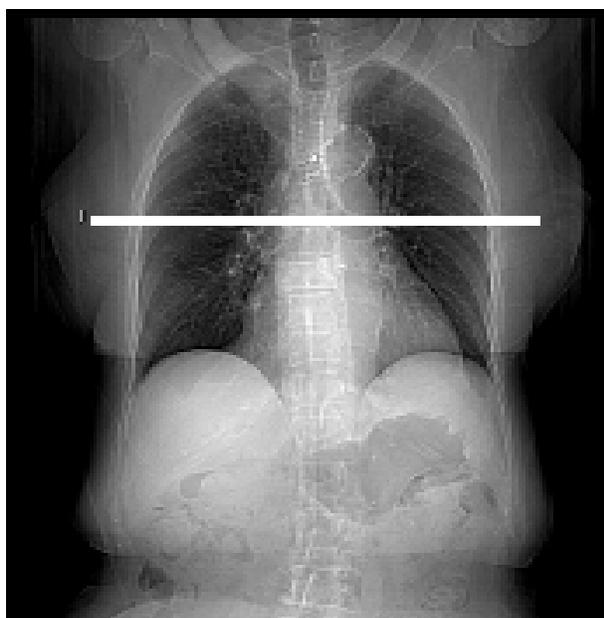
When utilizing SmartPrep the parameters controlling scan location, time between images, enhancement values, technique factors and time to start the study must be set.

These values may be set as part of any protocol utilizing SmartPrep, or they may be set for individual SmartPrep scans. Some values such as matrix and algorithm are not adjustable.

Monitor Location: You may Rx the scan by explicitly entering the location. The field is labeled Monitor Location, however Baseline and Monitor Scans are at the same location.



Show Localizer: You may graphically Rx the scan by selecting [Show Localizer] and adjusting the Rx line on the Scout image.



PE



Routine Abdomen



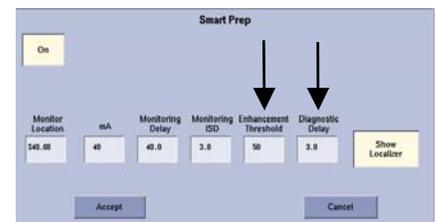
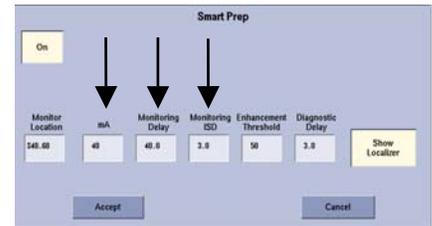
mA: The mA that is entered on the SmartPrep Rx window will be used for the Baseline and Monitoring images. Typically set to achieve a very low dose image.

Monitoring Delay: A delay entered here will occur after starting the SmartPrep/Injection, and before the Monitor Scans begin.

Monitor ISD: The Monitor Interscan Delay is the time between Monitor Scan images, or sampling rate.

Enhancement Threshold: This value is in HU, and simply determines where the bar will appear on the time/density graph. It is the density value you would like to achieve for the ROI sample(s), and the bar gives you a visual reference.

Diagnostic Delay: This delay is the minimum time between when you choose to move to the Scan Phase, and when it actually begins. The actual time will also be affected by table travel distance.



➤ Define the three phases of SmartPrep

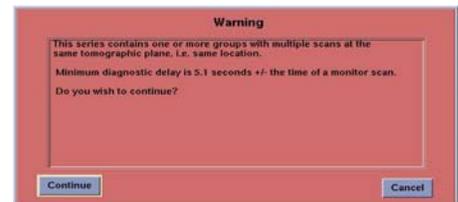
- Baseline

Click [Accept] when you have completed the SmartPrep Rx. When you are ready to begin, click on [Confirm].

Warning

This warning message is telling you that you have an Rx with multiple scans to be acquired at the same location.

The warning message will also update you on the actual minimum diagnostic delay. Consider this delay when choosing the proper time to begin the Scan Phase.



SmartPrep does multiple scans at the Baseline / Monitor location, therefore it is acceptable to click [Continue].

Advance the table when prompted. Press [Start Scan] when prompted, no breathing instructions are required for this scan.

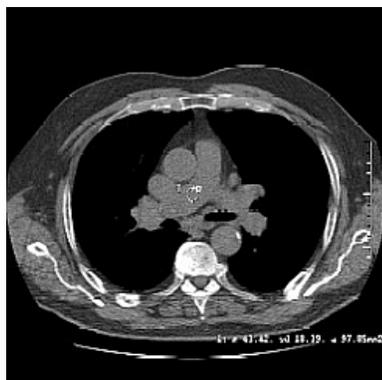
A single axial scan is taken through the anatomy of interest. This Baseline Scan is used to locate a sample location(s) within the area of interest.



➤ Define the three phases of SmartPrep

- Monitor

Place region of interest cursor(s) (ROIs) over the area(s) that will be monitored for enhancement. Up to three ROIs may be placed. Consult the SmartPrep Reference Chart for ROI placement locations. ROI enclosure should be relatively small to ensure other tissue types are not included in your sample.



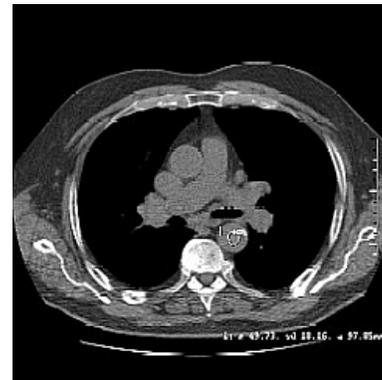
PE Exam

1 ROI OVER MAIN PULMONARY ARTERY



Routine Abdominal Exam
Portal Phase

OVER 2 AREAS OF NORMAL LIVER TISSUE (OPTIONAL 1 ROI OVER AORTA)



Thoracic or Abdominal
Aorta

1 ROI OVER THORACIC OR ABDOMINAL AORTA

Monitor Phase

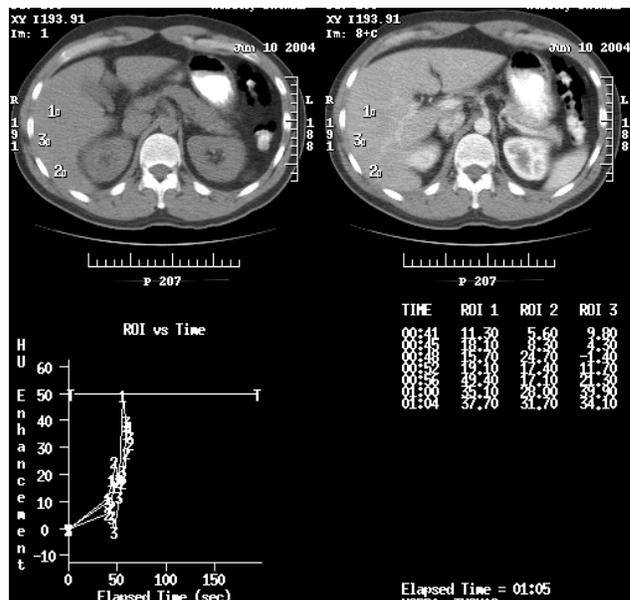
Monitor Phase begins when the [Monitor Phase] icon is clicked.

The Technologist will then press [Start Scan] and start the Injector simultaneously, no breathing instructions are required for this scan.

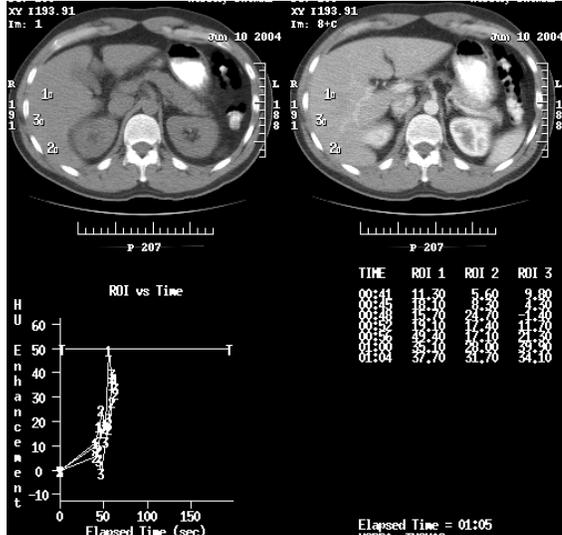
Up to 40 scans may be taken. Scans are taken at the same location as the Baseline Phase. 1-90 second ISD available.

The Monitor Phase measures and records the ROI data of the anatomic area being sampled during the injection of IV contrast. This allows you to determine peak enhancement levels in specific anatomic areas with reproducibility.

You are able to see the monitor scans as they reconstruct to determine the level of contrast in the anatomy. You will also see an updated graph of plotted ROI values.



Baseline Image
for visual
reference



Updating to display
last Monitor Phase
image taken

Time/Density curve
plotting the ROI results
and displaying the
visual reference bar

Data screen with
the ROI results and
elapsed time

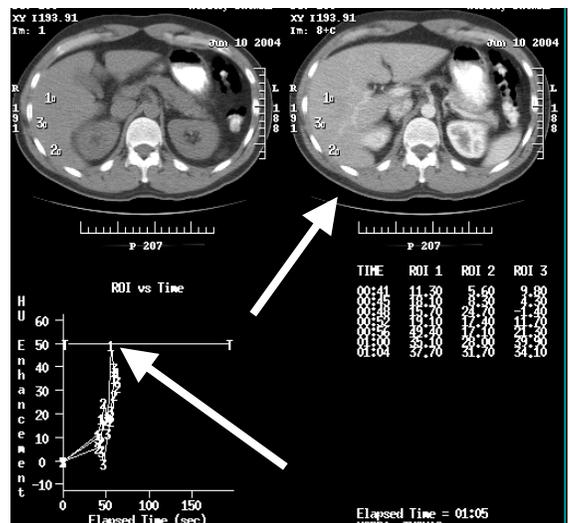
➤ Define the three phases of SmartPrep
- Scan

Scan

The Technologist determines when to begin the scanning phase by watching the graphical data, and the monitor scans. You must also consider the actual Diagnostic Delay that was reported on the Warning message.

Scan Phase begins when you click the [Scan Phase] icon.

The Technologist gives the breathing instructions as the table moves into position to perform the exam scans.



Note:

If all forty monitoring scans have been utilized it is necessary to use the [Move to Scan] and [Start Scan] buttons on the keyboard to place the table in position and initiate the scan prescription.

Note:

If the scanner has reconstruction or other failures, you may still view the Elapsed Time readout at the bottom of the right lower quadrant data page and begin scanning at a delay based on previous experience.

Note:

If you press [Pause] during the Monitor Phase, you may press [Resume]. The Elapsed Time will have continued to count from the initial [Start Scan].

Note:

If you choose to change the location or ROI placement and repeat the Monitor Phase, you must repeat the Baseline Phase first.

