

ACUSON Juniper Ultrasound System

Measurement On Screen How To and Report
SW Release VB30D



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Speaker Notes:

In this presentation, we will discuss the ACUSON Juniper Ultrasound system measurement on screen how to and report.

Objectives

- Explain measurement access and screen information
- Illustrate display customizations
- Describe measurement labeling and accessing alternate calculation packages
- Identify the Measurement Display Area and onscreen options
- Explain editing and deleting measurements
- Discuss exam specific measurements
- Examine Report access and printing



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Speaker Notes:

Here are the objectives for this presentation. We will begin with discussing the measurement access and screen information.

Accessing measurements



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Speaker Notes:

The measurement function is arranged by exam type and is accessed by selecting the **Caliper** key on the Control Panel.

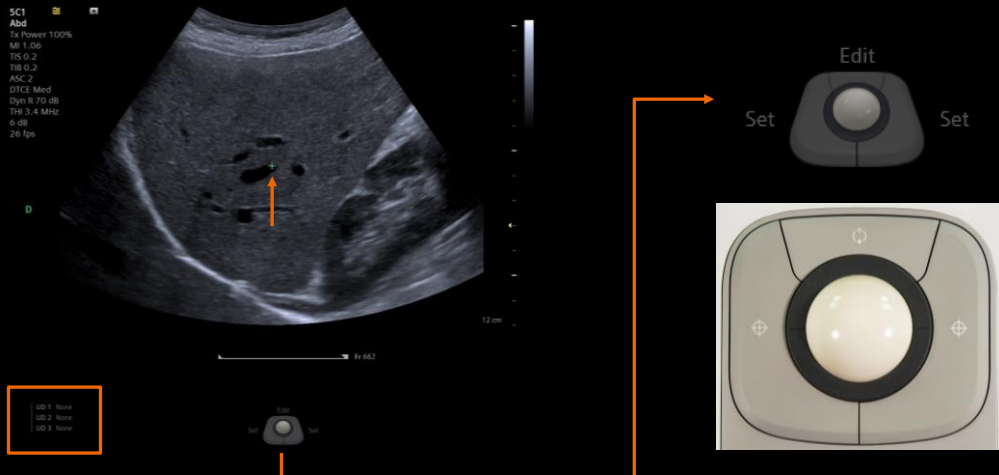
Once activated, measurements and calculations for all exam types are available and can be placed on the following image types:

- Real-time or frozen 2D images
- Frozen M-mode and Doppler spectrums
- Stored images in review

The system also provides some exam-specific measurements and calculations for certain specialized exam types, such as obstetrics and echocardiography.

Customization of exam types is found in **System configuration > Measurements** and will be covered in a separate presentation.

Measurement onscreen display



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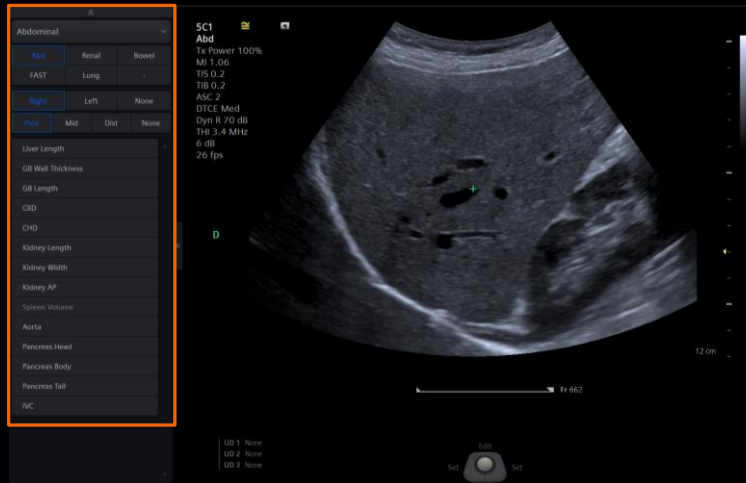
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Speaker Notes:

After selecting the **Caliper** key, an active caliper point will appear in the center of the imaging screen. Active calipers are green in color.

- To anchor the first caliper point, press the **Set** key on either side of the trackball and anchored or locked calipers will turn from green to yellow in color
- Activate the second caliper point by rolling the trackball and moving the caliper point to the desired location and repeat the **Set** key action to anchor it in place
- To edit any of the measurements, select **Edit** from the trackball pad
- A corresponding Measurement Display Area (MDA) will appear onscreen in a predefined position displaying the measured value; the position of the MDA is customizable in the **System configuration > Measurement > General** and will be covered in a separate presentation
- To exit the measurement function, unfreeze the image or press the **Caliper** key

Left panel onscreen display



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Speaker Notes:

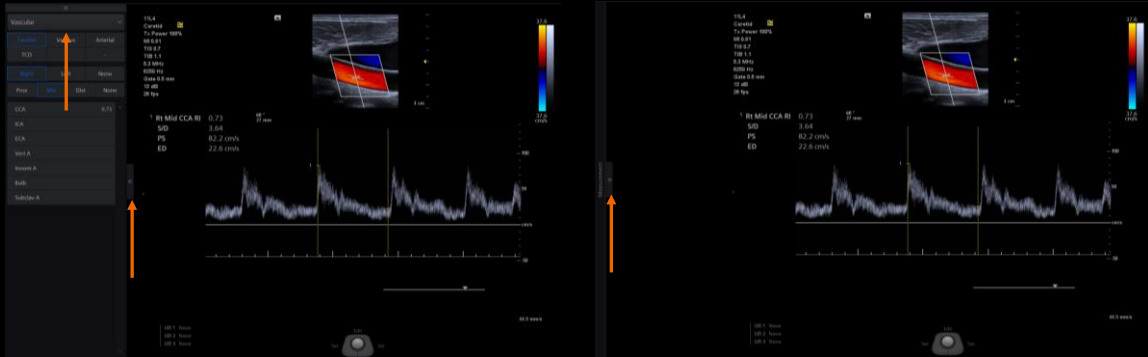
Two measurement menus are available for use once the caliper function has been activated – one on the image screen and the other on the Touch Screen.

The onscreen measurement menu will appear beside the imaging area in the left panel. This menu is customizable and can contain appropriate modifiers for view or dimension, such as right or left, proximal or distal, as well as anatomy-specific labels, such as kidney length or bladder volume.

This field can be configured with the same parameters as the Touch Screen menu or configured differently to reflect other user needs.

Configuration for the left panel measurement menu can be found in **System Configuration > Measurements > [Exam Icon] > Left Panel** and will be covered in a separate presentation.

Left panel on/off



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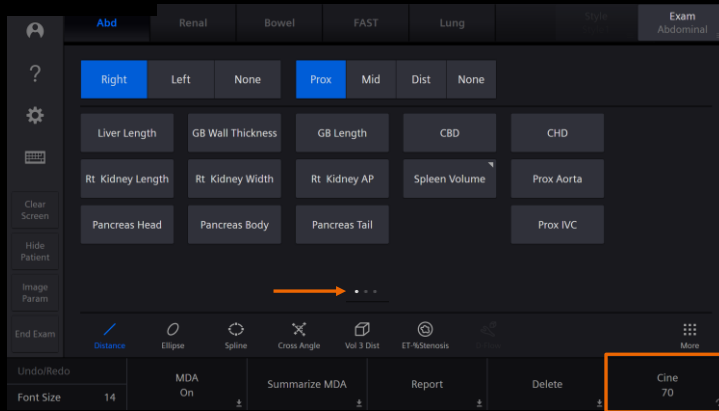
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Speaker Notes:

If the user decides not to utilize the left panel menu or visually does not want it on the screen, it can be hidden by selecting the tab on the side or top of the panel with the system pointer.

To redisplay the left panel, use the pointer to select the arrowed tab on the far-left side of the screen.

Touch Screen display layout



Speaker Notes:

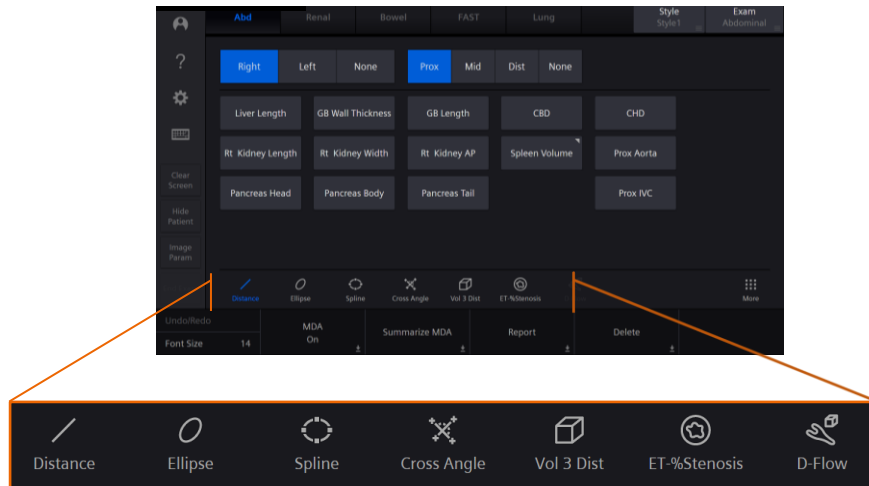
The measurement menu displayed on the Touch Screen is very robust and customizable. As with the example on the left, the Touch Screen menu can contain modifiers for view, position and anatomy-specific labels.

Additional pages of labeled measurements are available by swiping the Touch Screen to the left or right. Additional pages are indicated to the user by dots at the bottom of the Touch Screen above the tool bar. There are 24 measurement labels available per page with 3 pages in total.

A wide range of generic measurements are available on the Touch Screen (separate from the labeled measurements) and can be customized to the tool bar at the bottom of the Touch Screen in system configuration. The Cine function is available while you are in the measurement page.

For more information on measurement configuration, please refer to the ACUSON Juniper ultrasound system Measurement Configuration presentation.

Generic measurements Tool bar



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Speaker Notes:

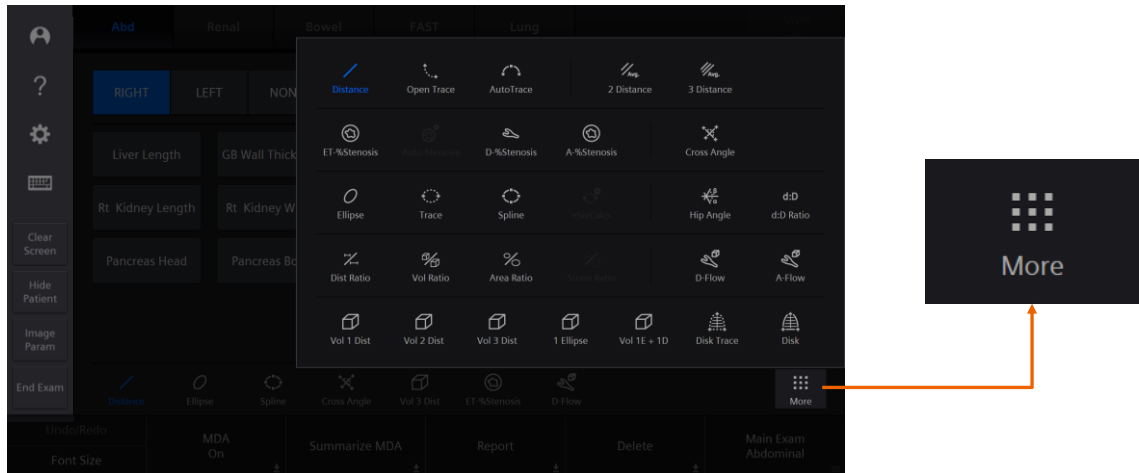
The layout of the tool bar menu is user-defined and exam-independent, meaning that the contents can differ between exam types. Customization is found in system configuration. The tool bar has space for eight different generic measurements.

Please note:

The unit of measurement for generic tools can be set within **System Configuration > Measurements > General [icon] > General [tab]**. Selected unit(s) for the generic measurement tools can be different from those of the labeled measurement package as the unit of measure for a specific exam (i.e. Abdomen) is set within **System Configuration > Measurements > General [icon] > Exam Specific [tab] > [exam type]**.

For more information on measurement configuration, please refer to the ACUSON Juniper ultrasound system Measurement Configuration presentation.

Generic Measurements “More”



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Speaker Notes:

If the user requires a generic measurement that is not contained on the tool bar, all other generic measurements are available under the “More” soft key on the right side of the Touch Screen.

Select **More** to open the generic measurement menu selection, then select the desired measurement.

Please note: Generic measurements appear only on the imaging screen and not on the measurement report. As noted on the previous slide, generic measurement tools can have different display units than those used in an exam-specific exam package.

For more information on measurement configuration, please refer to the ACUSON Juniper ultrasound system Measurement Configuration presentation.

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Speaker Notes:

Next, we will discuss how to customize the display function.

Font size



Undo/Redo

Font Size

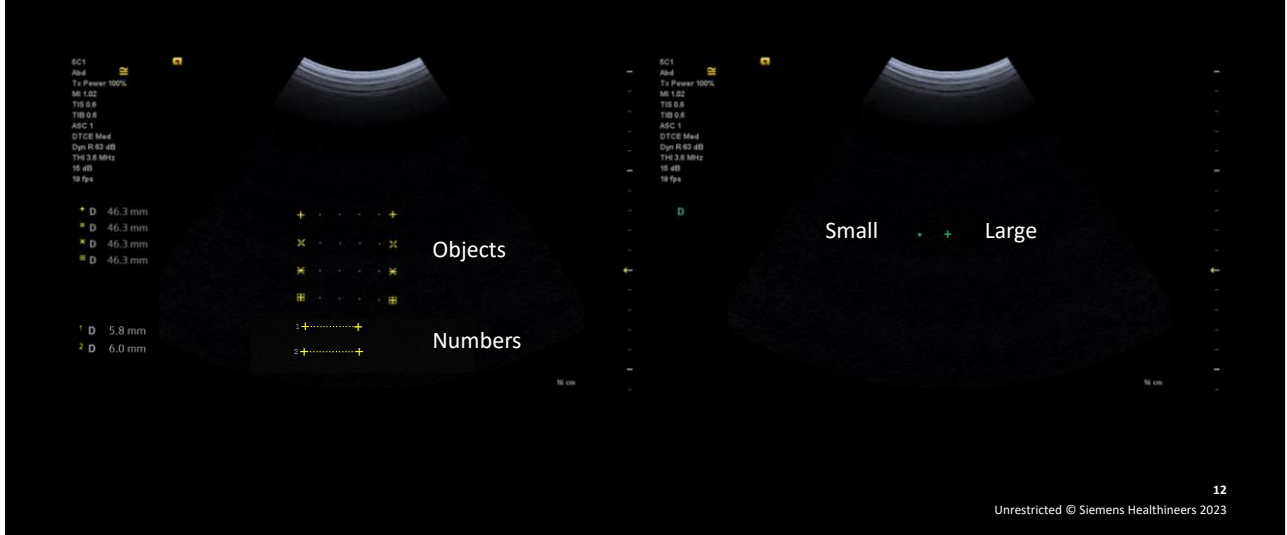
Speaker Notes:

The Font Size can be adjusted onscreen during or after a labeled measurement and will remain in that size until it is changed by the user. The last size chosen will continue even after system reboot.

To adjust the size of the font, locate the rotary control on the left side of the Control Panel directly below the soft key labeled Font Size. Rotate the dial to the right or left to obtain the desired size.

Please note: The soft key labeled Font Size shares the key space with Undo/Redo. Undo/Redo is used for open trace edits and is only active when a measurement is in use. To toggle between the two options if both are available, press down on the associated dial until the desired selection is white (active).

Caliper icons and size



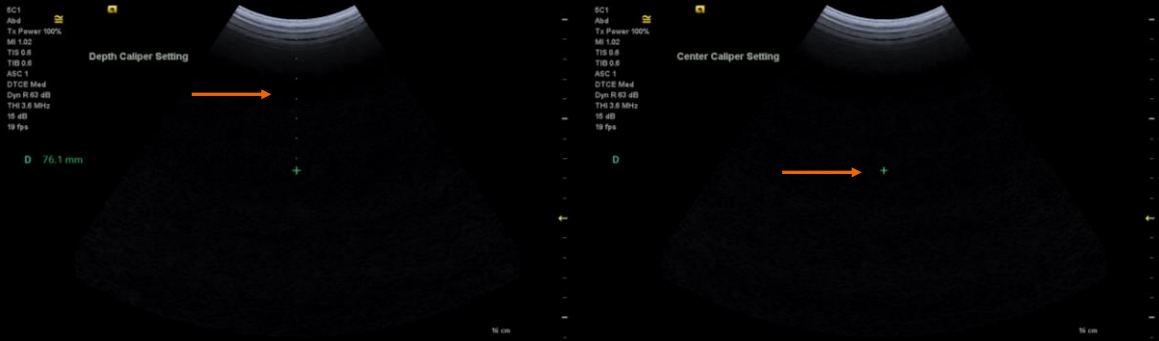
Speaker Notes:

Two options are available for caliper identifiers – objects and numbers. This is configured in the system configuration and cannot be changed by a Touch Screen command.

Two caliper sizes are available, small and large; they are also determined and set in system configuration.

Please note: The maximum number of caliper sets that can be displayed onscreen is 20.

Caliper default position



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Speaker Notes:

The default caliper position is configurable.

While both options display the initial caliper in the center of the screen, one option displays just the caliper, while the other option displays a depth from the skin line with the first caliper. The depth setting is convenient for quickly determining the depth of a mass, pocket of fluid for OB, etc.

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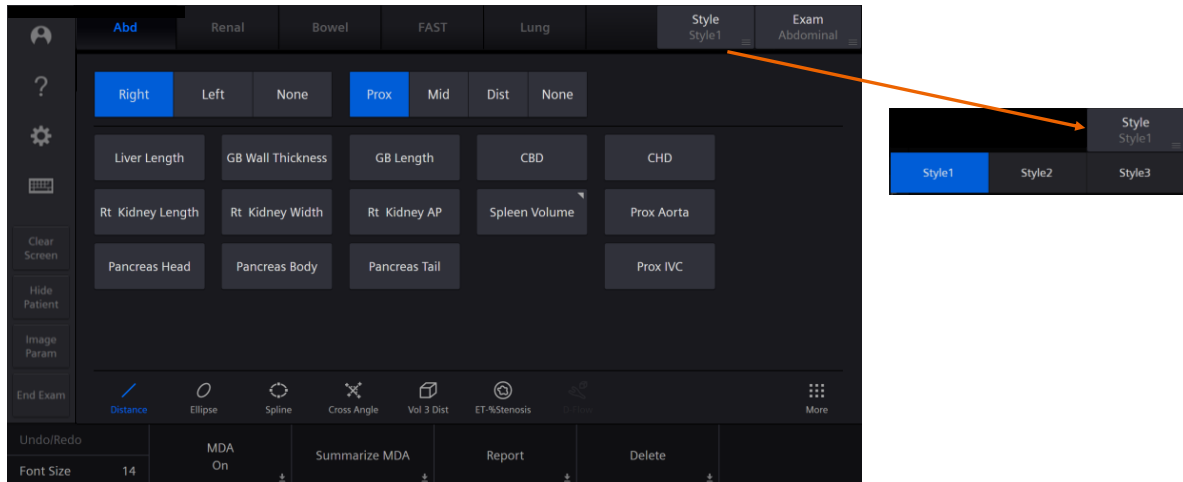
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Speaker Notes:

Next, we will discuss how to label measurements and access alternate calculation packages.

Styles



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Speaker Notes:

Each exam preset – abdomen, vascular, small parts, etc. – has different style options as to what measurement labels are displayed on the Touch Screen.

There are 3 different default measurement styles available with each exam measurement package which can be used as is or copied and customized to fit a specific doctor, exam, or site.

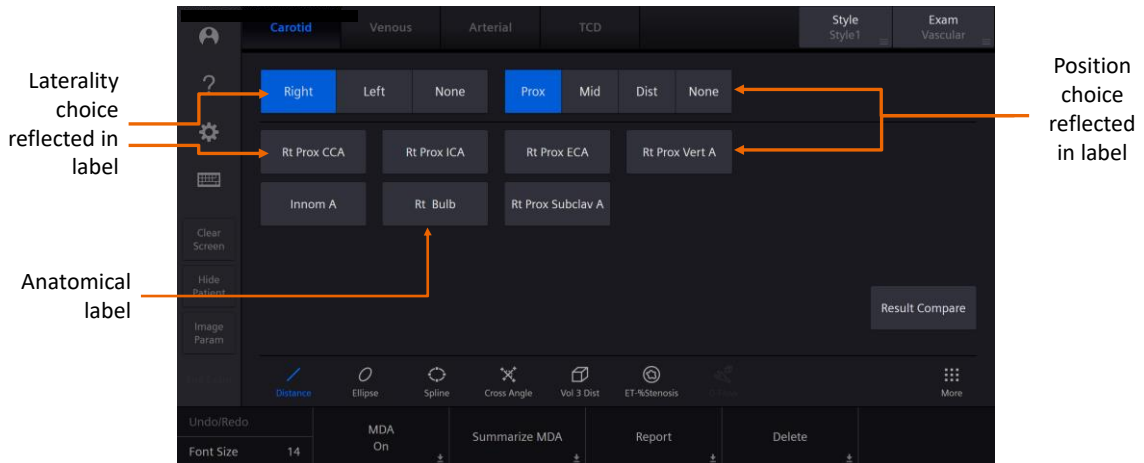
The different styles (default or custom) can be accessed under the Style soft key in the upper right corner of the Touch Screen. The default styles are labeled 1, 2, and 3.

The content of each style is exam dependent – some are more basic in their content whereas others contain a long list of measurements.

In general, Style 1 is the most universal and contains the measurements most commonly used and Style 3 will have continuous measurements (i.e. volumes) defaulted off.

Editing, copying, and creating new styles is done in system configuration and will be covered in a separate presentation.

Anatomical labels



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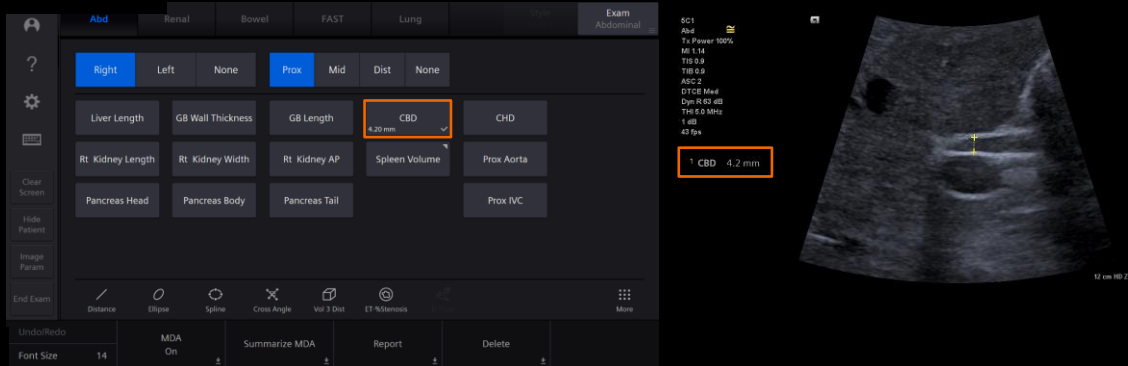
Speaker Notes:

Once the calculation package is activated, the Touch Screen will display the selectable options along with the anatomical label.

The selectable options include laterality and position of the measurement.

Please note that in the selectable options for position – Prox, Mid and Dist – an additional option of None is listed. If the user does not wish to identify the position of the measurement, selecting **None** will change, for example, “Rt Prox CCA” to “Rt CCA”.

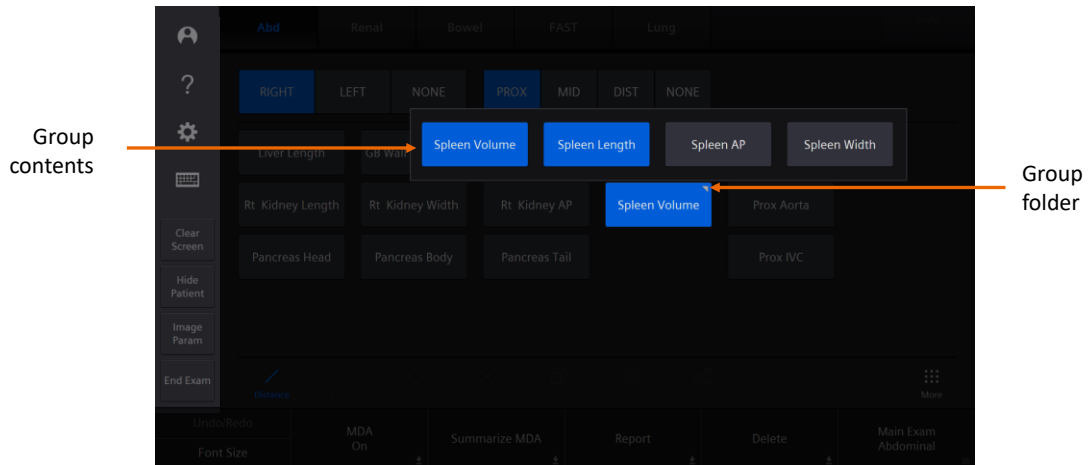
Labeled measurements



Speaker Notes:

Labels that have no associated position will not reflect any position, even if one is selected. This example has the Prox position selected, however, the onscreen measurement has no position designation.

Groups



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Speaker Notes:

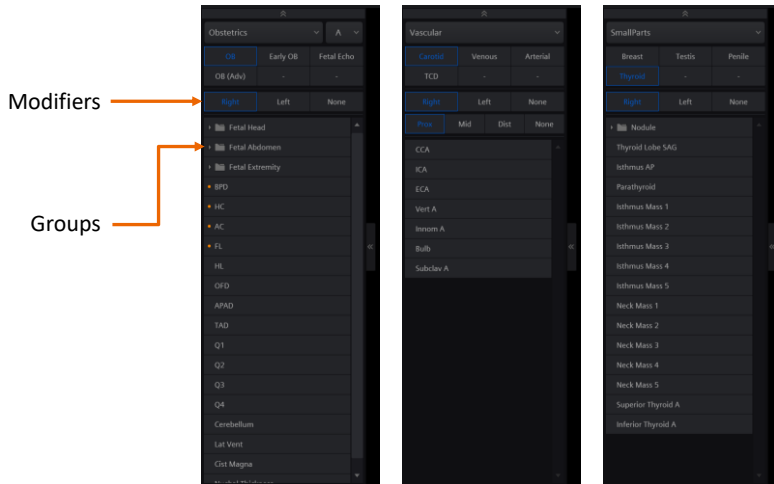
Several labels can be grouped together in one folder. Labels that contain groups have a small arrow in the upper right corner. When these labels are selected, the folder opens and populates the labels onscreen that are contained within that group.

The user can select the volume or individual measurements within that volume. For example, only spleen length can be selected rather than the spleen volume.

Groups are customizable and can be created for serial measurements or groups of measurements for a specific exam type, such as a liver Doppler.

The Customization of Groups will be covered in a separate presentation.

Left panel



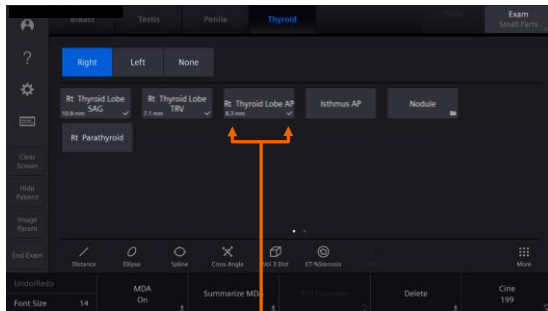
19

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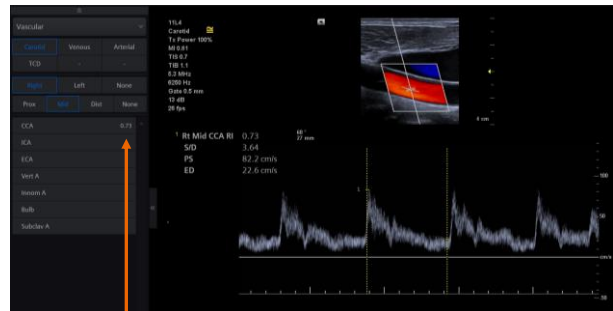
Speaker Notes:

The same modifiers and groups are found onscreen on the left panel and are selected with the system pointer.

Completed measurements Touch Screen



Measured value displayed
with check mark indicating
value entered into report



Measured value
displayed on label line

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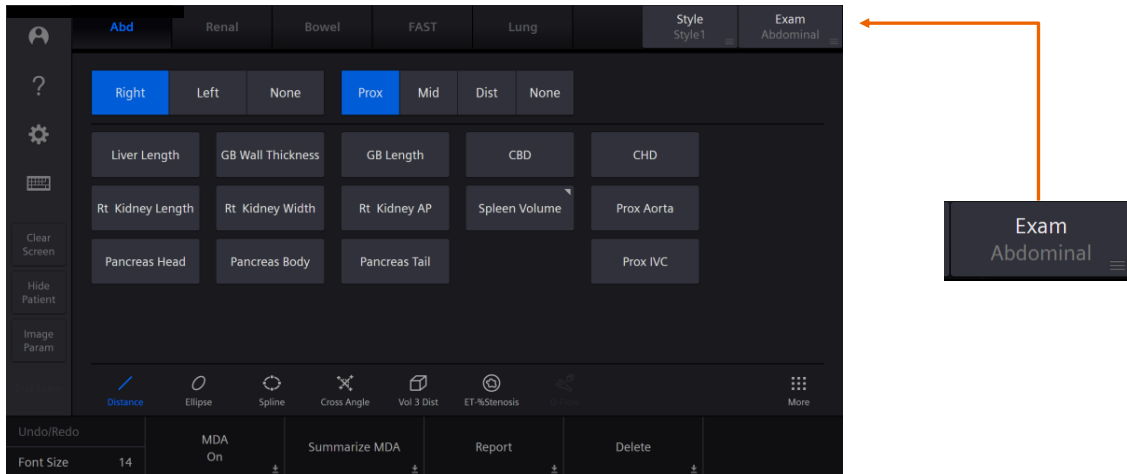
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Speaker Notes:

When measurements are completed, the value associated with the label will be displayed on both the Touch Screen and the left panel below or beside the label.

This feature is a very convenient check for the user to ensure the measurement has been done or to see the value of the measurement without having to open a report page or review feature.

Accessing other calculation packages



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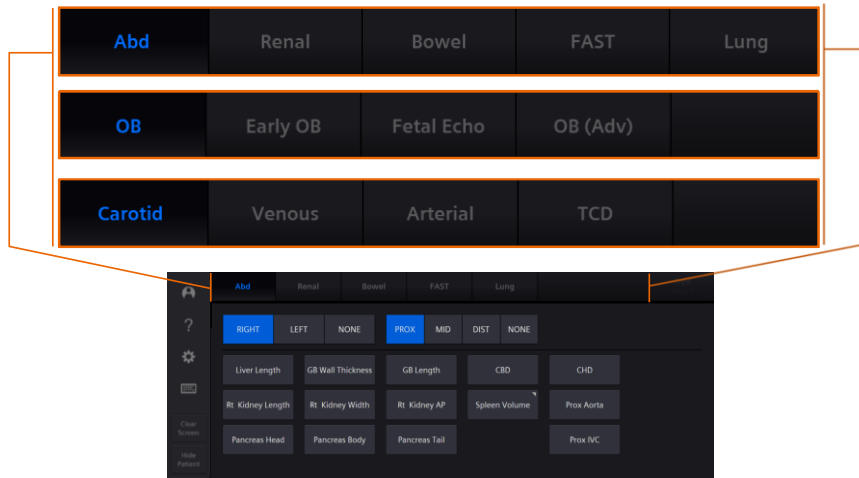
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Speaker Notes:

All measurement packages are available for all exam presets and transducers. For example, the user can have a vascular preset active and access the abdominal measurement package.

There are several options to access other exam measurement packages. The first is by selecting the **Exam** soft key in the upper right corner of the Touch Screen. A menu of available exam calculation packages will populate on the screen. Select the desired package on the Touch Screen, and the onscreen measurement options will change to the new selection.

Accessing other calculation packages



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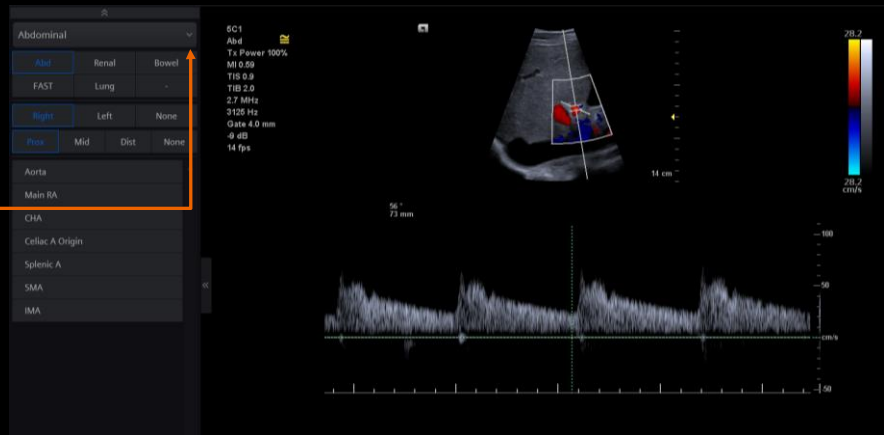
Speaker Notes:

Other exam packages can also be activated from the tab on the Touch Screen.

Please note: This mode of activation is limited to the measurement packages within the exam type grouping. For example, if the user has the abdominal calculation package active and needs to activate the carotid measurement package, they must use the Exam soft key.

Accessing other calculation packages

Drop down
menu access



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Speaker Notes:

As with the tabs on the Touch Screen, other exam packages can be accessed from the Left Panel through a drop-down menu. All exam packages are available under the main drop-down menu.

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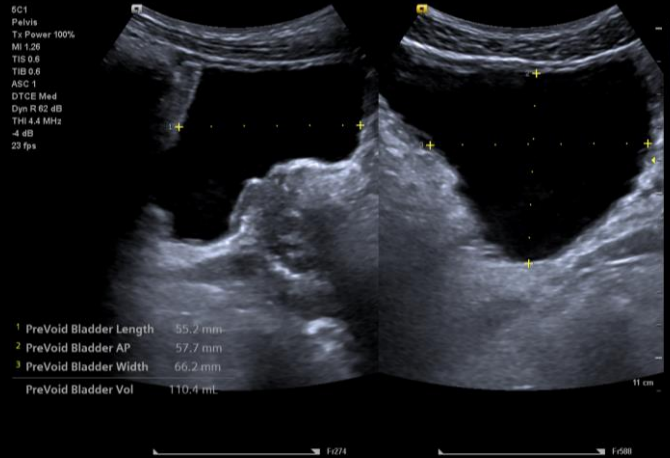
24

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Speaker Notes:

Next, we will discuss the MDA and onscreen options.

Measurement Display Area (MDA)



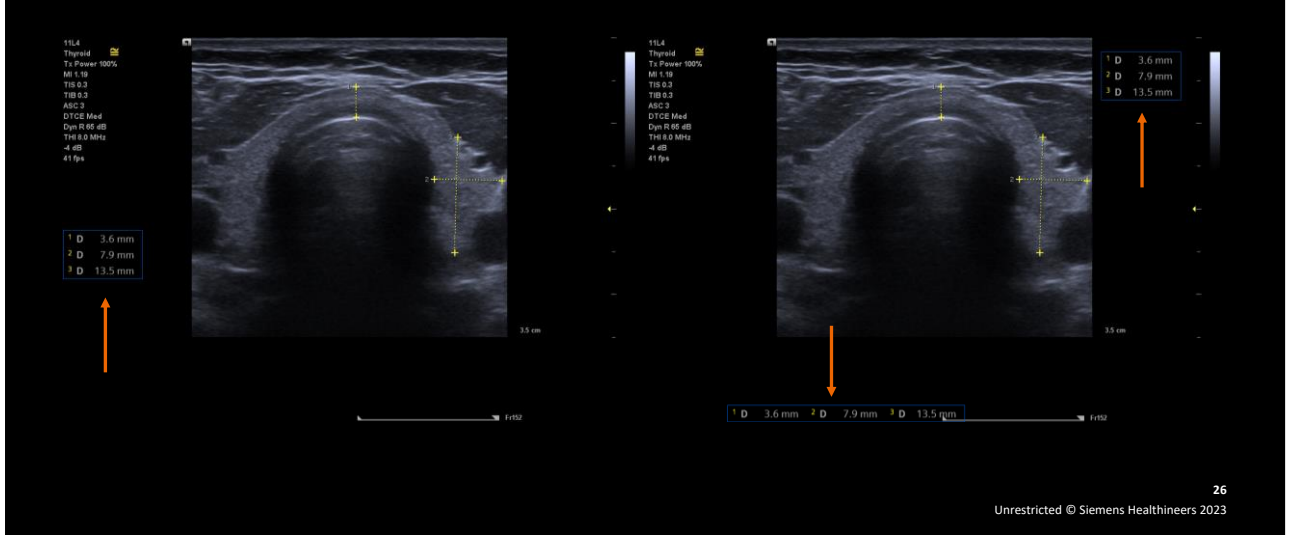
25

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Speaker Notes:

The Measurement Display Area, or MDA, will appear on the imaging screen with each taken measurement and any associated values, such as volume or ratio, once all the components of the measurement are completed.

Repositioning MDA



Speaker Notes:

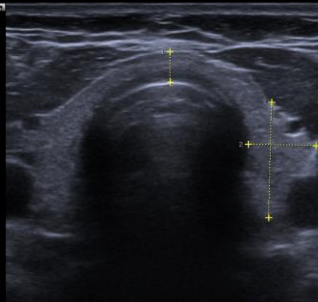
Should this default position be within the imaging field or required in a different area on the screen, the MDA can be moved:

- Activate the **Pointer** and place it within the MDA area; a blue box will appear around the MDA indicating it is ready to move
- Hold down the **Set** key and use the trackball to move the MDA to the desired location
- Once the desired location has been reached, release the **Set** key to place the MDA

Please note: The MDA can also be placed along the bottom of the screen in a lateral type display. Drag the MDA to the very bottom of the screen and when the Set key is released, the square or rectangular MDA will spread out laterally across the bottom of the screen.

MDA on/off

T1L4
Thyroid
Tx Power 100%
MI 1.19
TIS 0.3
TIB 0.3
AISC 2
DTCE Med
Dyn R 65 dB
TIS 0.3 Menu
-4 dB
41 fps



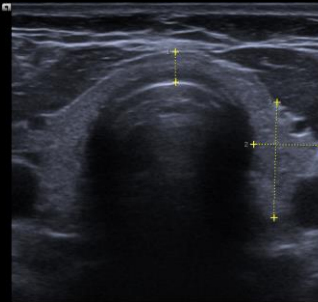
1 D 3.6 mm
2 D 7.9 mm
3 D 13.5 mm

3.5 cm

MDA
On



T1L4
Thyroid
Tx Power 100%
MI 1.19
TIS 0.3
TIB 0.3
AISC 2
DTCE Med
Dyn R 65 dB
TIS 0.3 Menu
-4 dB
41 fps



3.5 cm

MDA
Off



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Speaker Notes:

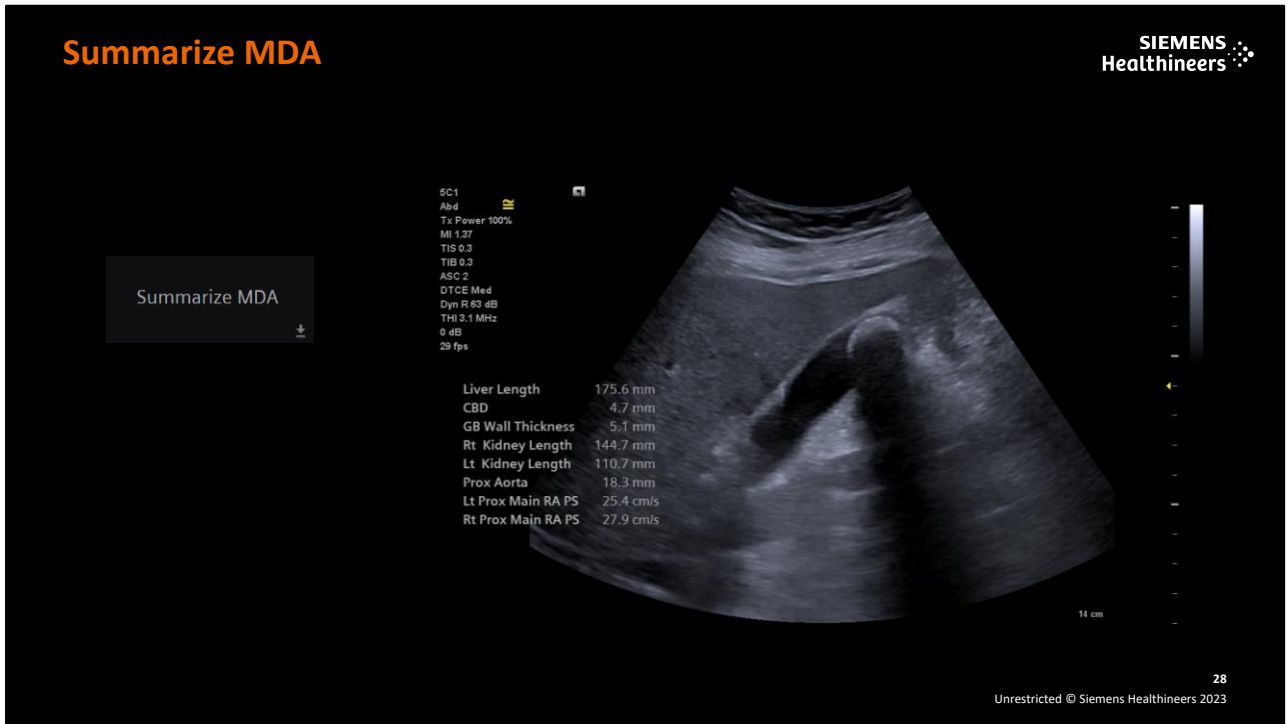
The MDA can also be turned off from view by the soft key located at the bottom of the Touch Screen or the dial associated with the soft key.

The soft key will display the current status of the MDA (on or off); selecting it will change it to the opposite status.

To turn the MDA off:

- Select the **MDA On** soft key or press down on the associated rotary knob
- The soft key display will change to **MDA Off**
- To redisplay the MDA on screen, select the **MDA Off** soft key or use the associated rotary knob

Please note: The caliper points remain on the screen even when the MDA has been turned off.



Speaker Notes:

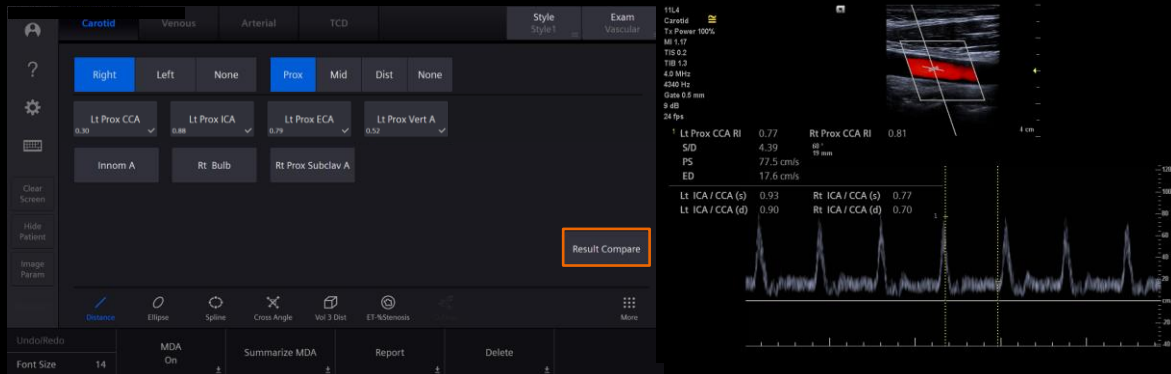
Summarize MDA is a soft key and dial option on the Touch Screen.

A summary of measurements entered into the report will appear on screen when the summary is pressed.

The summary can be moved around the screen in the exact same fashion as the measurement list:

- Select the **Pointer**; a highlight (blue) box will appear around the measurement summary
- Hold down the **Set** key and use the track ball to drag the box to another location
- Release the **Set** key to place the box/summary in the new location

Result compare



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Speaker Notes:

Result compare is available in the carotid calculation package and allows the user to compare resistive indices (RI) and ratios between the left and right sides onscreen.

Activation of Result Compare is done by selecting the soft key on the Touch Screen; it is only available if the opposing side has already been measured.

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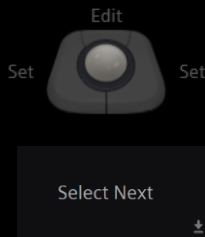
30

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Speaker Notes:

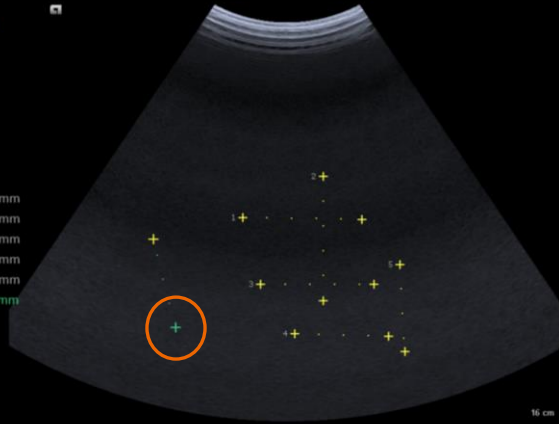
Next, we will discuss editing and deleting measurements.

Editing/updating a measurement



SC1
Ab-d
Tx Power 100%
MI 1.02
TIS 0.6
TIB 0.6
ASIC 1
DTCE Med
Dym R 63 dB
THI 3.6 MHz
15 dB
19 fps

1 D 47.9 mm
2 D 49.9 mm
3 D 45.6 mm
4 D 37.7 mm
5 D 34.9 mm
6 D 36.5 mm



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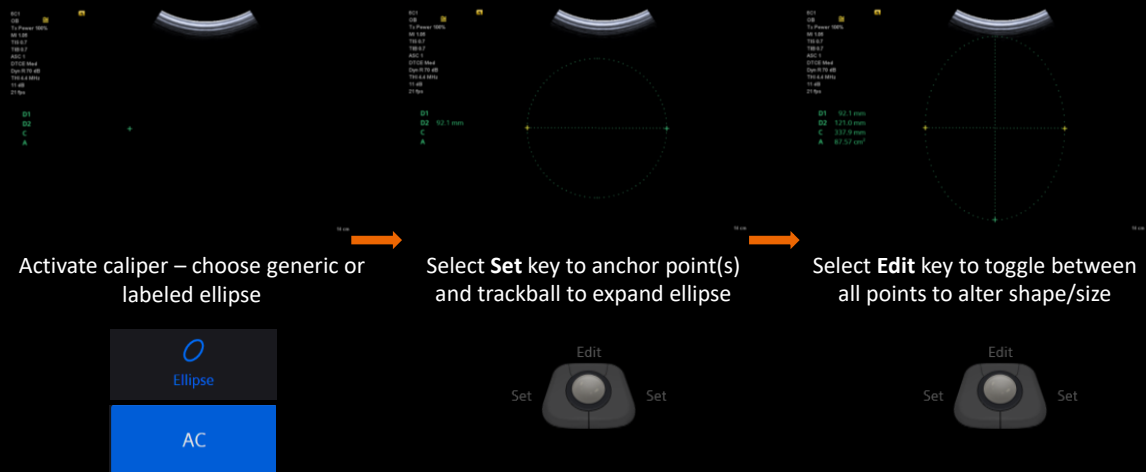
Speaker Notes:

To edit a measurement:

- Select the **Edit** key above the trackball; the last measurement reactivates indicated by turning from yellow to green
- Use the **Edit** key to toggle between the two caliper points of the set
- Select **Set** to anchor the new caliper position

To edit a different caliper set than the last one placed, use the soft key labeled **Select Next**. Continue pressing the soft key or the associated dial until the desired set turns green.

Editing/updating a measurement Ellipse manipulation



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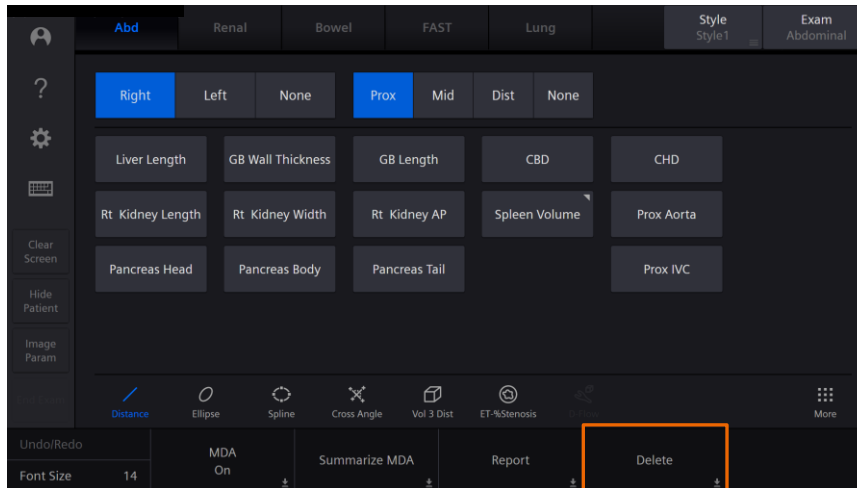
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Speaker Notes:

Measurements that require multiple manipulations prior to setting, such as an ellipse, use a combination of the Set key and the Edit key:

- Activate the caliper to choose the desired measurement
- Use the **Set** key to anchor the point(s) and the trackball to expand the ellipse; the Edit key will allow the user to toggle through the points during the manipulation of the size or shape of the measurement area
- Use the **Set** key to anchor the last caliper point and complete the measurement

Deleting a measurement



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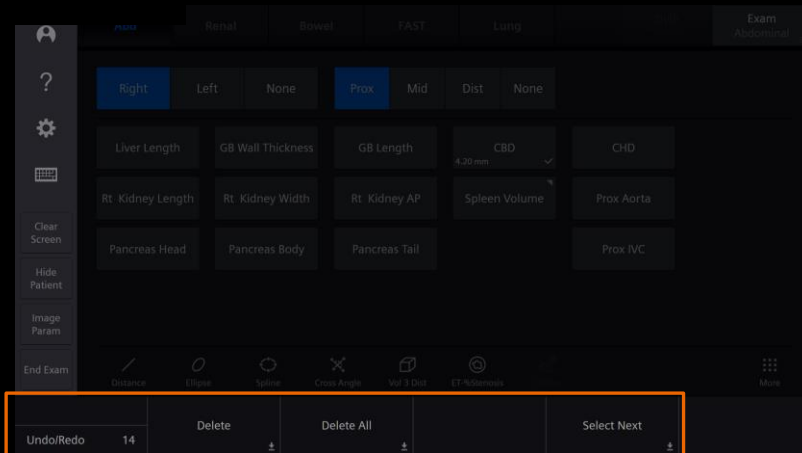
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Speaker Notes:

To delete a measurement:

- Use the **Delete** soft key on the Touch Screen or press down the associated rotary knob; this will delete one measurement at a time
- Delete All can be added to the Touch Screen labels in **System configuration > Measurement > Exam Type > Function**

Deleting a measurement



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Speaker Notes:

Additional deletion options will appear on the bottom row of the Touch Screen when the Edit function is activated from the trackball pad.

Please note: If Delete All is selected, only the measurements are deleted. Any text will remain on the screen.

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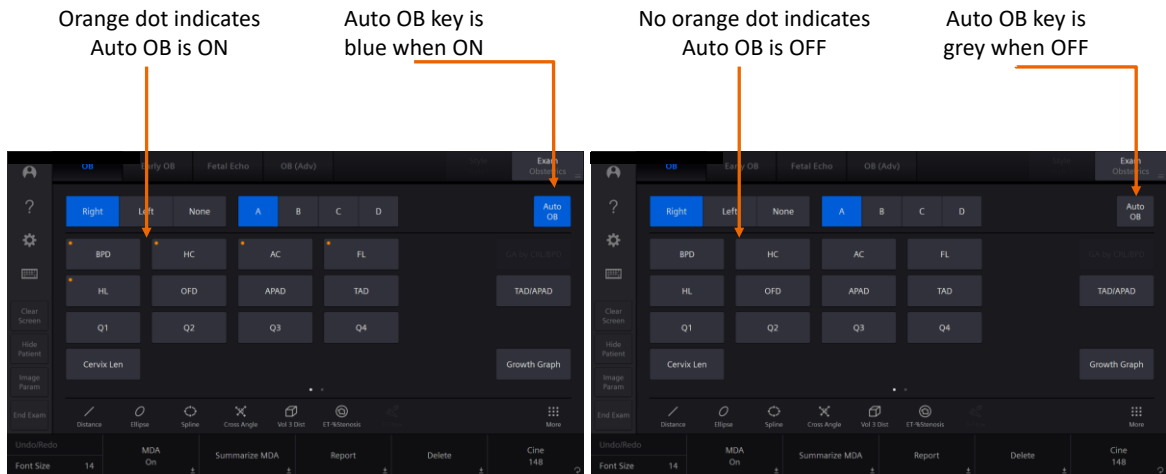
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Speaker Notes:

Next, we will discuss the exam specific measurements.

syngo® Auto OB measurements on/off



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Speaker Notes:

syngo® Auto OB measurements are defaulted on or off in the system configuration. However, the function can be deactivated by the user for an active exam on the Touch Screen, if required.

If *syngo* Auto OB measurements is on, a small orange dot will appear in the corner of the measurement labels included in the feature, and the Auto OB soft key will be illuminated blue.

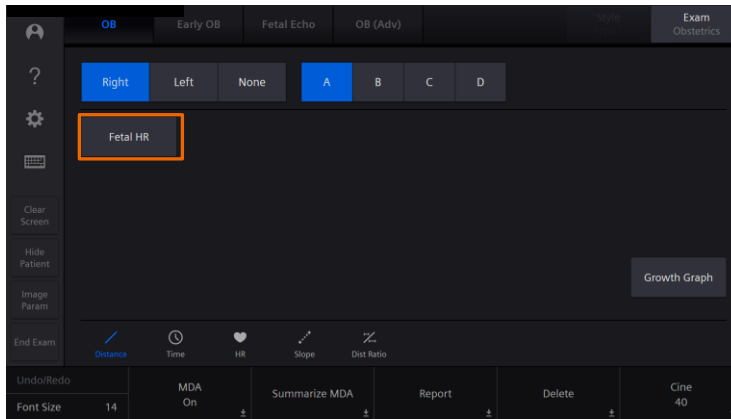
To deactivate the *syngo* Auto OB measurements function for a single exam, select the **Auto OB** soft key on the Touch Screen. The orange dots will no longer be on the parameter labels and the Auto OB soft key will no longer be blue.

Setting the default for *syngo* Auto OB measurements will be covered in a separate presentation.

Please note: If there is no detectable anatomy onscreen and the *syngo* Auto OB measurements feature is active, a message box will appear onscreen stating “Cannot detect anatomy.” The caliper point will remain active in the center of the screen waiting for user input.

The user can change the number of fetuses during the scan.

OB M-mode/fetal heart rate



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Speaker Notes:

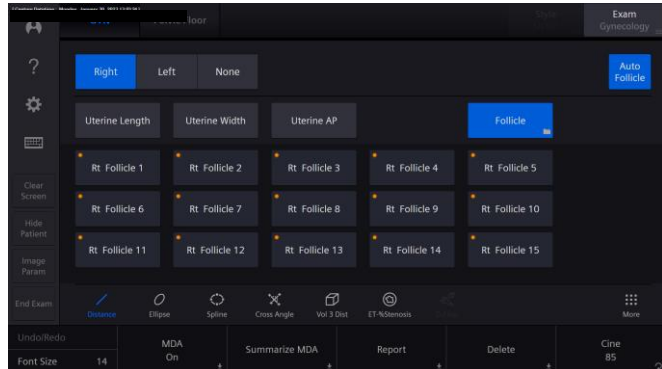
If an M-mode sweep has been taken for fetal heart rate, activating the caliper will populate on the Touch Screen with the Fetal HR label.

The Fetal HR label is also available on the left panel onscreen.

syngo® Auto Follicle Gyn exam preset

To perform an Auto Follicle measurement:

1. Tap the required measurement label on the Touch Screen
2. Roll the trackball to position the measurement marker and then press Set. The system will trace the borders of the follicle
3. Press Set to confirm the measurement
4. Repeat steps 2 and 3 for each follicle



*Only available in gynecology exams

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Speaker Notes:

syngo Auto Follicle is available in the gynecology calculation package. As with *syngo* Auto OB measurements, when *syngo* Auto Follicle is active, an orange dot will be visible on the follicle label.

To turn *syngo* Auto Follicle off or on, select the soft key on the Touch Screen. If the function is active, the soft key will be blue in color; if inactive, the soft key will be gray.

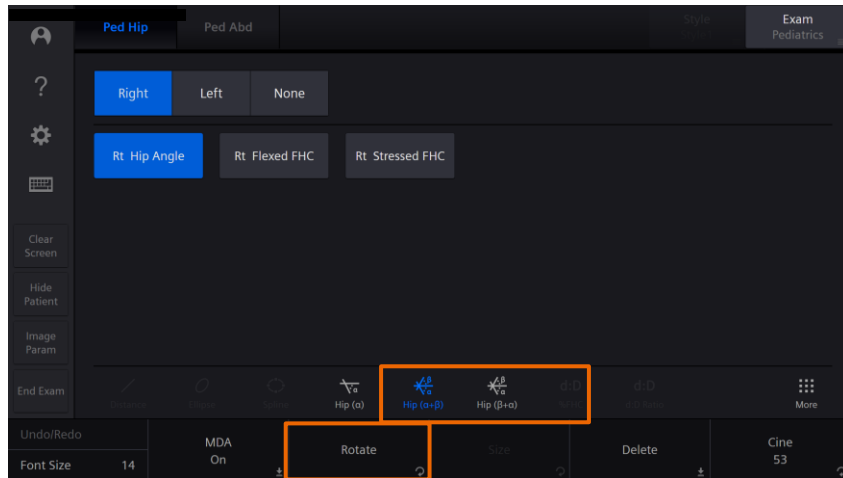
To perform a *syngo* Auto Follicle measurement:

1. Select the required measurement label on the Touch Screen
2. Roll the trackball to position the measurement marker and then press **Set**; the system will automatically trace the borders of the follicle
3. Press **Set** to confirm the measurement
4. Repeat steps 2 and 3 for each follicle

Please note: The system will display a message of “cannot detect anatomy” if the follicle cannot be detected. This feature is only available in gynecology exams.

Pediatric Hip Measurement: Hip ($\alpha+\beta$), Hip ($\beta+\alpha$), Hip (α)

Tools for Pediatric Hip



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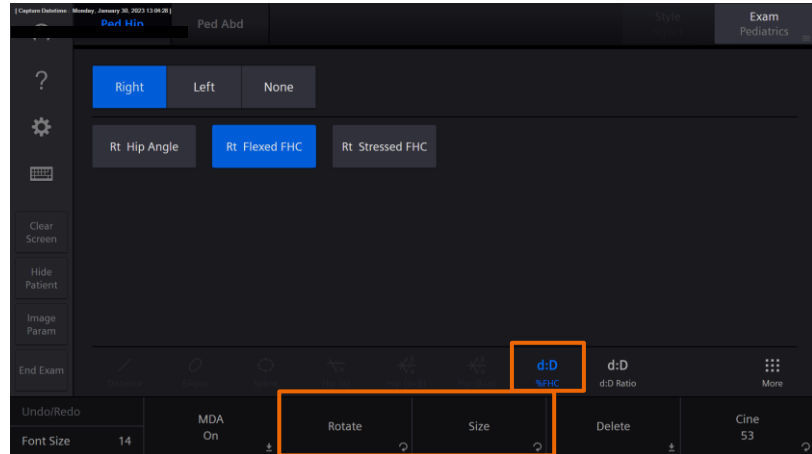
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Speaker Notes:

The tools for measuring a pediatric hip measurement are located on the touchscreen: Hip ($\alpha+\beta$), Hip ($\beta+\alpha$), Hip (α). The default measurement is Hip ($\alpha+\beta$).

Pediatric Hip Measurement: Femoral Head Coverage (FHC) Tool: %FHC

- %FHC tool is the default measurement
- The user can rotate the baseline and adjust the size of the ellipse



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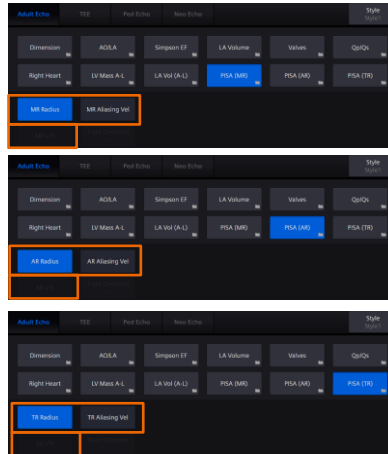
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Speaker Notes:

Femoral Head Coverage (%FHC) is an additional tool for pediatric hip measurements. The softkey menu has additional tools for rotating the baseline and adjusting the size of the ellipse.

Proximal isovelocity surface area (PISA) measurement package

- Mitral regurgitation
- Aortic regurgitation
- Tricuspid regurgitation



Speaker Notes:

The proximal isovelocity surface area (PISA) measurement package supports quantitative assessment for mitral regurgitation, aortic regurgitation and tricuspid regurgitation.

The PISA calculation for effective regurgitant orifice area (EROA) requires:

- Radius measurement in color Doppler
- Aliasing velocity value in color Doppler
- Velocity time integral (VTI) measurement in spectral Doppler (EROA calculation is not supported using a labeled maximum velocity measurement)

Please note: Measurement labels are accessible according to the imaging mode. Notice the VTI labels that are dithered out.

The ACUSON Juniper system uses the term effective orifice area (EO Area) to refer to EROA.

Enhanced measurement tool for PISA radius

The enhanced PISA radius tool displays like a bow

- Tool allows up or down measurement
- Assists in identifying caliper direction
- Ease of measuring color Doppler flow convergence from point of leaflet coaptation to point of color Doppler aliasing (hemisphere)



Caliper Start point



Speaker Notes:

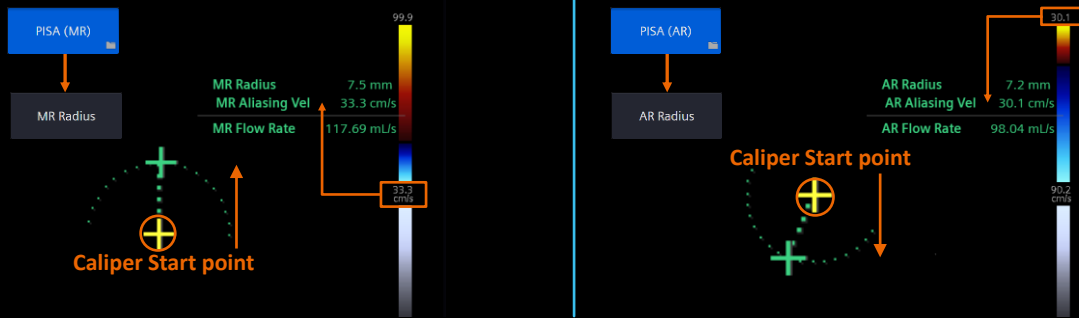
The enhanced PISA radius tool displays like a bow and allows for an up or down measurement depending on the direction of the regurgitant lesion being assessed.

The caliper's starting point is placed at the level of leaflet coaptation for the valve being assessed.

As the user moves the second caliper to the point of color Doppler aliasing, the green dotted hemisphere overlays the flow convergence.

Enhanced measurement tool for PISA radius Automated PISA velocity

Aliasing velocity value can be obtained automatically when measuring with the PISA **Radius** label while in color Doppler



Note: Baseline shift should be adjusted in direction of regurgitant jet

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Speaker Notes:

The aliasing velocity value is obtained automatically when using the PISA Radius label for measuring when in color Doppler.

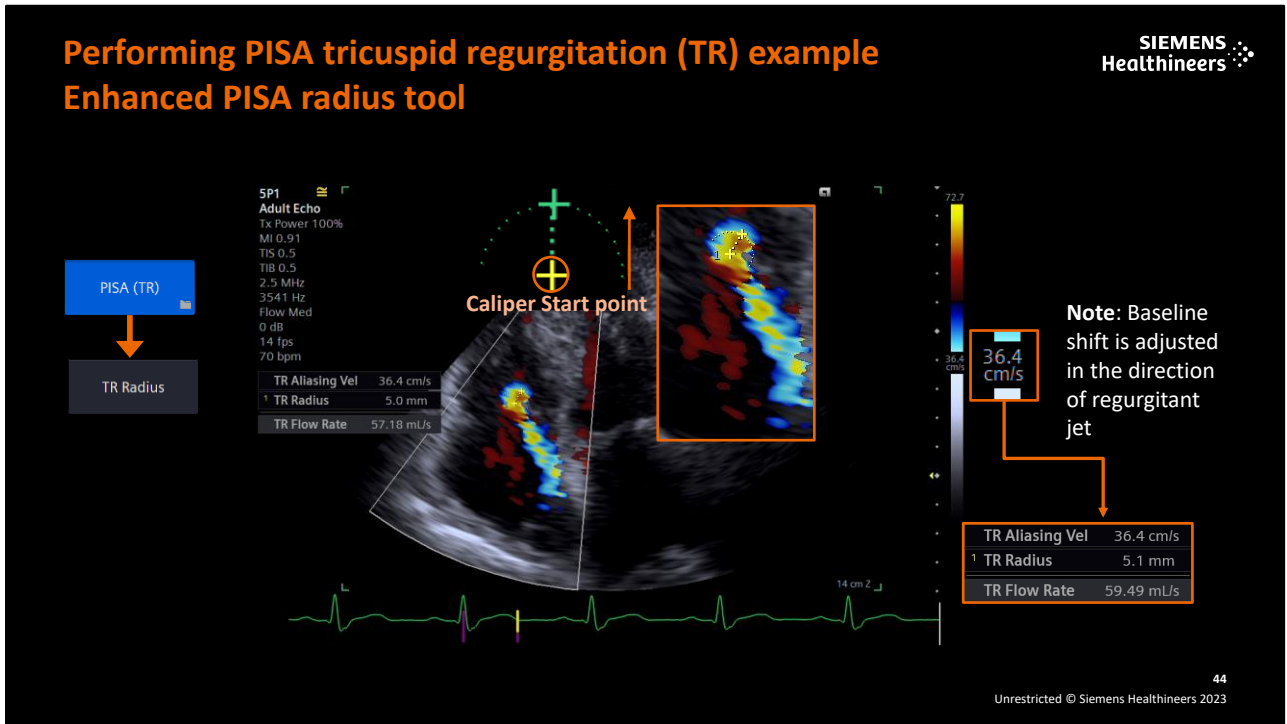
The application will automatically obtain the aliasing velocity which is dependent on the scale of the color Doppler baseline shift.

In the first example on the left, note that the mitral regurgitation aliasing velocity of 33.3 cm/s was automatically obtained with a downward baseline shift and an upward radius measurement.

In the second example on the right, note that the aortic regurgitation aliasing velocity of 30.1 cm/s was automatically obtained with an upward baseline shift and a downward radius measurement.

Please note: The color Doppler scale's baseline shift should always be adjusted in the direction of the regurgitant jet being assessed.

Performing PISA tricuspid regurgitation (TR) example Enhanced PISA radius tool



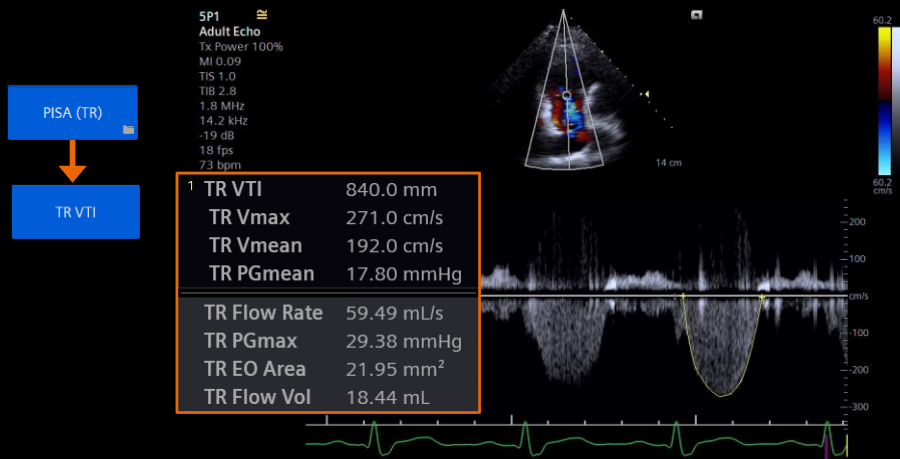
Speaker Notes:

In this PISA tricuspid regurgitation (TR) example, note how the baseline shift is adjusted downward in the direction of the regurgitant jet.

The aliasing velocity value of 36.4 cm/s is obtained automatically when using the TR Radius label for measuring while in color Doppler.

Please note that the PISA radius tool's caliper is starting at the point of leaflet coaptation, and the hemisphere overlays the flow convergence as the user measures to the point of color Doppler aliasing.

Performing PISA tricuspid regurgitation (TR) example Measuring velocity time integral (VTI)



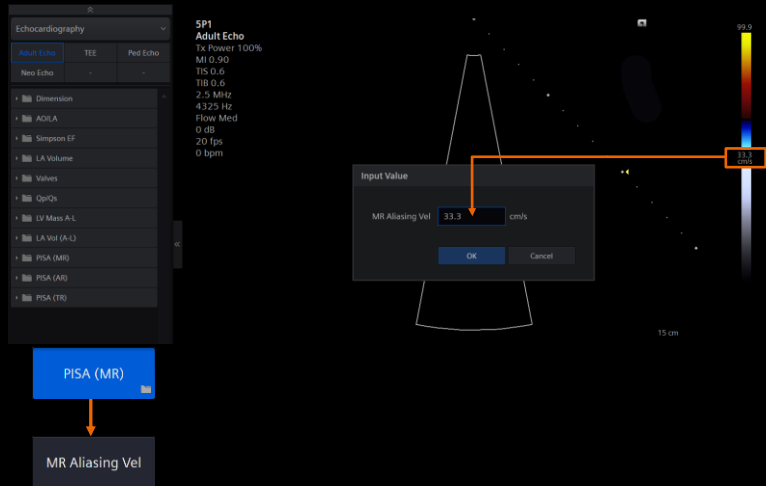
Speaker Notes:

This slide demonstrates the velocity time integral (VTI) measurement. After the user has performed all required measurements for the PISA calculation (radius, aliasing velocity and VTI), the effective regurgitant orifice area is derived. In this case an EO Area of 21.95 mm².

Manual PISA radius velocity

Aliasing velocity value can also be entered manually

- Select the **Aliasing Vel** label
- Manually enter color Doppler scale's baseline shift value



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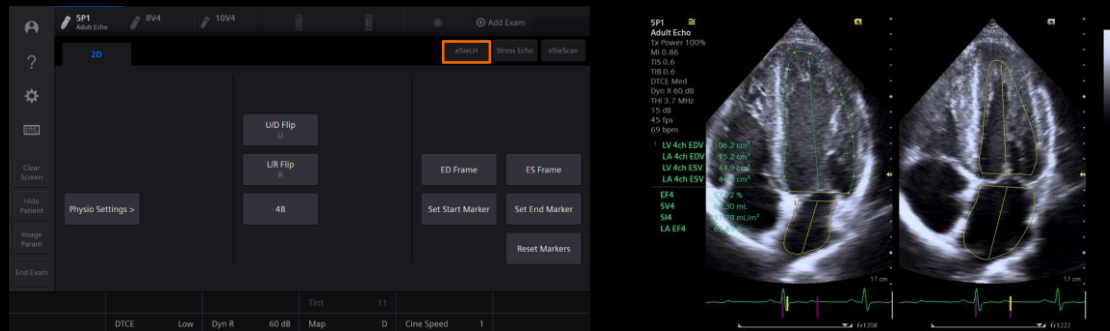
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Speaker Notes:

The system does allow for manual entry of the aliasing velocity value.

To do this, select the **Aliasing Vel** label from the Touch Screen and manually key in the color Doppler scale's baseline shift value. In this example, the user would manually key in **33.3** and select **OK**.

eSie Left Heart™ measurement package



*Only available during live imaging and requires an ECG signal.

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Speaker Notes:

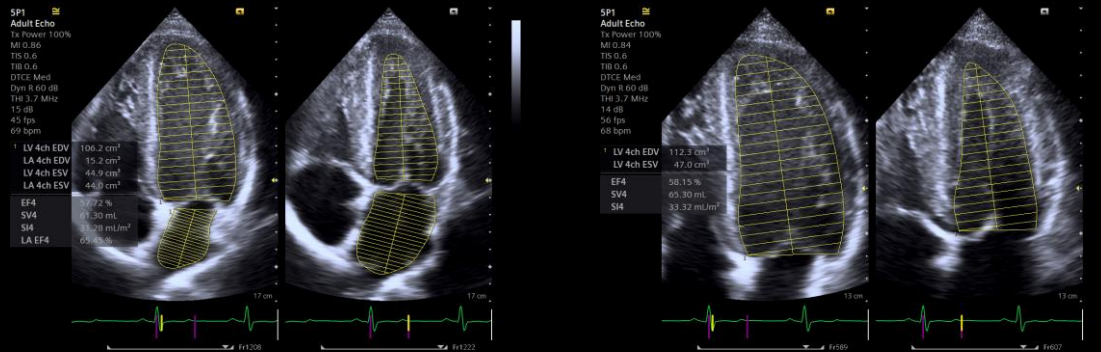
The eSie Left Heart™ measurement package is an automated method for measuring a Simpson's biplane in the apical 4CH and the apical 2CH views. The eSie Left Heart package tracing is achieved by using an algorithm trained on a large image database of apical 4CH and 2CH adult transthoracic 2D echo views annotated (manually measured) by clinical experts.

To utilize the eSie Left Heart package:

- From a live apical 4-chamber view with an ECG trace, freeze the image, select **eSieLH** from the Touch Screen and press **Print Store** on the Control Panel
- Repeat this for a live apical 2-chamber view to save a Simpson's biplane measurement
- To edit the automated tracing, use the cursor to select the green box markers and move to the desired position before selecting **Print Store**

Please note: The eSie Left Heart package is only available during live imaging and not from review. The patient must be connected to an ECG for the eSie Left Heart package to work.

eSie Left Heart measurement package Auto chamber detection



*Only available during live imaging and requires an ECG signal.

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Speaker Notes:

Chamber detection with the eSie Left Heart package provides automated recognition of either both the left ventricle and the left atrium, or just the left ventricle when the left atrium is not in the field of view.

eSie Left Heart measurement package Auto view recognition



*Only available during live imaging and requires an ECG signal.

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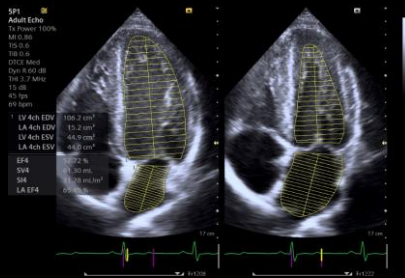
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Speaker Notes:

The eSie Left Heart package provides automatic view recognition of the apical 4-chamber and the apical 2-chamber view.

eSie Left Heart measurement package

Auto view recognition



*Only available during live imaging and requires an ECG signal.

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Speaker Notes:

If the software recognition for the view is not correct, the user can edit the view name from the Touch Screen after entering the eSie Left Heart package. For example, if the user wants this image labeled 2CH instead of 4CH, the user will have to select **2CH** from the Touch Screen to relabel before pressing **Print Store**.

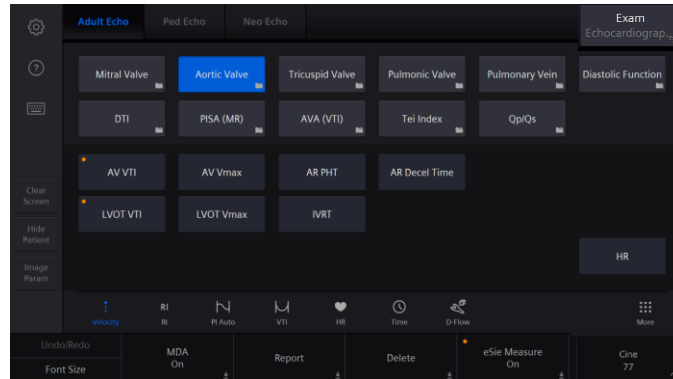
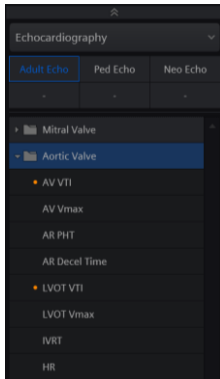


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1. Use the trackball for back up erase
2. Press **Update**, rotate **Undo/Redo** to remove or edit a segment of trace, reposition and anchor the caliper with trackball and set key

eSie Measure™ workflow acceleration package Cardiac exam preset



*Only available during live imaging and with an ECG

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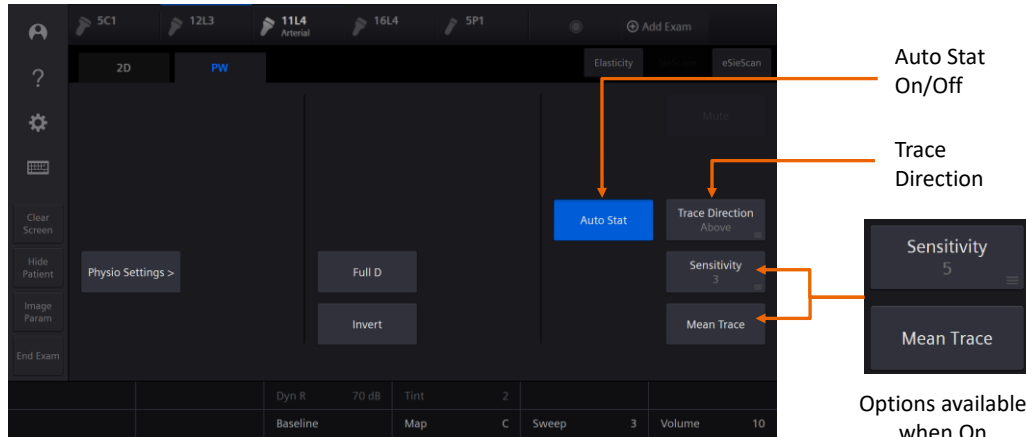
Speaker Notes:

The eSie Measure™ workflow acceleration package is an automated measurement method available for 2D mode, M-mode and spectral Doppler.

The eSie Measure package availability is indicated by an orange dot beside the measurement on both the Touch Panel and the Touch Screen. In this example, the AV VTI and LVOT VTI is displayed with eSie Measure package options.

The eSie Measure package can be defaulted on/off in the configuration menu or activated during an exam from the soft keys.

Auto Stat feature



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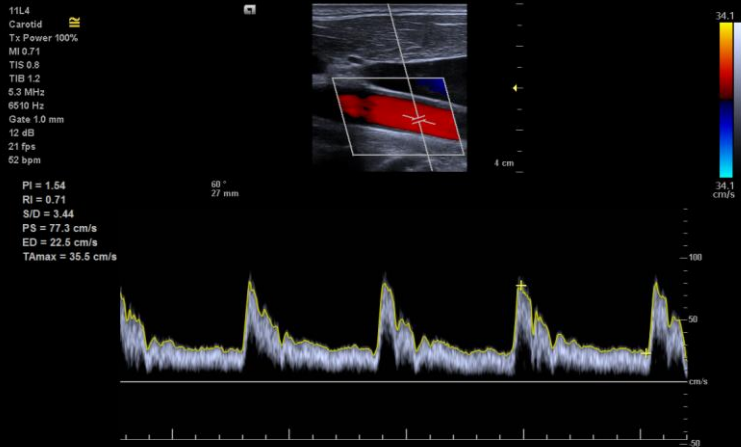
Speaker Notes:

Auto Stats are available on the ACUSON Juniper system.

The Auto Stat command is located on the right side of the Touch Screen within the PW Tab. When the feature is turned on, the key is highlighted in blue. When the feature is turned off, the key is gray. Next to the Auto Stat key is the control for Trace Direction. Available trace directions are Above [the baseline], Below [the baseline], and Both [above and below the baseline]. To change the direction of the trace, select the **Trace Direction** key to display the menu choices. Once the desired choice is selected, the menu will close.

Once the Auto Stat feature is activated, the user can customize the sensitivity or add a mean trace to the display. Selecting the **Sensitivity** key will display the menu containing the range of available sensitivities. Once a sensitivity option is chosen, the menu will close automatically. To add a Mean Trace, select the **Mean Trace** key; the key will be highlighted in blue when the mean trace is active and gray when it is off (not active).

Auto Stat feature



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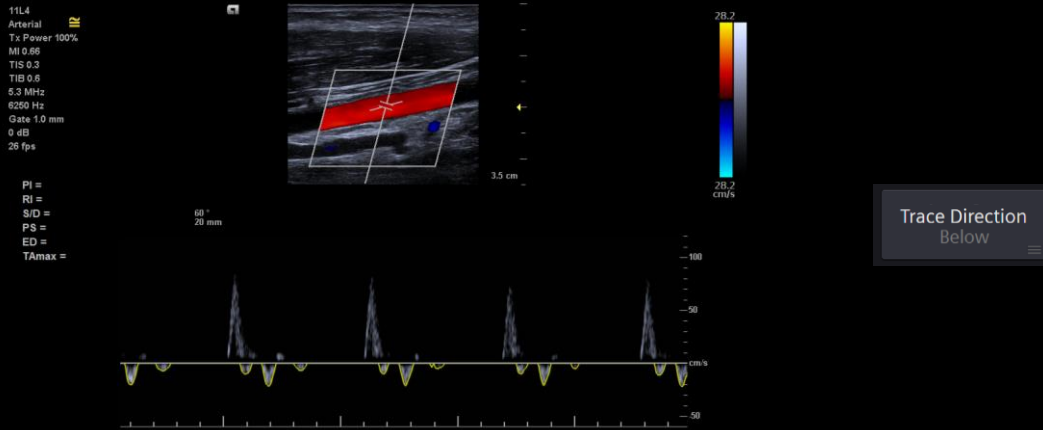
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Speaker Notes:

During activation of the Auto Stat feature, the user can choose which part of the trace the Auto Stat measures from the drop-down menu; this menu populates the Touch Screen when the Auto Stat soft key is selected.

This is an example of Auto Stat Trace Direction Above, where the yellow trace line will only trace the Doppler signal which is above the baseline.

Auto Stat feature



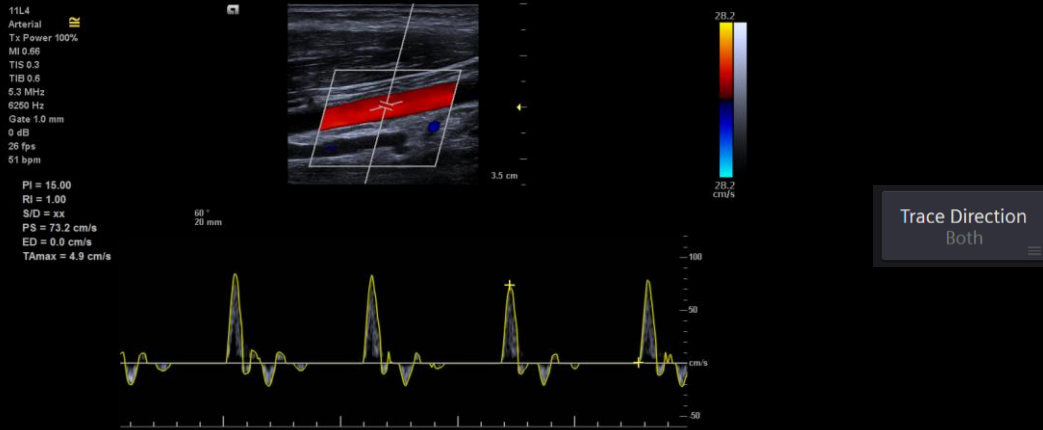
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Speaker Notes:

This is an example of the Auto Stat Trace Direction Below. Notice that the yellow trace line only outlines the Doppler signal that is below the baseline.

Auto Stat feature



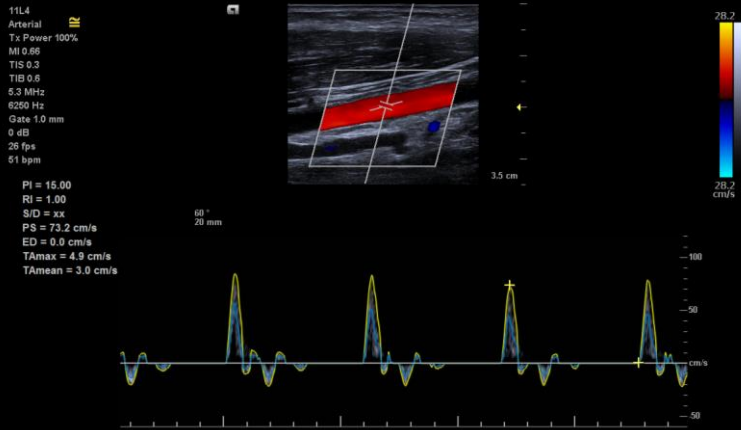
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Speaker Notes:

The third Auto Stat Trace Direction option is labeled “Both” as it will trace all signal(s) that are above and below the baseline during the sweep.

Auto Stat feature



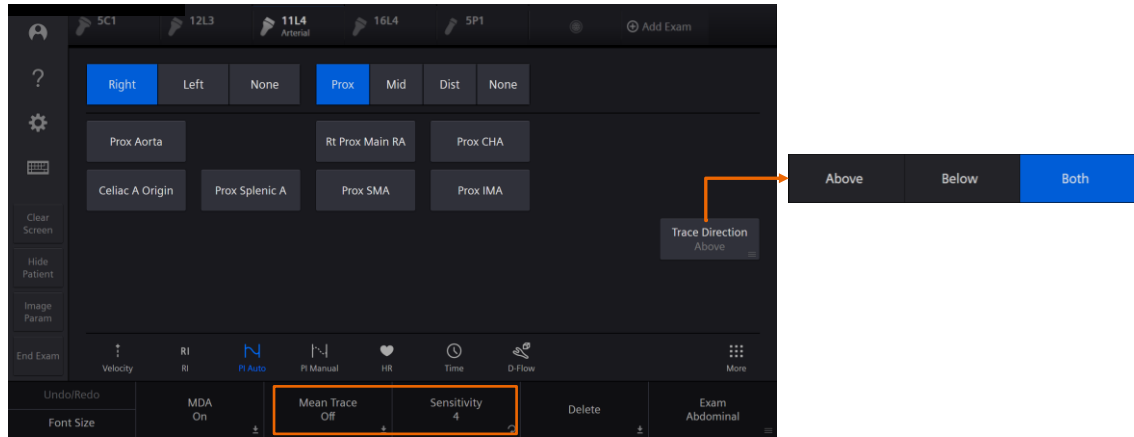
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Speaker Notes:

If the user wishes to add a mean trace to the sweep, select the **Mean Trace** soft key. When the feature is on, the key will be highlighted in blue, and a blue line will appear on the sweep indicating the mean value of the trace.

Auto Stat feature Options when caliper function is active



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Speaker Notes:

When the caliper function is active, the user can turn the Mean Trace on or off from the available soft keys; it is also possible to adjust the degree of trace sensitivity on the signal.

The sensitivity for the trace has options ranging from 0 thru 7.

The Trace Direction key is still displayed on the main Touch Screen when the image is frozen. If the user wants to change the direction of the trace when the image is frozen, selecting the key will display the available options. Once the new option is selected, the frozen image will display the new trace direction choice.

Objectives

- Explain measurement access and screen information
- Illustrate display customizations
- Describe measurement labeling and accessing alternate calculation packages
- Identify the Measurement Display Area and onscreen options
- Explain editing and deleting measurements
- Discuss exam specific measurements
- **Examine Report access and printing**



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Speaker Notes:

Lastly, we will discuss how to access and print the report.

Report access



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Speaker Notes:

Reports can be accessed from either the Report key on the keyboard or the Touch Screen soft key and associated rotary knob.

Report layout

The screenshot shows the Siemens Healthineers report layout interface. On the left is a navigation pane with options: 'Report type' (set to 'Cardiac'), 'Section navigation pane' (with expandable sections like 'Exam Specific Information', 'D-Mode Measurement', 'Cardiac Assessment', 'Images', and 'Comments'), 'Hide section option' (a small arrow icon), 'Method options' (dropdown menus for 'Rt Proc CCA (R)', 'Lt Proc CCA (R)', 'Rt Proc ICA (R)', and 'Lt Proc ICA (R)'), and 'Print/export options' (buttons for 'Print Previous', 'Export PDF', 'Print Report', and 'Store Report'). The main area displays 'Patient demographics' (Patient Name: ACUSON, Patient Number, Date) and 'Exam Specific Information' (Indications). Below this is a table of measurements:

Label	Method	Value	V1	V2	V3	V4	V5
BP (mmHg)							
Rt Proc CCA (R)							
IR	Last	0.65	0.65				
SD	Last	2.81	2.81				
PS	Last	73.1 cm/s	73.1				
ED	Last	25.8 cm/s	25.8				
Lt Proc CCA (R)							
IR	Last	0.68	0.65	0.68			
SD	Last	3.08	2.98	3.08			
PS	Last	67.0 cm/s	70.7	67.0			
ED	Last	22.1 cm/s	23.7	22.1			
Rt Proc ICA (R)							
IR	Last	0.54	0.54				
SD	Last	0.46	0.46				

On the right, there are ultrasound images and a 'Max # of displayed values' indicator. Below the images is a 'Scroll report' button and a 'Stored report thumbnail'.

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Speaker Notes:

The onscreen report display is customizable but typically displays:

- The report type
- Patient demographics
- Method (last, mean, etc.)
- A maximum of five displayed values

A navigation pane in the upper left corner allows the user to jump to different sections of the report quickly; the small arrow in the heading of each section allows the user to hide sections from display.

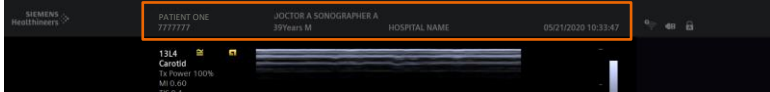
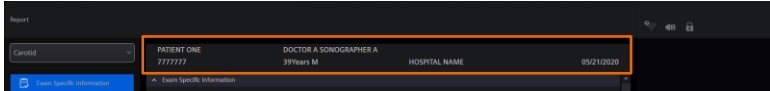
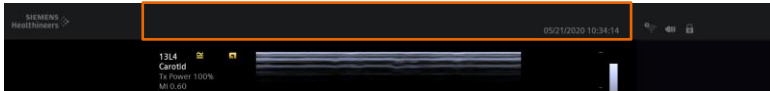
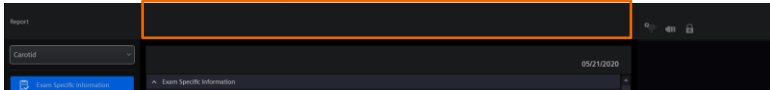
Print options are located at the bottom of the page.

Please note:

- If more than five measurements are taken, the last five are displayed on the Report
- The Print Report key will send a copy of the report to either the on-board external printer or other computer devices (e.g., a laptop)

Report banner

Hide option (System Configuration > General 2)

"Not Hidden"	Imaging mode	
	Report display	
"Hidden"	Imaging mode	
	Report display	

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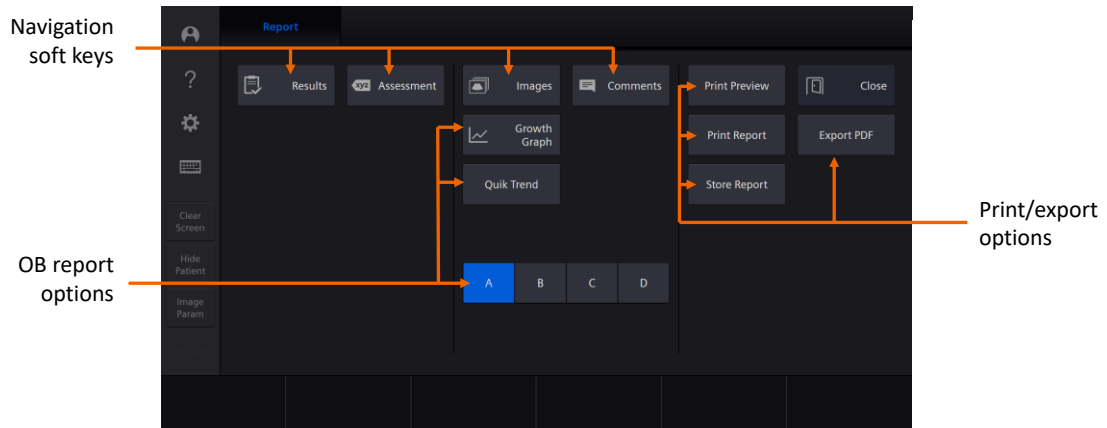
Speaker Notes:

Note that the contents of the patient report banner is directly linked to the content of the imaging mode banner. Any customizations made to the imaging banner will be directly reflected within the report banner when the report is displayed on the imaging screen.

The ACUSON Juniper system has the option to hide the patient information from view within the **System Configuration > General 2**. Selecting this option will hide the patient information from view during an active exam or displayed report.

This feature will not remove the patient's name from any report that is stored to the system by using the Store Report option or exported in a PDF format. For more information on how to configure the patient banner, please refer to the ACUSON Juniper System Configuration presentation.

Touch Screen layout



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Speaker Notes:

The Touch Screen contains navigation keys similar to the navigation pane displayed onscreen in the left panel. Results display the exam-specific measurement results such as indication or LMP.

Assessment will display the descriptive notes section of the report menu. The Assessment section contains a list of specific anatomical features, such as fetal anatomy for an OB exam, that can be checked off as seen or not seen or commented on by the user.

If images or comments are added to the report, selecting the Images or Comment keys will jump the display to those specific sections of the report.

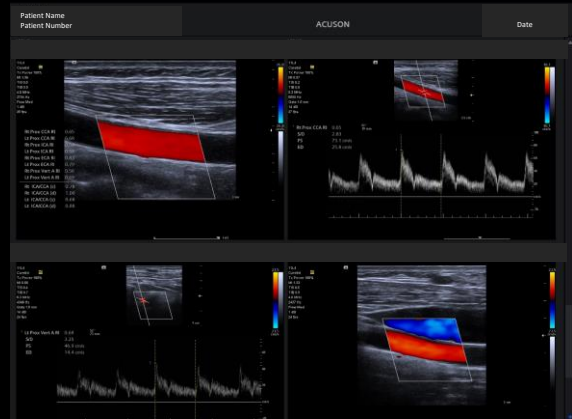
Specific OB report navigation options include Growth Graph and Quik Trend. Selecting Growth Graph will move the display directly to the section of the report containing the graphical representation(s) of the fetal biometry measurements.

Selecting Quik Trend will display the current data with previous study data for comparison. Note that this feature is only available if the previous study data has been manually entered into the system using OB History, or if previous studies have been performed on (and stored on) the system and are linked to the current exam. If multiple fetuses have been measured, use the “A, B, C, D” selection keys to display the appropriate fetus report for viewing, storing or printing.

The print and export options are displayed on the right side of the screen. Options include Print Preview, Print Report, Store Report and Export PDF. These print/export options will be discussed later in this presentation.

Report example > add images Vascular example

Patient Name		ACUSON				Date	
Patient Number							
Exam Specific Information							
Indications							
BP (mmHg)							
		Right		Left			
		Systole	Diastole	Systole	Diastole		
D Mode Measurement							
Label	Method	Value	V1	V2	V3	V4	V5
Rt Prox CCA (R)							
RI	Last	0.65	0.65				
SD	Last	2.83	2.83				
PS	Last	73.1 cm/s	73.1				
ED	Last	25.8 cm/s	25.8				
Lt Prox CCA (R)							
RI	Last	0.68	0.66	0.68			
SD	Last	3.08	2.98	3.08			
PS	Last	67.9 cm/s	70.7	67.9			
ED	Last	22.1 cm/s	23.7	22.1			
Rt Prox ICA (R)							
RI	Last	0.54	0.54				



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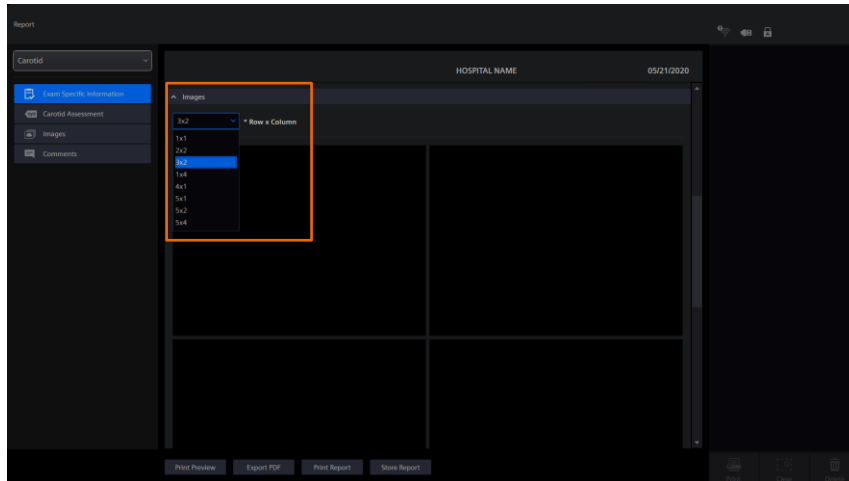
Speaker Notes:

Images can be added to the Report by using the Pointer and the Set key to click and drop the desired image into the image section of the Report.

Up to 20 images can be added into the report image section.

This is an example of a vascular report with multiple images added to the patient report.

Report Image layout options



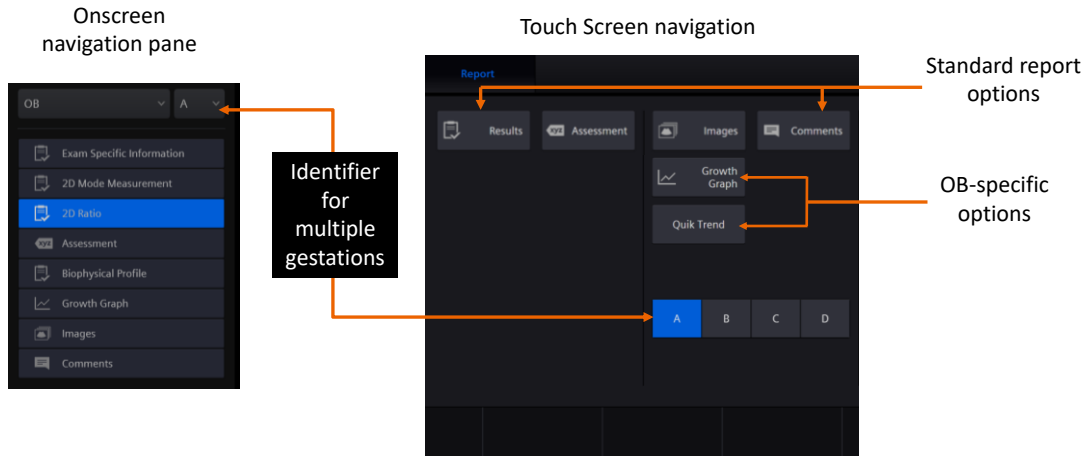
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Speaker Notes:

The image layout within the report can be customized according to the user's needs. The drop-down is located in the top left of the Images section and can be accessed by using the Pointer and Set key. Select the appropriate layout from the list provided. A guide for Row and Column related to the image order is displayed next to the layout drop-down menu.

Report example > exam specific options Obstetrics example



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Speaker Notes:

In the OB report, the results for each fetus will be displayed individually. Select the desired fetus (A, B, C, D) from the identifier on either the Touch Screen or the left panel.

There are two OB specific options – Growth Graph and Quik Trend.

Growth graph analysis graphs display the upper limit, mean and lower limit for predicted fetal growth patterns according to the selected reference (Hadlock, Osaka, etc.).

Quik trend will display exam data from previous studies. Note that these studies must be stored on the system and linked to the current study or manually entered for up to 20 previous exams.

Report example > layout Obstetrics example

Populated from registration

Calculated with exam measurements

Calculation type/author choices

Maximum number of displayed values

Label	GA	Author	Method	Value	V1	V2	V3	V4	V5
BPD	30w3d	Tokyo	Last	76.17 mm	76.17				
HC	33w4d±3w0d	Hadlock	Last	302.00 mm	302.00				
AC	28w1d±2w1d	Hadlock	Last	238.28 mm	238.28				

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Speaker Notes:

The OB report page will have some areas automatically populated from the patient registration page, such as indication and LMP. The user can modify the chart author and which value is displayed (mean, last, etc.) with drop-down menus.

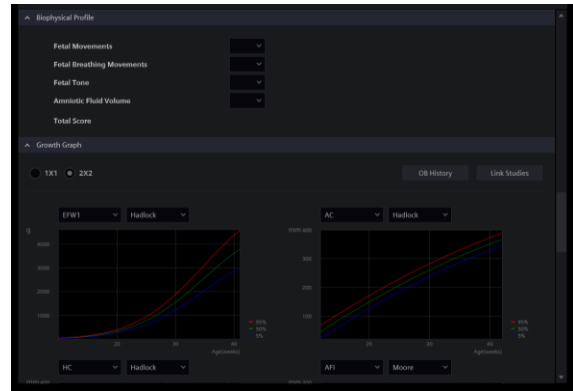
Any alterations to the clinical composite menstrual age or clinical estimated date of confinement causes the system to recalculate the date of the last menstrual period.

To alter or delete any measurements, use the Pointer and Set key to highlight the value and type in a new value or delete the value.

Report example > assessment usage Obstetrics example

Label	Value	Range Low	Range High	Growth Author
CI	72.02			Hadlock
FL/AC	19.72			Hadlock
HC/AC	1.12			Campbell
FL/BDP	66.74			Hadlock

Assessment	Value	Range Low	Range High	Growth Author
Fetal Heart Motion	Medium Seen			Seen
RVDOT	Seen			Seen
Am Arch	Seen			Seen
Fetal Position				Seen
Placenta Location				None
Placenta Grade				Adequate
Placental Cord				Seen
Liver/Palate	Seen			Seen
Choroid	Seen			Seen
Cardiac/Brain	Seen			Seen
C Spine	Seen			Seen



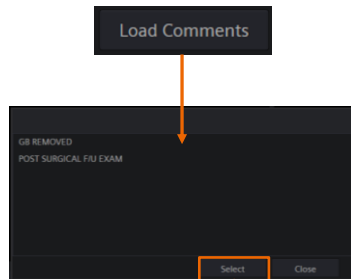
Speaker Notes:

As discussed previously, some exams contain the option to add assessments for anatomy or observations. The OB report is one of these exam types, as it contains an area for assessment of the fetal anatomy and movements.

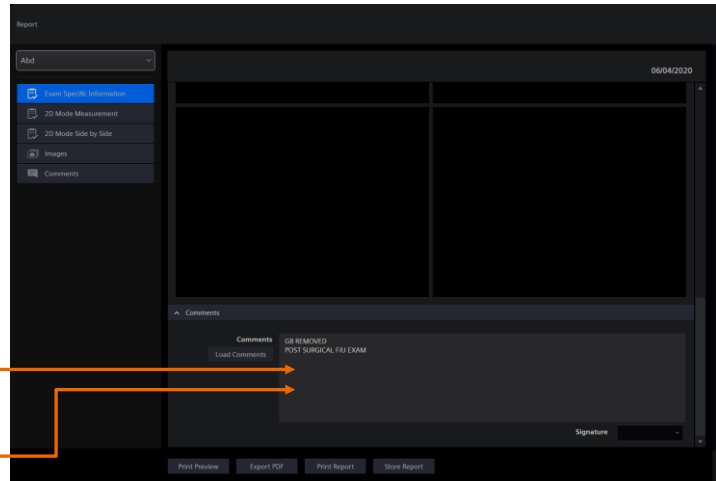
These fields can be populated by the user one by one, or a set of predefined defaults can be entered by selecting the Load Defaults at the top of the section. The choices contained in the Load Defaults are customizable.

Report example > comments usage

Add pre-programmed comments



Manually add comments



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Speaker Notes:

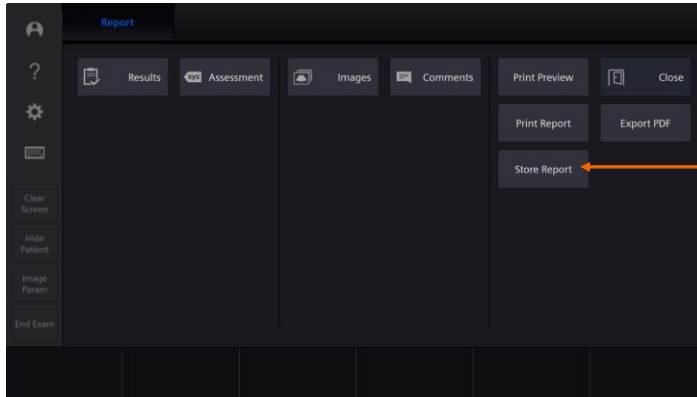
Comments can be added to the report manually by using the keyboard or by selecting options that have been added in the system configuration.

To add a manual comment, use the keyboard (virtual or tactile) to enter any information in the space provided in the Comments area.

To add pre-programmed comments, select the **Load Comments** key within the report to display the available options. Use the Pointer and Set key to highlight the comment you wish to add and press **Select**. Multiple comments can be added to the report.

For more information on configuring pre-programmed comments for an exam report, please refer to the ACUSON Juniper Measurement and Report configuration presentation.

Print reports > Store Report command



Store report using
Touch Screen key or
Print Store key on the
Control Panel



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Speaker Notes:


To store the report:

- Select the **Store Report** key on the Touch Screen; this will store only the report that is displayed on the imaging screen; if more than one report has been used (i.e., Thyroid and OB), each report will need to be stored separately
- To access additional reports, use the drop-down menu located in the onscreen left panel
- Select and display alternate reports and select the **Store Report** key on the Touch Screen to add to the patient image file
- Reports that are stored using the Store Report option will reflect any configuration(s) to show or hide patient or institution information

The Print Store key located on the Control Panel can also be used to store the displayed report. However, this will store the report as seen on the imaging screen. Any unpopulated portions of the report will not be removed. A report printed in this manner will also not be compressed into a shorter, more easily displayed format as with the Store Report command.

Print reports PDF format

Export PDF

ACUSON		Abd Report		Date
Institution				
				
Hospital Name ACUSON Performing MD Referring MD Sonographer				
Patient Information				
Patient Name	Patient Name			
Patient ID	0123456789			
Age		Gender	Other	
Height		Weight	BSA	
BP (mmHg)		Study Date	24/10/2017	

1

ACUSON		Date					
2D Mode Measurement							
Label	Method	Value	V1	V2	V3	V4	V5
Liver Length	Last	176.1 mm	176.1				
GB Length	Last	59.9 mm	59.9				
Spleen Length	Last	97.1 mm	97.1				
Spleen AP	Last	58.3 mm	58.3				
Spleen Width	Last	120.1 mm	120.1				
Spleen Volume	Last	356.0 mL					
Rt Kidney Length	Last	107.7 mm	107.7				
Lt Kidney Length	Last	108.5 mm	108.5				
Images							

2

Speaker Notes:

The PDF can be exported to a USB by inserting a USB into the connection port on the system and selecting **Export PDF** from the Touch Screen.

Report > Print Preview Hide institution and patient information

PATIENT NAME
05_15_2020_09_00_33

DR NAME SONOGRAPHER NAME
32Years M

HOSPITAL NAME
05/15/2020

HOSPITAL NAME
07/22/1987

PATIENT NAME
05_15_2020_09_00_33

Thyroid Report

Institution

Institution Name	HOSPITAL NAME
Performing MD	DR NAME
Referring MD	DR NAME 2
Sonographer	SONOGRAPHER NAME

Patient Information

Patient Name	PATIENT NAME
Patient ID	05_15_2020_09_00_33
Age	32Years
Height	6ft 0in
Weight	190lb 0oz
Gender	Male
BSA	2.08m²
BP (mmHg)	
Study Date	05/15/2020

2D Mode Measurement

Label	Method	Value	V1	V2	V3	V4	V5
Isthmus AP	Last	2.13 mm	2.13				
Rt Thyroid Lobe Volume	Last	0.63 mL					

"Not Hidden"

PATIENT NAME
05_15_2020_09_00_33

DR NAME SONOGRAPHER NAME
32Years M

HOSPITAL NAME
05/15/2020

HOSPITAL NAME
07/22/1987

PATIENT NAME
05_15_2020_09_00_33

Thyroid Report

2D Mode Measurement

Label	Method	Value	V1	V2	V3	V4	V5
Isthmus AP	Last	2.13 mm	2.13				
Rt Thyroid Lobe Volume	Last	0.63 mL					
Rt Thyroid Lobe TRV	Last	8.51 mm	8.51				
Rt Thyroid Lobe SAG	Last	17.82 mm	17.82				
Rt Thyroid Lobe AP	Last	8.72 mm	8.72				

2D Mode Side by Side

Label	Right	Left
Thyroid Lobe Volume	0.63 mL	
Thyroid Lobe TRV	8.51 mm	
Thyroid Lobe SAG	17.82 mm	
Thyroid Lobe AP	8.72 mm	

Images

"Hidden"

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Speaker Notes:

If the Hide Patient Information or Hide Institution Name has been selected in the system configuration, the PDF will reflect those options and the report will be shortened.

Please note: The institution name and the patient name remain in the header on the PDF – "hiding" these pieces of information using the settings within system configuration will only remove them from the main body of the report and not from the report entirely.

Print reports PDF format to patient images

Patient Name
Patient number

ACUSON 25/10/2017

ACUSON 25_10_2017_15_10_33

D Mode Measurement

Label	Method	Value	V1	V2	V3	V4	V5
Rt Prox CCA (R)							
RI	Last	0.65	0.65				
S/D	Last	2.83	2.83				
PS	Last	73.1 cm/s	73.1				
ED	Last	25.8 cm/s	25.8				
Lt Prox CCA (R)							
RI	Last	0.68	0.66	0.68			
S/D	Last	3.08	2.98	3.08			
PS	Last	67.9 cm/s	70.7	67.9			
ED	Last	22.1 cm/s	23.7	22.1			
Rt Prox ICA (R)							
RI	Last	0.54	0.54				
S/D	Last	2.15	2.15				
PS	Last	55.6 cm/s	55.6				
ED	Last	25.8 cm/s	25.8				
Lt Prox ICA (R)							
RI	Last	0.58	0.58				
S/D	Last	2.36	2.36				
PS	Last	46.0 cm/s	46.0				
ED	Last	19.5 cm/s	19.5				
Rt Prox ECA (R)							

Report Export PDF Print Report



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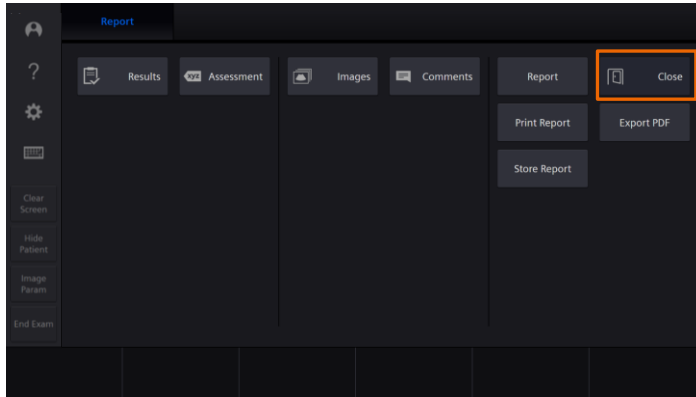
Speaker Notes:

As mentioned in a previously, the user can also store the report by using the Print Store key on the Control Panel. This option will store an image of what is currently displayed.

If a user prefers a white background, use the Print Preview option to display the PDF on the imaging screen and then press the **Print Store** key to store the visible area.

Please note: This option will not store the entire report automatically – the user must scroll and display all portions of the report and select the Print Store key each time.

Close report



Close report
options



Speaker Notes:

To close or exit a report, select **Close** from the Touch Screen or press the **Report** key or the **2D** key on the Control Panel.

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Speaker Notes:

No Speaker Notes.

Thank you for your enthusiasm!

Questions?

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Speaker Notes:

No Speaker Notes.