Functional CT - Liver Perfusion

☑ Purpose

Functional CT is intended for visualization, assessment and quantification of blood flow, blood volume, time to peak and peak enhancement using dynamic CT data. The application provides whole-organ or single-location liver, lung and kidney perfusion calculations.

Before you begin

Intravenous contrast bolus is injected into the patient and region of interest is scanned repeatedly for a period-of-time. Position the slice location to include the liver, spleen, portal vein, and aorta.

Inject Contrast. (Recommended injection parameters: 40-50 ml total, >300 mgl/ml, 5-7 ml/ second.)

Obtain axial, contrast-enhanced scans at the same location during patient's breath-hold for the duration, from the injection to the end of the portal phase. (Recommended scan parameters: 5 mm slice thickness, 1 second scan duration, 3 second cycle time, 360 degree rotation, 120kpV, 150-200 mAs, breath hold.)

Workflow

To analyze a CT liver perfusion scan:

1. Select the study and series and click .

2. Click (**Draw Artery**) and draw and arterial ellipse

3. Click (**Draw Vein**) and draw a venous ellipse

4. In the **Perfusion Type** field, click the drop-down arrow and select **Liver**.

5. Click (**Draw Spleen**) and draw a spleen ellipse.

> ✎ **Note** The arterial, venous, and spleen ellipses do not need to be on the same image.

Each of the drawn ellipses are now labeled within the main viewport.

6. Click next to Vessel Definition to move to step 2, **Perfusion Maps**. The perfusion maps display in the top right viewport.

> ✎ **Note** Liver Perfusion maps include the following:
> - Arterial Perfusion
> - Portal Venous Perfusion
> - Total Perfusion
> - Hepatic Perfusion Index

7. Under **Tissue ROIs**, click (**Draw tissue ROI/Ellipse**) as needed.

8. Do one or more of the following:

   - To save the images, click (**Save**) and select the way you want to save the images.

   - To bookmark the images, click (**Bookmark**) and set the bookmark in the **Save Bookmark** dialog box.

   - To send the final images to the reporting package, click the drop-down arrow next to the displayed reporting option and select

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