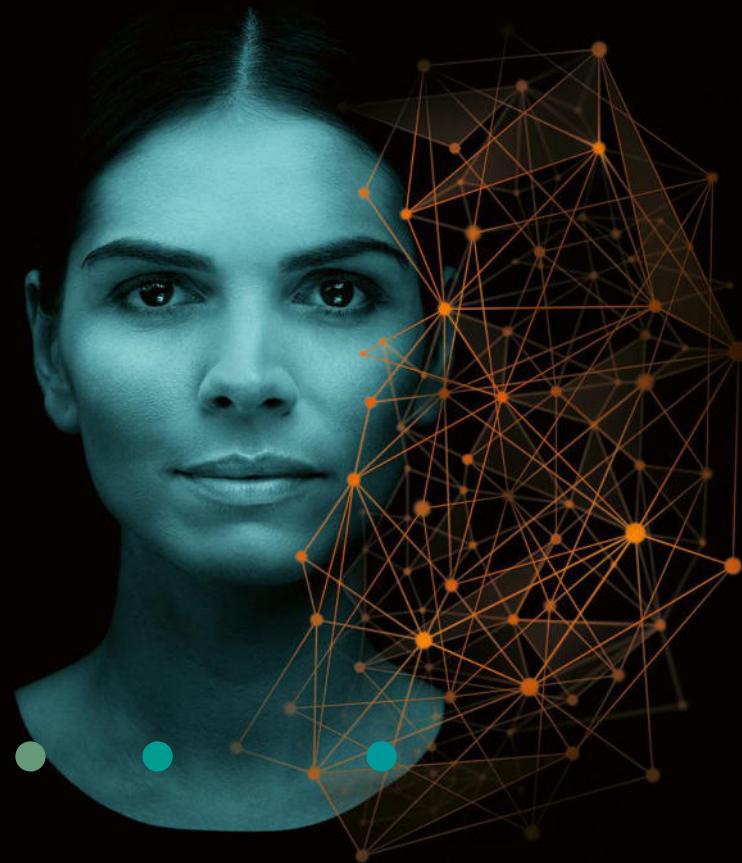


ACUSON Sequoia Ultrasound System

Measurements & Reports (Onscreen)
3.5 (VB30)



Objectives

- **Identify access to measurement feature and screen information**
- Explain editing and deleting measurements
- List exam specific measurement options
- Examine report access, layout and editing
- Outline printing options

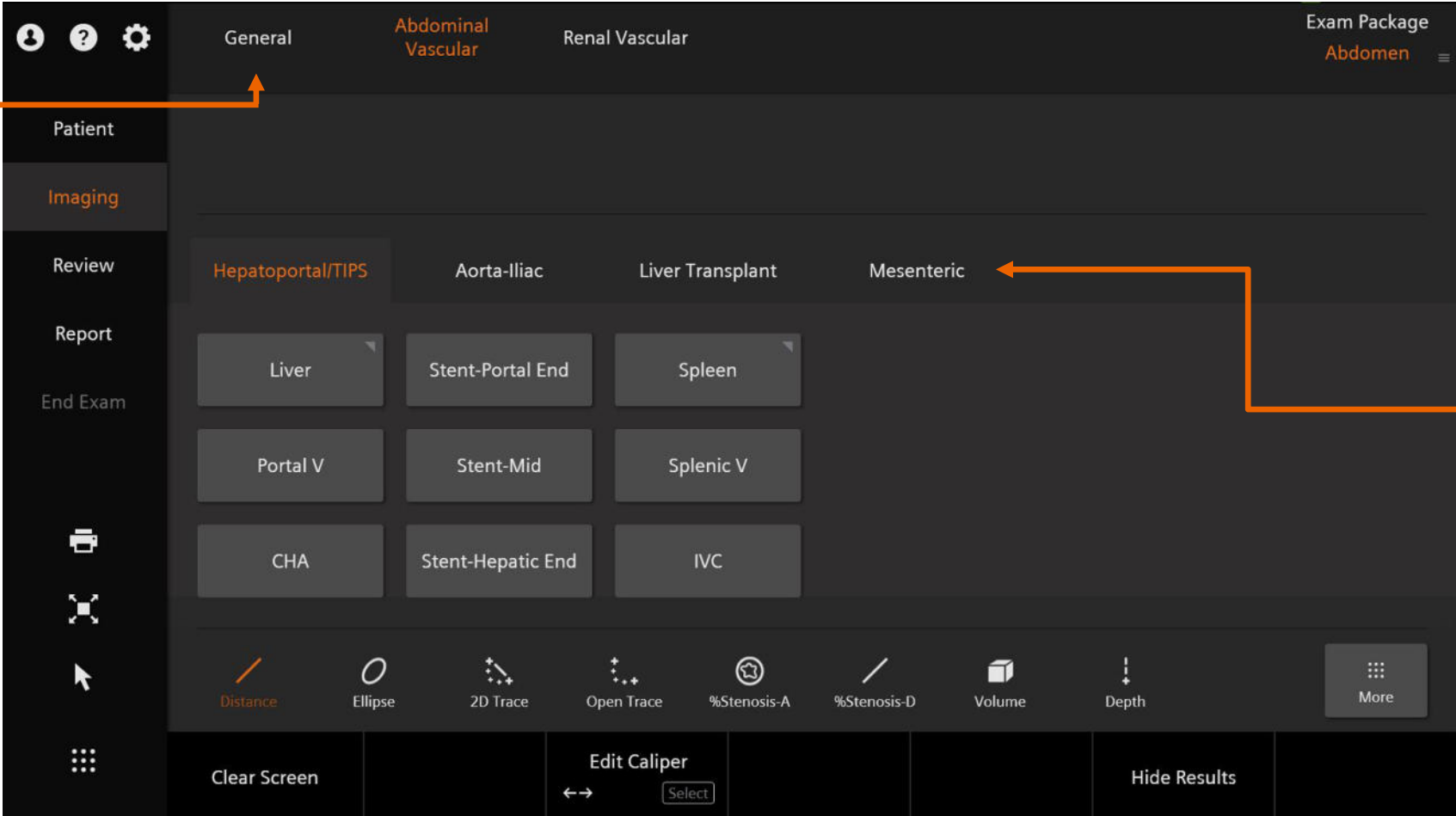


Accessing measurement feature



Touch Screen display layout

Main label groups

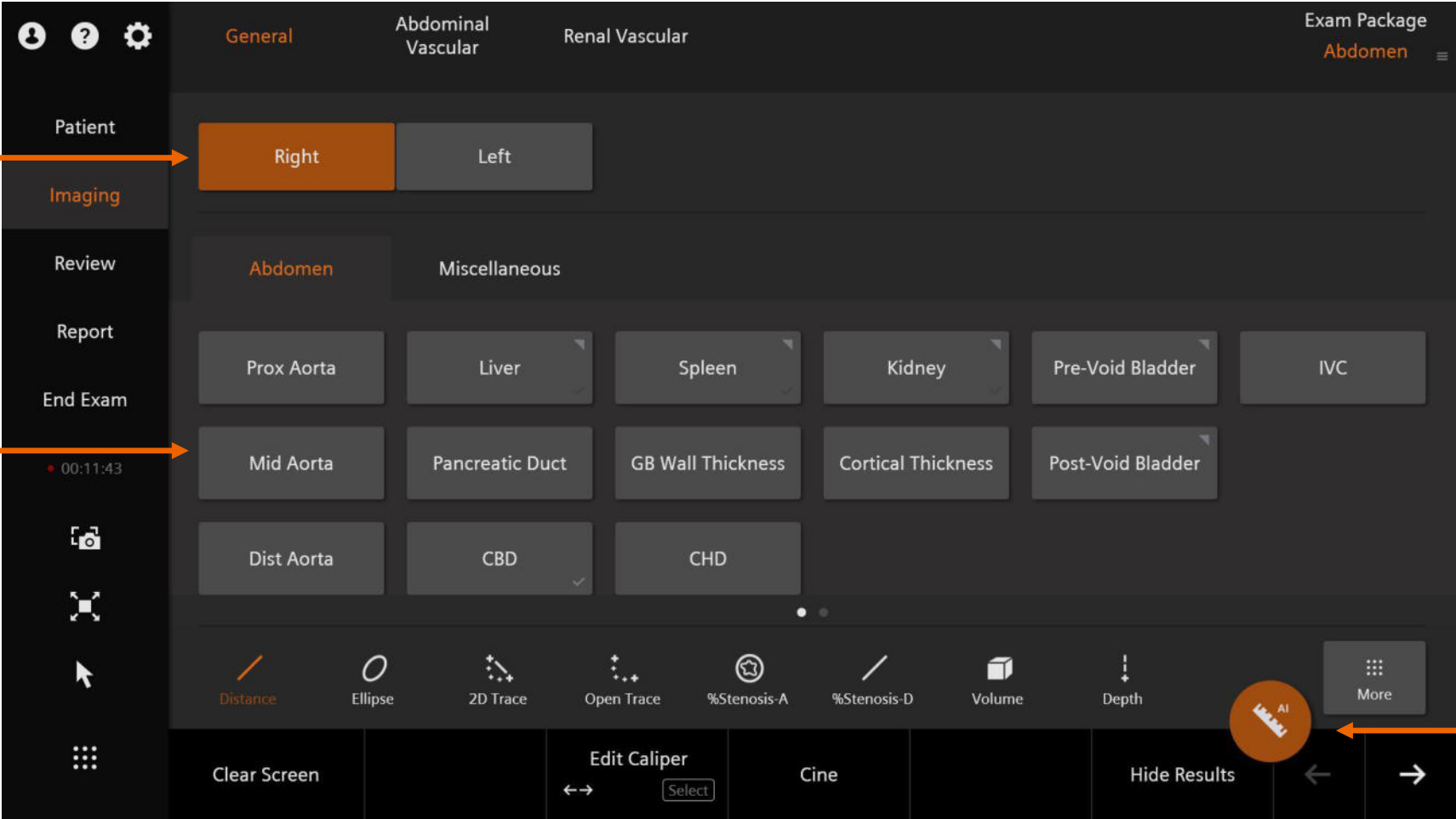


Label sub-groups

Touch Screen display layout

Right/Left options are displayed on every page

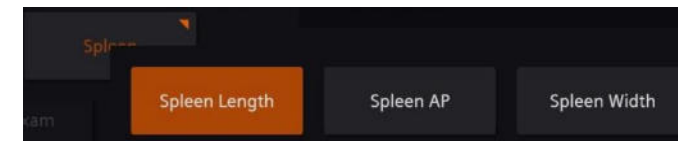
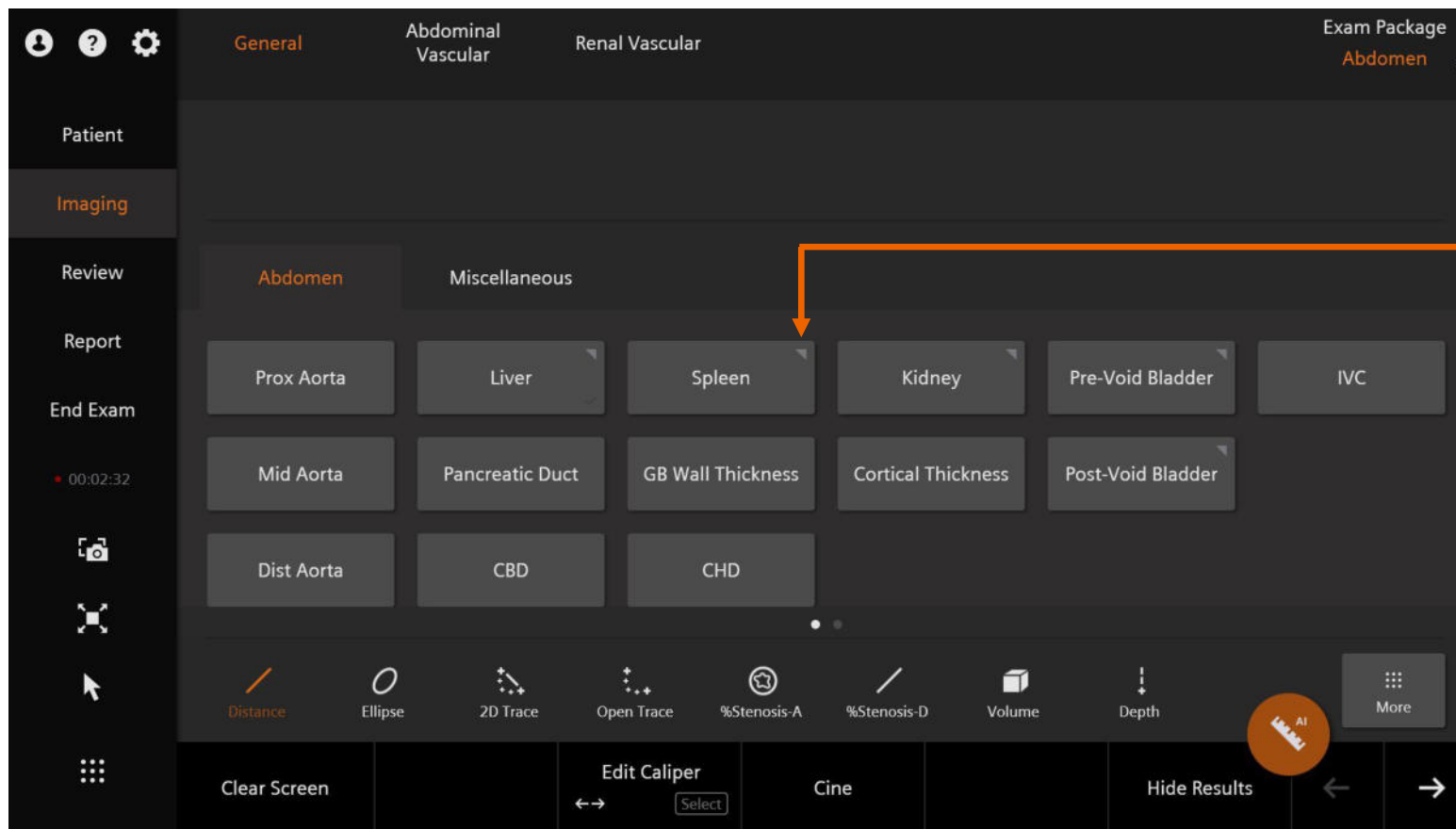
Modifiers are embedded within labels



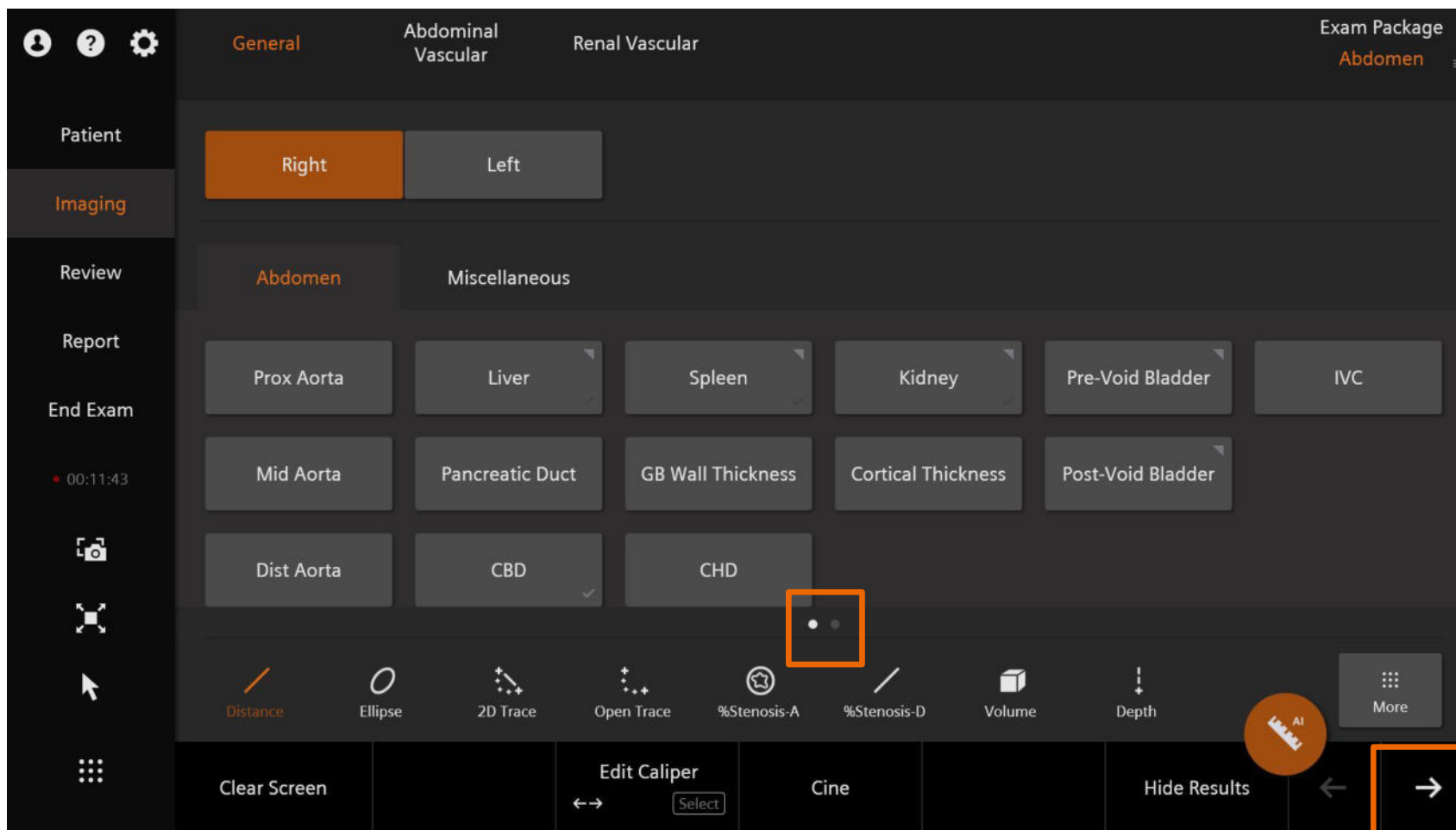
AI Measure Tool

Touch Screen display layout

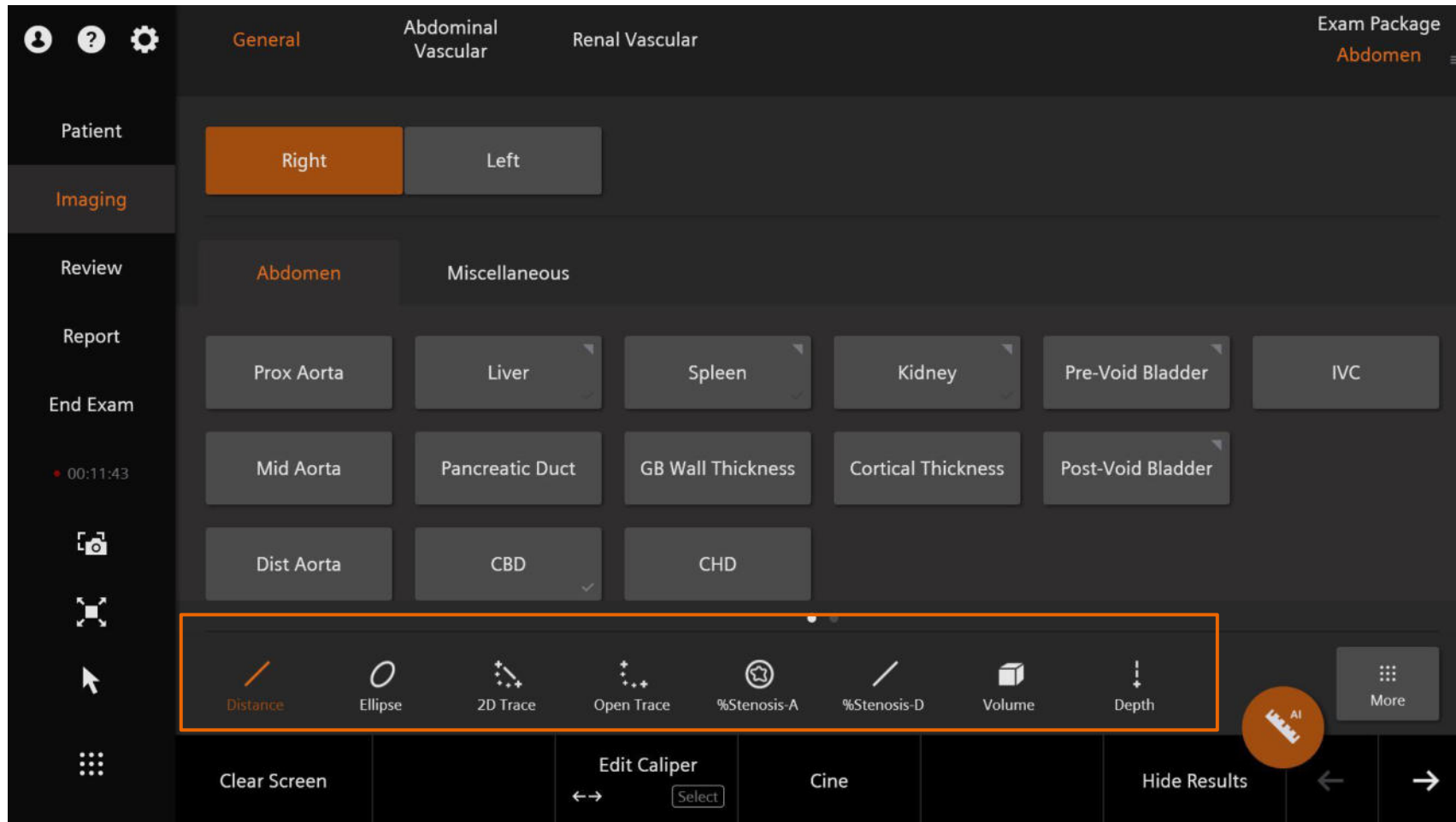
Continuous measurement folders



Touch Screen display layout

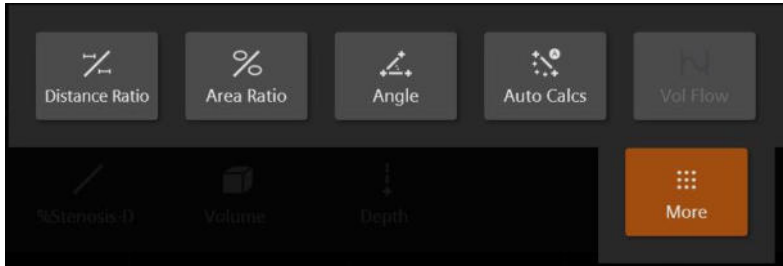
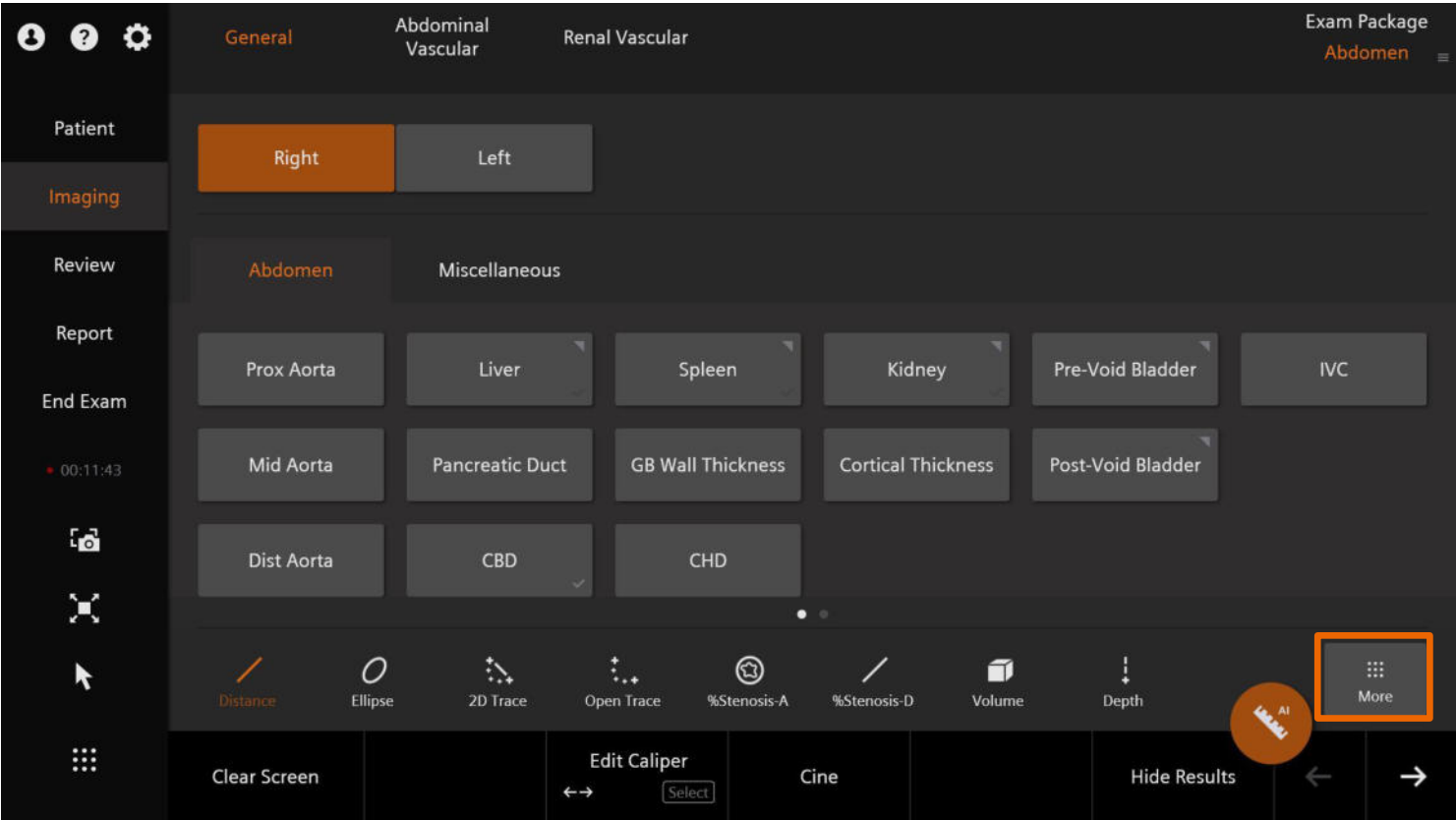


Generic measurements Tool bar



Generic measurements

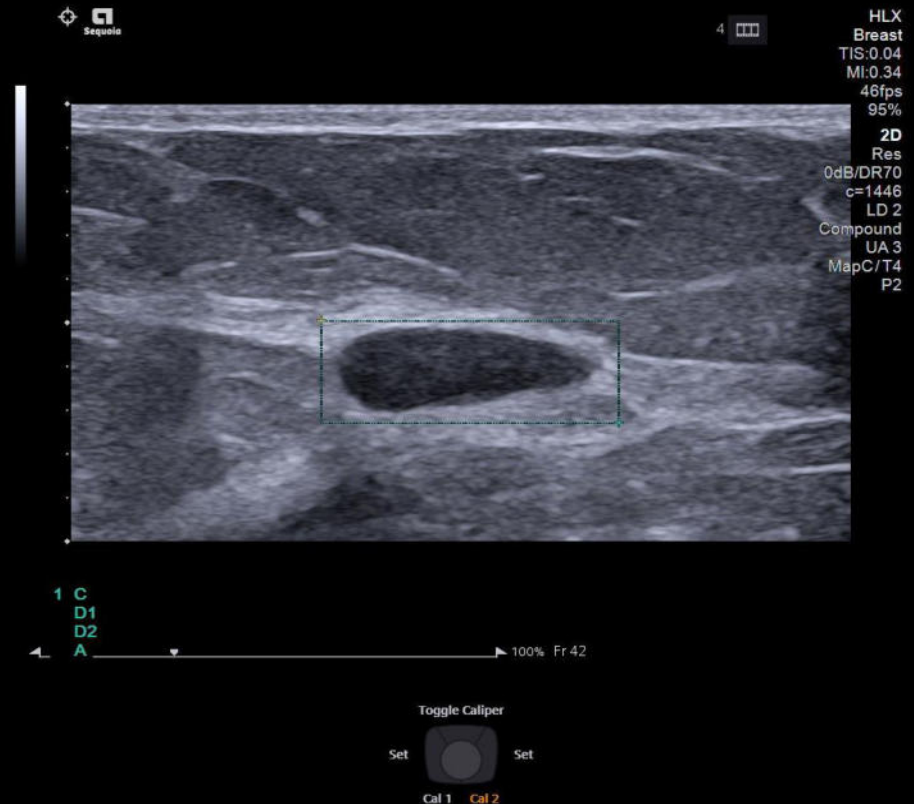
More



More options

Auto Calcs native tracing software

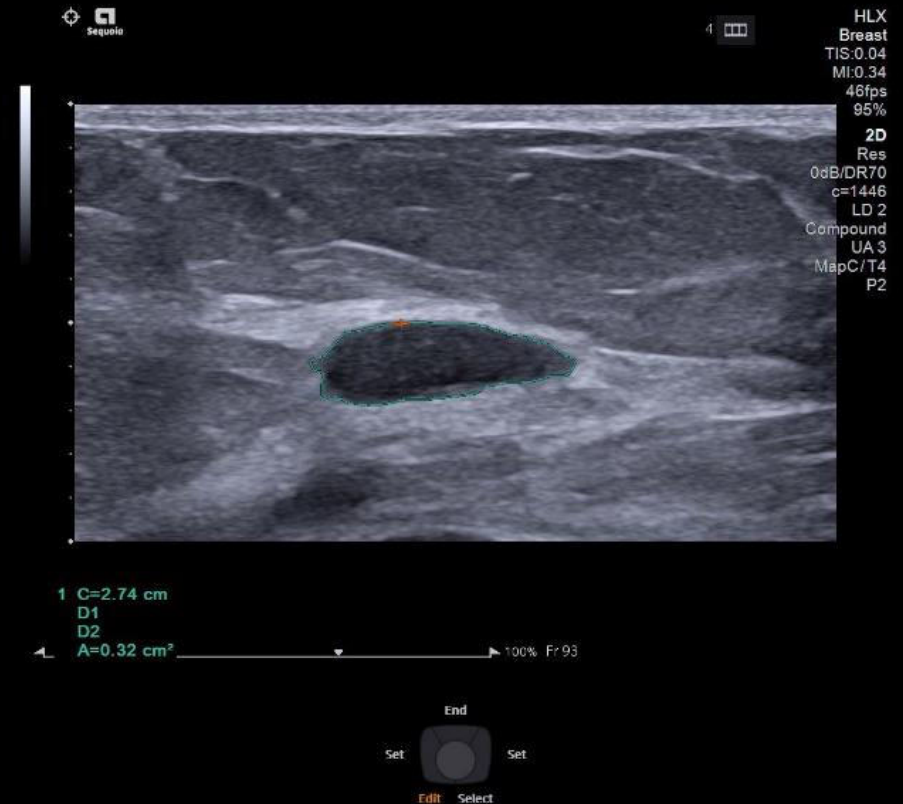
- Pattern recognition software that traces and measures the circumference, two diameters, and area of a structure
- Select **Auto Calcs** under **More**
- Position the first marker, press **Set** to anchor it and bring up the ROI
- Roll the trackball to encompass the structure within the ROI
- Press **Update** to **Toggle Caliper** between calipers



More options

Auto Calcs native tracing software

- Press **Set** and the border trace will appear; the user can roll the trackball and **Set** to edit the border
- To accept and complete the measurement, select **Update to End**

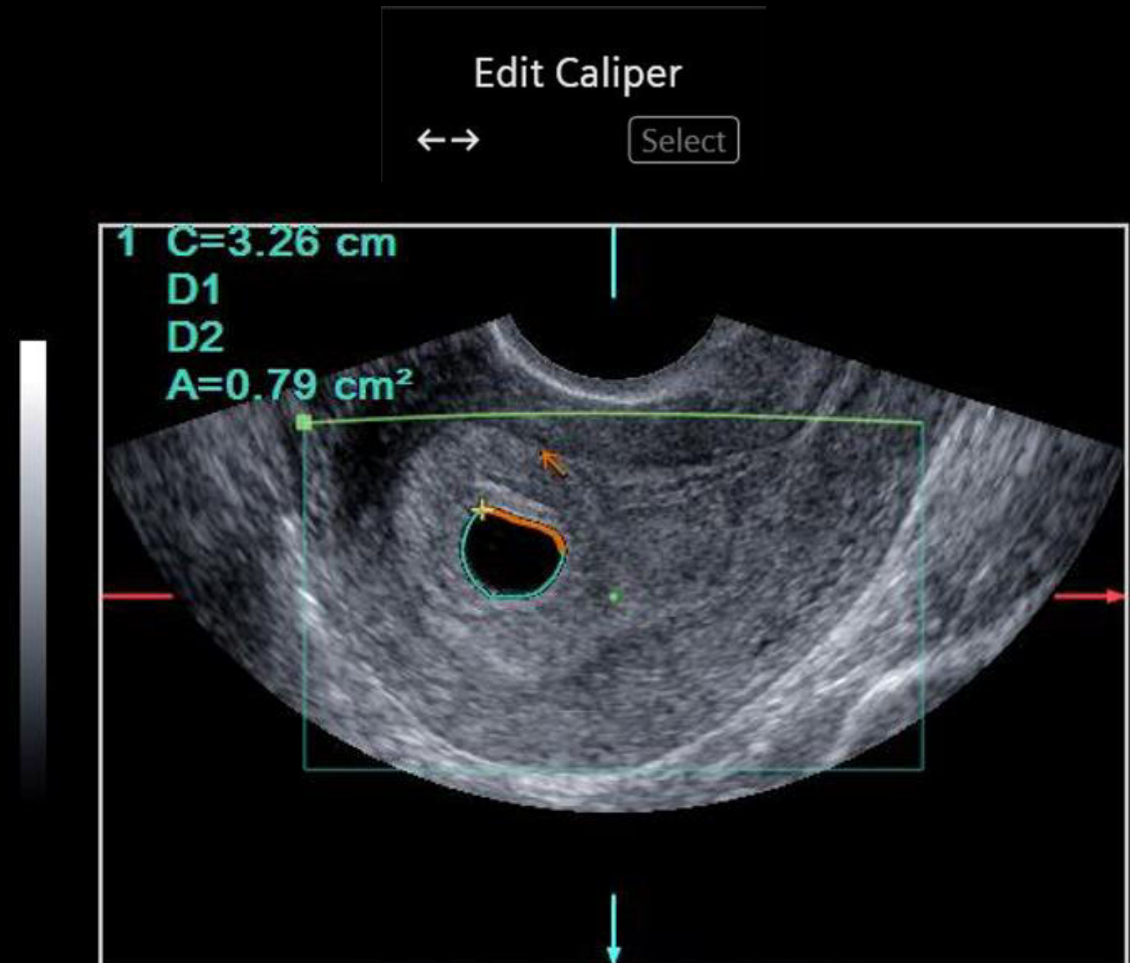


More options

Auto Calcs software – Edit Caliper

To edit the trace:

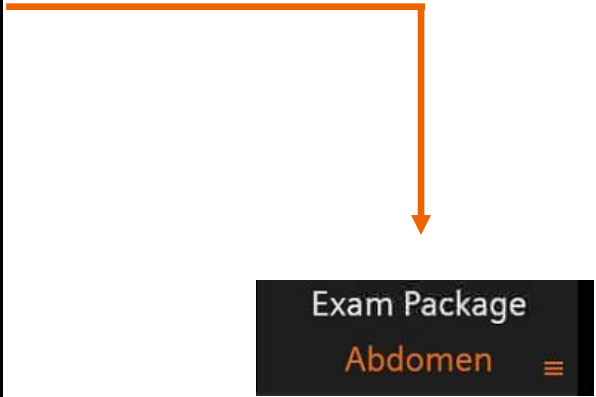
- Press the **Edit Caliper** soft key to reactivate the trace, if it is already set
- Use the orange arrow cursor to highlight an area of the trace
- Move the cursor closer to the trace to select a smaller portion, move the cursor further away from the trace to select a larger portion
- Select **Set** to activate the trace and edit as desired
- Select **Set** to complete the new trace



Accessing additional exam calculation packages

The screenshot shows a software interface with a dark theme. On the left is a vertical sidebar with icons for Patient, Imaging, Review, Report, and End Exam. The main area contains a grid of exam packages. The 'Abdomen' package is highlighted in orange. A menu icon (three horizontal lines) is located to the right of the 'Abdomen' package name in the top right corner of the grid.

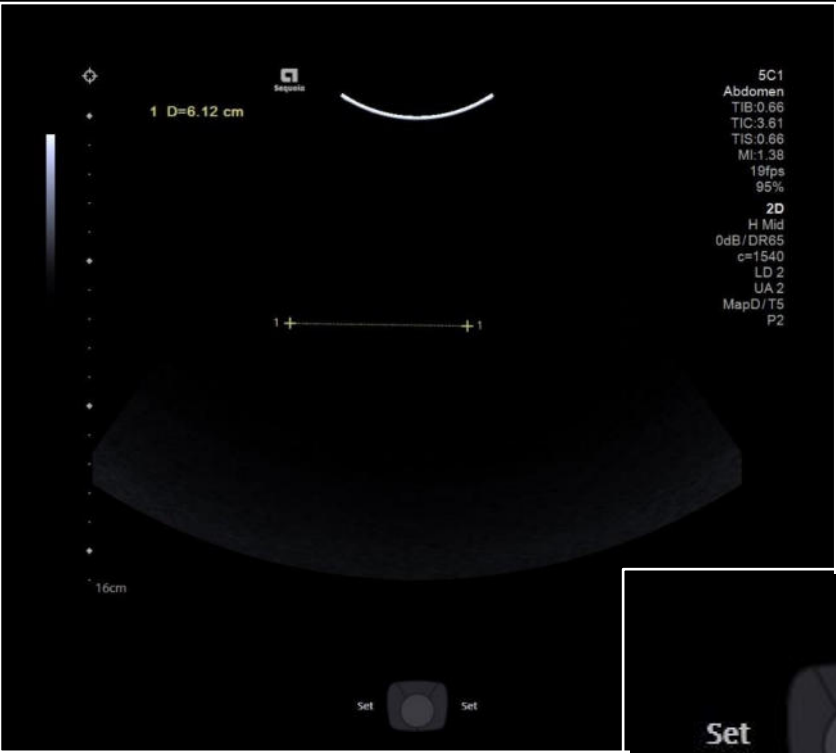
Abdomen	Carotid	Cardiac	Breast
Digital	GYN	Fetal Echo	Early OB
MSK	Neonatal Head	OB	Pediatric Abdomen
LEA	LEV	Renal	Pelvis
Penile	Prostate	TCI	Testis
Thyroid	UEA	UEV	



Active/locked caliper trackball options



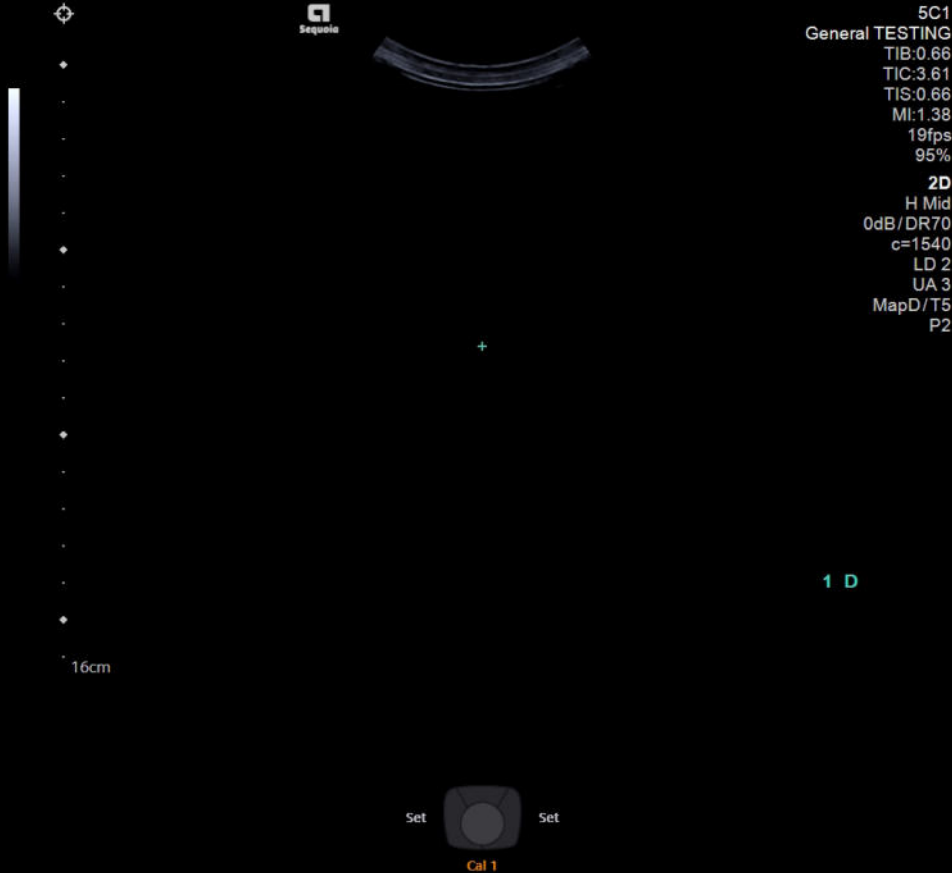
Active caliper



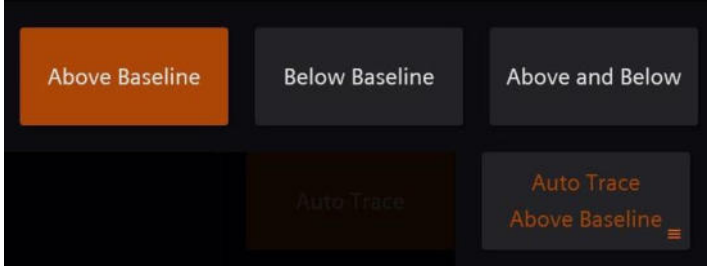
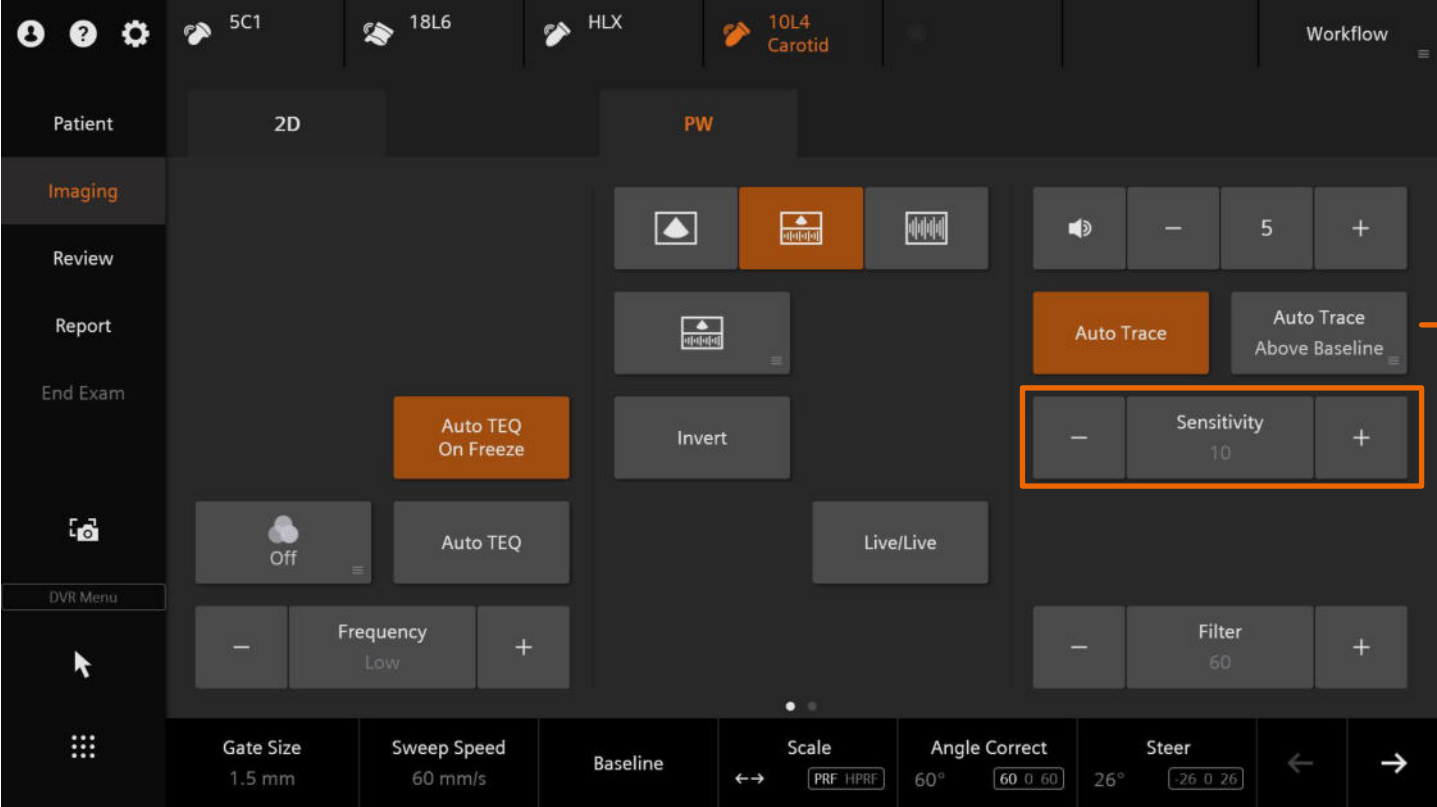
Locked caliper



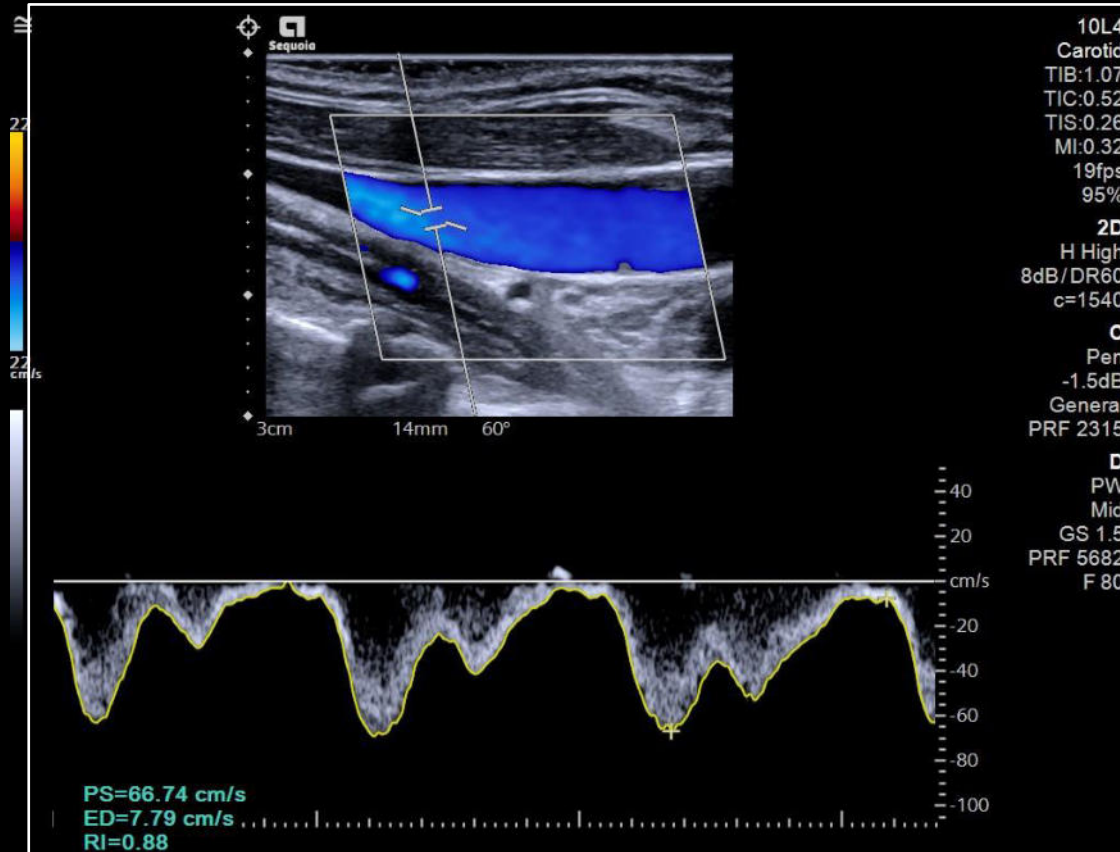
Reposition the measurement display area (MDA)



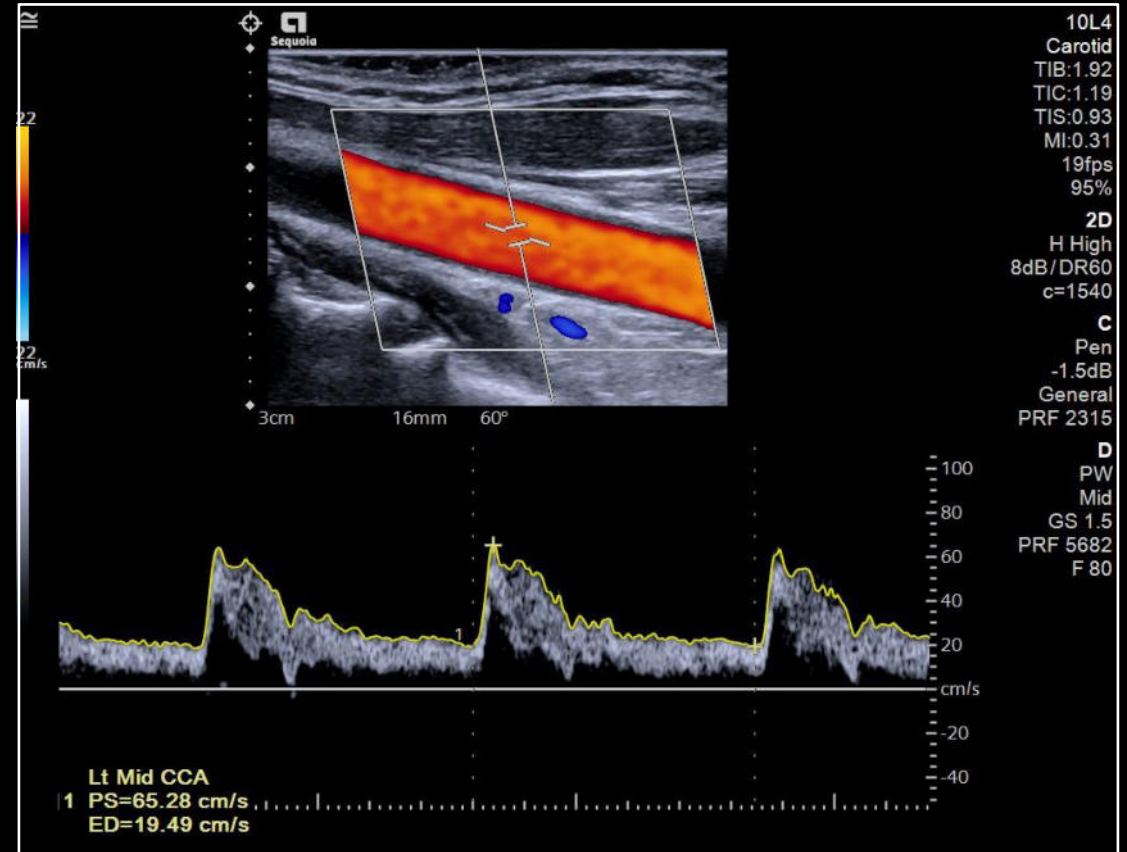
Auto Trace & Sensitivity option



Auto trace Example



Below the baseline



Above the baseline

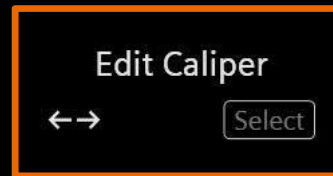
Objectives

- Identify access to measurement feature and screen information
- **Explain editing and deleting measurements**
- List exam specific measurement options
- Examine report access, layout and editing
- Outline printing options



Editing/updating a completed measurement

- Press the **Edit Caliper** soft key to activate caliper set



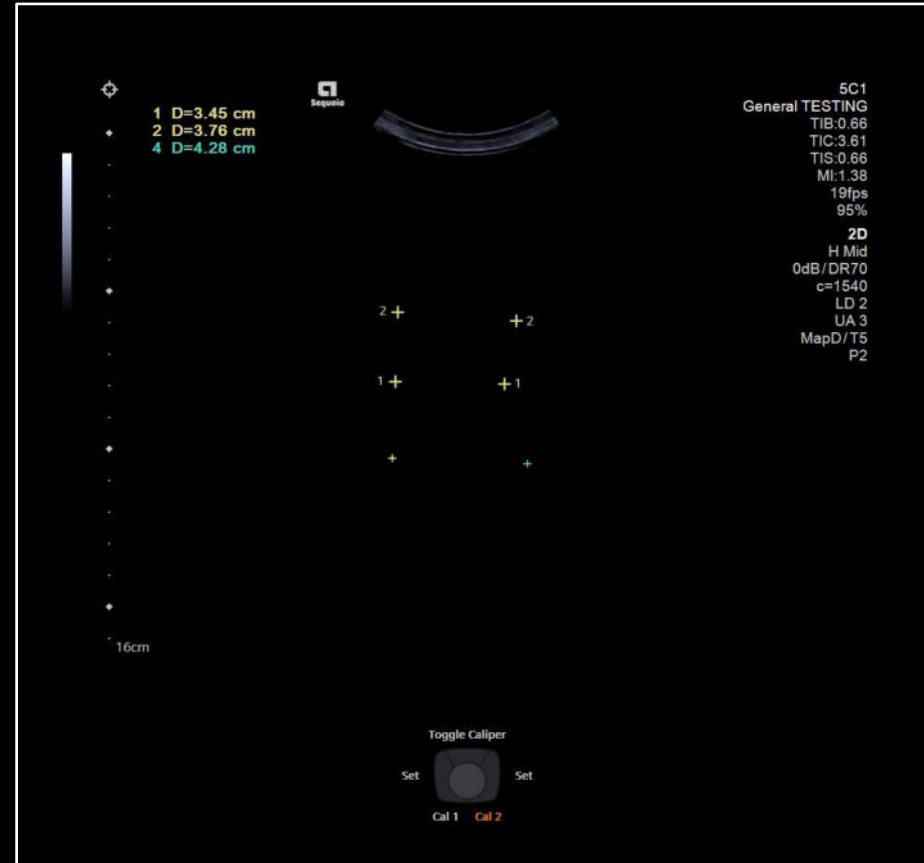
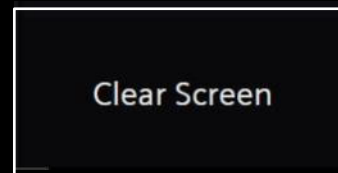
- Use the **Update** key to toggle and the **Set** key to lock caliper



Deleting a caliper

With the measurement function active:

- select the **Delete** key on the Control Panel for single measurement deletion
- Select **Clear Screen** to delete all measurements



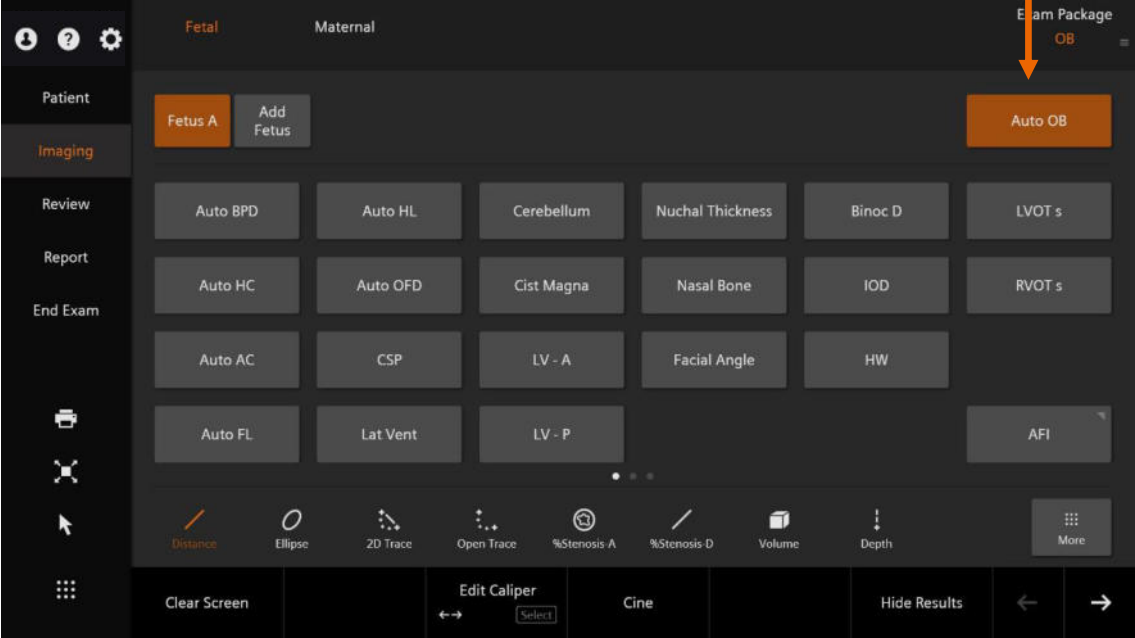
Objectives

- Identify access to measurement feature and screen information
- Explain editing and deleting measurements
- **List exam specific measurement options**
- Examine report access, layout and editing
- Outline printing options

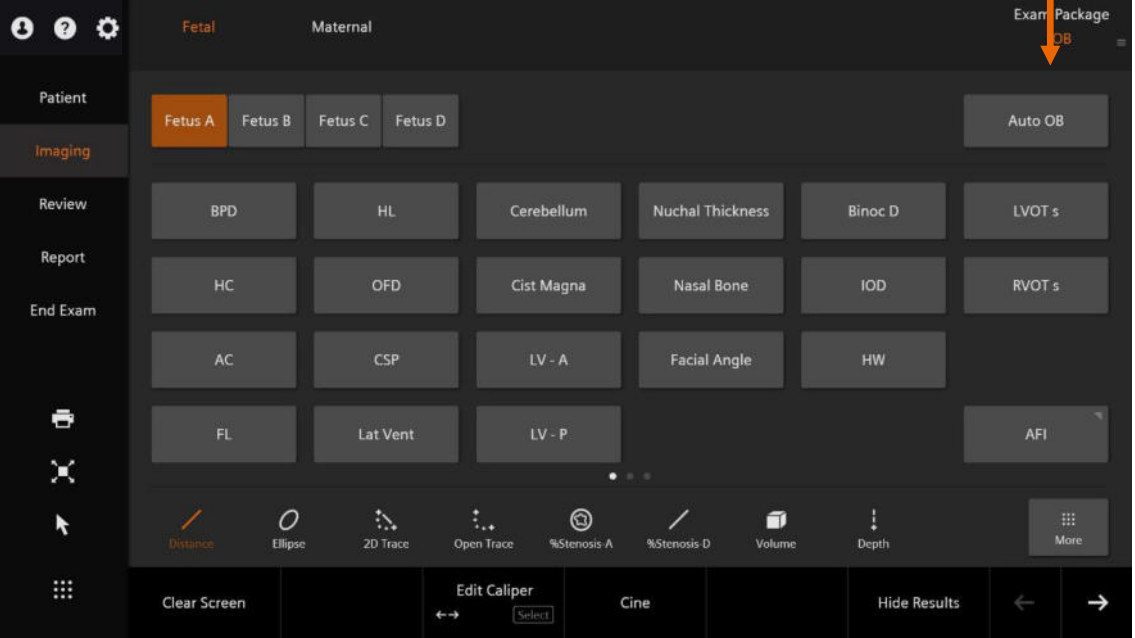
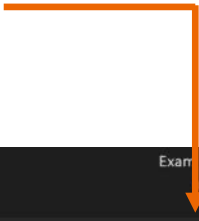


Auto OB on/off

Auto OB key is orange when ON



Auto OB key is gray when OFF



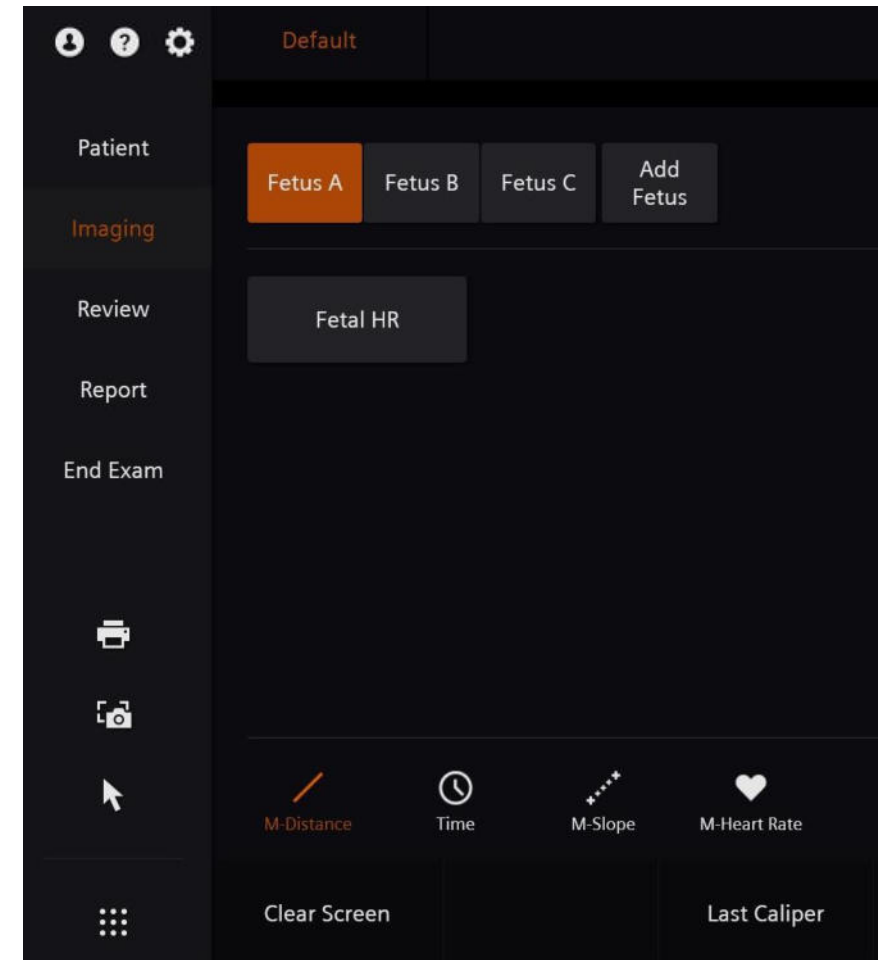
Fetal heart rate measurement

With the M-mode sweep completed:

- Activate the caliper function
- Default on Touch Screen is to Fetus A - manually select alternate fetus if multiple
- Select Fetal HR on Touch Screen and measure the appropriate beat(s)



- Number of beats for measurement is displayed in lower left corner of image screen
- Number of beats can be set in system configuration



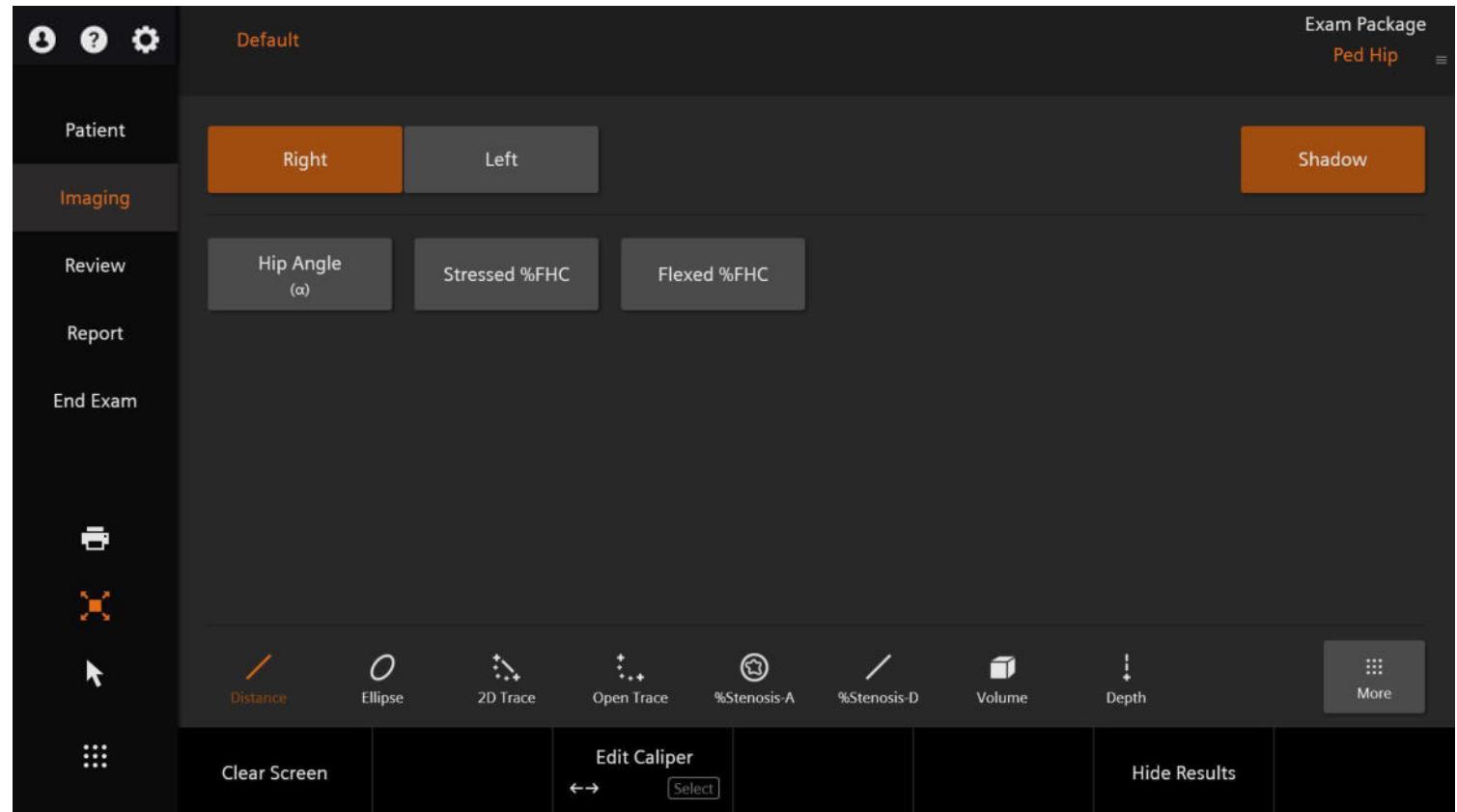
Hip measurements

Available labels:

- Hip Angle
- Femoral head coverage (stressed and flexed)

Onscreen tool and method* options:

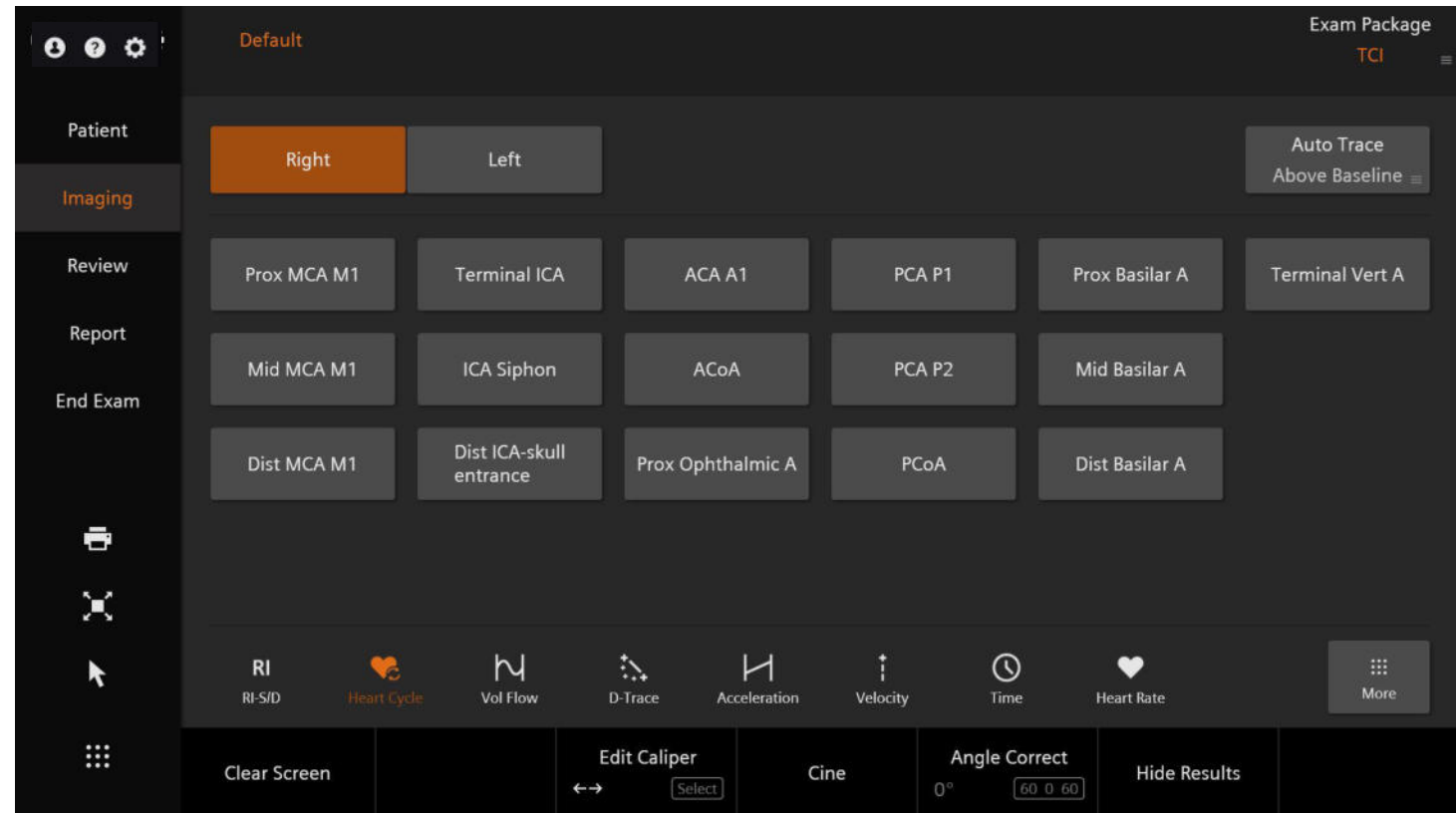
- Alpha and Beta
- Alpha only



*Options only for Hip Angle. MDA will only display the configured tool(s)

Transcranial Imaging (TCI)

- Factory measurement labels displayed in Doppler mode
- Display is configurable in the Touch Screen Layout Editor
- Auto Trace available



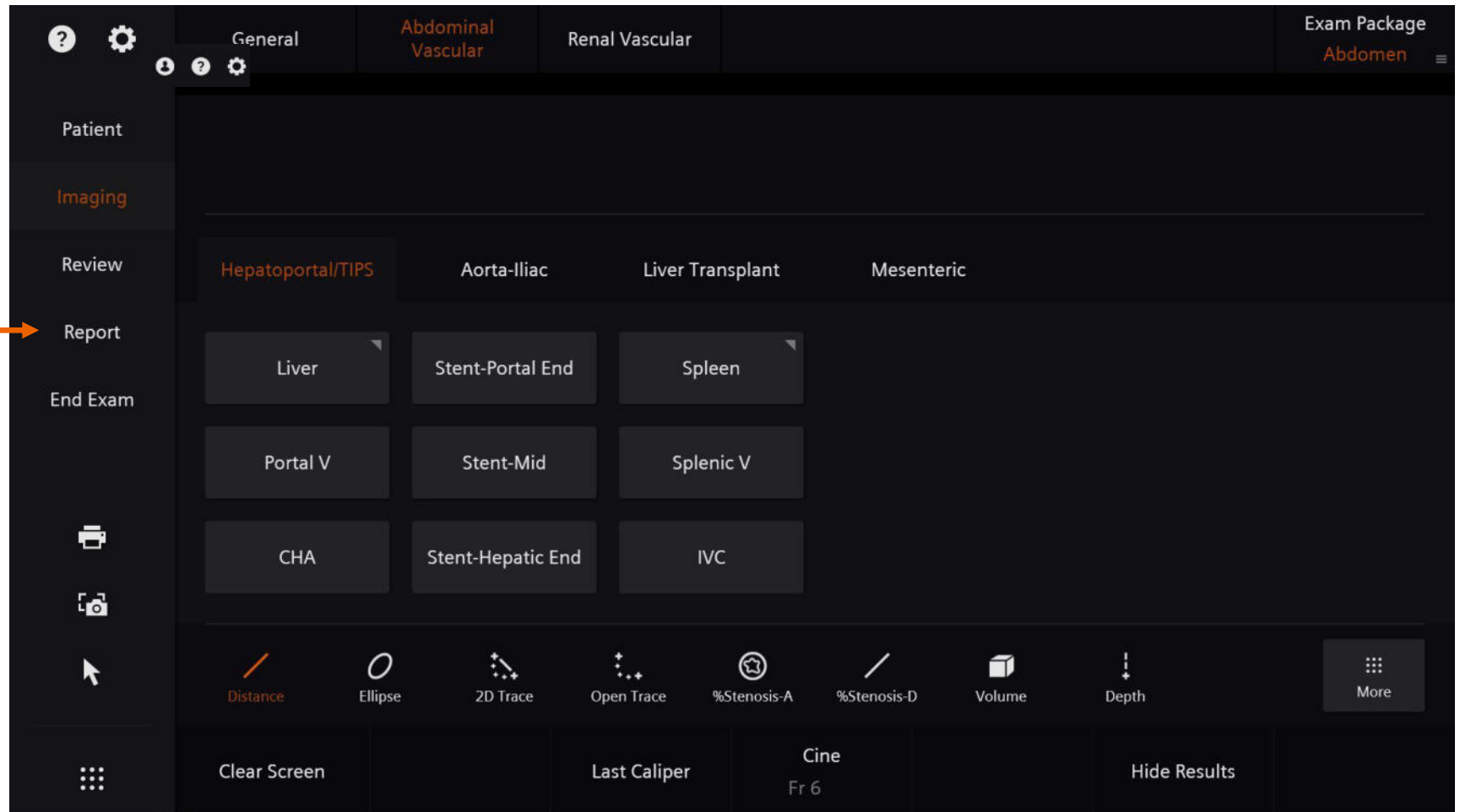
Objectives

- Identify access to measurement feature and screen information
- Explain editing and deleting measurements
- List exam specific measurement options
- **Examine report access, layout and editing**
- Outline printing options



Report access

Report access from
the Touch Screen



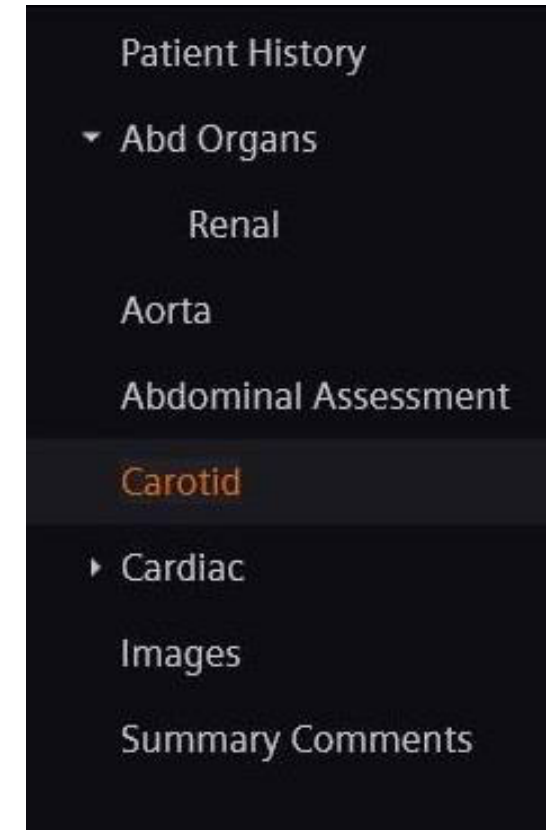
Report layout

The screenshot displays the Siemens Healthineers Patient Report interface. On the left is a navigation pane with options: Patient History, **Abd Organs**, Abdominal Assessment, Images, and Summary Comments. Below this are buttons for Summary, Export to PDF, Store Report, Transfer Report, and Print Report. The main content area is titled 'Patient Report' and contains sections for Patient information (TEST, PATIENT), History, Institution (Sequoia 3.5), and a Liver measurement table. The table lists Liver Length (13.57 cm), Liver AP (7.70 cm), and Liver Width (8.55 cm). On the right, there are thumbnails of medical images and a vertical scroll bar. Annotations with orange arrows point to various elements: 'Navigation pane' points to the left sidebar; 'Expand or collapse all fields' points to the 'Collapse All' button; 'Available functions' points to the bottom buttons; 'Section heading' points to the 'Patient' section header; 'Scroll bar' points to the vertical scrollbar; 'Thumbnails' points to the image thumbnails; and 'Measured results listed by exam' points to the numerical values in the table.

	Value	Method	1	2	3	4	5
Liver Length	13.57 cm	Last	13.57				
Liver AP	7.70 cm	Last	7.70				
Liver Width	8.55 cm	Last	8.55				

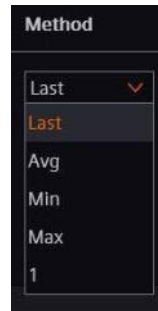
Navigation pane

- The navigation pane contains links to different report sections
- Sections are organized by anatomy
- An open/active section heading is highlighted in orange
- All reports/sections that have data are listed
- Any sections that have been “hidden” in system configuration will **not** be listed, even if measurement data has been obtained



Report content structure

- Sections can be individually collapsed by selecting the “+” or “-” for that section
- A maximum of five labeled measurements will be displayed
- The display method options are determined by tool type and can be manually altered for all exams



- “Side-by-side” options are available for some labels with left/right options

A screenshot of a report content structure interface. The interface is dark-themed and shows a list of sections: Liver, Spleen, and Kidneys. Each section contains a table of measurements. The 'Liver' section has a table with columns for Value, Method, and five numbered columns (1-5). The 'Spleen' section has a similar table with rows for Spleen Length, Spleen AP, Spleen Width, and Spleen Vol. The 'Kidneys' section has a table with rows for Rt Kidney Length and Lt Kidney Length. Below the 'Kidneys' section, there is a section titled 'Kidneys Side-by-Side' which is highlighted with an orange box. This section has a table with columns for Right and Left, and a row for Kidney Length. At the bottom of the interface, there is a 'Collapse All' button.

Liver							
	Value	Method	1	2	3	4	5
CBD	0.49 cm	Last	0.49				

Spleen							
	Value	Method	1	2	3	4	5
Spleen Length	11.24 cm	Last	11.24				
Spleen AP	7.10 cm	Last	7.10				
Spleen Width	13.97 cm	Last	13.97				
Spleen Vol	583.74 cm ³						

Kidneys							
	Value	Method	1	2	3	4	5
Rt Kidney Length	18.13 cm	Last	18.13				
Lt Kidney Length	20.31 cm	Last	20.31				

Kidneys Side-by-Side		
	Right	Left
Kidney Length	18.13 cm	20.31 cm

Report Summary - Flexible

General Measurements included:

- Diameter
- Peak Systole (PS)
- End Diastole (ED)
- Resistive Index (RI)
- Systolic/Diastolic (S/D)
- Time Average Max (TAMx)
- Time Average Min (TAMn)
- MD
- Pulsatility Index (PI)
- Angle

The screenshot shows a software interface for a 'Carotid' report. A dropdown menu is open under the 'Diam' column, listing various measurement options: Diam, PS, ED, MD, TAMx, TAMn, RI, S/D, and Angle. The 'Diam' option is highlighted in orange. The background shows a table with columns for 'Right' and 'Left' measurements, with values for PS, ED, MD, and TAMx. The 'Prox CCA' row shows values of 42.16 cm/s for PS and 24.03 cm/s for ED. Below the table are expandable sections for '+ Carotid Assess' and '- Images'.

	Right	Left
Prox CCA	PS 42.16 cm/s ED 24.03 cm/s MD 0.00 cm/s TAMx 0.00 cm/s	

Report Summary - Flexible

TCI Measurements Included:

- Peak Systole (PS)
- End Diastole (ED)
- Resistive Index (RI)
- SV Depth
- Mean TCD
- Time Average Max (TAMx)
- Time Average Min (TAMn)
- Mean Diastole (MD)
- Pulsatility Index (PI)
- Angle

	PS	ED	RI	SV Depth	Mean TCD
Prox MCA M1	0.00 cm/s	1.00	80 mm	5.59 cm/s	

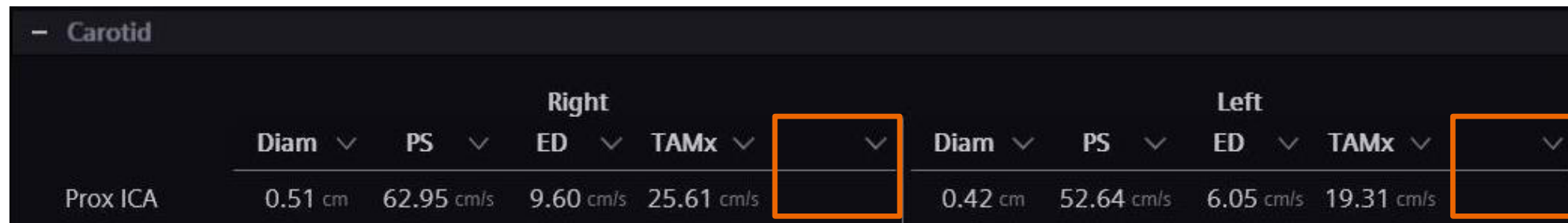
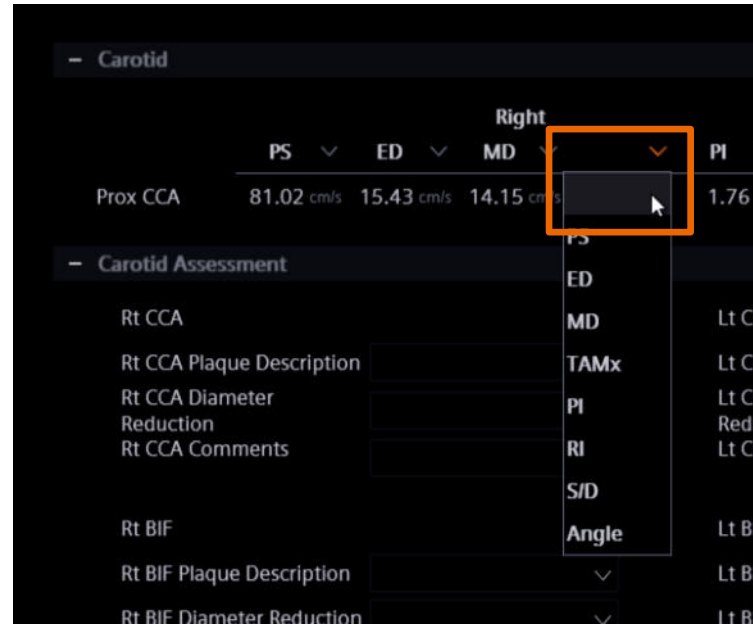
Report Summary - Flexible

- Allows user to customize summary measurement display
- Provides drop-down options when six or more included measurements are utilized



Report Summary - Flexible

- Users can hide a column by selecting the blank option in the drop-down menu

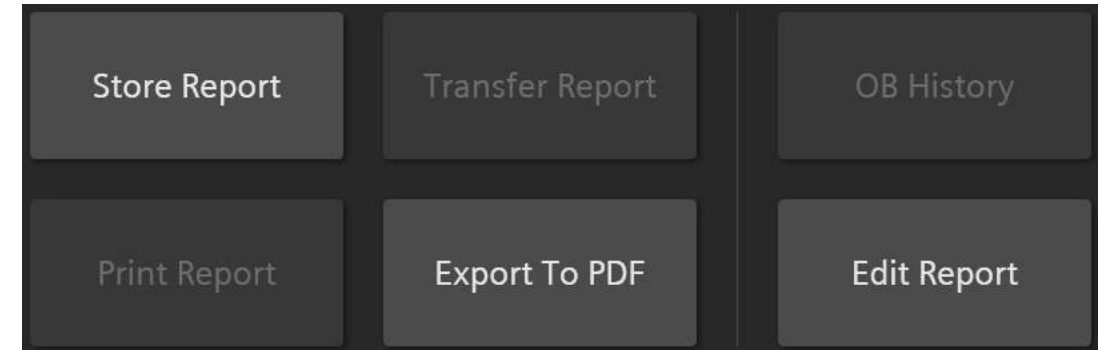


Function keys

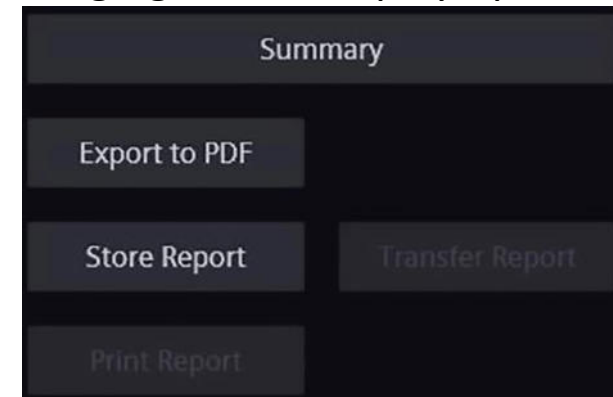
Function keys relating to the report are displayed on the Touch Screen and imaging screen

- Store Report
- Print Report
- Transfer Report
- Export to PDF
- OB History
- Edit Report
- Summary

Touch screen display options



Imaging screen display options



- Obstetric history can be manually added to the report to compare growth parameters
- Use the **Pointer** to select the date the previous exam was performed on
- Enter data in the fields provided and select **OK** to add

Note: if the previous exam was performed on the same system, the data will be populated in the OB History

OB History

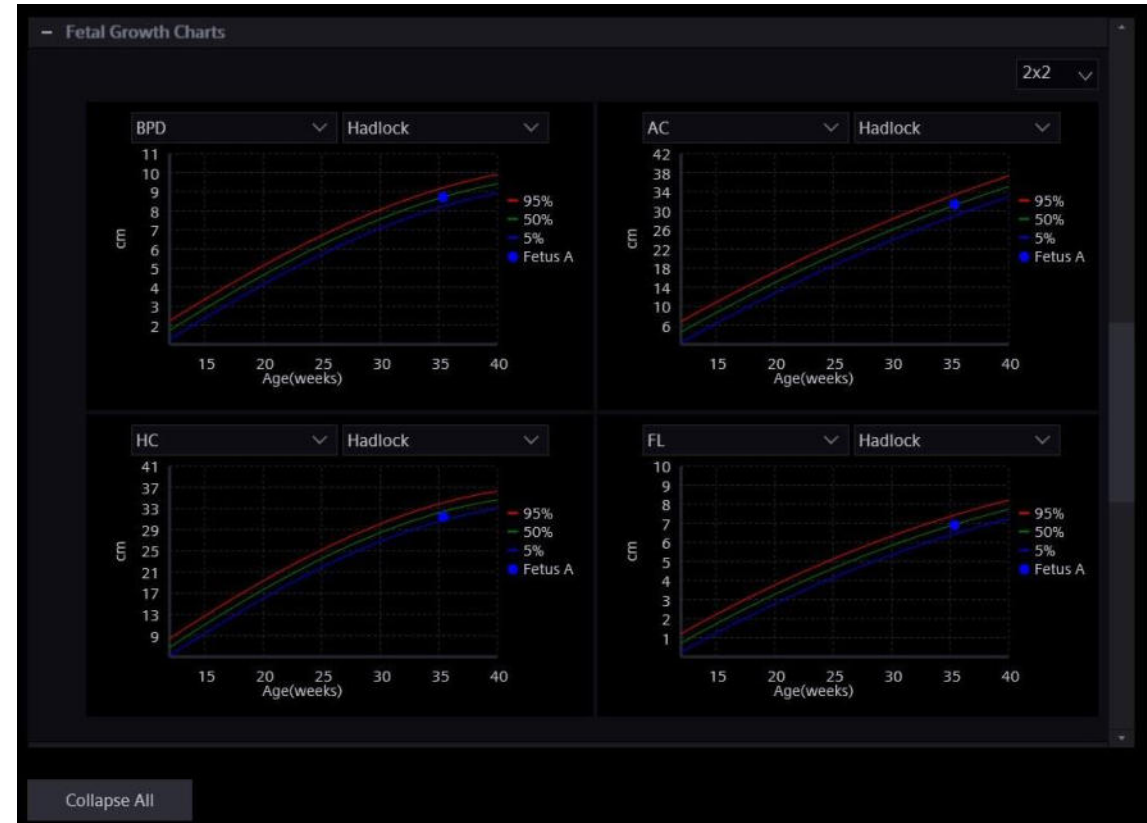
Fetus A

Trend	Exam Date	GSD cm	CRL cm	BPD cm	HC cm	AC cm	FL cm	HL cm	EFW g	Interval Growth
<input type="checkbox"/>	MM/YYYY									
<input type="checkbox"/>	MM/YYYY									
<input type="checkbox"/>	MM/YYYY									
<input type="checkbox"/>	MM/YYYY									
<input type="checkbox"/>	MM/YYYY									
<input type="checkbox"/>	MM/YYYY									
<input type="checkbox"/>	MM/YYYY									
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<input type="checkbox"/>	MM/YYYY									
<input type="checkbox"/>	MM/YYYY									
<input type="checkbox"/>	MM/YYYY									
<input type="checkbox"/>	MM/YYYY									
<input type="checkbox"/>	MM/YYYY									
<input type="checkbox"/>	MM/YYYY									
<input type="checkbox"/>	MM/YYYY									

OK Cancel

Fetal growth charts

- Fetal growth charts can be displayed in the report
- User can change the measured parameter and chart author using the drop-down menus located on each chart
- Options for chart layout are found in the drop-down menu in the right upper corner – this is a 2 x 2 layout
- To collapse/hide charts click on the minus sign (-) in the section heading



Cardiac report

- Cardiac reports are displayed in sections that contain headings and sub-headings to divide the results
- Display method options can be changed for individual measurements from those listed in the drop-down menu
- If changes are made, an additional function key to Save as Cardiac Default will store the current settings

	Value	Method	1	2	3	4	5
Dimensions PLAX							
IVS d PLAX	0.93 cm	Last	0.89	0.93			
IVS s PLAX	1.44 cm	Last	1.09	1.44			
LVID d PLAX	5.54 cm	Last	5.63	5.54			
LVID s PLAX	3.78 cm	Last	3.72	3.78			
LVPW d PLAX	0.91 cm	Last	0.85	0.91			
LVPW s PLAX	1.53 cm	Last	1.50	1.53			
IVS/LVPW	1.03						
IVS %Thick	54.7 %						
LVPW %Thick	69.4 %						
LV Relative Wall Thickness (LV RWT)	32.7 %						
A4C							
LV Major s A4C	5.96 cm	Last	5.96				
LV Mass ASE							
IVS d PLAX	0.93 cm	Last	0.89	0.93			
LVID d PLAX	5.54 cm	Last	5.63	5.54			
LVPW d PLAX	0.91 cm	Last	0.85	0.91			
LV Mass ASE	192.55 g						

Collapse All Set all results for Cardiac to: Default Save as Cardiac Default

Available assessments

Assessment sections are available for:

- Abdomen
- Gyn
- Early OB – fetal and maternal
- OB – fetal and maternal
- Fetal Echo
- Carotid
- Hip

Comment or drop-down menu formats are available.

Custom assessments can be added in the System Configuration.

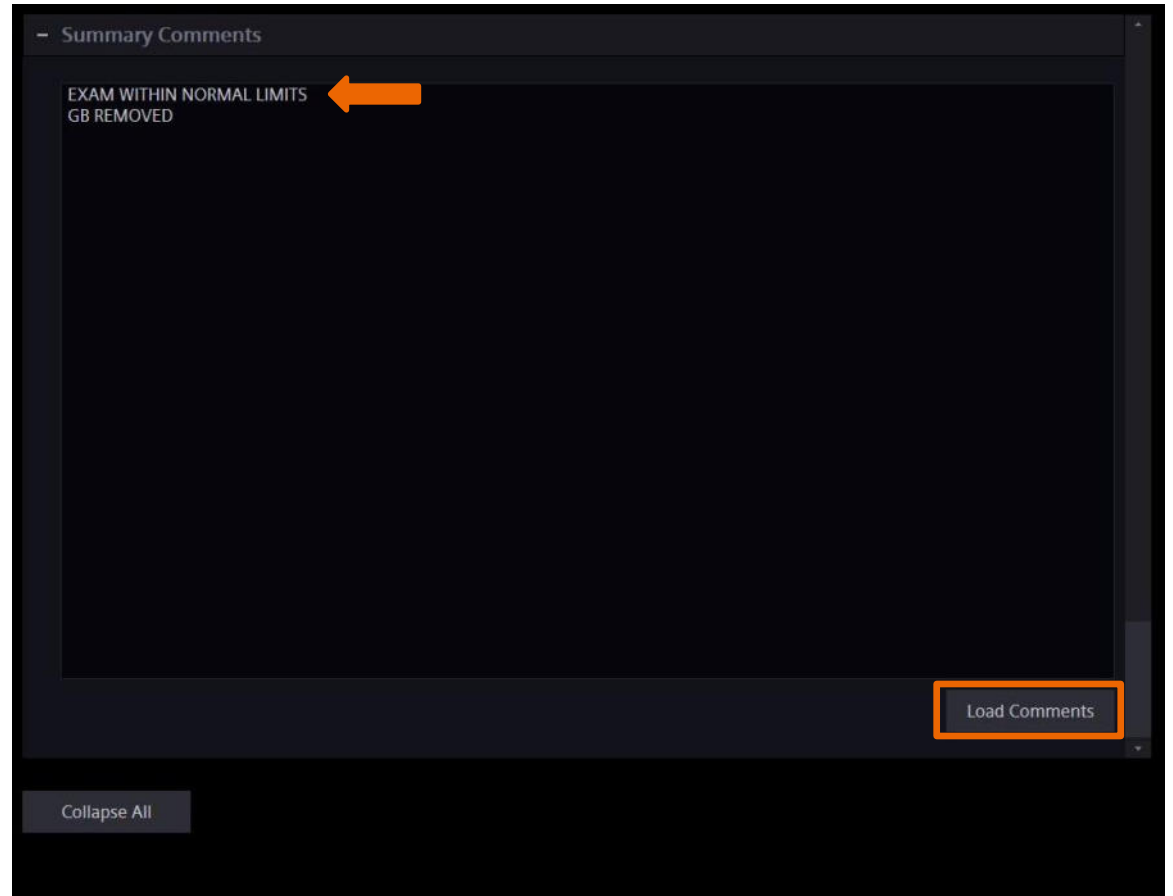
The screenshot shows the 'Fetal Assessment' configuration panel. It includes a 'Placenta' section with checkboxes for 'Anterior', 'Posterior', 'Fundal', 'Mid', 'Right Lateral', 'Left Lateral', 'Low Lying', 'Marginal Previa', and 'Partial Previa'. Below this are dropdown menus for 'Placenta Grade', 'Placenta Cord Insertion', 'Placenta Comments', 'Amniotic Fluid', and '3 Vessel Cord'.

The screenshot shows the 'Abdominal Assessment' configuration panel. It features dropdown menus for 'Liver', 'Echotexture', 'Fatty Infiltration', 'Portal Hypertension', 'Portal Vein', and 'Focal Lesions'.

The screenshot shows the 'GYN Assessment' configuration panel. It includes dropdown menus for 'Uterus', 'Endometrium', and their respective 'Comments' fields.

Summary comments

- A section for summary comments is available for each exam type
- Comments can be freeform and added by using the keyboard to enter the specific comment
- If pre-programmed comments are available, select the **Load Comments** key
- Custom comments can be added in system configuration

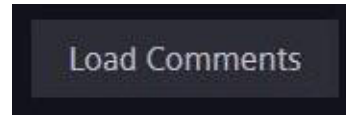


Summary comments

Add pre-programmed comments

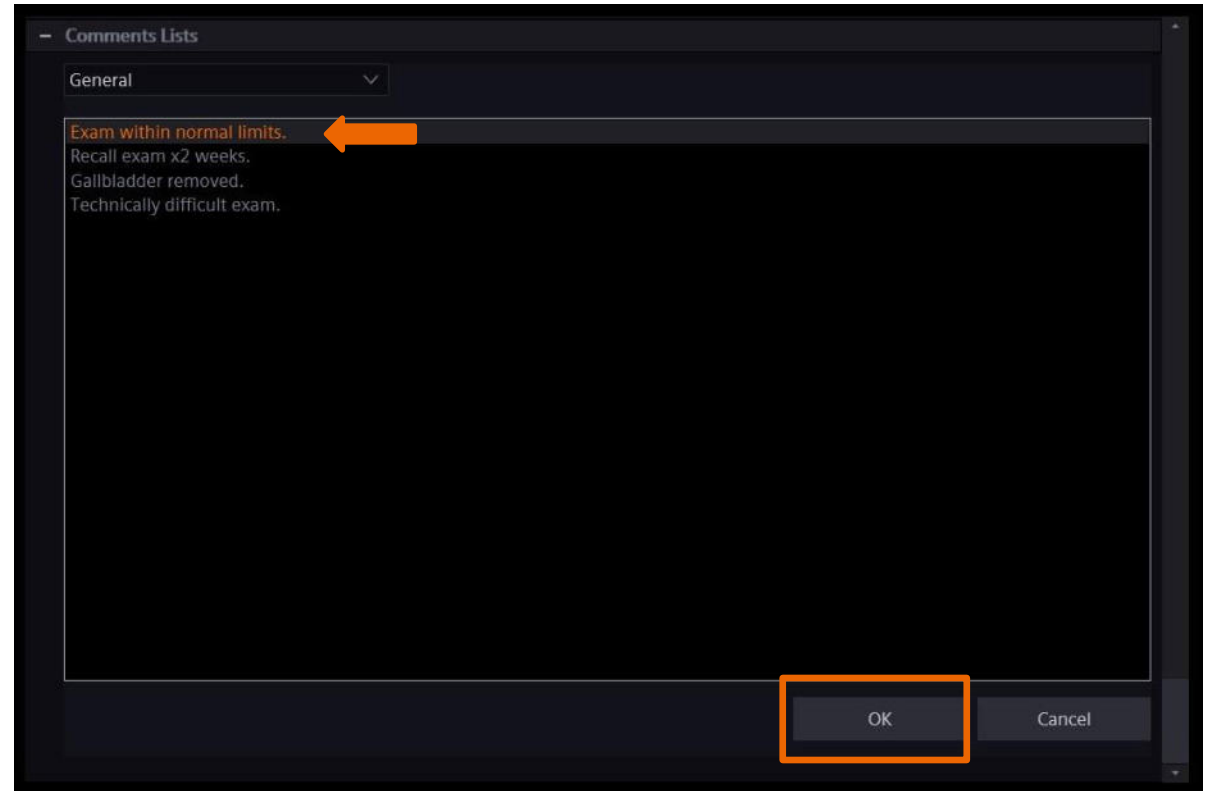
To add comments:

- Select **Load Comments**



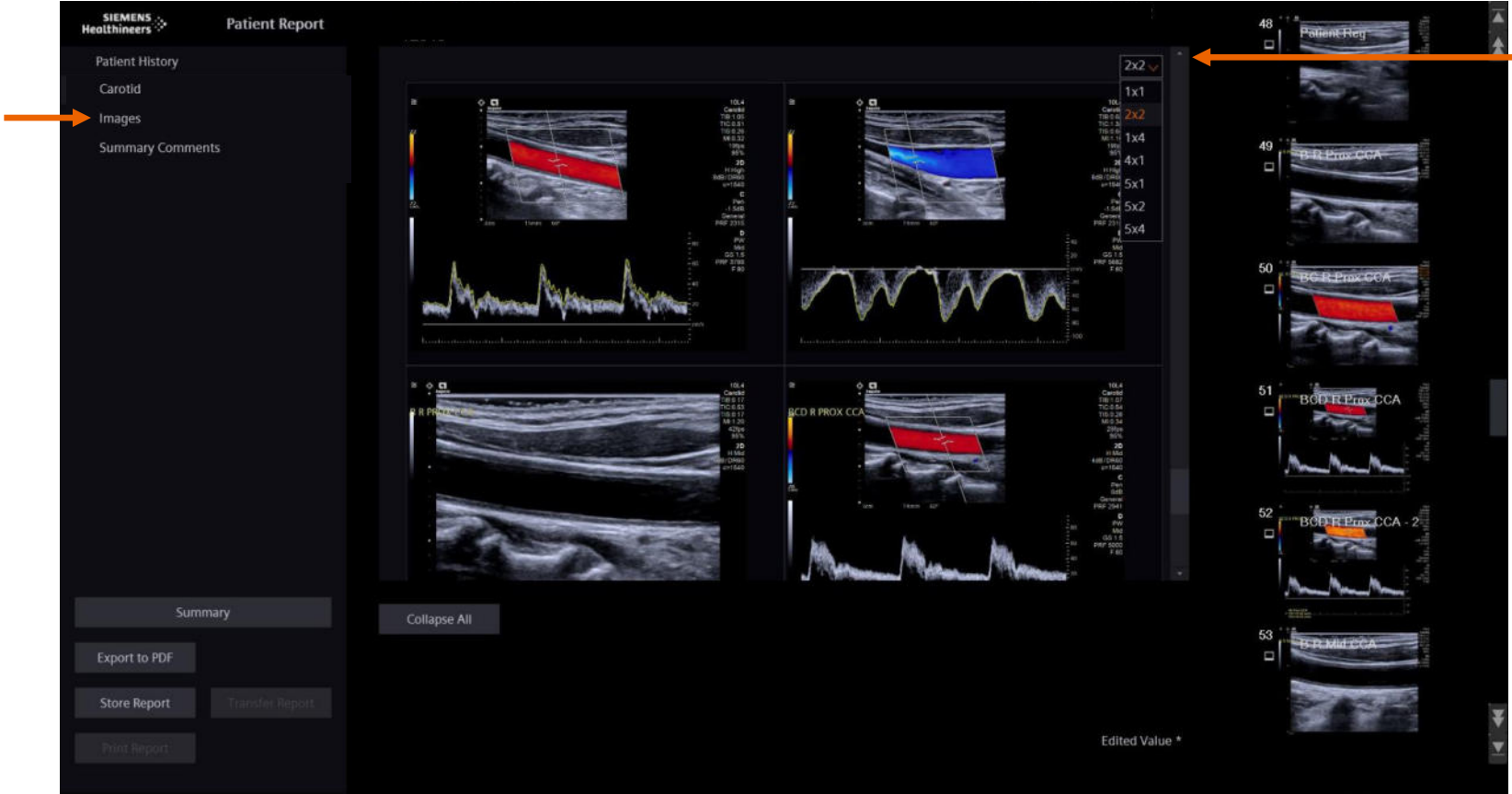
- Use the **Pointer** to highlight the chosen comment
- Select **OK**
- Comment will populate report

Multiple comments can be added to a single report one comment at a time.



Add images to report

Quick navigation to images section

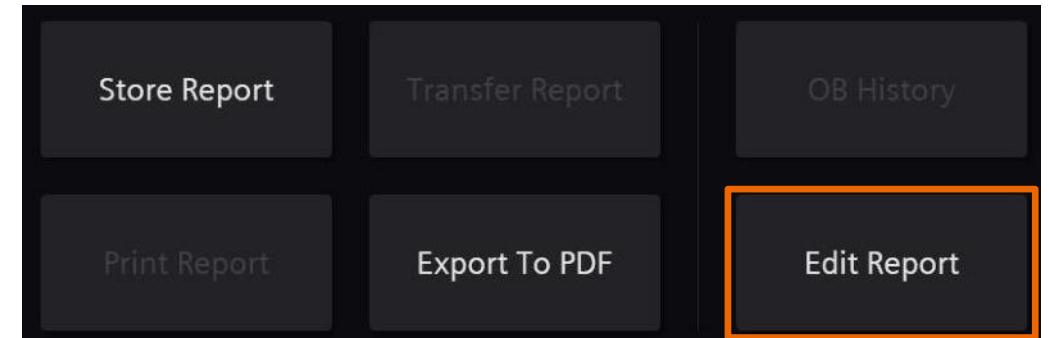


Drop-down for display layout

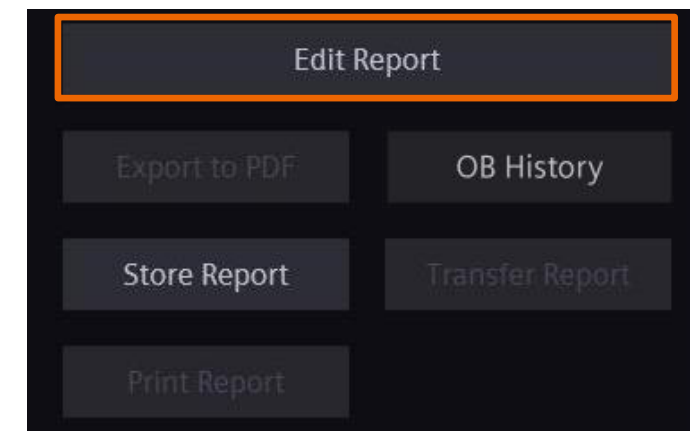
Edit report

- Report data can be edited
- Function key to activate editing feature is available on both the Touch Screen and the imaging screen
- Select **Edit Report** and use the **Set** key, **trackball**, and **keyboard** to input the new values

Touch Screen display



Imaging screen display



(continued next slide)

Edit report

Once the Edit Report function is selected:

- Use the **Pointer** and **Set** key to select/highlight the value to be edited
- Use the keyboard to enter the new value or use the **Delete** key on the Touch Screen to remove value entirely
- Move to another cell with the **Tab** key or trackball to complete change/deletion
- Edited values will be indicated by an asterisk (*) in the data cell and noted at the bottom of the report

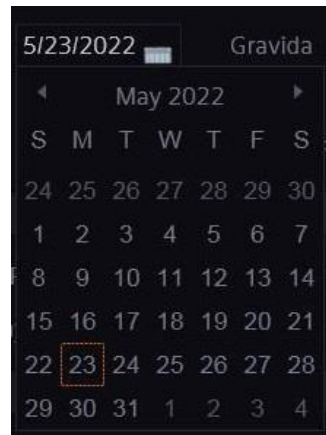
The screenshot displays the 'Edit Report' interface for a carotid study. The interface is organized into sections: 'Study', 'Institution', 'Carotid', and 'Carotid Assessment'. The 'Carotid' section contains a table with columns for 'Value', 'Method', and five numbered columns (1-5). The 'Carotid Assessment' section includes dropdown menus for 'Rt CCA' and 'Lt CCA' parameters.

	Value	Method	1	2	3	4	5
Rt Prox CCA							
PS	71.73 cm/s	Last	70.92	72.94	71.73		
ED	12.09 cm/s		10.88	10.88*	12.09*		
Angle	-60 °		-60	-60	-60		

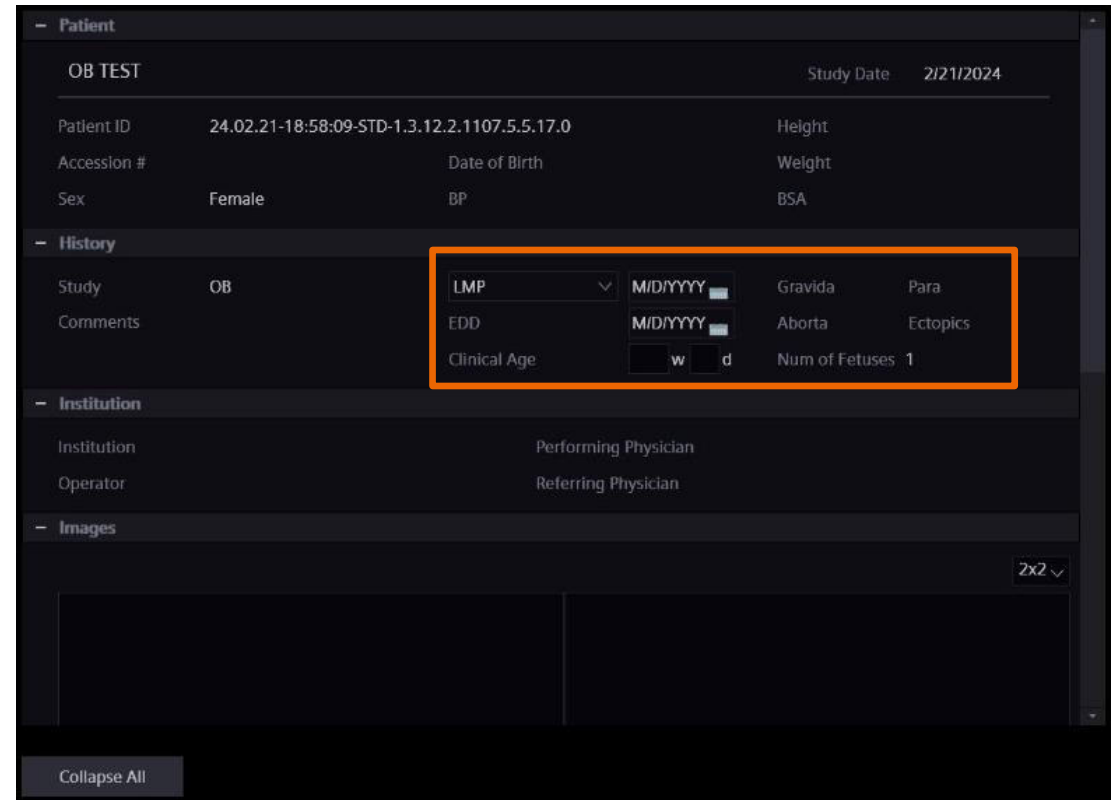
The 'Carotid Assessment' section includes dropdown menus for 'Rt CCA' and 'Lt CCA' parameters, with sub-parameters for 'Plaque Description', 'Diameter Reduction', and 'Comments'. A 'Collapse All' button is located at the bottom left of the interface.

Editing OB dating data

- OB dating data can be edited on the report
- Use the **Pointer** to select the calendar drop-down and desired date



- The date can be altered manually by highlighting the field entering the date using the keyboard



Data type available/entered	Report behavior	Patient registration
1. Last Menstrual Period (LMP)	<ul style="list-style-type: none"> LMP is displayed and is editable EDD and Clinical Age are calculated from LMP LMP does not change if Clinical Age is changed 	<ul style="list-style-type: none"> If LMP is edited from the report page, all values (LMP, EDD, and Clinical Age) are updated on the patient registration page
2. Expected Date of Delivery (EDD)	<ul style="list-style-type: none"> EDD is displayed and is editable EDD will be re-calculated on report if Clinical Age is edited LMP will be blank (not calculated from EDD if a value was not entered originally) 	<ul style="list-style-type: none"> If EDD is edited from the report page, Clinical Age is re-calculated and both values are updated in the patient registration page LMP remains blank if not entered
2. Clinical Age	<ul style="list-style-type: none"> Clinical Age is displayed and is editable If Clinical Age is edited, EDD will be re-calculated on the report LMP will be blank (not calculated from Clinical Age if a value was not entered originally) 	<ul style="list-style-type: none"> If Clinical Age is edited from the report page, EDD is re-calculated and both values are updated in the patient registration page LMP remains blank if not entered

Edit shear wave values

- Shear wave values cannot be edited in the report, only deleted
- Select **Edit Report** to activate the editing function
- Values cannot be retrieved once they are deleted
- All values – Mean, Std Dev, Median, IQR, and IQR/Median listed in the results will be re-calculated

	Liver Site 1		Depth
	Vs m/s	E kPa	cm
1	1.30	5.0	4.7
2	1.26	4.8	4.7
3	1.52	6.9	4.7
4	1.36	5.6	4.7
5	1.28	4.9	4.7
6	1.37	5.7	4.7
7	1.34	5.3	4.7
8	1.37	5.6	4.7
9	1.24	4.6	4.7
10	1.81	9.9	4.7
Mean	1.39	5.8	
Std Dev	0.17	1.6	
Median	1.35	5.4	
IQR	0.09	0.8	
IQR/Median	0.07	0.1	

Overall Statistics

Mean 1.39 m/s Std Dev 0.17 m/s Median 1.35 m/s IQR 0.09 m/s IQR/Median 0.07

Mean 5.8 kPa Std Dev 1.6 kPa Median 5.4 kPa IQR 0.8 kPa IQR/Median 0.1

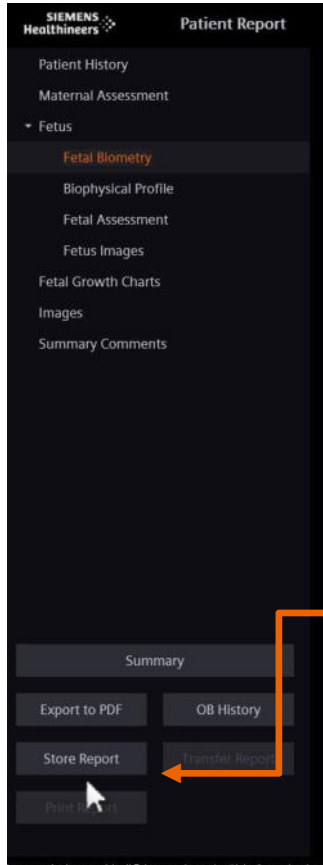
Note: Shear Wave Speed and Elasticity values may vary among manufacturers!

Objectives

- Identify access to measurement feature and screen information
- Explain editing and deleting measurements
- List exam specific measurement options
- Examine report access, layout and editing
- **Outline printing options**

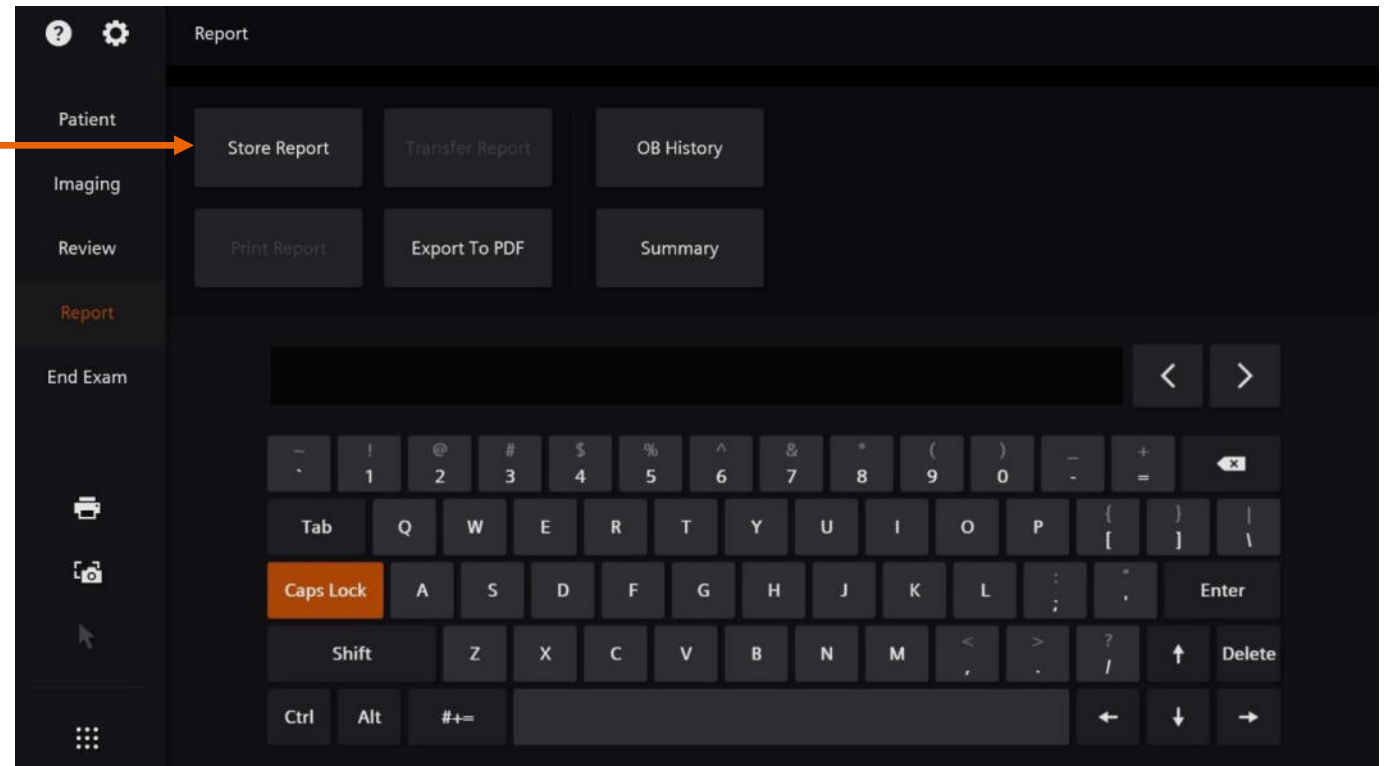


Print/store report



Touch Screen
store report
option

Imaging screen
store report
option



Store Report command

Patient

Last Name
First Name
Patient ID
Date of Birth
Height
BP

History

Study ***
Comments

Institution

Institution
Performing Physician
Referring Physician
Operator

Liver

Spleen

Spleen Length 12.91 cm

Kidneys

Rt Kidney Length 10.80 cm
Lt Kidney Length 11.25 cm

Kidneys Side-by-Side

Kidney Length

Thyroid

Rt Thyroid Length 0.87 cm

Carotid

Rt Prox CCA Diam 6.24 cm
Rt Prox CCA ED 14.5 cm
PS 83.9 cm
ED 35.7 cm
RI 0.57
S/D 2.35
Angle 0°
Lt Prox ECA PS 60.1 cm
ED 13.2 cm
RI 0.78
S/D 4.55
Angle 0°
Lt Prox ICA PS 86.5 cm
ED 42.9 cm
RI 0.50
S/D 2.02
Angle 0°

Carotid Ratios

Rt Prox ICA(83.9)
Lt Prox ICA(86.5)

Carotid Side-by-Side

Fetus Information

Clinical Age / GA
US Age 24
EFW 79
EFW Age 24
EFW%
Fetal HR

Fetal Biometry

BPD Value / Method 5.39 cm
Last 21.75 cm
HC Last 22.41 cm
FL Last 4.32 cm
EFW Last 796 g

Fetal Ratios

Label	Ratio	Range Low	Range High	Growth	Author
HC/AC	0.97				
FL/BPD	80.15				
FL/HC	19.86				
FL/AC	19.28				
CI	67.52				

Thyroid

	Value	Method	1	2	3	4	5
Lt Thyroid Length	4.08 cm	Last	4.08				
Lt Thyroid AP	12.46 cm	Last	12.46				
Lt Thyroid Width	2.46 cm	Last	2.46				
Lt Thyroid Vol	59.90 cm³						

Thyroid Side-by-Side

	Right	Left
Thyroid Length		4.08 cm
Thyroid AP		12.46 cm
Thyroid Width		2.46 cm
Thyroid Vol		59.90 cm³

Edited Value *

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Thank you for your enthusiasm!

Questions?