

ACUSON Juniper Ultrasound System

Measurement Configuration
Software Release VB30D



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Speaker Notes:

The purpose of this presentation is to provide instructions for the measurement configuration on the ACUSON Juniper™ ultrasound system.

Objectives

- Explain measurement configuration access and homepage layout
- Review the General icon
- Analyze the Exam Specific icon layout
- Discuss Configuration
- Examine patient report



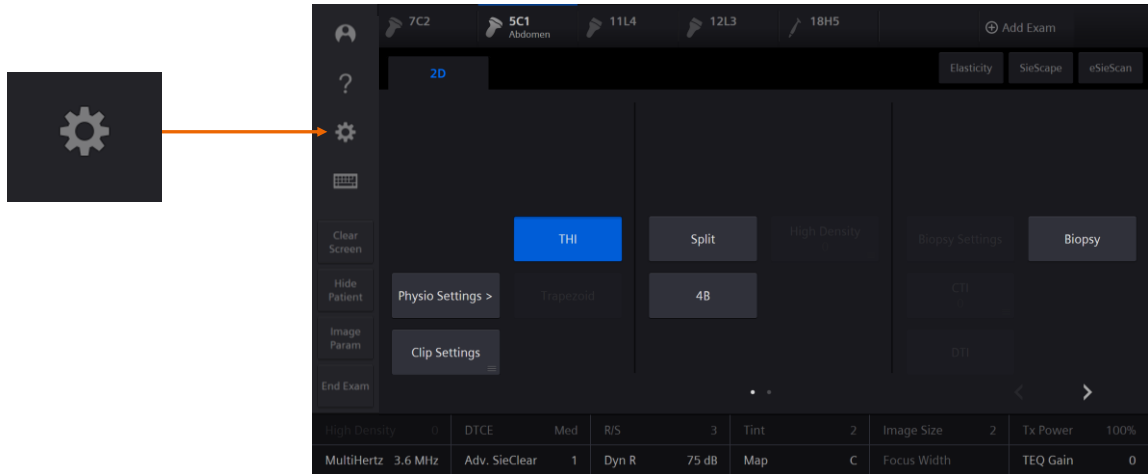
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Speaker Notes:

Here are the objectives of this presentation. We will begin with discussing the measurement configuration access and the home page layout.

Measurement configuration access



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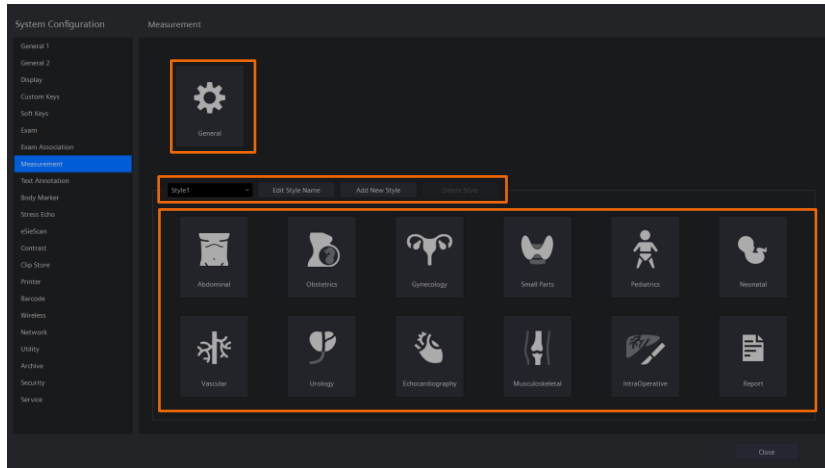
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Speaker Notes:

The measurement package on the ACUSON Juniper ultrasound system is very robust and can be customized for each exam type according to the user's needs.

To access the configuration menu, select the **Configuration** icon from the Touch Screen.

Measurement configuration home page



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Speaker Notes:

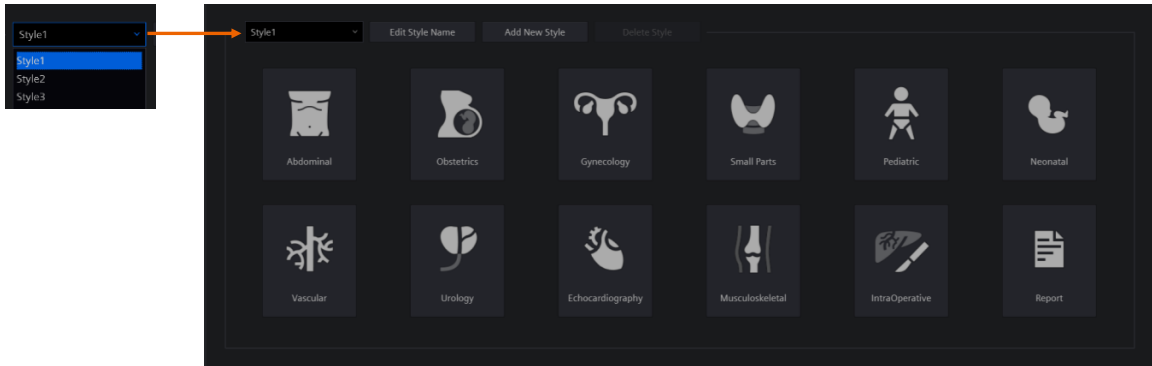
Once in the configuration menu, select the **Measurement** tab to access the homepage for the customization of each exam measurement package.

The homepage for the measurement configuration consists of three distinct sections:

- General icon – system-wide and exam-specific customizations
- Style selection – preloaded and customizable selection lists for what is displayed within the measurement function
- Exam Specific icons – to customize each individual exam, create folders and determine which generic functions are displayed

These icons and their contents will be discussed in detail during this presentation.

Measurement options Styles



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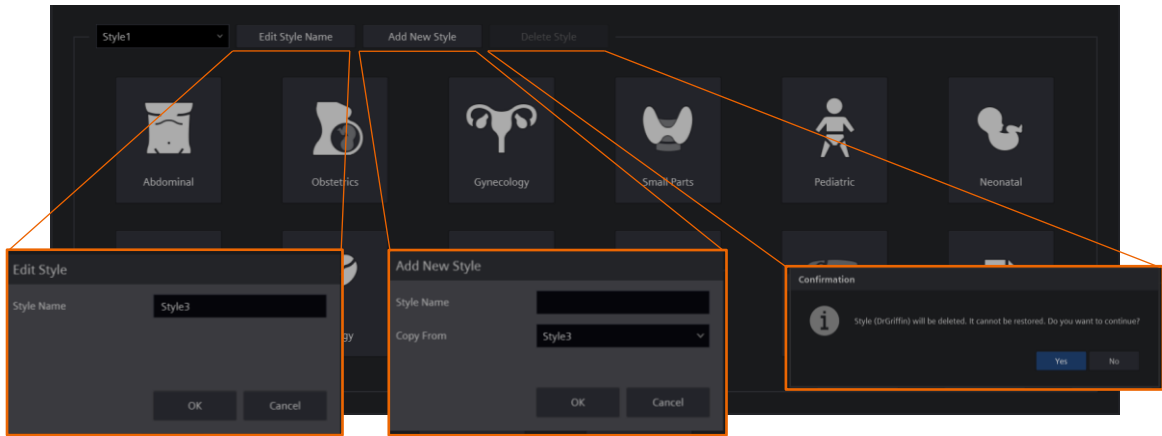
Each exam preset has customizable “style” options available which determine what measurement labels are displayed on the Touch Screen.

There are three different default measurement styles available in the drop-down menu that are labeled Style 1, Style 2, and Style 3.

Each style can be used as is or copied and customized to fit a specific user, exam or site. Each style can be configured for 2D, Doppler and M-mode Touch Screen contents.

The maximum number of styles that can be added is 20.

Measurement options Styles – Edit, Add, Delete



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Speaker Notes:

To add, edit or delete a style, use the menu keys found on the style tool bar. The factory default styles can be renamed to something other than Style 1, 2 or 3.

- To edit the style name, select the style from the drop-down menu and select the **Edit Style Name** key with the pointer. A dialogue box will appear onscreen with the current style name that you have chosen to edit
- Use the keyboard to change the name of the style and select **OK** to complete the change and the style will now be listed with its new name in the drop-down styles menu

New styles can also be added, however, they must be copied from an existing style and then customized within each exam measurement package.

- To add a new style, use the Pointer to select the **Add New Style** key from the style tool bar and a dialogue box will open onscreen
- Within the dialogue box, choose the style you wish to copy from the drop-down menu and enter the new style name in the space provided and select **OK** to complete the process; your new style will be listed in the drop-down menu of style selections

Customization of this new style is done in each exam measurement package and will be covered later in this presentation. All copied/customized styles can be deleted by selecting the **Delete Style** key.

- Select the style you wish to delete from the styles drop-down list, then select **Delete Style**; a dialogue box will appear onscreen to confirm the deletion by selecting **Yes** and the style will no longer be listed in the drop-down menu of styles; please note: It cannot be restored

Please note: Factory styles, even if renamed, cannot be deleted.

Objectives

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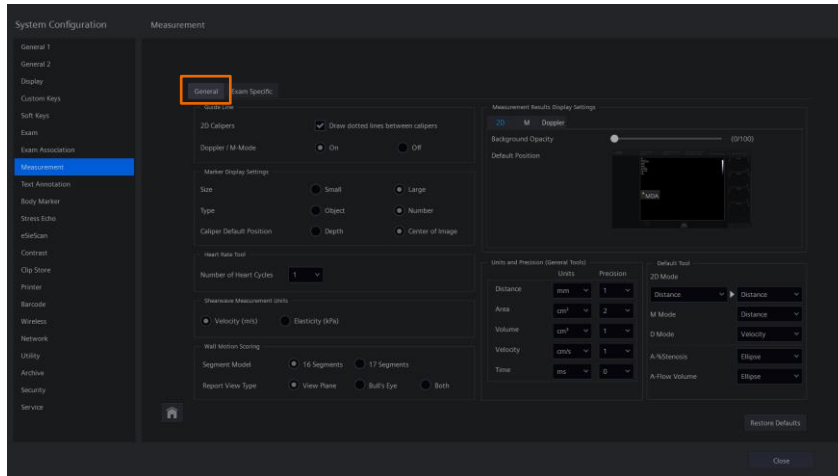
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Speaker Notes:

Next, we will discuss the General icon.

Measurement tab General icon



Speaker Notes:

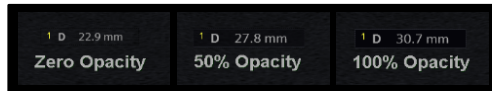
System-wide measurement settings are found within the General icon in the measurement tab. These system-wide measurement settings are divided into general options, such as font size or caliper type, and exam specific options, such as Auto OB or eSie Measure workflow acceleration package for cardiac.

We will begin by exploring the general options on the right side of the screen.

General icon System-wide settings

System-wide settings for 2D, M-mode and Doppler

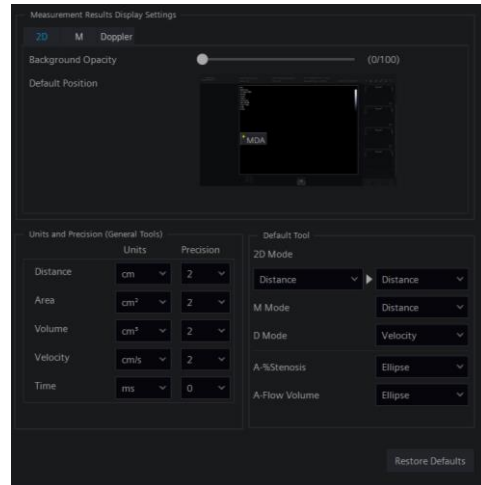
- Background Opacity of Measurement Display Area (MDA)



- Units and Precision – General Tools
- Set default measurement type for distance, M-mode, D-mode, etc.

Variable settings between modes

- Position of MDA



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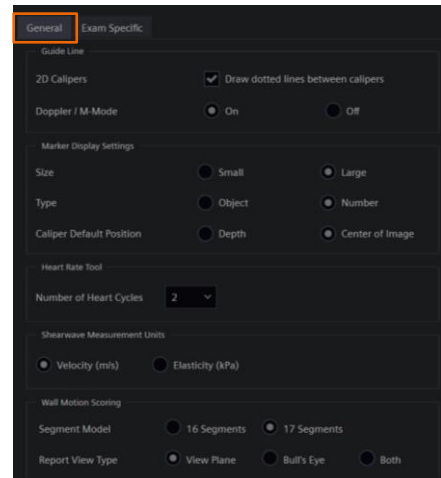
Measurement background opacity of the measurement display area (MDA) are system-wide settings and do not differ between modes. Use the Pointer to slide the adjustment point to the desired size or opacity. Note that font size can be adjusted on the Touch Screen during an exam and will remain that size until changed, even after shutdown. Background opacity ranges from transparent to black the further the adjustment point is moved from left to right – notice the appearance of a box outline around the measurement number as the opacity increases.

The default position of the MDA can differ between modes. Select the mode from the tabs found in the Measurement Results Display Settings and use the Pointer to position the MDA within the window representing the imaging screen below.

Default settings for units and degrees of precision for each general (“generic”) measurement tool (distance, area, volume, etc.) are also set within the general tab. Use the Pointer to select the desired units and precision from the choices available in the drop-down menus. These options will apply to a tool when it is not attached to a specific measurement label.

General icon General options tab

- Marker Display Settings
 - Size – small/large
- Type – object/number
- Caliper Default Position – center / depth
- Guide Line for Doppler/M-mode and On / Off
- Heart Rate Tool settings (heart cycle options 1-5)
- Shear wave Measurement Units
- Wall Motion Scoring settings for cardiac



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Speaker Notes:

The left side of the screen contains two tabs: One for General and one for Exam Specific settings.

General settings apply to all exams, such as caliper size, type and default position onscreen when the caliper function is activated.

Use the Pointer to select a small or large size caliper in either an object or number type icon during display. The user can choose to have the caliper show a depth measurement from the skin line when activated or appear without the measurement in the center of the screen.

The Guide Line for Doppler and M-mode can be deactivated here (default is On) and the number of heart cycles can be set from the drop-down menu under the heart rate tool.

Shear wave Measurement Units displayed on the report and the options for Wall Motion Scoring's model and type are also found within the General tab.

Please note: The Shear wave Measurement Units option found here does not affect the unit that is displayed onscreen (both units are displayed onscreen).

General icon Exam Specific options tab – Obstetrics

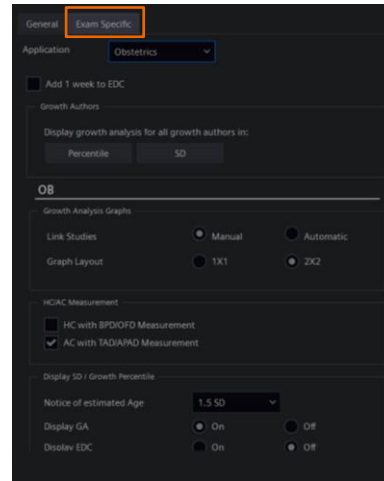
Separate customizable options for each obstetrical application:

- OB
- Early OB
- Advanced OB

Measurement and display parameters:

- Standard Deviation
- Display GA/EDC onscreen
- Graph layout
- BPD measurement markers
- HC and AC display settings

Auto OB On/Off default selection



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Speaker Notes:

There's also an Exam Specific tab within the General icon. This tab contains features that are specific to certain applications, such as OB or Cardiac.

This is an example of the Obstetrics Exam Specific options that contain options for OB, Early OB and Advanced OB. There is a slider bar on the right side that allows the user to scroll down the page for all options and all OB exams.

Measurement parameters, report parameters and display parameters for all OB exams are found within this folder, including the default setting for Auto OB.

Please note: Each OB application – General OB, Early OB, and Advanced OB – is listed separately and can be configured to fit the given exam. For example, the user may choose to have Auto OB defaulted On for the General OB preset, but defaulted Off for Early OB.

General icon

Exam Specific options tab – Echocardiography

Separate customizable options for each cardiac application:

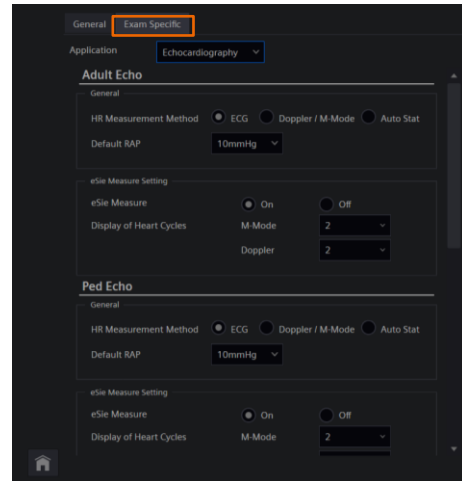
- Adult Echo
- Ped Echo
- Neo Echo

Heart rate measurement method

- ECG
- Doppler/M-mode
- Auto Stat

Default RAP setting (right arterial pressure)

eSie Measure Settings



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Speaker Notes:

Echocardiography, much like obstetrics, has several exam-specific options for each cardiac application preset.

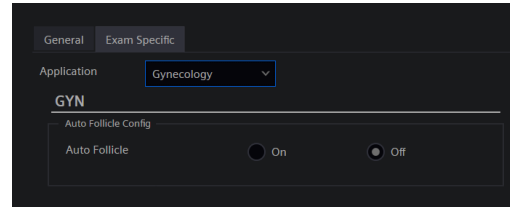
Adult Echo, Ped Echo and Neo Echo can be customized separately for the HR Measurement Method, Default RAP and eSie Measure package. Scroll down to display the Neo Echo options.

Select the desired option from the drop-down menus or selection box located next to the parameter using the Pointer and the Set key.

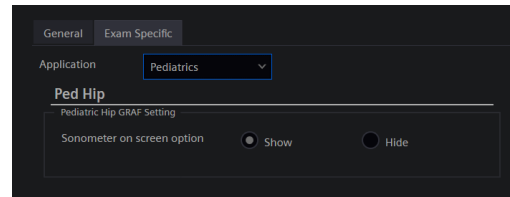
Please note: The default eSie Measure Setting can differ between exams in both activation (On or Off) and the number of heart cycles displayed.

General icon Exam Specific options tab

Gynecology application default setting for Auto Follicle On/Off



Pediatric Hip application default setting for Sonometer display onscreen On/Off



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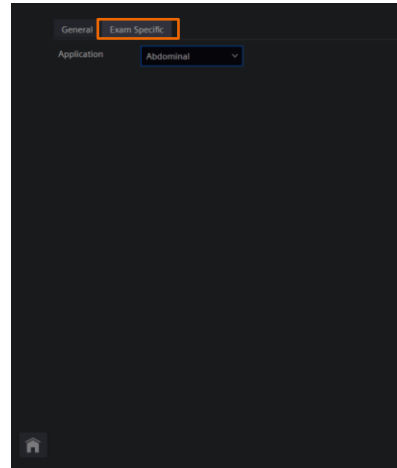
Speaker Notes:

Auto Follicle default setting for Gynecology and on-screen Sonometer display option for Pediatric Hip are also found in the Exam Specific tab.

General icon Exam Specific options tab

Applications without Exam Specific options:

- Abdominal
- Small parts
- Neonatal
- Vascular
- Urology
- Musculoskeletal (MSK)
- Intraoperative



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Speaker Notes:

There are some applications without Exam Specific options:

- Abdominal
- Small parts
- Neonatal
- Vascular
- Urology
- Musculoskeletal (MSK)
- Interoperative

These applications will be blank in content when selected from the drop-down menu.

Objectives

- Explain measurement configuration access and homepage layout
- Review the General icon
- **Analyze the Exam Specific icon layout**
- Discuss Configuration
- Examine patient report



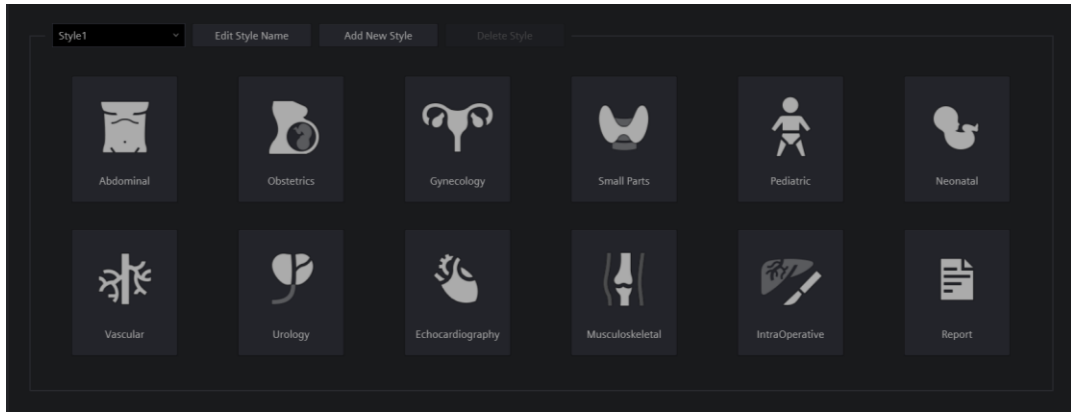
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Speaker Notes:

Next, we will discuss the exam-specific icon layout.

Exam Specific icons

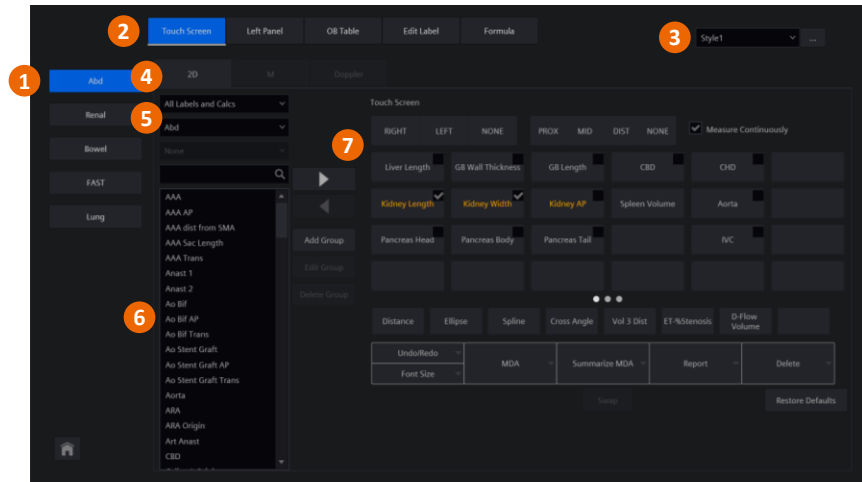
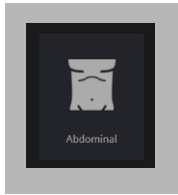


Speaker Notes:

Customization of individual exam presets is found within each exam category icon. Use the Pointer to select an exam category and display the customizable options onscreen.

The next slide will explore the Abdominal icon contents.

Exam Specific icons Overview



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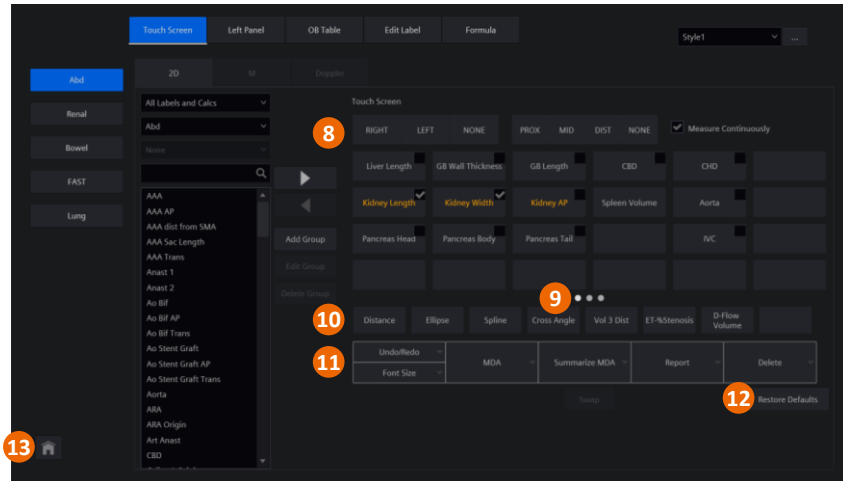
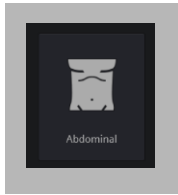
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Speaker Notes:

Once an icon is selected, available setting options for the exam type are displayed.
The components on the page are:

1. The list of associated exams – in this case, the Abdomen exam type is associated with Renal, FAST and Lung exams as well; to configure these exams, select the exam from the left and the homepage for those exams will populate the screen
2. There are tabs for configuring the Touch Screen, Left Panel, etc., at the top and the page content will change with each selected tab – this homepage content is for the Touch Screen only – the remaining tabs (Left Panel, OB Table, Edit Label, Formula) will be covered in the upcoming slides
3. The different Styles for each exam are found under the drop-down menu on the right; each style can be customized within the exam type
4. Tabs for customizing the different modes – 2D, M-mode and Doppler – are accessed with the Pointer
5. Drop-down menus for the content available in each exam and mode and are accessed with the Pointer; the contents of the drop-down menu will be covered in the next slide
6. The options will be displayed in a list below; if the list is longer than the display area, there is a slider bar to access the unseen portion
7. If combinations of labels are used, for example, in a volume, the user has the option to Measure Continuously for that sequence of measurements and Measure Continuously will automatically populate the next measurement in the series; turning off Measure Continuously will mean the user must select each component of the volume individually instead of the system automatically activating the next measurement when the previous one in the sequence is completed

Exam Specific icons Overview (continued)



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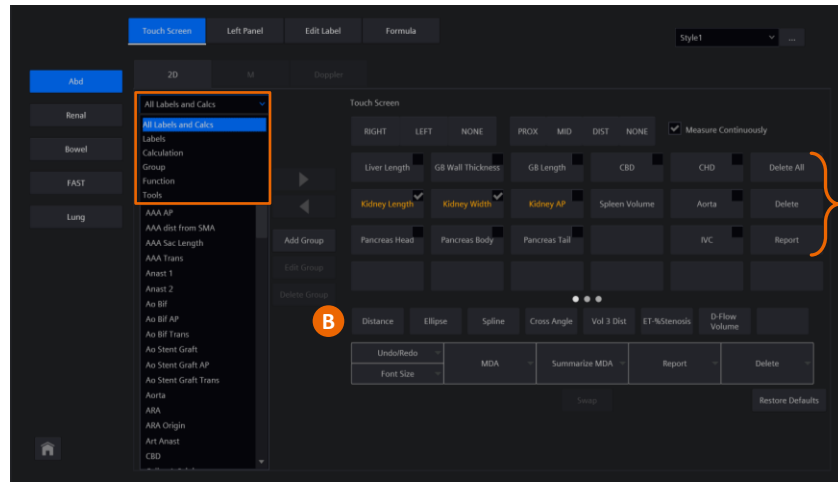
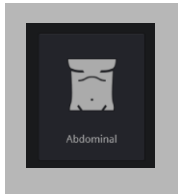
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Speaker Notes:

Continued:

8. A copy of the Touch Screen layout for configuration is shown here with associated labels; any labels added to the display will appear on the Touch Screen in the same position/location
9. There are a total of 24 Touch Screen labels available per page, with three pages total; the pages are accessed by using the Pointer and Set key to select one of the white dots at the bottom of the Touch Screen display
10. A tool bar for generic measurements is customizable and available to the user when in the measurement function
11. The function bar associated with the soft keys on the Touch Screen and the rotary dials on the Control Panel have some flexibility as to which items are displayed and their location
12. If required, the user can reload the default layout/selections on the page by selecting **Restore Defaults**
13. To return to the measurement exam icon homepage, select the **Home** icon with the Pointer

Exam Specific icon Drop-down menu options



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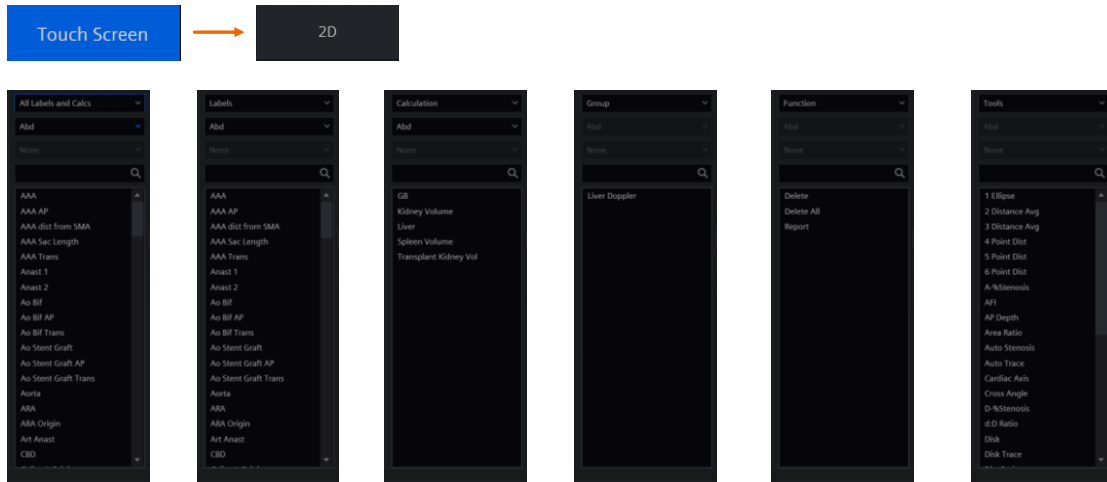
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Speaker Notes:

The drop-down menu of available content for each exam is broken into several categories. They are:

- All Labels and Calcs which consists of all measurement options for the Touch Screen, including series calculations, such as specific organ volumes
- Labels only – this list consists of all individual measurements minus the organ specific series measurements, such as Splenic Volume
- Calculation contains the organ-specific series measurements, but no individual Labels
- The list found under Group contains packets or folders of several measurements that are grouped together; for example, a folder called “liver Doppler” with all the measurements specific to a liver transplant can be created by the user; this newly created group can be added to the Touch Screen; when selected, the folder will open and display the contents to the user; please note: Having a Group folder expands the use of a single Touch Screen key and keeps the Touch Screen contents streamlined
- Function contains options such as Delete, Delete All and Report; these can be added to the Touch Screen in any mode – as indicated by the letter A – thus the user has the functions always available, even when not in the active mode they are associated with
- Tools is the final option in the drop-down menu; the bar containing the tools list (indicated by the letter B) are generic measurements that the user may require during the exam; the tool bar content can differ between exams; a total of eight different tools can be displayed

Exam Specific icon Drop-down menu options



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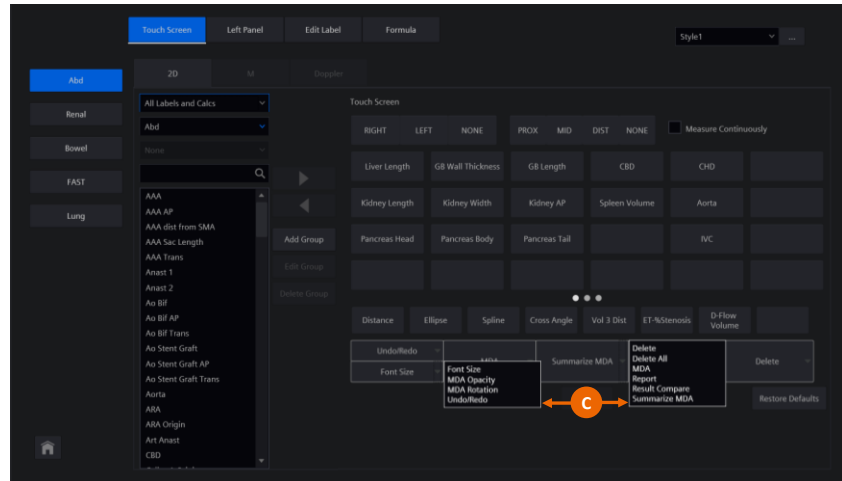
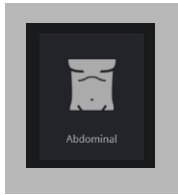
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Speaker Notes:

Here is an example of the contents of each category for the 2D mode of the Abdomen exam available for the Touch Screen. Note how the content of each category changes from the All Labels and Calcs selections through to the Tools list. Each mode (2D, M-mode and Doppler) has different options available under each category.

Due to the extensive list of available options and number of exam types, we will not be going through each exam individually. This example is presented as a generalization to help better understand the contents of each category and how they differ.

Exam Specific icon Rotary dial/soft key options



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Speaker Notes:

Options for customization of the soft keys at the bottom of the Touch Screen that are associated with the rotary dials on the Control Panel are below the Tools options.

Using the Pointer, select the downward arrow on the right side of the key you wish to change to display the drop-down menu of available options (C). Select the desired option from the list using the Pointer.

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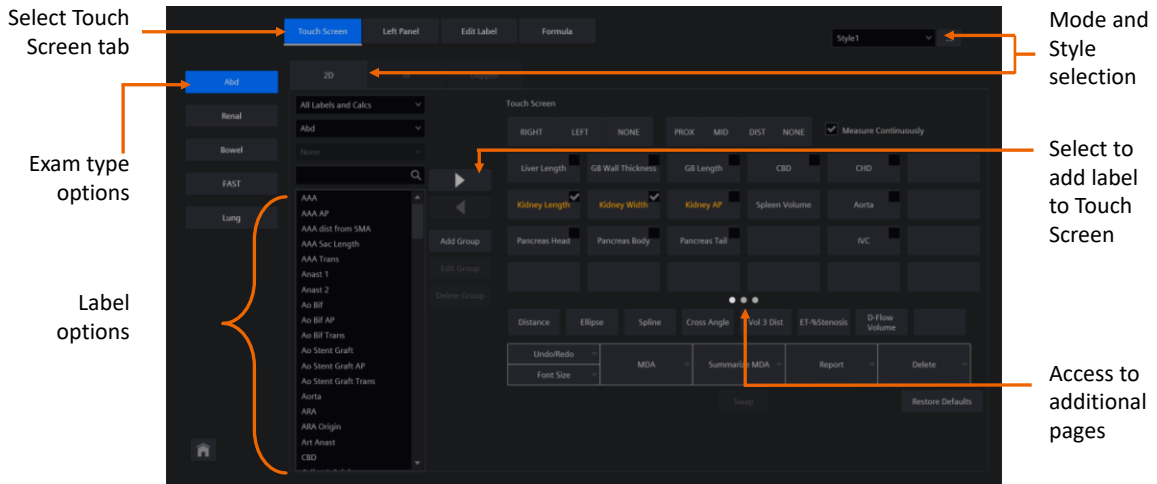
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Speaker Notes:

Next, we will discuss the measurement Touch Screen configuration.

Configuration Touch Screen



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Speaker Notes:

To configure the Touch Screen:

- Use the Pointer to select the **Touch Screen** tab from the tab options at the top of the page
- Then select the exam type, mode (2D, M-mode, Doppler) and Style from the appropriate list or drop-down menu you wish to customize

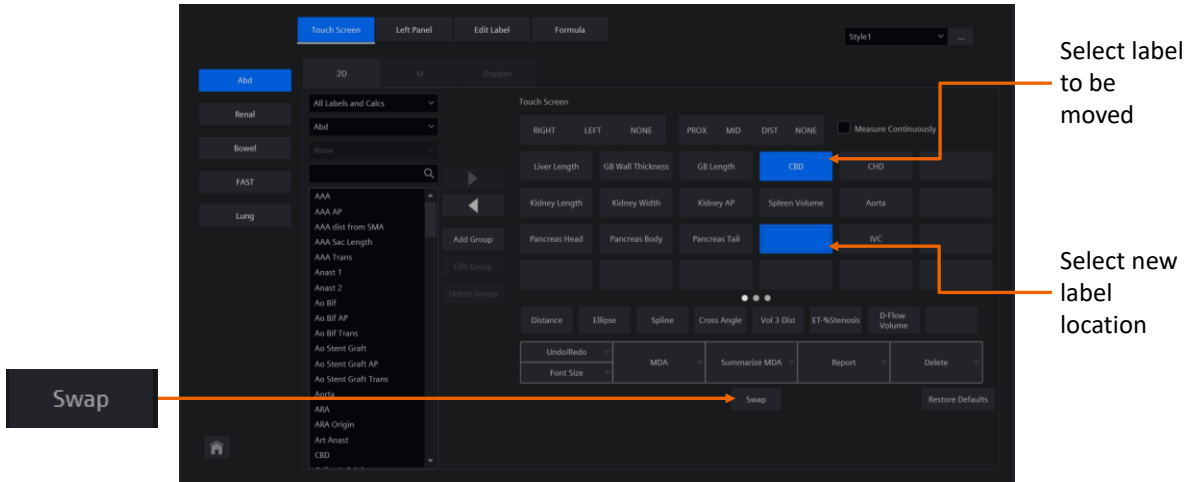
The default Touch Screen layout and associated labels will be displayed on the screen.

To add additional labels to the Touch Screen:

- Select the label from the list of label options and use the arrow key adjacent to the list to add the label
- If there is a label displayed that is not required, use the Pointer to highlight the label and the reverse arrow to add the label back into the options list
- To save time, multiple labels can be highlighted and added or highlighted and removed at one time

If the page becomes crowded, additional pages are accessed by selecting one of the white dots at the bottom of the page with the Pointer. A maximum of three pages are available.

Configuration Label Swap



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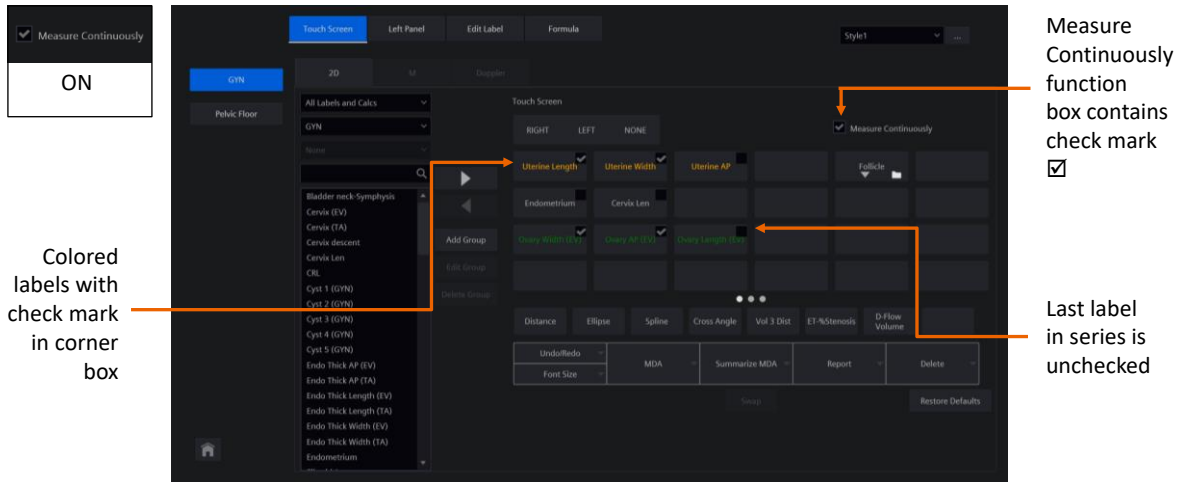
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Speaker Notes:

Repositioning labels on the Touch Screen during configuration is done by using the Swap feature:

- Use the Pointer to highlight the label you wish to move, as well as the new location, then select the **Swap** option from the bottom of the screen; only one label can be swapped at a time

Configuration Measure Continuously



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Speaker Notes:

Measure Continuously is a feature used in conjunction with series measurements, such as volume, and is on by default in most Styles.

The option to turn it off or on is located in the upper right side of the screen above the Touch Screen keys. A checkmark in the box indicates that the function is turned on.

The labels involved in the continuous measurement will change color from white to yellow, orange, green, etc., depending on how many label sets are linked to Measure Continuously. This color change will be reflected on the Touch Screen during live scanning when in the measurement function.

All labels, except the last one in the series, will have a checkmark in the corner box of the label indicating that they are part of a series measurement sequence. The absent checkmark in the last label indicates the end of the measurement sequence.

If the user wishes to add another measurement to the series, a checkmark is placed in the box of the last label once the additional (new) label has been placed next to it on the Touch Screen layout. Adding the check mark to the label indicates to the system that the new label is part of the series. The new label will not have a check mark indicating that the series now terminates with that label.

Configuration Measure Continuously

Measure Continuously
OFF

Labels gray in color

Function box is unchecked ☐

All labels lack check mark boxes

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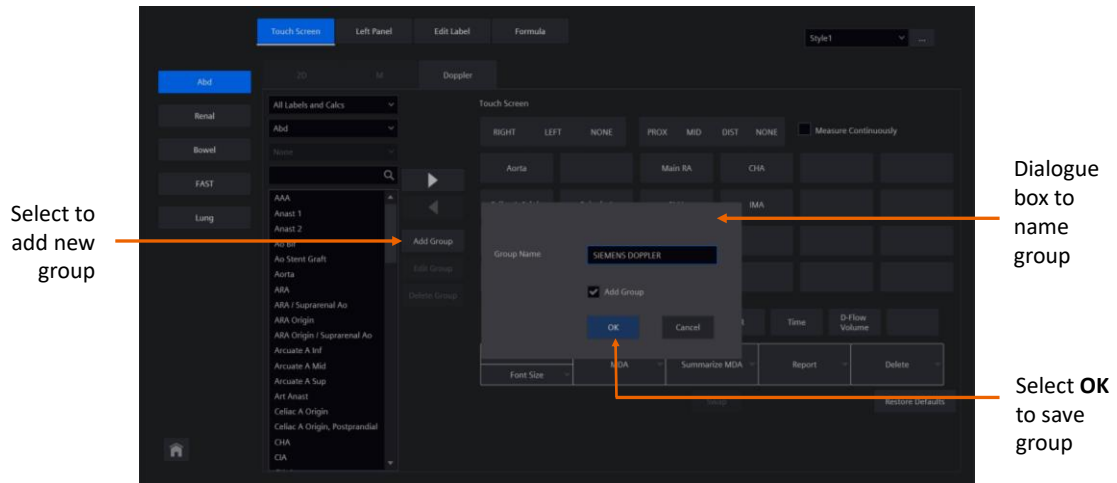
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Speaker Notes:

If Measure Continuously is off, there will be no check mark in the function box, the label text will be gray in color and the label itself will lack a check mark box in the upper right corner.

Please note: In some exam types or styles, Measure Continuously is defaulted off.

Configuration Add Group



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Speaker Notes:

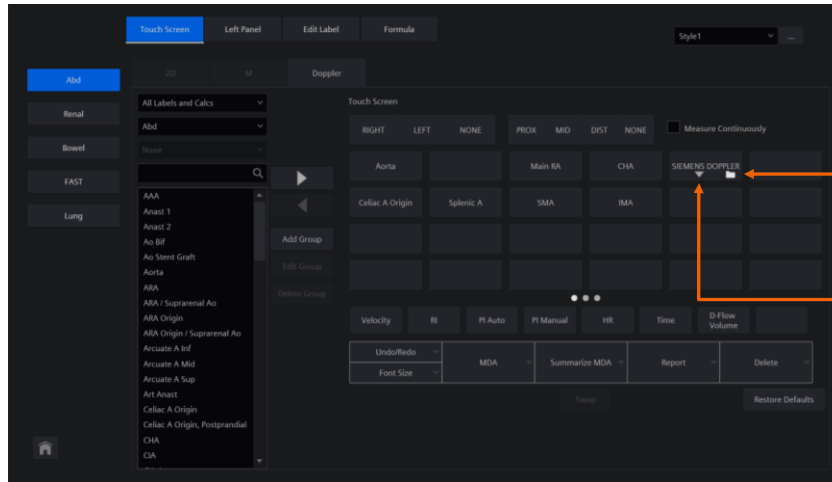
New groups of labels can be added to the Touch Screen menu. Creating a Group allows the user to have access to a list of measurements without cluttering up the Touch Screen, as this list of labels sits within one key. Once the key is selected, the list of labels are displayed on the Touch Screen.

To add a new group of labels:

- Select **Add Group** to launch a dialogue box and type in the new Group Name in the space provided
- Select **OK** to add the newly created group label to the Touch Screen keys

A maximum of 54 labels can be added to a Group (18 labels on each of the three pages).

Configuration Add Group



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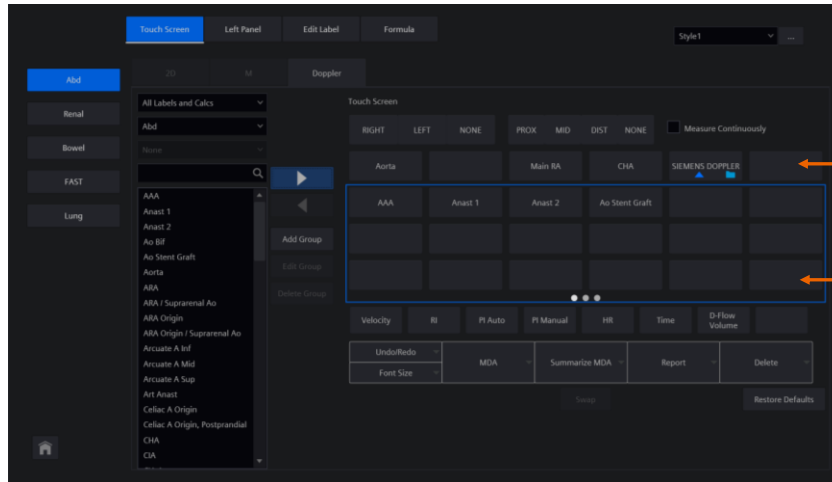
Speaker Notes:

The newly created group label, in this example “Siemens Doppler”, will appear on the screen in one of the blank keys in the top line of the Touch Screen keys. If the top line of keys are already fully populated with labels and there are no blank keys, the group label will appear on the next page containing a blank/open space in the first line of keys. The default location on the first line is related to how the Group opens up on the Touch Screen when activated during measurement.

When in configuration, a file icon on the lower right corner of the Touch Screen key alerts the user that the key label contains a Group.

To open the Group and begin adding labels, use the Pointer to select the small downward arrow on the key.

Configuration Add Group



General
imaging
group
location

Open group
to add labels

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Speaker Notes:

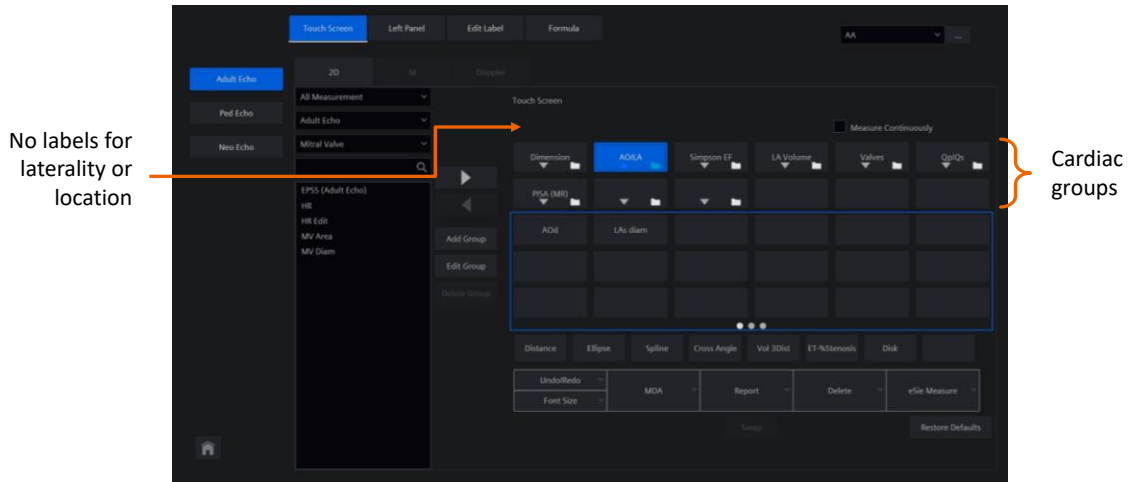
When the Group is open, the blank labels for configuration display in the bottom three rows of the Touch Screen. The layout display location is the reason why all Groups can only be placed in the first row of the Touch Screen keys in General Imaging.

Adding labels to a Group is done the same way as the regular Touch Screen keys once the Group is opened and the blank keys are displayed.

Use the Pointer to select label(s) and the arrow to add to the open Group. Labels can be swapped around the keys using the Swap selection as explained in an earlier slide.

A maximum of 54 labels can be added to a Group (18 labels x three pages).

Configuration Add Group



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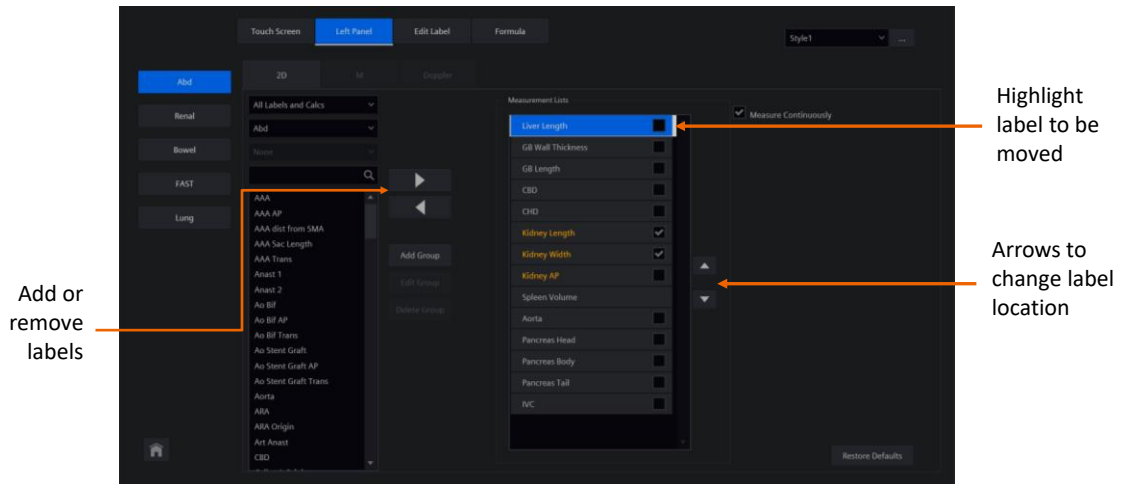
Speaker Notes:

There is an exception for the location of a Group label found in the Cardiac application.

The measurement labels for Cardiac lack the laterality and location label options (right, left, proximal, mid, etc.) required for General Imaging. Without these labels, the number of configurable measurement label keys for Cardiac expand to include the row used by laterality and location for General Imaging. As a result, Groups on a Cardiac Touch Screen can be located on the first and second lines of the Touch Screen.

Groups will still open and populate the bottom three rows regardless of their location on the first or second line of the Touch Screen keys. In this example the AO / LA Group on the first row is open and displayed on the bottom three rows of the Touch Screen, even though the Group is located on the top row with a row in between it. The result is that Groups located on the top row of a Cardiac screen have the same number of labels as Groups located on the second row.

Configuration Left Panel



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Speaker Notes:

The tab next to the Touch Screen tab is the configuration options for the Left Panel, as it is configured separately from the Touch Screen.

The same label lists are available for the left panel as for the Touch Screen and the labels are added / removed from the left panel in the same manner, by way of the bidirectional arrows.

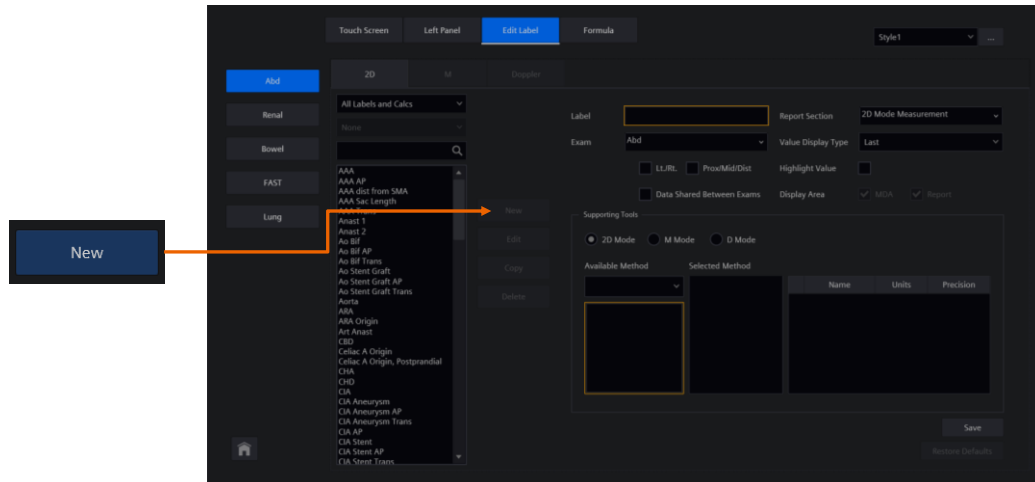
Mode selection tabs for 2D, M-mode and Doppler as well as choice of Styles are activated the same as when configuring the Touch Screen tab.

Label position on the left panel is accomplished by using the up and down arrows next to the selected labels and moving them up and down the list.

To move a label, use the Pointer to highlight the label you wish to move and then select the appropriate arrow to move the label to the new position.

Please Note: Measure Continuously check marks and associated label color change appear on the Left Panel labels as well as the ability to Add Groups to the measurement list.

Configuration Edit Label



32

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Speaker Notes:

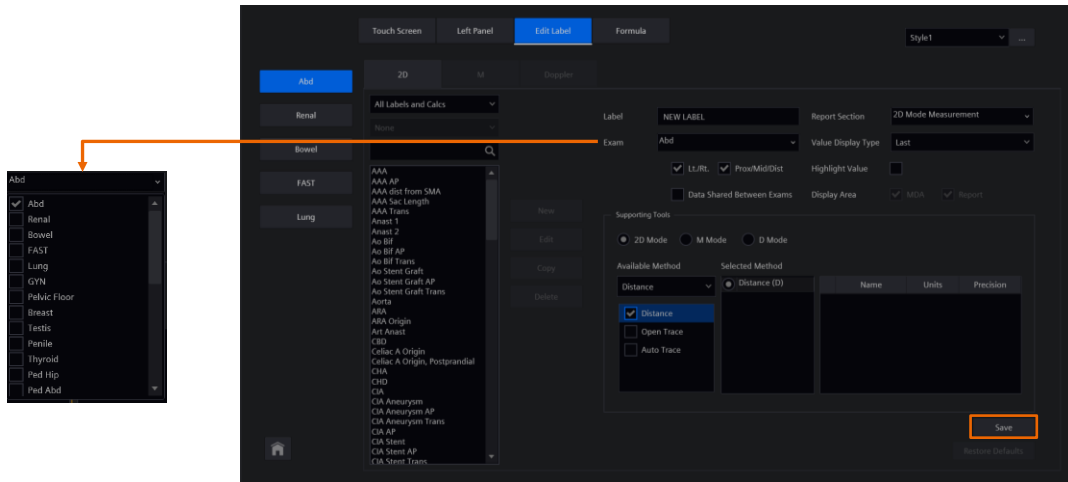
The Edit Label tab allows the user to add new labels as well as edit components of existing factory or custom labels.

To add a new label:

- Select the **New** key to activate the information fields and define the label parameters
- Name the new label in the space provided using the keyboard

User-defined label names can contain up to 64 characters, including spaces.

Configuration Edit Label



33

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Speaker Notes:

Once the label has been named, the user must define the label by choosing the exam it will be linked to. Several exam types are available in a drop-down menu below the label name.

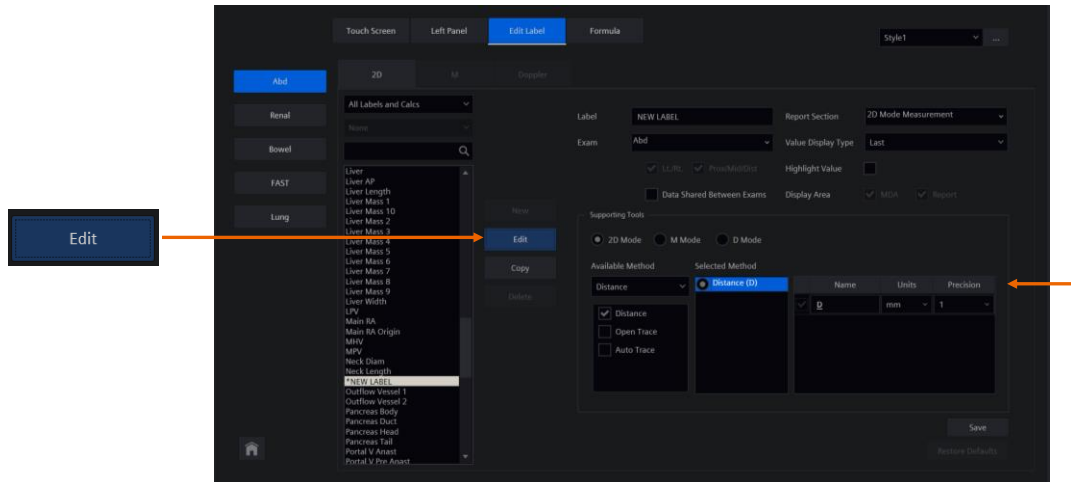
Additional parameters, such as Report Section, Value Display Type and Laterality/Location, must also be defined for the new label.

Under the Supporting Tools options, the user can decide what type of measurement action will be linked to the label. In this example the label is defined as a Distance calculation with a point-to-point distance measurement rather than an Open Trace or Auto Trace.

The default setting for the Units and Precision of any new measurement, regardless of type, have been predefined in the General icon in the system-wide settings. This default setting can be edited once the label is saved and added to the label list.

Select **Save** to complete the new label addition.

Configuration Edit Label



34

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Speaker Notes:

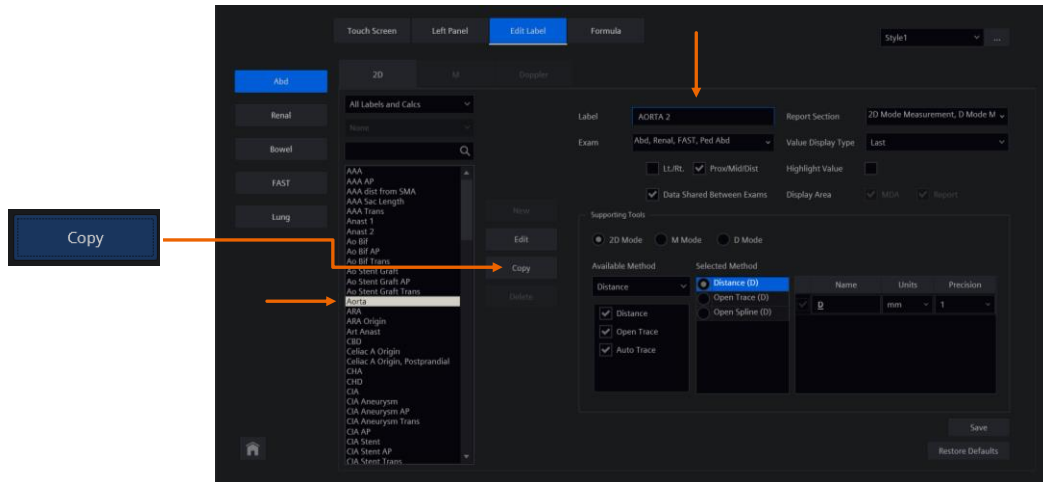
The newly created label, in this example called “NEW LABEL”, will appear in the master drop-down list that contains all the existing labels.

A change of parameters of the new label can be accomplished using the Edit function.

Using the Pointer, choose the new label from the master list and then select **Edit**. All previously defined fields may be altered including the Units and Precision.

There is a benefit to being able to alter the default Unit or Precision for any individual label in that the user is able to measure a structure, such as the gall bladder wall, in millimeters, while other labels, such as kidney length, remain in centimeters. A single measurement unit type does not fit all measurement situations – the ACUSON Juniper ultrasound system measurement package has the flexibility to easily meet these needs to remain flexible.

Configuration Edit Factory label



35

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Speaker Notes:

Labels can also be copied and renamed.

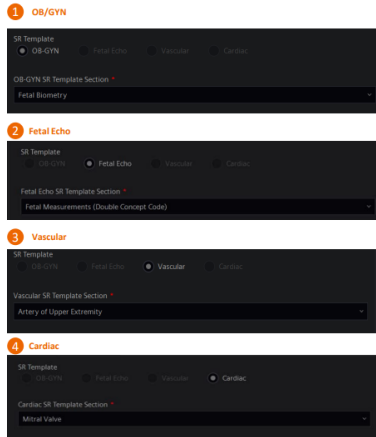
If an existing label already contains all the necessary criteria, copying and renaming it to fit your desired label is a short cut to creating customized labels.

To copy a label:

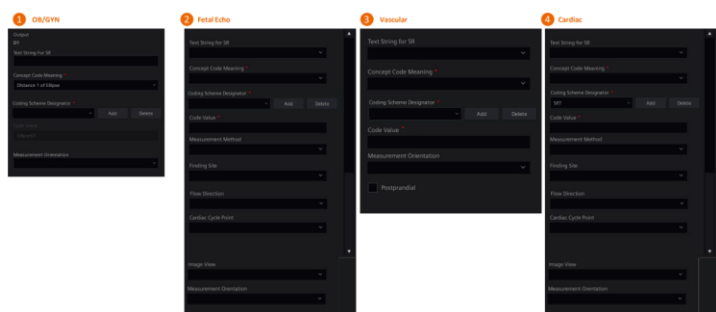
- Open the Edit Label of the exam icon you wish to add the label to, then select the label you want to copy from the master list of available labels
- Select **Copy** and the label parameters will populate on the right side of the screen; rename the label and select **Save** to complete the process

Edit Label – DICOM SR

SR Templates



SR Tool Setting



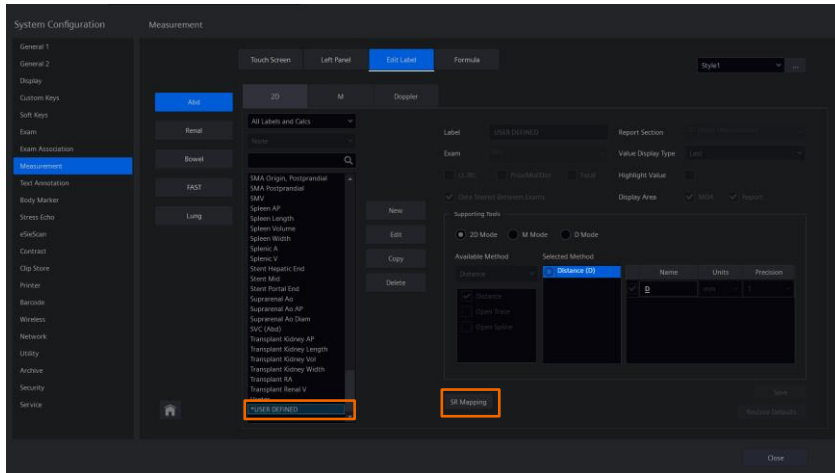
36

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Speaker Notes:

There are four DICOM SR templates that have their own set of tools: OB/GYN, Fetal Echo, Vascular and Cardiac.

Edit label – DICOM SR



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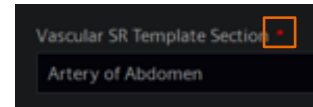
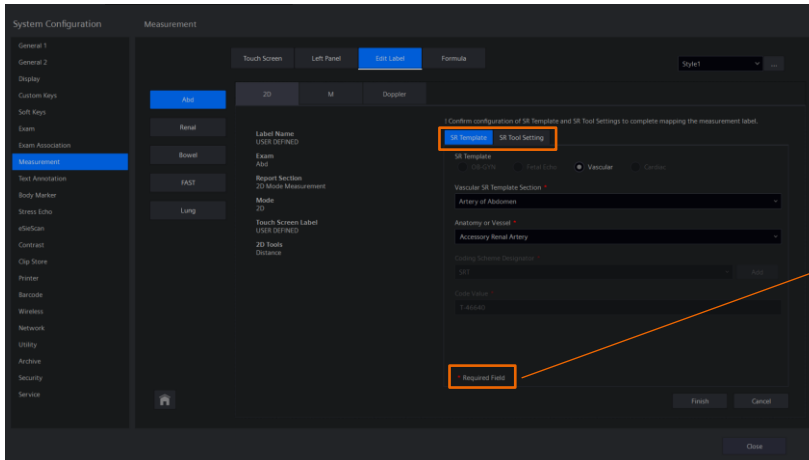
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Speaker Notes:

To configure a user defined DICOM SR, go to System Configuration > Measurement > Edit Label.

First, create a new user-defined label, then select **SR mapping**.

Edit label – DICOM SR



38

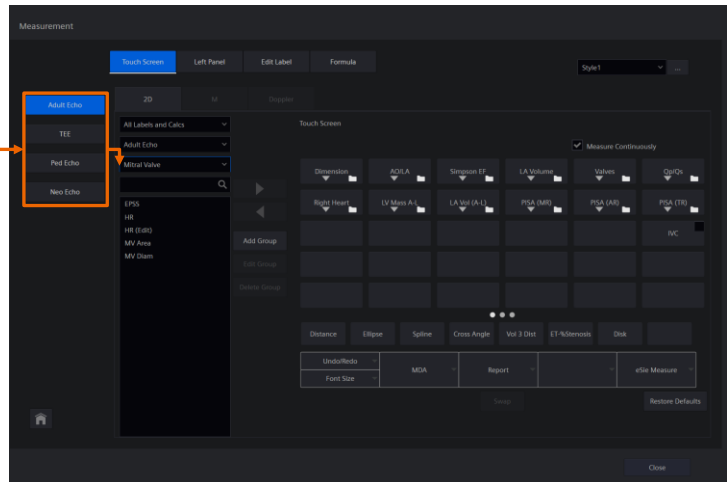
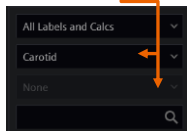
Unrestricted © Siemens Healthineers 2023

Speaker Notes:

There are two new tabs to fill out: The SR Template and the SR Tool setting. A red asterix indicates the fields that must be completed.

Configuration Cardiac Labels – Add New

- All Echocardiography exam types have label categories
- All other exams do not have label categories



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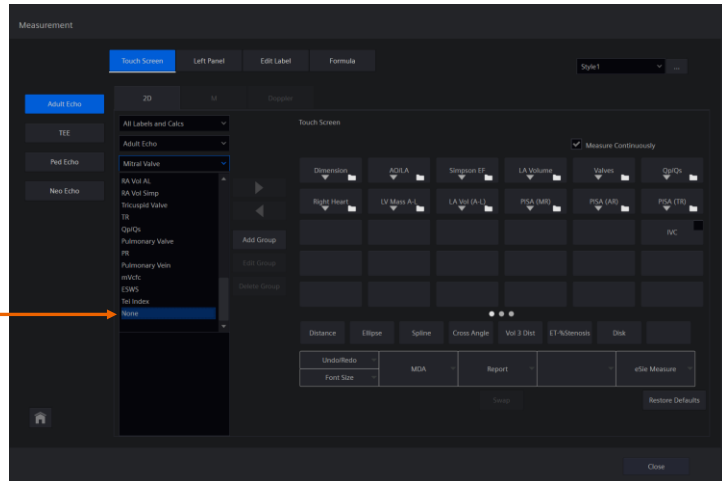
Speaker Notes:

When creating new labels for any cardiac preset, the workflow differs from that of general imaging exams.

This is due to cardiac presets containing different categories of measurements related to anatomy, pathology or formulas (i.e., Simpson's method).

Configuration Cardiac Labels – Add New

“None” category for
Cardiac is at bottom of list



40

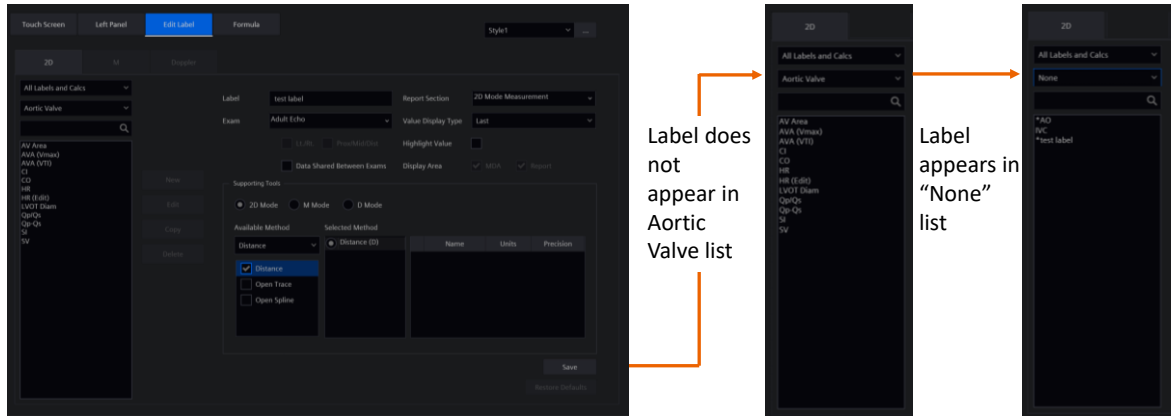
Unrestricted © Siemens Healthineers 2023

Speaker Notes:

Cardiac contains the same “None” folder at the bottom of the categories list that is found in the general measurements display.

This “None” folder becomes important when creating custom measurement labels for cardiac as all custom measurement labels are located in this folder unless the label was copied and renamed from an existing category.

Configuration Cardiac Labels – Add New



41

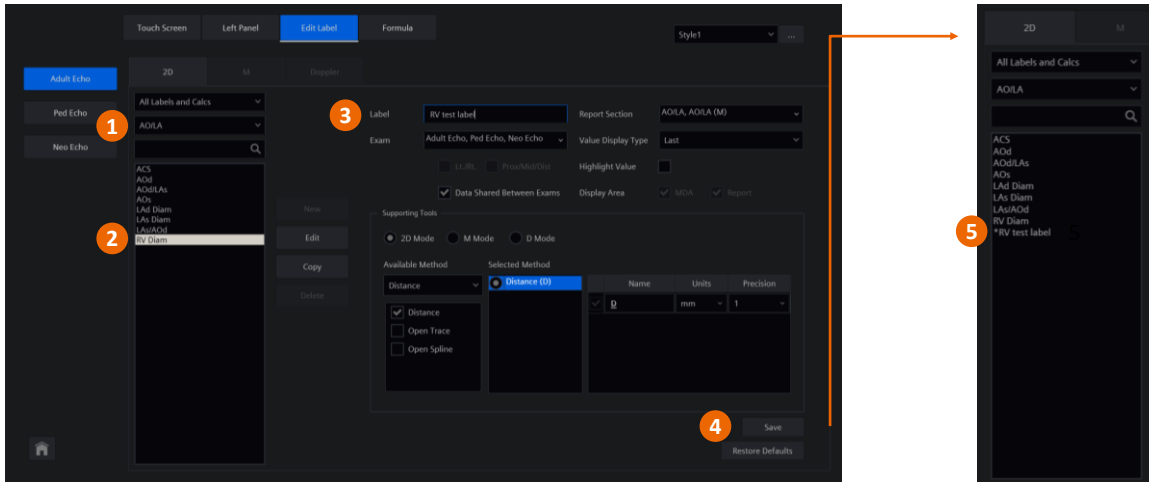
Unrestricted © Siemens Healthineers 2023

Speaker Notes:

If the user tries to create a custom label in the Edit Label tab for the Aortic Valve category by following the same steps that were outlined for general imaging, the label will not be listed in the Aortic Valve list after Save – it will instead be found in the None category.

To have a new custom label be listed in a category other than None, the new label must be copied from an existing label in that category and renamed.

Configuration Cardiac Labels – Copy/Add New



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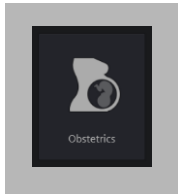
Speaker Notes:

To add a custom label to a specific category:

1. Select the category from the drop-down menu you wish to add the label to
2. Select the label you want to copy; it must contain the parameters required for the new label
3. Rename the label to the new custom label name
4. Select **Save**
5. The new label will be displayed with an asterisk [*] before the name in the chosen category

Please note: Not all labels can be copied and renamed. If a label is unable to be copied, the Copy key will remain inactive (grayed out) and will not be selectable when the label is highlighted from the master list.

Measurement Configuration OB Table



Touch Screen Left Panel **OB Table** Edit Label Formula Style1

OB

Early OB
Fetal Echo
OB Table

Gestational Age

GA (BPD)	Hadlock
GA (BPDa)	Hadlock
GA (HC)	Hadlock
GA (AC)	Hadlock
GA (FL)	Hadlock
GA (HL)	Jeanney
GA (Foot)	Mercer
GA (OFD)	ASUM
GA (FTA)	Osaka
GA (APFD x TTD)	Tokyo
GA (TAD)	Moriz
GA (APAD)	Moriz
GA (LHsa)	Jeanney

Growth Analysis Graphs

Growth (BPD)	Hadlock
Growth (HC)	Hadlock
Growth (AC)	Hadlock
Growth (AFI)	Moore
Growth (LV-A)	Nicolaides
Growth (APFD x TTD)	JSLM
Growth (CI)	Hadlock
Growth (Cist Magna)	Nicolaides
Growth (Clavicle)	Yankton
Growth (CRL)	Hadlock
Growth (EFW1)	Hadlock
Growth (William EFW1)	William
Growth (EFW2)	Hadlock

Ratio

CI (DB)	Hadlock
Cerebellum/AC	Meyer
Lat Vent/HHW	Johnson
FL/AC	Hadlock
HC/AC	Campbell
FL/BPD	Hohler

Same Author for All Labels

Hadlock Apply

Estimated Fetal Weight

EFW 1	Hadlock1 - (AC, FL)
EFW 2	Hadlock4 - (BPD, HC, AC, FL)
USGA	Average

Restore Defaults

43

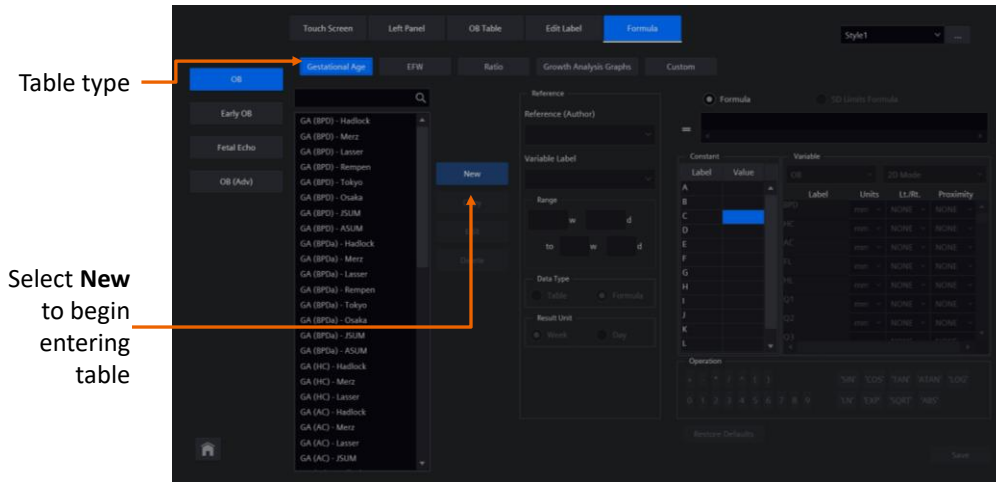
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Speaker Notes:

The OB Table tab is only found within the Obstetrics exam icon. Under the OB Table tab, select the appropriate table using the drop-down menu under each growth parameter.

Please note: Different tables for each label are available or can be selected via the **Same Author for All Labels** option.

Measurement Configuration Formula – New table



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Speaker Notes:

If the use of a table that does not exist on the ultrasound system is required, a new table can be added by either data entry (line by line) or by inputting a formula:

- Within the Formula tab, select the table type you wish to add or create – Gestational Age, EFW, Ratio or Growth Analysis; in this example, Gestational Age is selected
- Once the Gestational Age table type has been defined, select **New** to activate the custom data fields to enter the new table information

Please note: The Custom tab is only for formula entries.

Measurement Configuration

Formula – Custom GA table addition

The screenshot shows the 'Formula' tab in the 'OB Table' configuration menu. The interface is divided into several sections:

- Left Panel:** A list of measurement types including 'Early OB', 'Fetal Echo', and 'OB (Adv)'. Under 'OB (Adv)', there is a search bar and a list of various GA (Gestational Age) formulas from different manufacturers like Hadlock, Merz, Lasser, Rempen, Tokyo, Osaka, JSUM, and ASSUM.
- Reference (Author):** A dropdown menu labeled 'Reference (Author)' with a value of 'Test'.
- Variable Label:** A dropdown menu labeled 'Variable Label' with a value of 'GA (BPD)'.
- Range:** A section with 'From' (6), 'to' (14), and 'Unit' (W) for weeks.
- Data Type:** Radio buttons for 'Table' (selected) and 'Formula'.
- Result Unit:** Radio buttons for 'Week' (selected) and 'Day'.
- Chart Data:** A table with columns: Weeks, Days, Low Limit, Value, Up Limit. The first row contains values: 1, 0, 0, 0.0, 0.0.
- Buttons:** 'Clear Cell', 'Clear Line', 'Clear All', and 'Save'.

Three orange circles with numbers 1, 2, and 3 are overlaid on the interface to indicate the steps for adding a new table:

1. Selecting a measurement type from the left panel.
2. Selecting a variable label from the 'Variable Label' dropdown.
3. Selecting the 'Table' data type and 'Week' result unit.

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Speaker Notes:

1. The first step in entering new table data is to add a table name in the Reference (Author) space provided; the table will be listed with this name in the master table list
2. Next, define the variable – for the GA table example, the choices will be BPD, HC, AC, etc., – as well as the range in weeks from the first entry to the last; Data Type and Result Unit must also be defined
3. Once all the reference fields have been filled in, the chart data – Weeks, Days, Low Limit, Value and Up Limit, can be entered and the chart will continue to add new lines as you progress through the data entry

Please note: New custom reference author names (for example, “John Smith”) and variable labels (for example, “Radius”) can be added by entering the new name within the spaces provided. Custom chart reference author and variable label names are not limited to only the choices that are listed in the factory-set drop-down menu.

Measurement Configuration Custom GA chart/Save

The screenshot shows the 'Formula' tab for 'Gestational Age' configuration. The 'Reference' table is as follows:

Weeks	Days	Low Limit	Value	Up Limit
1	6	0	3.0	4.0
2	6	1	3.0	5.0
3	6	2	4.0	5.0
4	6	3	5.0	6.0
5	6	4	5.0	7.0
6	6	5	6.0	8.0
7	6	6	7.0	9.0
8	7	0	7.0	10.0
9	7	1	8.0	11.0
10	7	2	9.0	12.0
11	7	3	10.0	13.0
12	7	4	10.0	14.0
13	7	5	11.0	15.0
14	7	6	12.0	16.0
15	0	0	0.0	0.0

The 'Save' button is highlighted in orange. An orange arrow points from the 'Save' button to the 'Gestational Age' tab in the right panel, which also has an orange box around it.

46

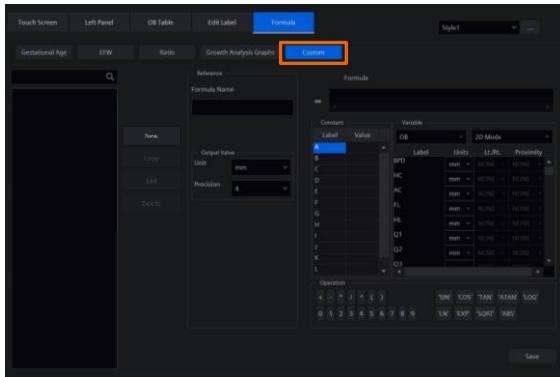
Unrestricted © Siemens Healthineers 2023

Speaker Notes:

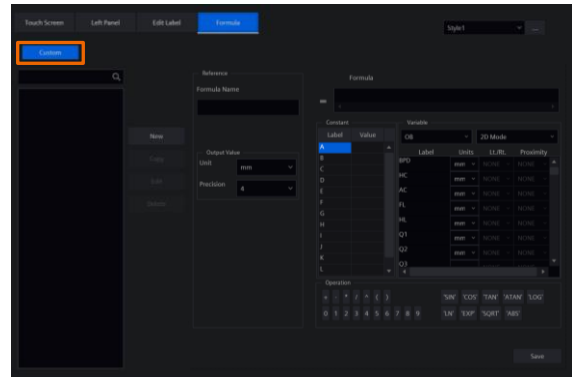
Once all values for the table have been entered, select **Save** to verify the table and add it to the list of available tables.

The new table will appear in the list under chart type (for example, Gestational Age), and the name will be provided in the Reference space.

Measurement Configuration Custom Formula



OB Custom Formula Tab



General Imaging Custom Formula Tab

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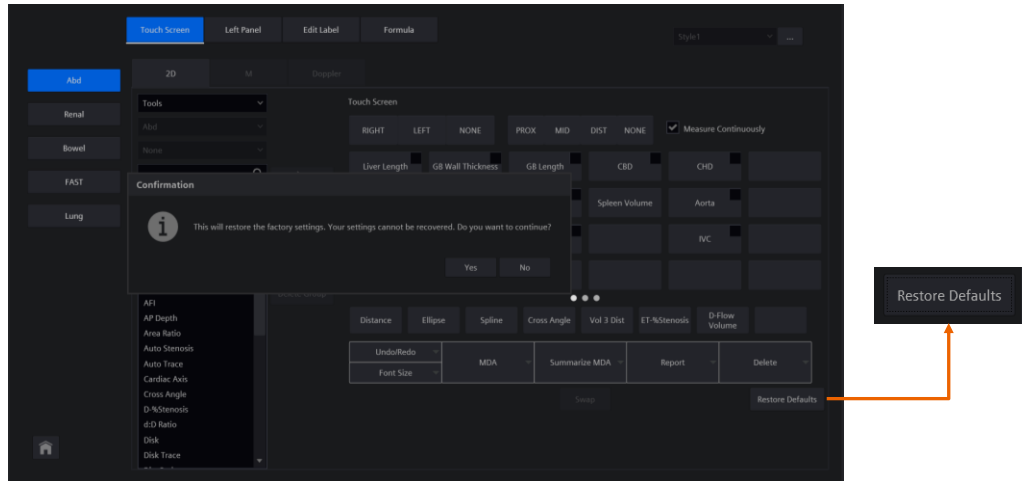
Speaker Notes:

Custom measurement formulas can be added for both OB and general exams. Any custom formulas added under the Custom tab for OB are not related to a biometry table but are general parameter calculations, such as “A over B minus C” for a selected variable.

The maximum number of characters available for a user-defined formula is 64.

Please note: The other table type tabs found in OB (Gestational Age, EFW, Ratio, Growth Analysis Graphs) are absent in the general imaging formula tab.

Measurement Configuration Restore Defaults



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Speaker Notes:

The Touch Screen, Left Panel, OB Table and Edit Label tabs all contain a Restore Default option at the bottom of the page.

The Formula tab does not have this option.

Custom Formula using body surface area (BSA) Echocardiography

Custom formulas using BSA are only supported in the Echocardiography measurement configuration menu

For custom BSA formulas to work, users must enter Height and Weight for a patient's exam

The screenshot shows the 'New Patient' registration form. The 'Patient Demographics' section includes fields for Last Name (BSA TEST3), First Name, Date of Birth (DD/MM/YYYY), Age, Sex (Male/Female/Other), and Gender (Male/Female/Other). The 'Medical Information' section includes fields for Height (170 cm), Weight (85 kg), BSA (1.97 m²), and BP (mmHg). The 'Order Information' section includes fields for Performing MD, Referring MD, and Sonographer. A red box highlights the Height and Weight fields, indicating that these values are required for custom BSA formulas to work.

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Speaker Notes:

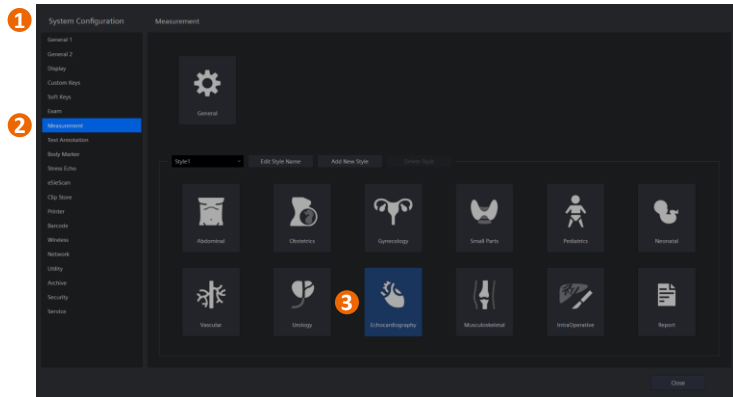
Custom formulas using body surface area (BSA) are only supported within the Echocardiography exam icon.

It is essential to remind that height and weight must be entered during patient registration for custom formulas using BSA to work.

Creating a Custom Formula using BSA Echocardiography

To access:

1. Select **System Configuration**
2. Select **Measurement**
3. Select **Echocardiography**



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Speaker Notes:

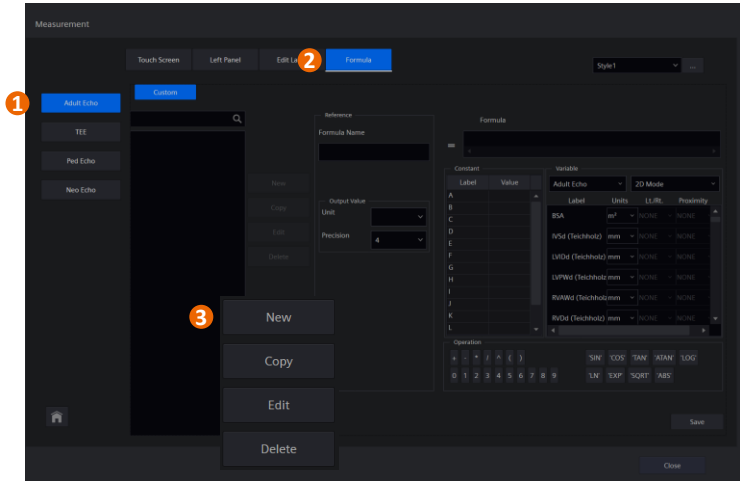
To access the Echocardiography measurement configuration menu:

1. Select **System Configuration**
2. Select **Measurement**
3. Select **Echocardiography**

Creating a Custom Formula using BSA Echocardiography

To begin creating a new custom formula:

1. Select **exam type**
2. Select **Formula**
3. Select **New**



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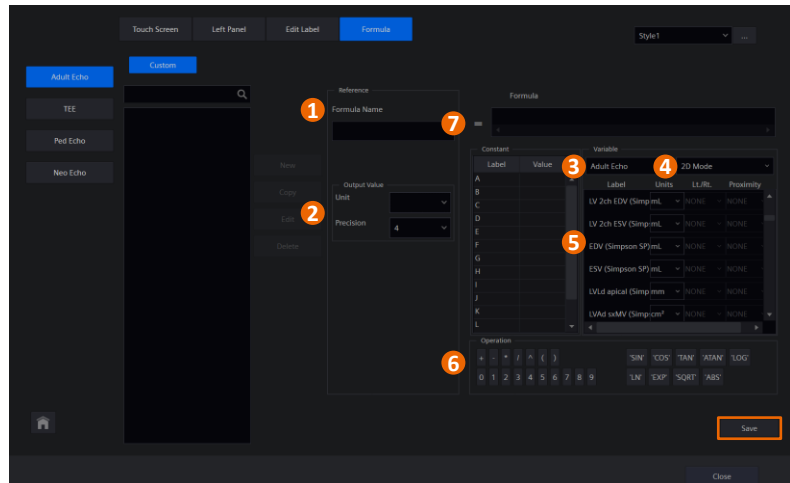
Speaker Notes:

To begin creating a new custom formula in the Echocardiography measurement configuration menu:

1. Select **Adult Echo**
2. Select **Formula**
3. Select **New**

Creating a Custom Formula using BSA Echocardiography

1. Define **Formula Name**
2. Select **Unit** and **Precision** of measure
3. Choose exam type
4. Select mode of measure
5. List of available factory labels
6. Available operations for creating custom equation
7. Custom Formula displays as created



Select **Save** to complete the formula

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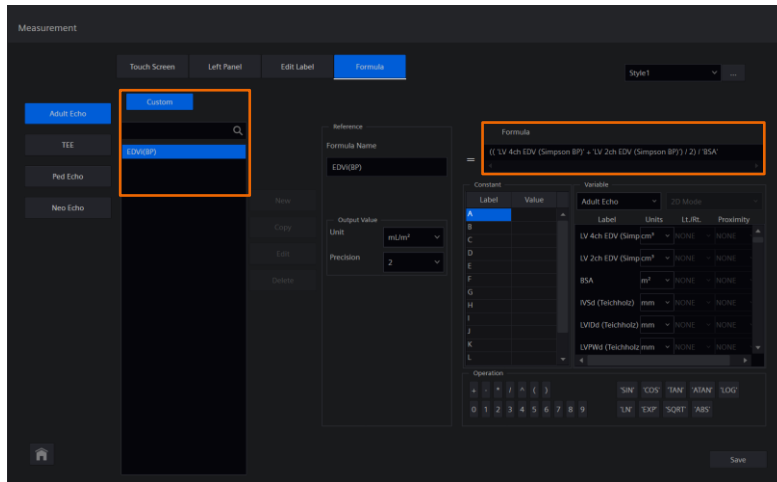
Unrestricted © Siemens Healthineers 2023

Speaker Notes:

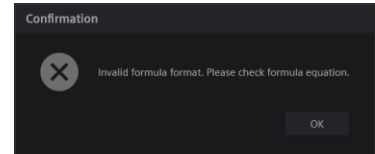
To create a custom Formula, all the components of the equation must be defined:

1. Define the Formula Name
 - The Formula Name appears with the equation results in the measurement display area (MDA) and on the report page under 2D Mode Measurement
2. Select the output value's Unit and Precision of measurement from the available drop-down menus
3. Factory labels displayed depend on the selected exam type from the drop-down menu
4. Select measurement mode from the drop-down menu (2D Mode, M-Mode, D-Mode)
 - The measurement mode selected determines the listed factory labels
5. Select desired labels from the factory default list to create custom formula
 - Custom labels are not supported in creating custom formulas
6. Use the desired combination between the available operations and labels to create the custom formula (Please Note: You must adhere to the order of operations when creating the formula)
7. The custom formula displays in this field as it is being created

Custom Formula using BSA example Echocardiography



“Invalid formula format” –
This notification appears when a
custom formula is not created
correctly



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Speaker Notes:

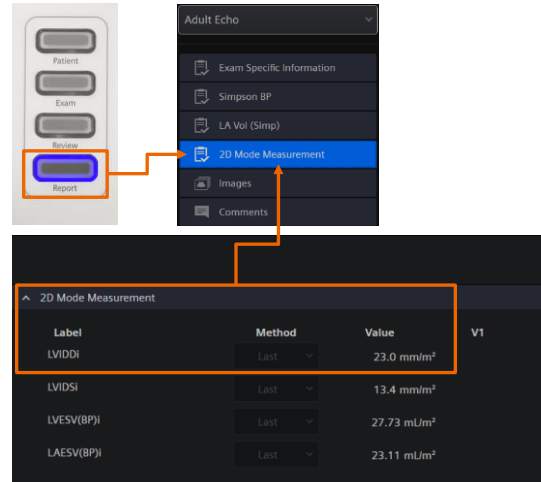
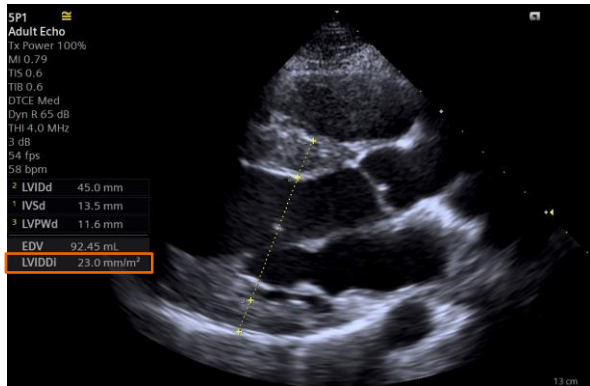
In the example displayed, a new Custom Formula was created for the left ventricular end diastolic volume biplane measurement indexed to the body surface area.

As custom formulas are created and saved for the selected exam type, they populate to the list under the Custom tab.

The Formula display field shows the variables and order of operations selected for creating this example.

Please note: If the created equation does not use factory defined labels and/or the correct order of operations, the system will display the message: “Invalid formula format. Please check the formula equation.”

Display of Custom Formula results using BSA example Echocardiography



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Speaker Notes:

Once the last labeled measurement(s) is performed for any given Custom Formula during an active exam, the Custom Formula's result will appear in the MDA and can also be found on the report page.

This is an example of a performed labeled measurement showing Custom Formula results using BSA.

Custom Formula results appear in the MDA and on the report page under 2D Mode Measurement.

Common Custom Formula equations with BSA Echocardiography

- **LVIDDi** Left Ventricular Internal Diameter diastole indexed
'LVIDd (Teichholz)' / 'BSA'
- **LVIDSi** Left Ventricular Internal Diameter systole indexed
'LVIDs (Teichholz)' / 'BSA'
- **LVEDV(BP)i** Left Ventricular End Diastolic Volume biplane indexed
(('LV 4ch EDV (Simpson BP)' + 'LV 2ch EDV (Simpson BP)') / 2) / 'BSA'
- **LVESV(BP)i** Left ventricular End Systolic Volume biplane indexed
(('LV 4ch ESV (Simpson BP)' + 'LV 2ch ESV (Simpson BP)') / 2) / 'BSA'
- **LAESV(BP)i** Left Atrial End Systolic Volume biplane indexed
(('LA 4ch ESV (LA Vol Simp)' + 'LA 2ch ESV (LA Vol Simp)') / 2) / 'BSA'
- **RAESVi** Right Atrial End Systolic Volume indexed
'4ch (RA Vol Simp)' / 'BSA'

Speaker Notes:

The following are some of the common custom formula equations using body surface area in echocardiography.

The exact labels and order of operations required for use on the ACUSON Juniper ultrasound system are listed.

A hyperlink for downloading a ZIP file of these presets can be shared via email as needed:

- Extract the ZIP file download and save the backup at the first root level folder and select **Preset_Backup** on a clean thumb drive
- Upload the Preset_Backup using Restore in the service menu

Please note: For additional information on back-up and restore, please refer to the ACUSON Juniper Ultrasound System Getting Started presentation.

Custom Formula using BSA – key reminders Echocardiography

- Height and weight must be entered during patient registration for custom formulas using BSA to work
- Must use at least one or more predefined measurement labels in addition to BSA
- Custom label cannot be used in Custom Formula (only factory-loaded labels are available for use in Custom Formulas)
- Custom Formula names are unique for each exam type under the Echocardiography measurement configuration menu

Speaker Notes:

There are a few key reminders worth mentioning when creating custom formulas:

- Patient's height and weight must be entered during patient registration for custom formulas indexed to BSA to work
- Must use at least one or more predefined measurement labels in addition to BSA
- Custom label cannot be used in creating custom formula (only factory default labels are supported in creating custom formulas)
- Custom formula names are unique to the exam type for which it was created (it can not be used in another exam type)

Objectives

- Explain measurement configuration access and homepage layout
- Review the General icon
- Analyze the Exam Specific icon layout
- Discuss Configuration
- **Examine patient report**



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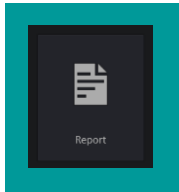
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Speaker Notes:

Lastly, we will discuss the patient report.

Patient report

Measurement Report Four Category Tabs



Report
Section

Anatomy
Assessment

Comments

Print Preview

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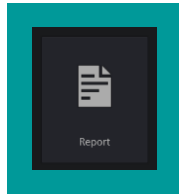
Speaker Notes:

Configuration of exam reports is located in the Report icon in the bottom corner of the System Configuration Measurement Tab.

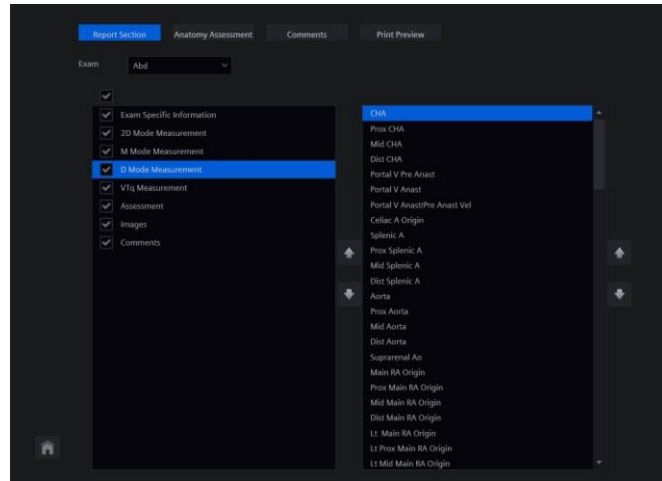
There are four category tabs available for configuration:

- Report Section
- Anatomy Assessment
- Comments
- Print Preview

Patient report



Report Section



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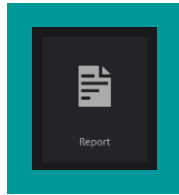
Unrestricted © Siemens Healthineers 2023

Speaker Notes:

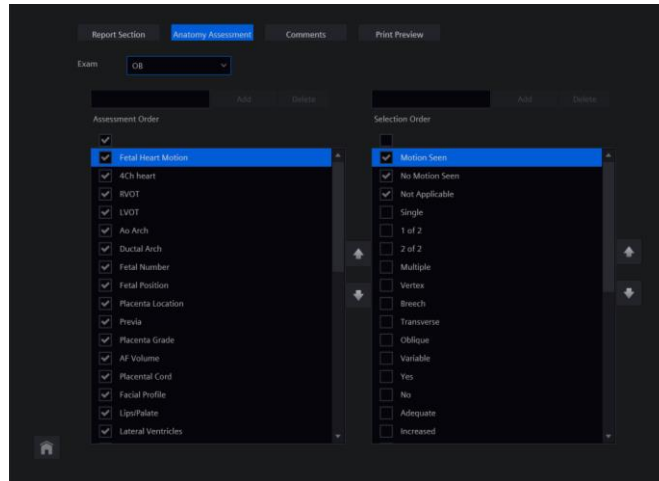
The Report Section contains options for what sections are displayed on the report. Sections can be selected or de-selected for display by using the Pointer to check/uncheck the box beside the listed options.

Some sections, such as the the D Mode Measurement section, will display a list of labels on the right side. These labels are displayed on the report page if the measurement label has been used during the exam. The user can select the order by which the labels will populate into the report page by highlighting a label, and then using the arrows to change its position. These labels cannot be deleted.

Patient report



Anatomy
Assessment



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Speaker Notes:

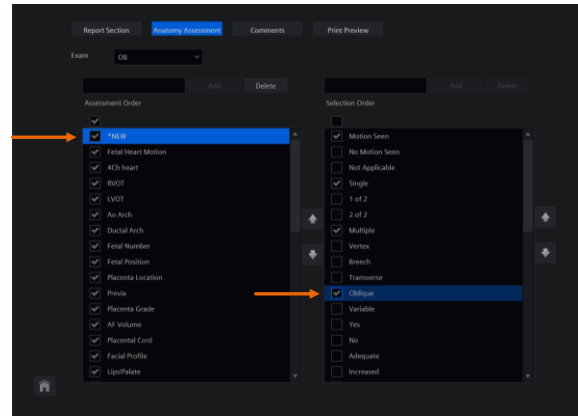
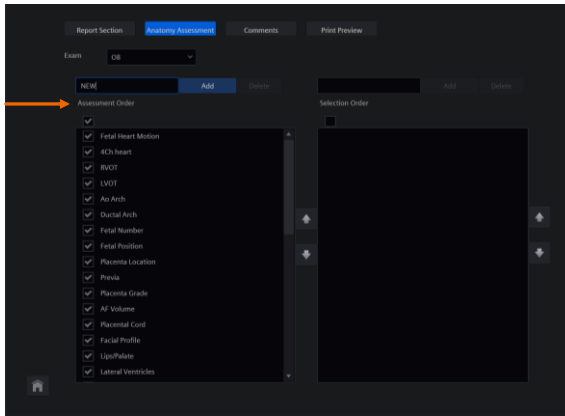
The Anatomy Assessment section of the report displays a list of specific anatomy, position or quantity related to an individual exam.

This feature is most frequently used in the OB exam report to verify fetal anatomy as seen or not seen as well as lie, presentation and number of fetuses involved in the exam.

The column on the left contains the specific anatomy, whereas the column on the right contains the drop-down assessment options for the given anatomy. For example, the Fetal Heart Motion highlighted on the left will have drop-down options on the report page for Motion Seen, No Motion Seen or Not Applicable.

The order of both columns can be changed by using the up and down arrows on the side of the column. Changing the list order will affect where the item is displayed on the report page.

Patient report Anatomy Assessment



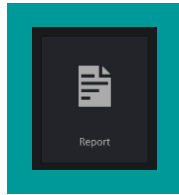
Speaker Notes:

New items can be added to the assessment list and assessment result by using the Add feature at the top of each column:

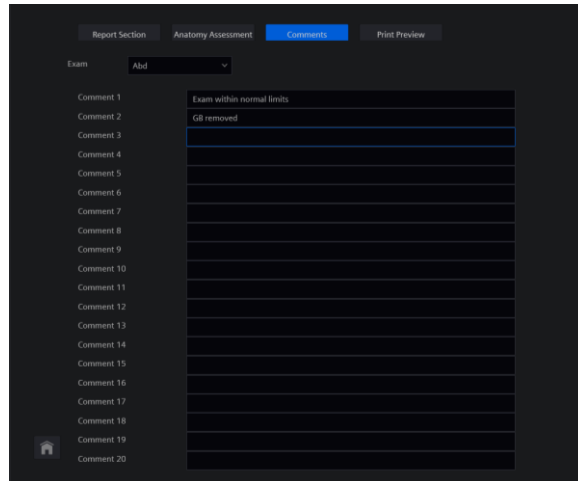
1. Use the Pointer to activate the name field of either column, then use the keyboard to type in the new label name
2. Select **Add**, and the assessment label will appear on the master list of the column it has been added to

Please note: If a new assessment label has been added to the left column, the drop-down options for the report must be selected from the right column. All new assessment labels will have blank drop-downs unless they are manually populated from the options available on the right. Assessment options can also be added to exams that have no existing factory assessment options on the report.

Patient reports



Comments



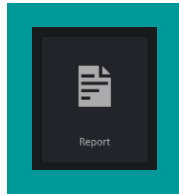
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Speaker Notes:

Customized comments can be added to the report from the Comments tab. Use the keyboard to add up to 20 comments.

Patient report



Print Preview

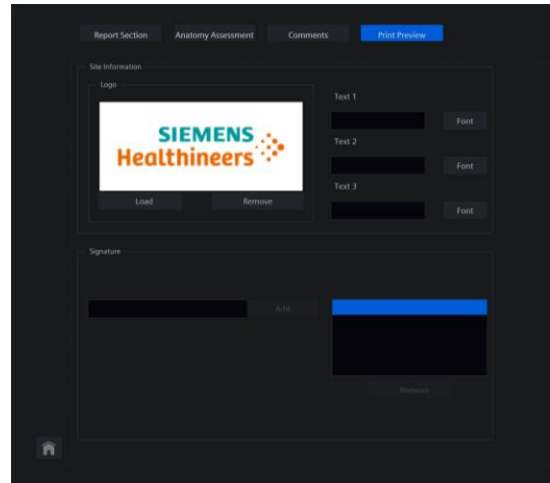
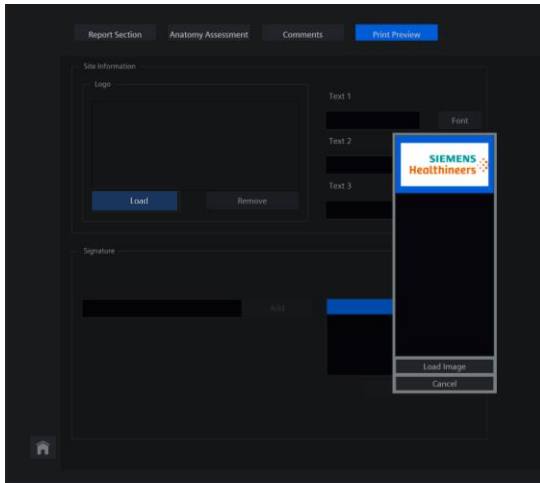
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Speaker Notes:

The Print Preview tab allows the user to customize the appearance of the PDF report with logos, text or a signature; it also provides the options to hide patient or institution information.

Patient report Logo customization



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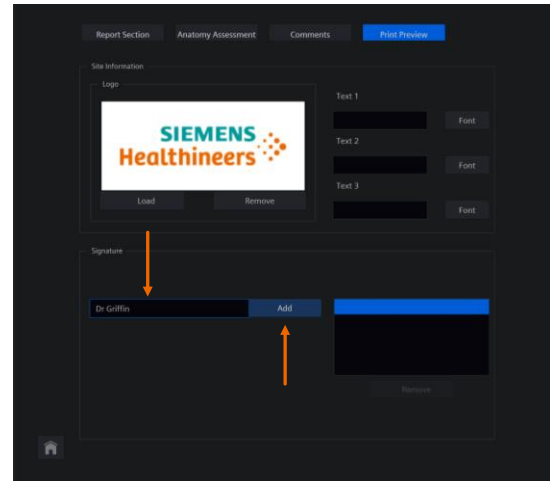
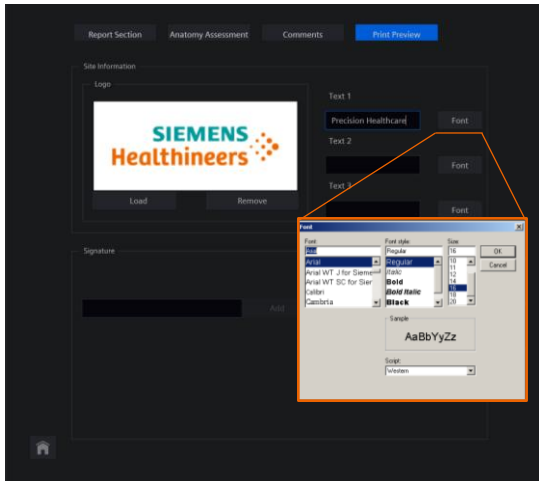
Speaker Notes:

To add a site logo:

- Insert a USB into the USB port containing a JPEG or PNG of the desired logo
- Select **Load** to view the file contents of the USB on the screen
- Highlight the desired logo from the files that are displayed and select **Load Image** from the bottom of the dialogue window.
- The logo will be added to the Logo window area

To remove the logo, select **Remove** from the options located below the Logo window area.

Patient report Personalized text and signature



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Speaker Notes:

In addition to a customized logo, a custom statement of up to three lines and 32 characters per line can be added to the report.

To add a customized statement, use the Pointer to activate one of the three available Text areas and type in the desired text.

This example used "Precision Healthcare" as the custom statement text.

Once the text is entered, the user can further customize the font type, font style and the size of the statement text by selecting the **Font** key to open the font dialogue box on screen. All fonts, font styles, and sizes that are available in a typical Word document are available for selection.

To add a custom signature:

- Use the Pointer to activate the signature space and type in the desired signature
- Select **Add** and the custom signature will appear in the signature window on the right

To remove a signature, highlight the text with the Pointer and select **Remove**.

Patient report PDF with logo/text example

The screenshot shows a patient report interface with the following sections and annotations:

- Institution information:** Points to the 'Institution' field under the 'Abd Report' header.
- Patient information:** Points to the 'Patient Information' section, which includes fields for Patient Name, Patient ID, Age, Height, BP (mmHg), Hospital Name, DR Name, DR Name 2, and Sonographer Name.
- Export options:** Points to the 'Export PDF', 'Print Report', and 'Store Report' buttons at the bottom.
- Customized logo and statement text:** Points to the Siemens Healthineers logo and 'Precision Healthcare' text.
- Scroll to access full report:** Points to the right edge of the report area.

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Speaker Notes:

The patient report can be exported to a USB in PDF format. This is an example of the PDF report demonstrating the customized logo and text that were used as the example on the previous slide.

Patient report

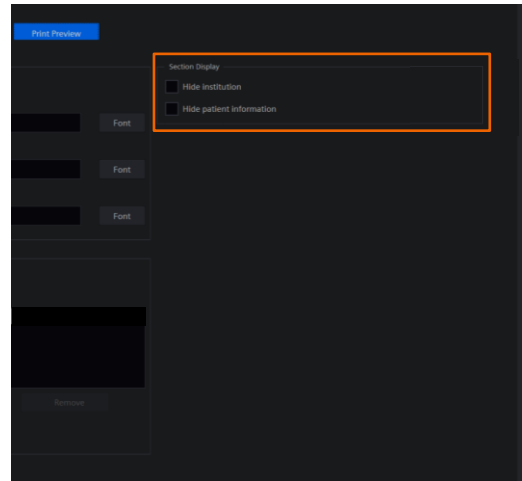
Print Preview > Section Display

Section Display contains options to control what is displayed in the report

Options are:

- Hide institution
- Hide patient information

Selecting these options will shorten report length when displaying, exporting or storing it to patient file



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Speaker Notes:

The Print Preview tab also contains options to decrease the length of the report:

- Hide institution
- Hide patient information

Please note: Selecting one or both of these options will not remove all the patient or site information from the report, as the objective of these configuration options is to shorten the length of the report, rather than anonymize it. When selected, these options will serve to reduce the report length when displaying, exporting or storing the report to the patient file.

Patient report > Store Report example “Hide”

JOHN DOE		Thyroid Report				1234567	
Institution							
Institution Name				HOSPITAL NAME			
Performing MD				DR ABC			
Referring MD							
Sonographer							
Patient Information							
Patient Name		JOHN DOE		Gender		Male	
Patient ID		1234567					
Age		64Years		Weight		BSA	
Height				Study Date		06/05/2020	
BP (mmHg)							
2D Mode Measurement							
Label	Method	Value	V1	V2	V3	V4	V5
Rt Thyroid Lobe SAG	Last	10.1 mm	10.1				
Rt Thyroid Lobe AP	Last	7.4 mm	7.4				
Rt Thyroid Lobe TRV	Last	0.7 mm	0.7				
Rt Thyroid Lobe Volume	Last	0.24 mL					
2D Mode Side by Side							
Label	Right	Left					
Thyroid Lobe SAG	10.1 mm						
Thyroid Lobe AP	7.4 mm						
Thyroid Lobe TRV	0.7 mm						
Thyroid Lobe Volume	0.24 mL						
Images							

“Not Hidden”

JOHN DOE

1234567

Thyroid Report

2D Mode Measurement

Label	Method	Value	V1	V2	V3	V4	V5
Rt Thyroid Lobe SAG	Last	10.1 mm	10.1				
Rt Thyroid Lobe AP	Last	7.4 mm	7.4				
Rt Thyroid Lobe TRV	Last	0.7 mm	0.7				
Rt Thyroid Lobe Volume	Last	0.24 mL					

2D Mode Side by Side

Label	Right	Left
Thyroid Lobe SAG	10.1 mm	
Thyroid Lobe AP	7.4 mm	
Thyroid Lobe TRV	0.7 mm	
Thyroid Lobe Volume	0.24 mL	

Images

“Hidden”

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Speaker Notes:

This is an example of a report stored to the patient image file using the Store Report key.

The image on the left does not have any “hide” option selected in the Print Preview configuration area, thus the patient information and institution information is displayed within the body of the report.

The image on the right has both “hide” options selected within the Print Preview Section Display area.

The resulting “hidden” stored report contains no patient information or institution information sections within the body of the report, however, the patient name remains in the upper left corner of the stored report header.

Patient report > PDF example “Hide”

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”

Speaker Notes:

If the Hide Patient Information or Hide Institution Name has been selected in the Print Preview, the PDF will reflect those options and the report will be shortened. Note that 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 not the report entirely.

For more information on report configuration, please refer to the dedicated ACUSON Juniper Measurement and Report Configuration presentation.

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Speaker Notes:

No Speaker Notes.

Thank you for your enthusiasm!

Questions?

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Speaker Notes:

No Speaker Notes.