



# SonoSim Ultrasound Training Solution User Guide



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# Welcome to SonoSim

Welcome to SonoSim, the easiest way to learn ultrasonography.

To watch a welcome webinar and video tutorials, please visit [sonosim.com/videos](https://sonosim.com/videos)

For a personal onboarding session to overview product features, please email [membersuccess@sonosim.com](mailto:membersuccess@sonosim.com) with the subject line "Product Overview".

Enjoy your ultrasound training journey!



Members can access didactic content presented in an interactive multimedia format, which uses still ultrasound imagery, audio narration, computer graphic imagery, and videos. Access SonoSim Courses in three ways (*an internet connection is required*):

1. From the Main Menu with the SonoSim Probe plugged in or
2. Log in to [sonosim.com/login](https://sonosim.com/login) or
3. Download the SonoSim App on your phone or tablet



## 1. Select a Course



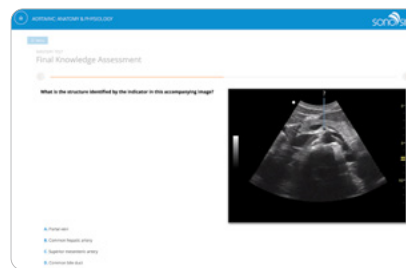
The Course Library displays the courses you have purchased.

## 2. Complete the Lessons



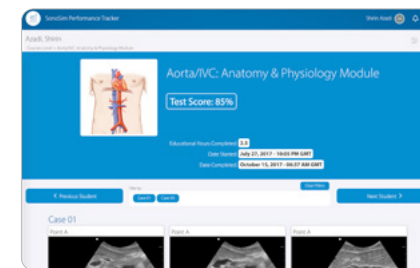
Each course is divided into lessons with knowledge checks. Exit the course anytime and your progress will be saved.

## 3. Take the Mastery Test



At the end of each SonoSim Course, take a Mastery Test. Your results will be immediately displayed.

## 4. Review Performance



Your Mastery Test score will be saved in the Course Library and Performance Tracker\*.

\*Performance Tracker for group licenses only



Return to Course Library homepage

- Q Search Hide
- LESSONS
- Proximal Aorta in Short Axis
  - Mid-Aorta (Celiac Axis) in Short Axis
  - **Mid-Aorta (Superior Mesenteric Artery & Splenic Vein) in Short Axis**
  - Mid-Aorta (Superior Mesenteric Artery & Splenic Vein)
  - Mid-Aorta (Left Renal Vein)
  - Mid-Aorta (Renal Arteries)
  - Distal Aorta (Bifurcation) in Short Axis
  - Knowledge Check
- IVC
- Aorta vs. IVC

Hide or display navigation menu

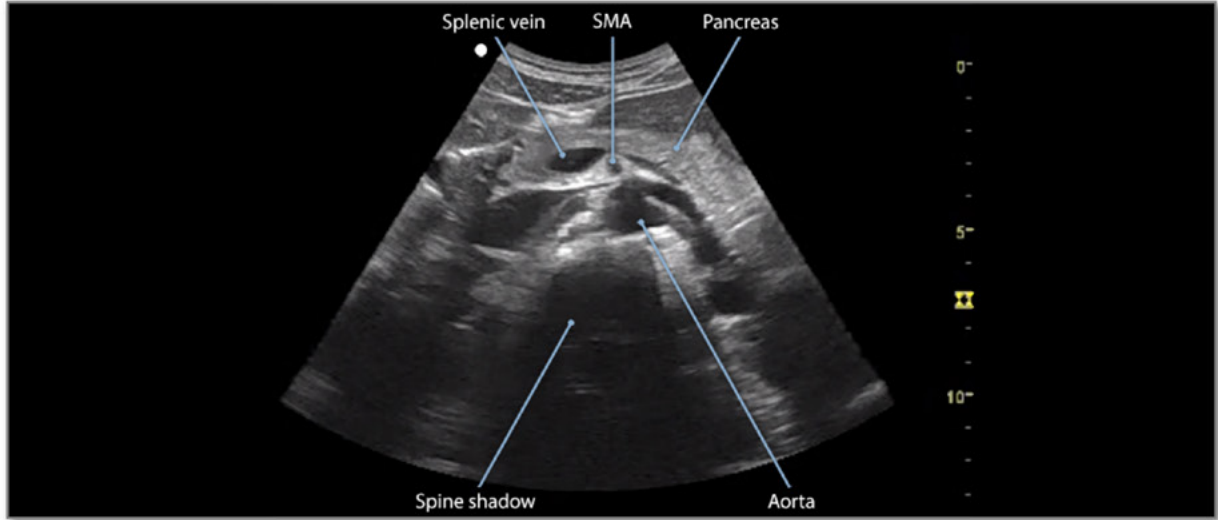
05. SONOGRAPHIC TECHNIQUE

NOTES

SIGN OUT

Take notes on important topics

Mid-Aorta (Superior Mesenteric Artery & Splenic Vein) in Short Axis



Use optional scripts for reading

SCRIPT

PLAYBACK SPEED: 1.0X

0:06 / 0:46

Speed up or slow down audio

# Using the SonoSimulator® to Develop Image Acquisition & Interpretation Skills

The SonoSimulator allows scanning of real-patient cases using the SonoSim Probe in a virtual ultrasound imaging environment.

## Calibrate the SonoSim Probe for Optimal Scanning

Step 1: Center yourself in front of the screen and select the CALIBRATE button.

Step 2: Hold the probe upright on a flat surface and point the indicator to the left of the screen.

Step 3: Select OK. Your Probe is now ready for use.

*Note: For an optimal experience, do not operate your SonoSim Probe near metallic objects such as cell phones, watches, or metal surfaces.*

The screenshot displays the SonoSimulator interface. On the left, a 3D model of a male torso is shown. The top left corner features the SonoSim logo and text: "Adv. FoCUS: Part I Case 2 Parasternal". The main area is titled "SonoSim® Probe Calibration" and contains an illustration of a hand holding a probe upright on a flat surface, with the indicator pointing left. Below the illustration, the text reads: "Position the SonoSim® Probe as shown above: 1. Hold the probe upright on a flat surface 2. Point the indicator to the left of the screen Click OK or press the 'C' key". A blue "OK" button is positioned below the instructions. A speech bubble on the right says: "Calibrate Re-calibrate periodically for an optimal scanning experience". At the bottom, a navigation bar contains various icons, with the probe icon highlighted by a yellow box.

# Using the SonoSimulator® - Getting Started

## Choose & Download Your First Cases

To start hands-on training, select the CASE LIST button in the bottom left. This allows you to select and download a real-patient case from the SonoSim Case Library. Press the CASE HISTORY button to learn pertinent information about the selected patient.

### Case List

Select cases to download and scan

SonoSimulator Case List

Downloaded Size: 8.01 GB, Free Disk Space: 48.92 GB

Download All ↓ Show: All (116) Downloaded (20) Available (96) X

Module	Sub-Module	Case
Introduction	Basic Heart	Case 1
Fundamentals	Core Cardiology	Case 2
Abdomen	Adv. FoCUS: Part I	Case 3
Breast	Adv. FoCUS: Part II	Case 4
Cardiac	Focused Echocardiography	Case 5
Genitourinary		Case 6
Head / Neck		Case 7
Musculoskeletal		Case 8
Obstetrics/Gynecology		Case 9
Ocular		Case 10
Pediatric		
Procedures		
Protocols		

**Download Module**  
See size requirements & choose cases to download

**Remove Module** (available with specific licenses)  
Delete downloaded Modules from your local disk drive. Saved ultrasound images will not be deleted

**Case History**  
Brief patient history such as age, gender, vital signs, and chief complaint

This 56-year-old female with a history of daunorubicin chemotherapy presents with dyspnea on exertion and weakness.

Please measure the LVOT diameter and assess mitral valve leaflet motion with M-mode Doppler. Please use both RVIT and PSAX views to assess the tricuspid valve with CFD and CWD.

# Using the SonoSimulator® - Getting Started

## Scanning with the SonoSim Probe

The virtual Probe on the screen will mirror the rotational movement of the SonoSim Probe in your hand. Rock, fan, and rotate to image through the virtual patient windows.

To begin scanning, place the Probe on your preferred scanning surface (*see right*).

Change imaging windows in three ways:

- a- Click and drag the on-screen Probe to a designated imaging window (bright dot) on the virtual body or
- b- Click on any of the highlighted imaging windows (bright dots) on the virtual body model or
- c- Select a menu bar point that corresponds with a desired imaging view



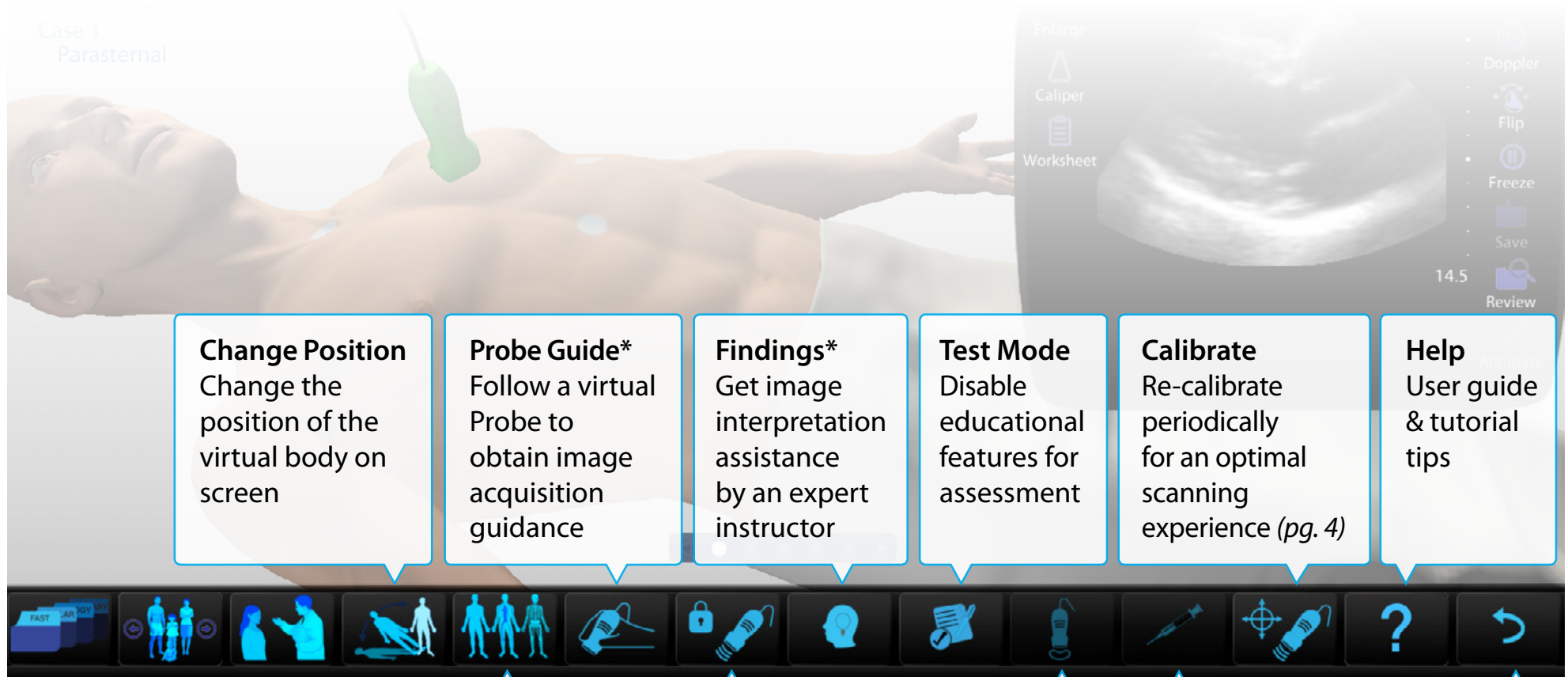
Scan on a variety of surfaces including the scan pad, table, your hand, live volunteer, manikin, stuffed animal, etc.





# Using the SonoSimulator® - Basic Features

To see video tutorials of how to scan in the SonoSimulator, please visit [sonosim.com/videos](https://sonosim.com/videos)



The screenshot shows the SonoSimulator interface. On the left, a virtual patient is lying down with an ultrasound probe on their chest. The text 'Case 1 Parasternal' is visible. On the right, there is a large ultrasound image. Below the image is a control panel with various icons. A callout menu is open, listing several features with descriptions.

**Change Position**  
Change the position of the virtual body on screen

**Probe Guide\***  
Follow a virtual Probe to obtain image acquisition guidance

**Findings\***  
Get image interpretation assistance by an expert instructor

**Test Mode**  
Disable educational features for assessment

**Calibrate**  
Re-calibrate periodically for an optimal scanning experience (pg. 4)

**Help**  
User guide & tutorial tips

**Layers\***  
Remove body layers to view how the ultrasound beam transects underlying anatomy

**Lock Probe**  
Hold the Probe in place for a more detailed evaluation

**Compression\***  
Press & hold to simulate compression for structure evaluation

**Needle\***  
Practice U/S-guided needle procedures

**Close**  
Exit to the Main Menu

*\*This feature is inactive if it remains dim in appearance when you move your cursor over it.*

# Using the SonoSimulator® - Basic Features

The image shows the SonoSimulator interface with several callout boxes explaining features:

- Expand or collapse MRI, CT, or X-Ray\***: Callout for the 'Split' icon.
- Expand the ultrasound window\***: Callout for the 'Enlarge' icon.
- Adjust image depth**: Callout for the 'Depth' icon.
- Adjust image brightness & contrast**: Callout for the 'Gain' icon.
- Flip the Probe indicator to the opposite side of ultrasound image**: Callout for the 'Flip' icon.
- Freeze, Save, Review, Annotate\***: Callout for the 'Freeze', 'Save', 'Review', and 'Annotate' icons.

The interface includes a main ultrasound window with a yellow probe indicator, a 'Worksheet' icon, a 'Doppler' icon, and a '14.5' depth indicator. A playback control bar at the bottom shows a pause button, a progress bar at -0:08, and a 1x zoom level.

\*This feature is inactive if it remains dim in appearance when you move your cursor over it.

\*\*Performance Tracker for group licenses only

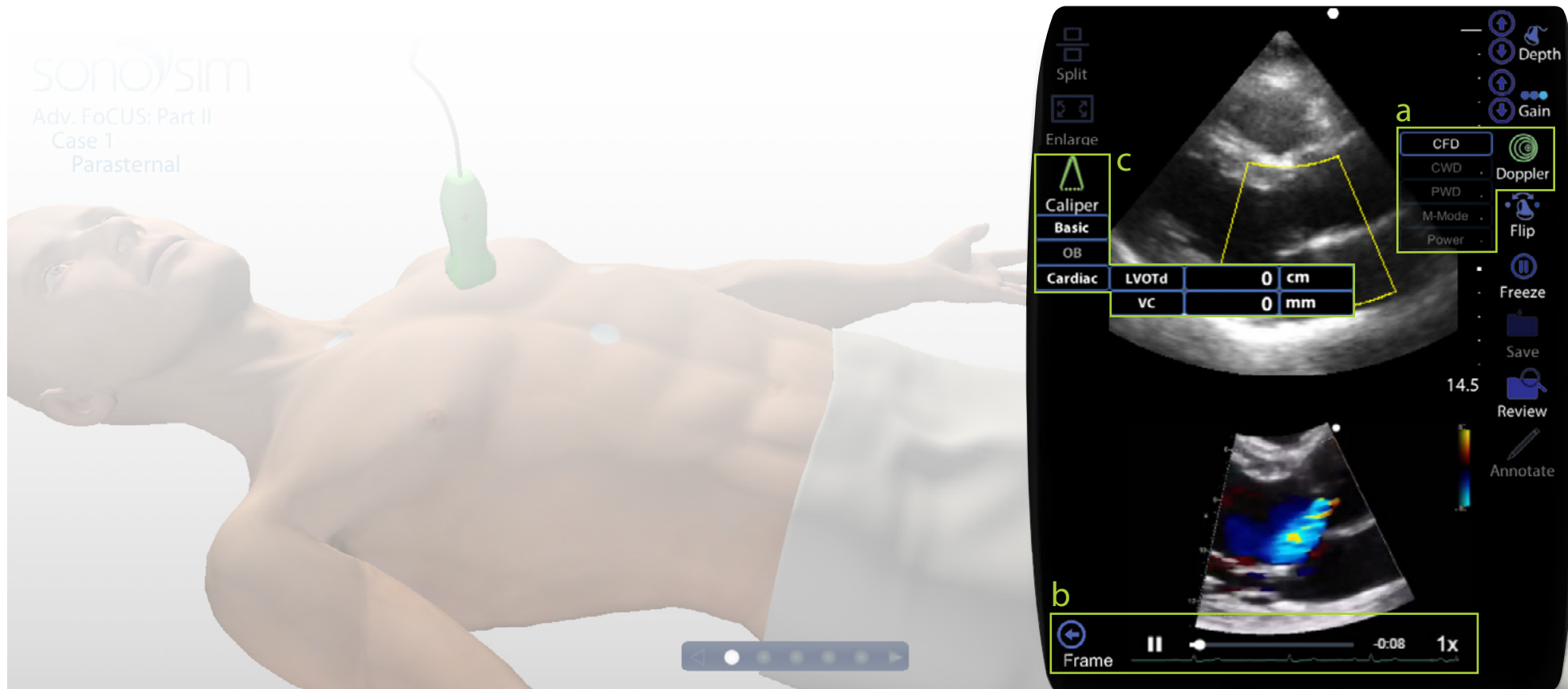
# Using the SonoSimulator® - Advanced Features

## Doppler

The Doppler feature (a) includes multiple imaging modes, including Color, Continuous-Wave, Pulsed-Wave, M-Mode and Power Doppler. If the optimal view is obtained for Doppler imaging of a select target structure, the original patient Doppler clips and tracings will play in the dropdown media window. View frame-by-frame navigation of the Doppler clips using the controls (b).

## Caliper

The Caliper button (c) allows you to select specialty-specific measurement tools. You can select Basic (e.g., height, width, length), OB (e.g., fetal biometry), or Cardiac (e.g., LVOT diameter, SV, CO) measurement parameters.



# Using the SonoSimulator® - Advanced Features

## Worksheets

Measurements acquired from the selected patient cases are stored in the Worksheets. Formulas demonstrating additional output values are displayed.

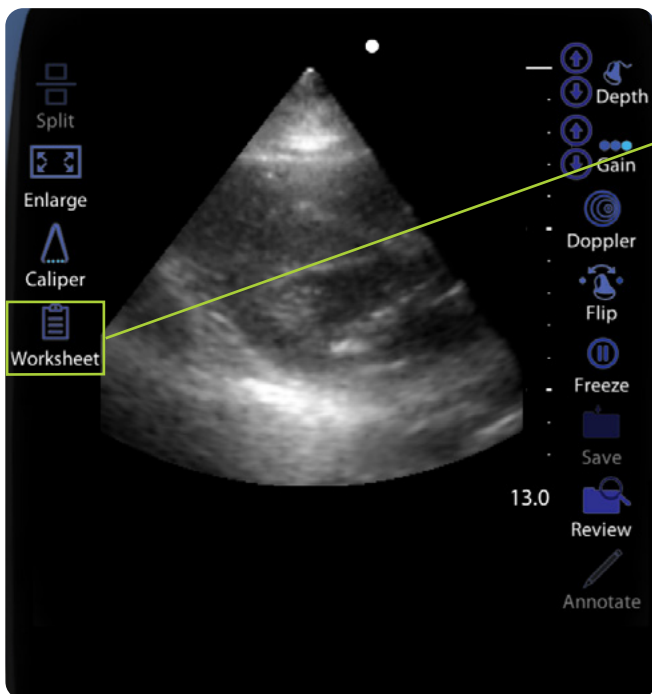
Step 1: Use calipers to get a measurement

Step 2: Close out the calipers

Step 3: Go to worksheet

## Legend

The Legend button can be selected from the top right corner of the Worksheet. It defines acronyms utilized in calipers and formulas for the selected patient case. An extensive list of cardiology acronyms can be found in 'Appendix A' in the SonoSim Case Legend, accessed from the Main Menu.



### Worksheet

Back

Legend

RAP = 10 mmHg

TR maxPG (mmHg) =  $4 \times (\text{TR Vmax (m/s)})^2$

TR maxPG: 0 mmHg =  $4 \times (0 \text{ m/s})^2$

pRVSP (mmHg) = RAP (mmHg) + TR maxPG (mmHg)

pRVSP: 10 mmHg = 10 mmHg + 0 mmHg

Mean PAP (mmHg) =  $0.61 \times \text{pRVSP (mmHg)} + 2$

Mean PAP: 8.1 mmHg =  $0.61 \times 10 \text{ mmHg} + 2$

Grading Tricuspid Regurgitation Severity

- Qualitative assessment of tricuspid regurgitant jet with CFD

### Legend

Back

Worksheet

#### Cardiology Acronyms

Acronym	Definition
Mean PAP	Mean Pulmonary Artery Pressure
pRVSP	Peak Right Ventricular Systolic Pressure
RAP	Right Atrial Pressure
TR maxPG	Tricuspid Regurgitation Max Pressure Gradient
TR Vmax	Tricuspid Regurgitation Velocity Max

## Summary

A summary point is provided in various Modules to overview relevant finding of all imaging windows and clinical context. The Summary point appears as the final menu bar point in the horizontal menu bar. This menu item provides a Case Summary description, an associated Findings video, and a Summary Worksheet. The Case Summary description can be accessed by selecting the CASE SUMMARY button.

## Summary Worksheet

The Summary Worksheet containing all the CORRECT values for parameters and calculations will appear by clicking on the REPORT button when the Summary point is selected.

The screenshot displays the SonoSimulator interface. On the left, a 3D model of a pregnant woman is shown. A 'Case 1 Summary' dialog box is open, containing the following text:

**Case Summary**

Case 1: Summary

This 34-year-old female G3P2 with a history of Hashimoto's thyroiditis presents in her estimated 36th week of pregnancy. The fetus demonstrates an intraabdominal umbilical vein varix, measuring 0.83 cm. This finding can be associated with fetal anomalies and can cause fetal complications like hydrops fetalis. The fetus presents cephalic and is measuring 34 weeks with fetal biometry, revealing a two-week discrepancy from menstrual age. Normal amniotic fluid index at 17.41 cm; normal fetal heart rate is demonstrated. The placenta is normal and anterior-fundal. The umbilical vein varix appears to be an isolated finding which, favors a good prognosis.

Values for fetal biometry are demonstrated in the report page.

OK

Summary

On the right, a 'Worksheet' panel is visible, featuring a 'Back' button and a 'Legend' icon. It contains two tables:

**OB Data** Correct Values in Green

Measurement	Value	Age
BPD	0.00 cm 8.86 cm	Age = 35w6d
HC	0.00 cm 31.96 cm	Age = 36w0d
AC	0.00 cm 29.35 cm	Age = 33w2d
FL	0.00 cm 6.63 cm	Age = 34w1d
MVP	0.00 cm 5.27 cm	

**AFI**

Para Ut RLQ	Para Ut RUQ	Para Ut LUQ	Para Ut LLQ	AFI
0 5.27	0 4.57	0 3.36	0 4.21	0 17.41

The bottom of the screen shows a navigation bar with various icons, including a 'Case Summary' icon that is highlighted.

# Continuing Medical Education (CME) or Certificate of Completion

Find the Claim Certificate page in the hamburger menu at the top right corner of the Main Menu. Select "Certificate of Completion" or "Continuing Medical Education (CME)". Please ensure that the First and Last names are correct. If either of the names are incorrect, please email [support@sonosim.com](mailto:support@sonosim.com).

This will generate a PDF with your certificate that you can print or save to your computer. If applicable, you may self-report your CMEs to your licensing body.

*Note: SonoSim Modules offer CME credits that are approved for AMA PRA Category 1 Credits™. SonoSim Modules also fulfill the requirements of the ARDMS Accepted Continuing Education Evaluation Model System (AACEEMS) Checklist and are recognized by ARDMS towards CME Credit.*



Welcome Webinar

How-To Videos

Case Legend

Support

Guest User GU



- Knobology
- Claim Certificates
- Ultrasound Blog
- About

## Claim Certificates

Choose Certificate of Completion or Continuing Medical Education (CME)

Continuing Medical Education (CME)

Certificate of Completion

First Name

Last Name

Module

Receive Certificate



Learn



Scan

# Cleaning & Disinfection

## To clean the SonoSim Probe:

- Damp a small piece of dry cloth with 70% Isopropyl Alcohol (IPA).
- Wipe the exterior of the Probe gently, ensuring no liquid enters the seams.

*Caution: Never submerge the probe in liquid.*

## To clean the Scan Pad:

- Use a microfiber cloth and water to clean the scan pad. For deeper cleaning, use a 50:50 mix of alcohol and water.

*Caution: Ensure the scan pad is COMPLETELY dry before using it in conjunction with the SonoSim Probe.*



# Member Support

## Online Resources

For online service and support information, please visit [sonosim.com/support](https://sonosim.com/support) and watch tutorials at [sonosim.com/videos](https://sonosim.com/videos)

## SonoSim Member Support

For technical support, please contact [support@sonosim.com](mailto:support@sonosim.com) or call us at 855.873.7666 (M-F 6am-6pm, Sat 8am-4pm PT).



## Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules and RSS-210 of IC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.

The term "IC" before the equipment certification number only signifies that the Industry Canada technical specifications were met. Changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## Déclaration de la Commission Fédérale des Communications

Cet appareil est conforme à la section 15 des règles de la FCC et RSS-210 des règles IC. Son fonctionnement est sujet aux deux conditions suivantes :

1. Cet appareil ne doit pas causer des interférences nuisibles, et
  2. Cet appareil doit accepter toute interférence reçue, y compris les interférences qui peuvent provoquer un fonctionnement indésirable.
- Cet équipement a été testé et jugé conforme aux limites d'un appareil numérique de classe B, conformément à la section 15 des règles de la FCC. Ces limites sont conçues pour fournir une protection raisonnable contre les interférences nuisibles dans une installation résidentielle. Cet équipement génère, utilise et peut émettre une énergie radiofréquence et, s'il n'est pas installé et utilisé conformément aux instructions, peut causer des interférences nuisibles aux communications radio. Cependant, il n'y a aucune garantie que des interférences ne se produiront pas dans une installation particulière. Si cet équipement provoque des interférences nuisibles à la réception radio ou télévision, ce qui peut être déterminé en allumant et en éteignant l'équipement, l'utilisateur est encouragé à essayer de corriger l'interférence par une ou plusieurs des mesures suivantes :
- Réorienter ou déplacer l'antenne réceptrice.
  - Augmenter la distance entre l'équipement et le récepteur.
  - Connecter l'équipement à une prise sur un circuit différent de celui sur lequel le récepteur est branché.
  - Consulter le revendeur ou un technicien radio/TV expérimenté pour obtenir de l'aide.

Le terme "IC" avant le numéro de certification de l'équipement signifie uniquement que les spécifications techniques d'Industrie Canada ont été respectées.

Les changements ou modifications non expressément approuvés par la partie responsable de conformité pourraient annuler l'autorité de l'utilisateur à utiliser l'équipement .

## Waste Handling



Dispose of in accordance with local requirements and regulations.

## Certification



The product is in compliance with the essential requirements of Council Directive 1999/5/EC on radio and telecommunications terminal equipment (R&TTE). The product is in compliance with Council Directive 2011/65/EU on restriction of the use of certain hazardous substances (RoHS).