



# Voluson Expert 22

You Set the Limits



**Voluson™**  
A Healthier Future for Women

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# Voluson Expert 22

## BT25

# You Set the Limits

You set out to make a difference. You became a leader.

Medicine is who you are. Women's health—your life, your legacy.

Your eye is focused on 'right now', but you are envisioning 'what's next', finding answers to questions that have yet to be asked. And the more you know, the more you want to know.

That's why we created the Voluson Expert 22 - to help you:

REVEAL THE INVISIBLE

DETECT THE UNDETECTABLE

ACHIEVE THE UNACHIEVABLE

EXPECT THE UNEXPECTED

It's a milestone in the making. Not the end of a path, but the continuation of a journey.

Because like you, we don't just hope for a Healthier Future for Women. We insist on creating it.



# Voluson Expert 22 – You Set the Limits

It's more than you ever thought possible. And in your hands, there's endless potential.

## Imaging - Reveal the Invisible

*Experience next-level imaging capabilities to help see details*

## Early Detection - Detect the Undetectable

*Uncover critical answers sooner for faster assessment, detection, and diagnosis*

## Workflow - Achieve the Unachievable

*Remove obstacles and drive productivity*

## Support Excellence - Expect the Unexpected

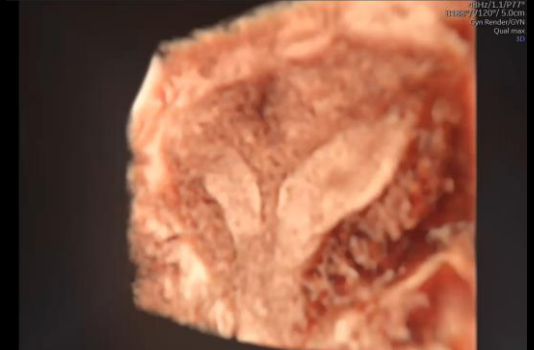
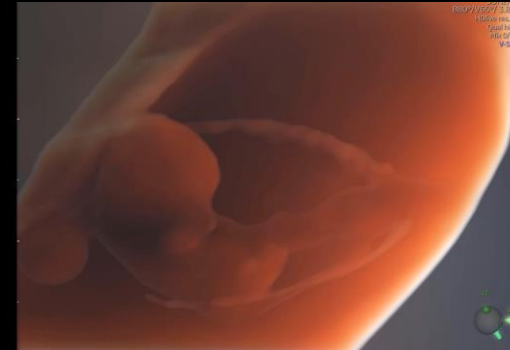
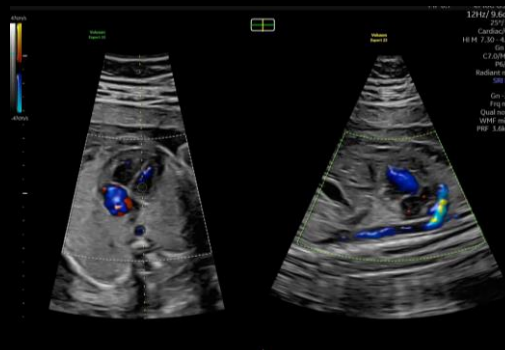
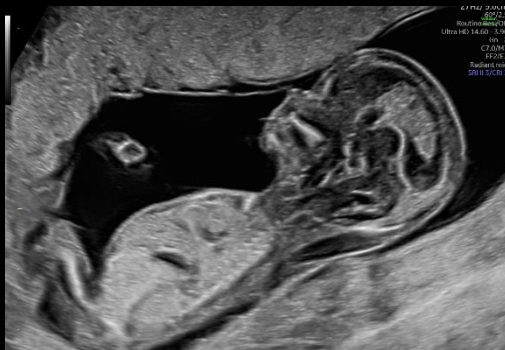
*More services. More support. More future-focused solutions.  
Finally, a partnership that won't leave you wanting more.*





# Voluson Expert 22

- Voluson **ultra premium** ultrasound system
- The **most powerful and adaptive platform** to date to help clinicians establish new standards
- **Lyric Architecture** generates new levels of clarity, penetration, and resolution to reveal fine anatomy in 2D/3D/4D with ease
- **Specialized imaging tools** help users detect and diagnose uncovering answers faster to complex and routine exams
- Modernized iconic **Voluson workflow**, with new personalization options, help ease your workday
- **Advanced efficiency** in daily exams with Artificial Intelligence and automation to reduce repetitive actions and inconsistent results



# Reveal the Invisible

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Imaging Excellence

# Reveal the Invisible – Imaging Excellence

The Voluson Expert 22 is prepared to show you more than you ever thought possible. We are taking innovation further, making it easier to collect more information at record speeds for even faster, sharper, and clearer imaging. The Voluson Expert 22 will help you see critical details required for a confident diagnosis.

## Lyric Architecture

Unlock new imaging and processing power to achieve high resolution, detailed images

### 2D Imaging



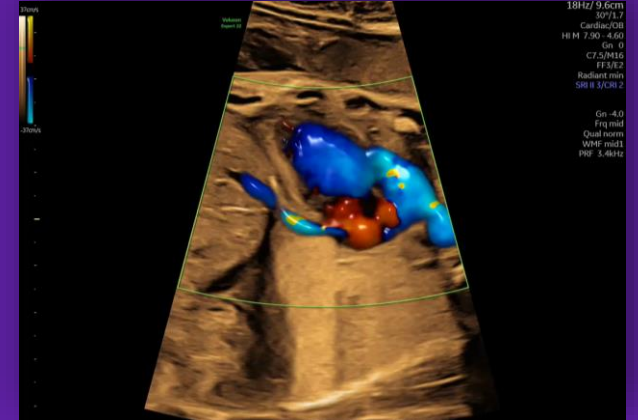
Uncover answers by elevating your 2D imaging with exceptional spatial and contrast resolution for distinct border and tissue differentiation with UltraHD, Augment, and Radiant imaging

### Volume Imaging



Visualizing anatomy from another view can be the difference between delaying or making a confident diagnosis. Discover the next generation of 3D/4D imaging featuring our new HDlive™ Studio+.

### Color Imaging



Make blood flow assessment faster and easier with advanced Voluson technologies. Increased resolution and sensitivity in color and pulsed wave Doppler for unprecedented clarity

# Lyric Architecture

How do you find a needle in a haystack? Build a powerful engine with the most progressive and adaptive capabilities yet.

The Lyric Architecture unlocks new imaging and processing power to achieve high resolution, detailed images – independent of body habitus and other difficult scanning conditions.

- Graphic-based beamforming that generates new levels of penetration, resolution, and frame rates to reveal fine anatomy in 2D/3D/4D with ease
- Delivers uniformity throughout the image with increased spatial and contrast resolution
- Works in harmony with our unique probe technology offering advanced personalized imaging to address patient challenges
- Opens doors to unique Voluson imaging capabilities

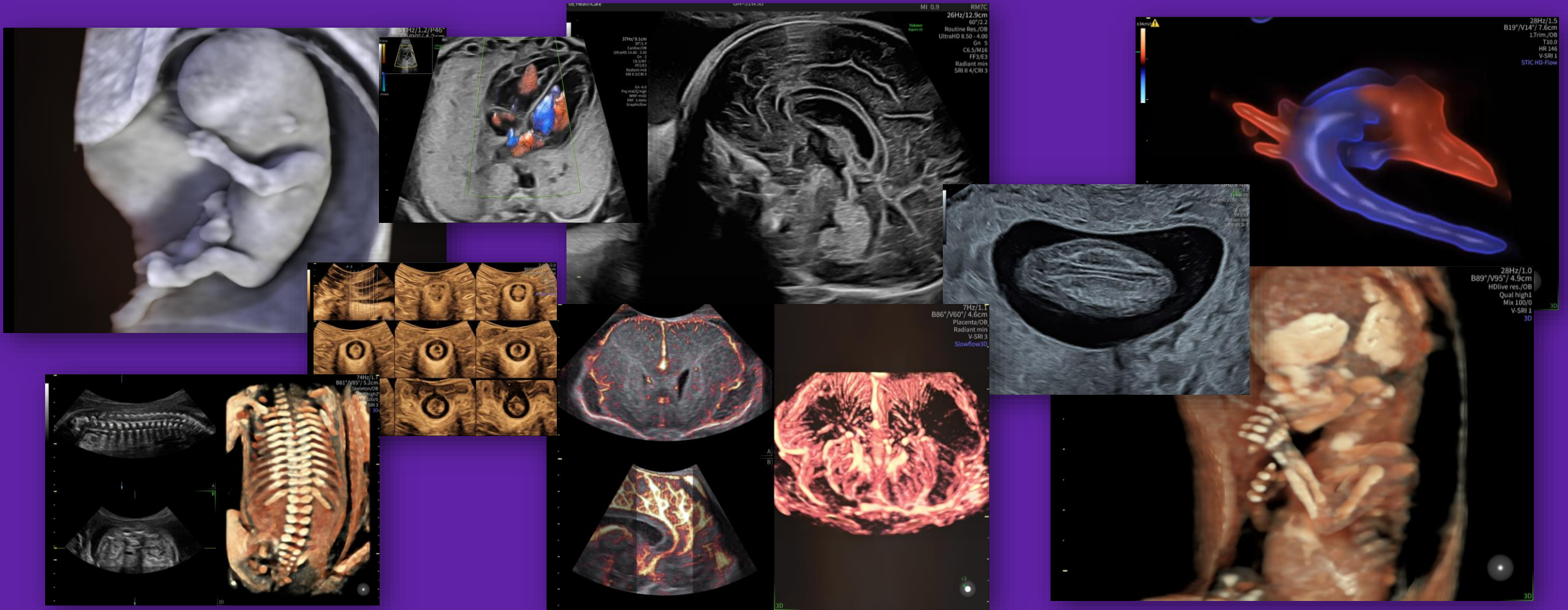
Generations ahead of other ultrasounds, the Lyric Architecture allows you to set new standards for years to come





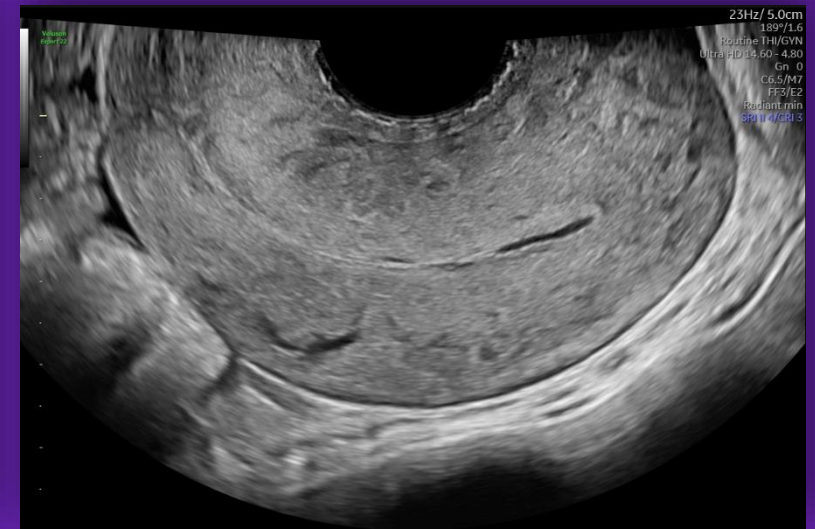
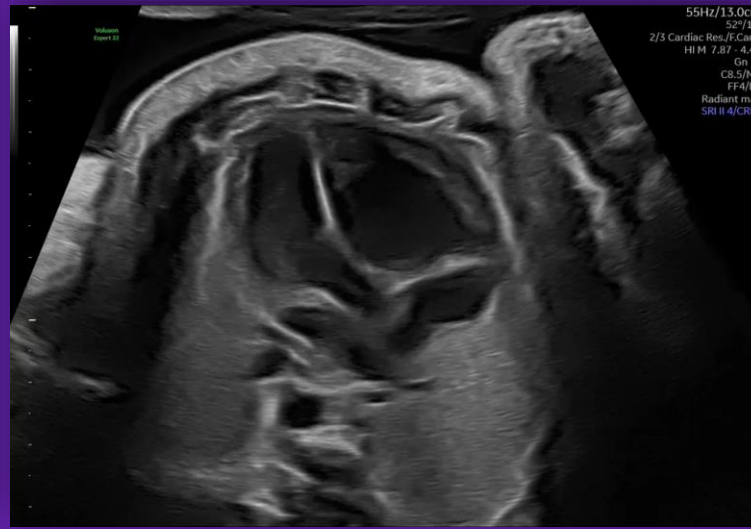
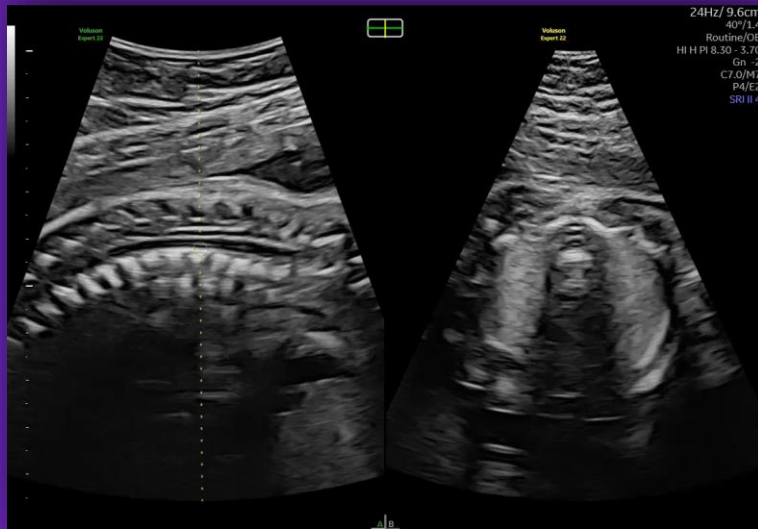
# Reveal the Invisible – Imaging Excellence

Leveraging the power of Lyric Architecture for next level 2D/3D Imaging



# The Ultimate Foundation – 2D Imaging

To uncover answers, you depend on details. The Voluson Expert 22 elevates 2D imaging with exceptional spatial and contrast resolution to enhance border distinction and tissue differentiation



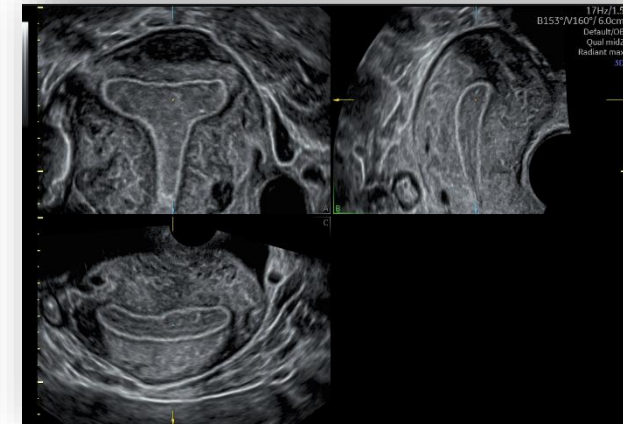
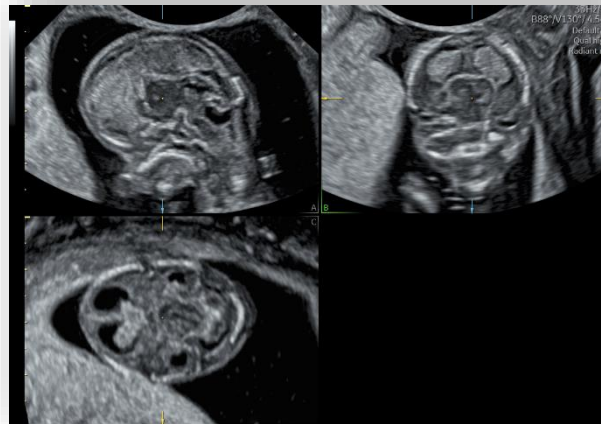
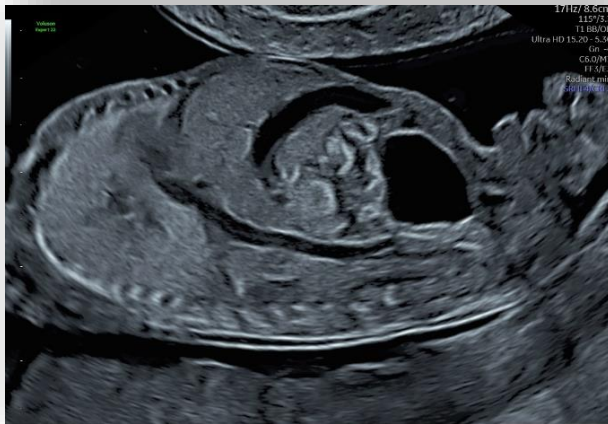
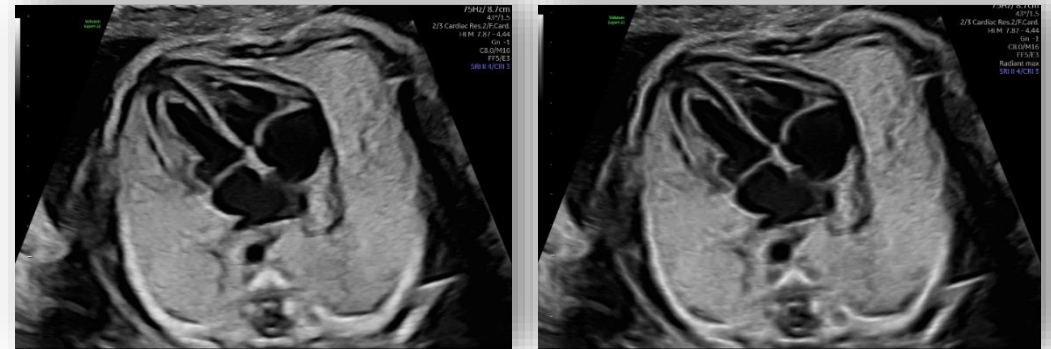


# Radiant - Reach New Heights

Enhance border visibility by changing elevation levels for a 3D-like appearance, which aids in crucial border differentiation in anatomy such as brain and fetal heart

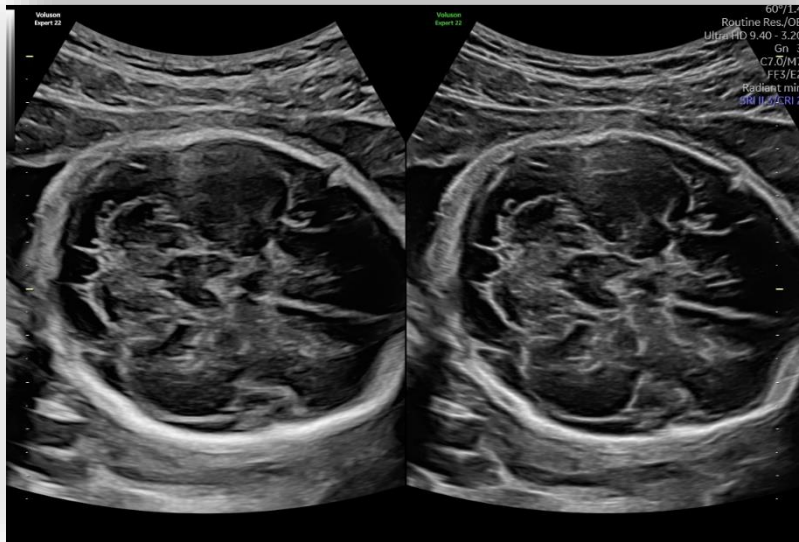
- Change the elevation visualization – Off – Min – Mid – Max
- Enhances spatial and contrast resolutions
- Available in multi-planar views
- Better imaging across all planes

Off/Max Comparison



# UltraHD – Visualize Super Fine Details

Obtain highly detailed images of the fetal brain, first trimester development, and other complex anatomy with increased axial and lateral resolution

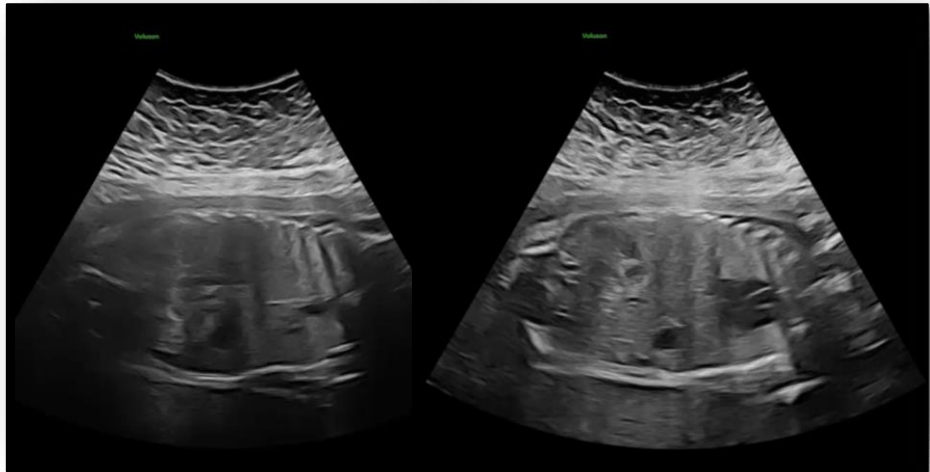


On/Off Comparison

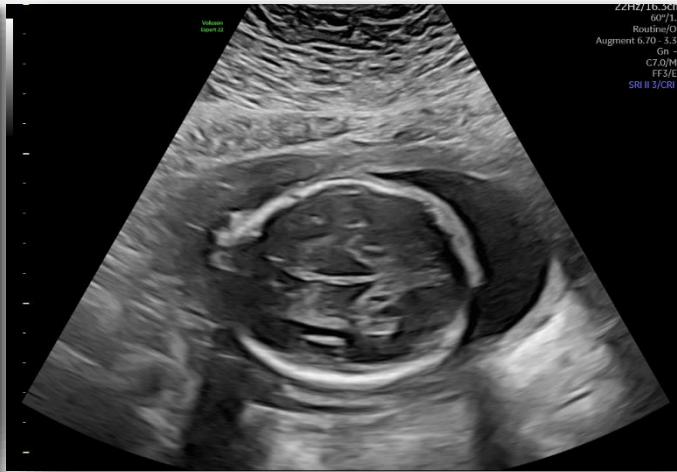


# Augment – Simplify Challenging Exams

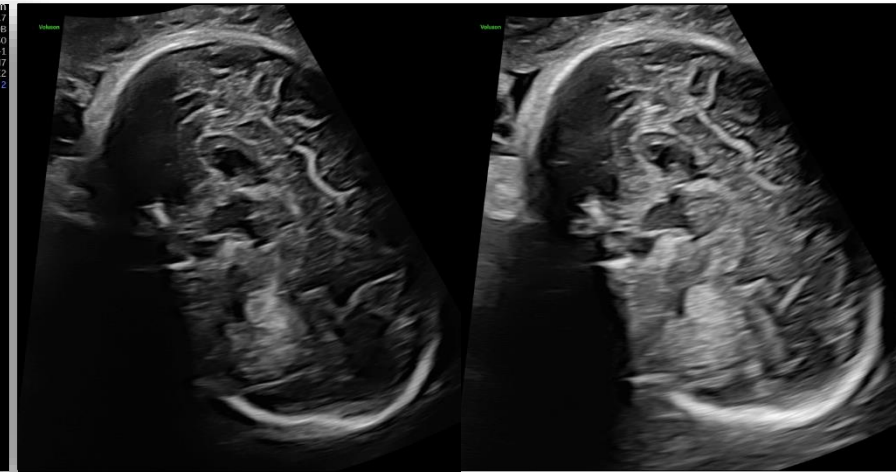
Utilize the Augment feature to reduce noise and increase penetration for a robust, cleaner image even in difficult to scan situations like high body mass index (BMI)



Off/On Comparison



BMI >50



Off/On Comparison

# Shadow Reduction

Reduces shadowing in B-mode imaging, even in difficult to scan patients



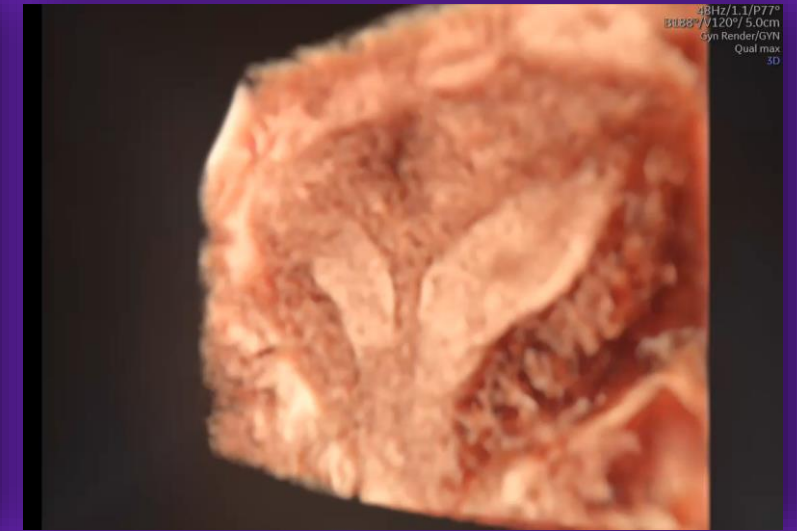
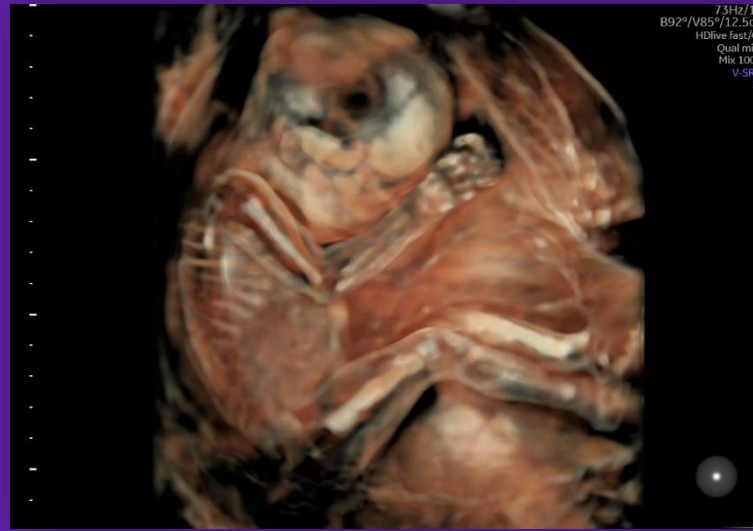
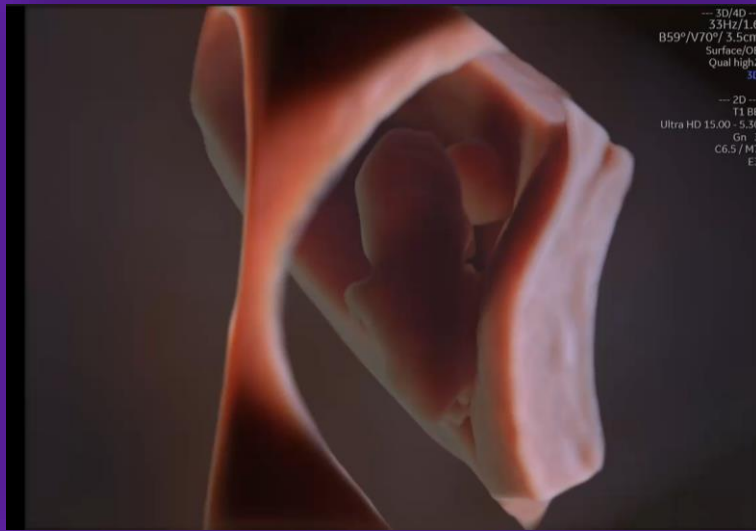
Without Shadow Reduction



With Shadow Reduction

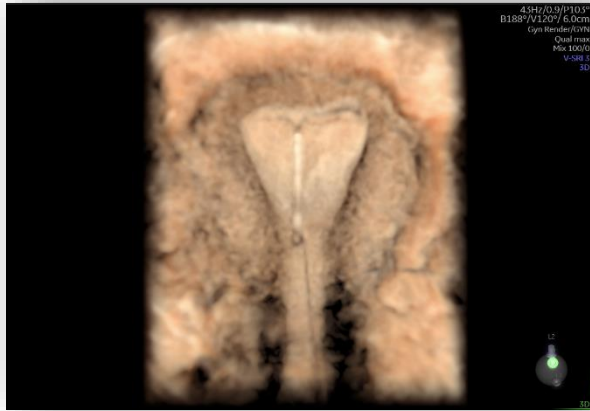
# A New Perspective – Volume Imaging

Visualizing anatomy from another view can be the difference between delaying or making a confident diagnosis. The Voluson Expert 22 builds on our world class volume imaging to deliver the next generation of 3D/4D imaging.



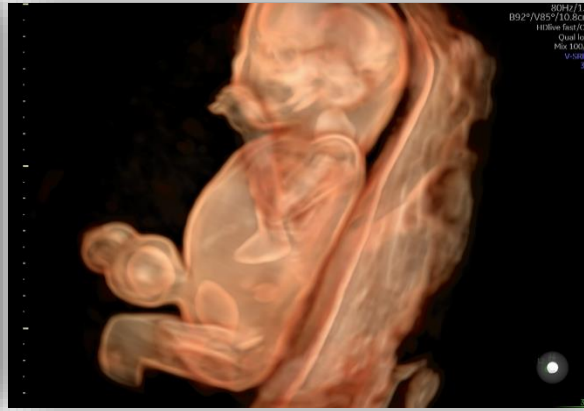
# HD*live* Studio+

An essential problem-solving feature for a deeper understanding of relational anatomy and developing structures. The suite of features offer added opportunities for realistic views and assessment of anatomy for greater confidence.



## HD*live*

Illuminate anatomy and surrounding fluid with up to 3 independent light sources with various intensity and hues.



## HD*live* Silhouette

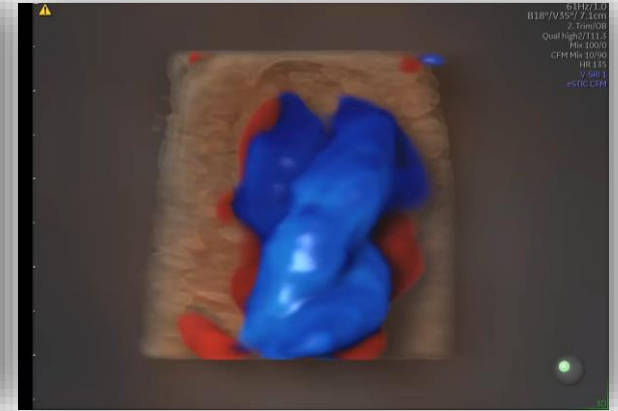
Volume imaging is taken to the next level with the ability to control what tissue type is displayed internally vs. externally.

Additional transparency tuning controls allow for more details, providing diagnostic assessment and confidence.



## Perspective Rendering

“Camera Zoom Technology” type representation to enhance spatial and optical visualization for a realistic view and increased depth display.



## HD*live* Flow

Vascular structures are displayed with greater depth perception and dimension

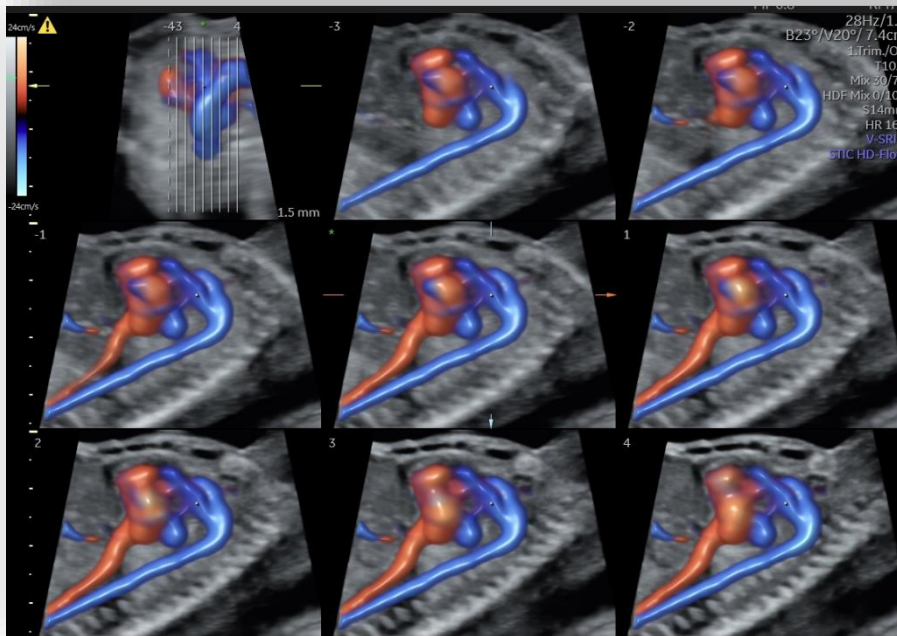
## HD*live* Flow Silhouette

Visualize vascular structures, along with surrounding tissues, with various levels of border enhancement and through transparency.



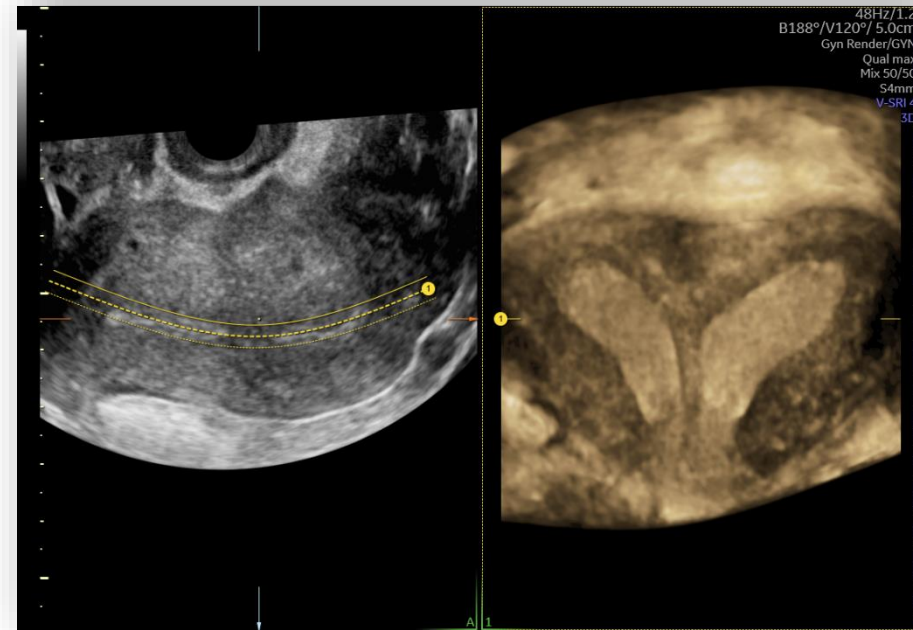
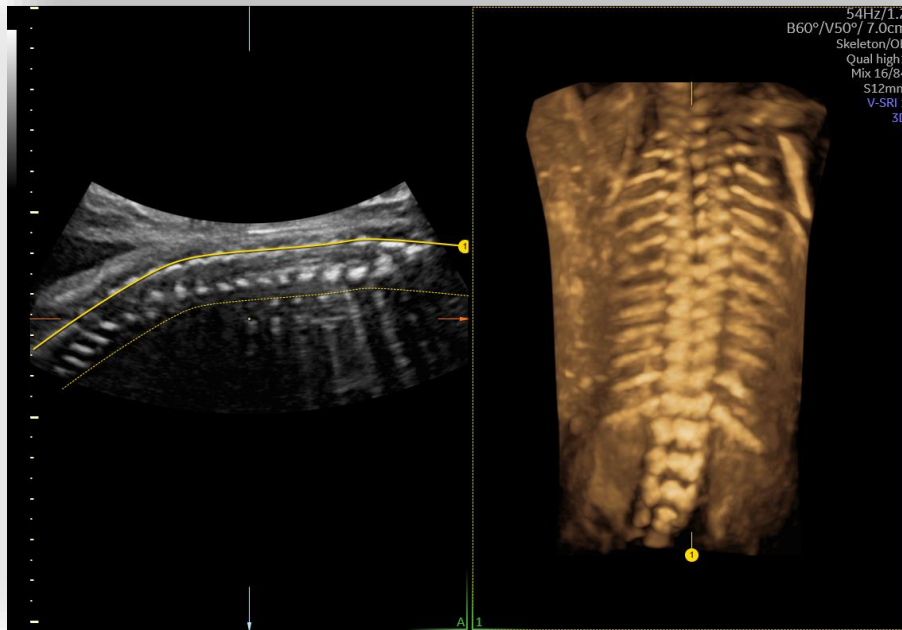
# Advanced VCI

Adjusts slice thickness on 3D or 4D images to help enhance contrast resolution with use of render techniques such as bone and tissue renderings. Can be applied in the acquisition plane (VCI-A), static 3D volumes, color, or OmniView



# OmniView

Obtain any plane from a 3D or 4D volume by simply drawing a line, curve, poly-line, or trace through a structure. This valuable technology enables views of even irregularly shaped structures not attainable in 2D imaging



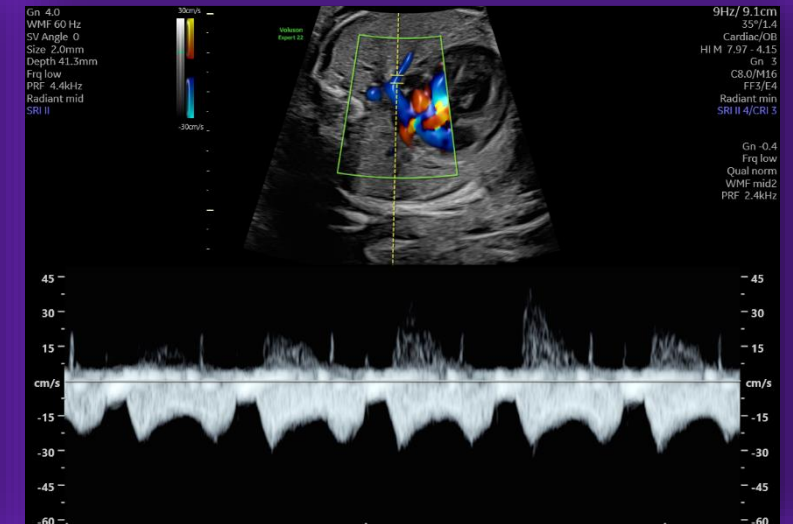
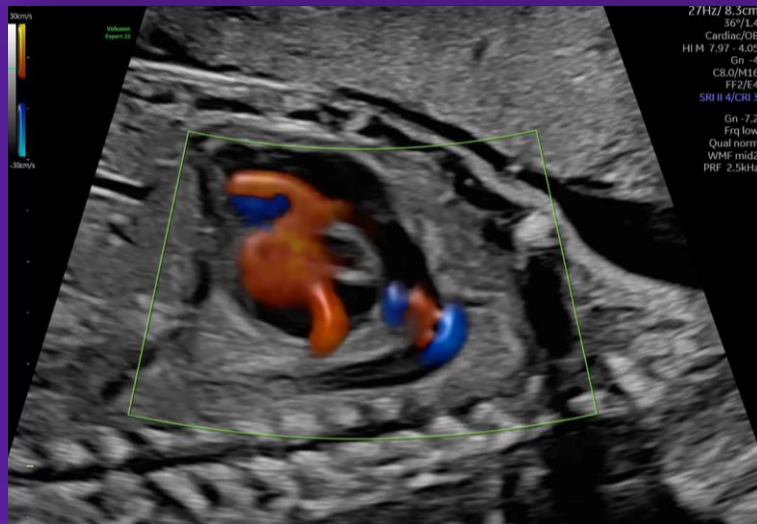
# Spine Trace

Easily obtain 3D views of the spine - automatically acquire the volume and displays the coronal view in a few easy steps



# Beyond Basic Blood Flow – Doppler Imaging

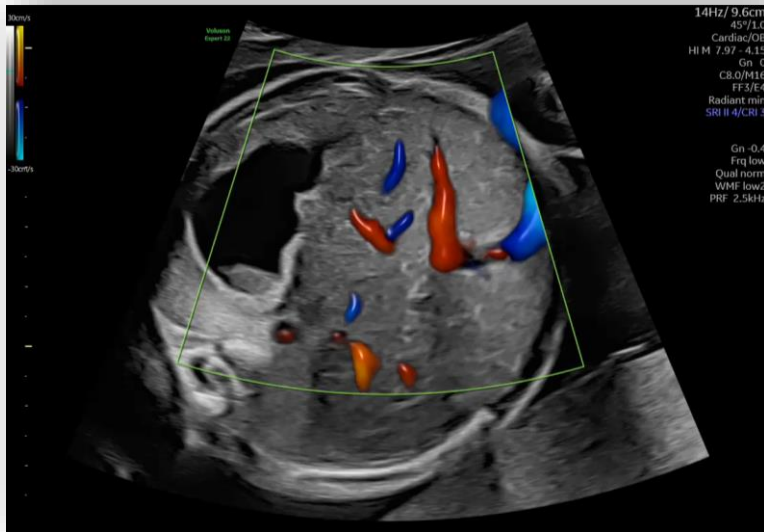
Make blood flow assessment faster and easier with advanced Voluson technologies. Increased resolution and sensitivity in color and pulsed wave Doppler for unprecedented clarity





# Radiantflow™

Achieve a new standard of color Doppler – Delivers easy, fast visualization of blood flow using the amplitude of the color Doppler signal to enhance robustness and create a 3D-like appearance

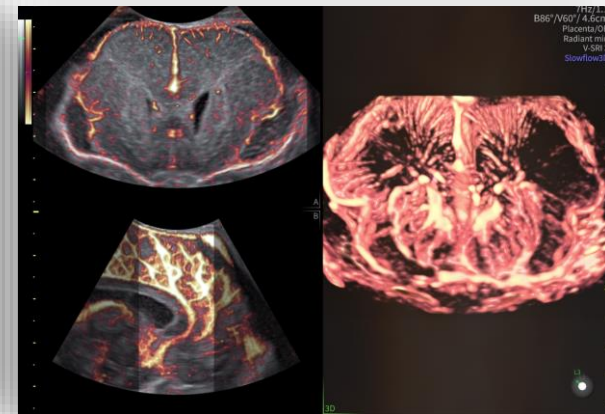
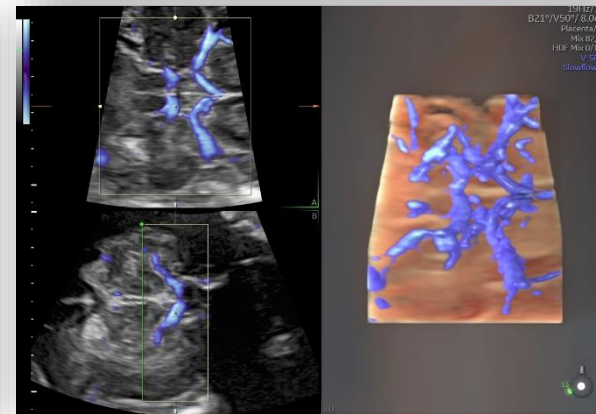
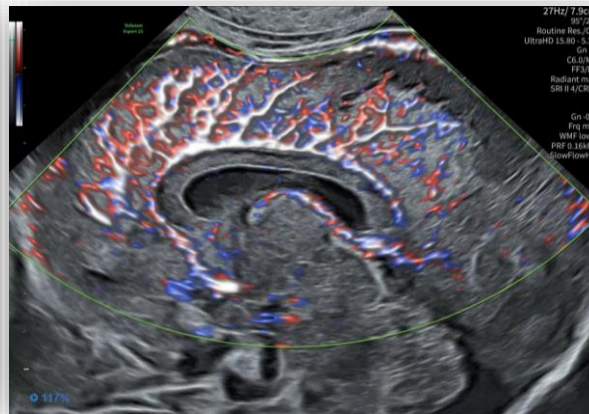


# Slow flow

Observe low velocity vessels in 2D and 3D images with *SlowflowHD* and *Slowflow3D* – extending color capabilities for first trimester, placenta, and gynecological exams for enhanced diagnostic confidence



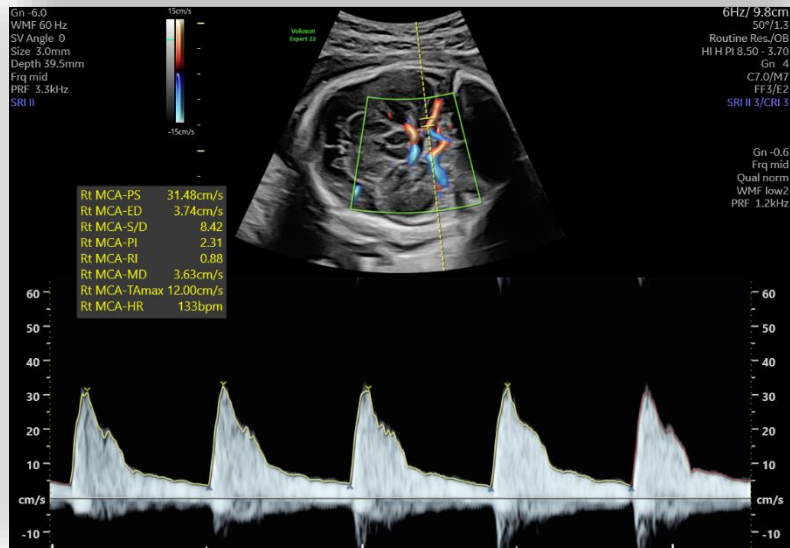
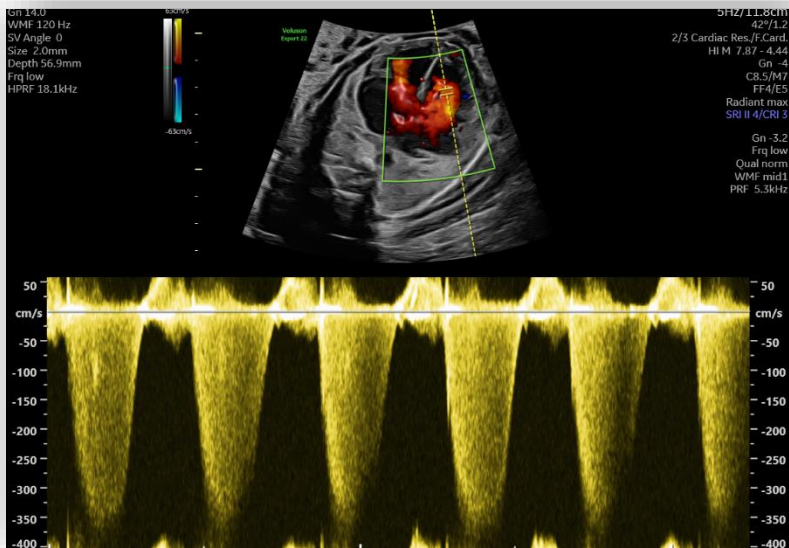
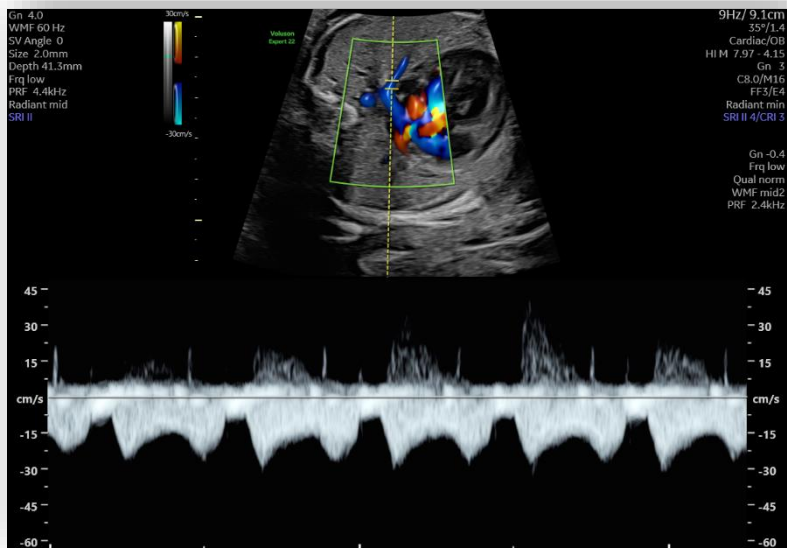
*SlowflowHD*



*Slowflow3D*

# Pulsed Wave Doppler

New levels of unprecedented sensitivity and clarity for confident assessment



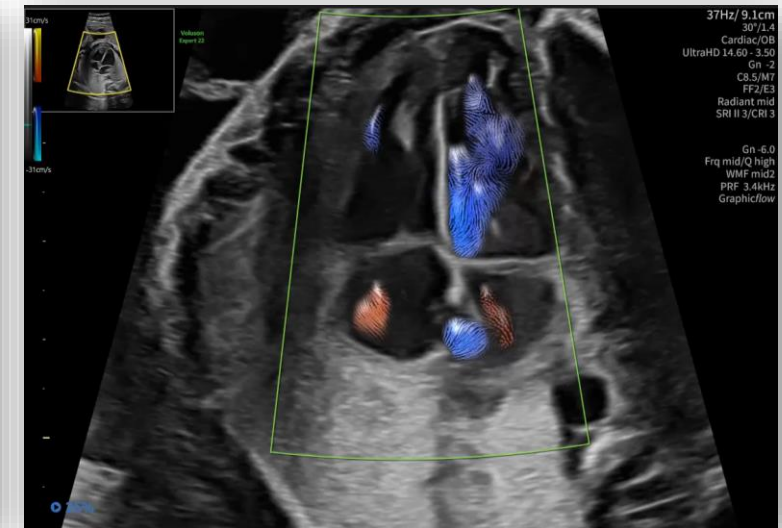
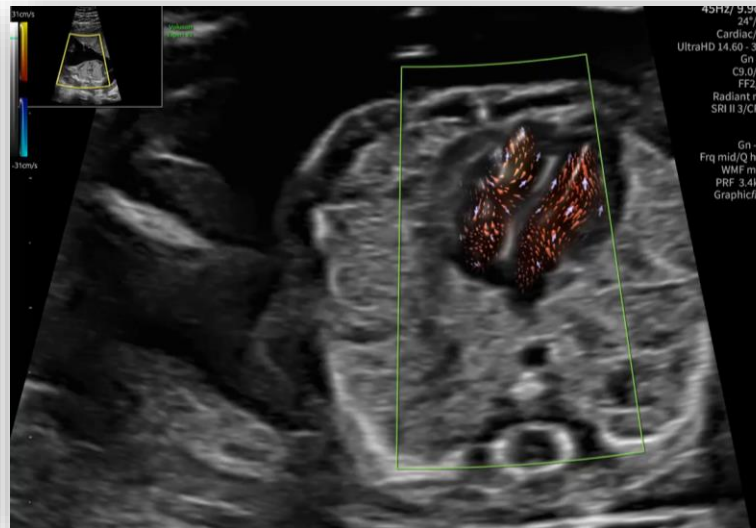
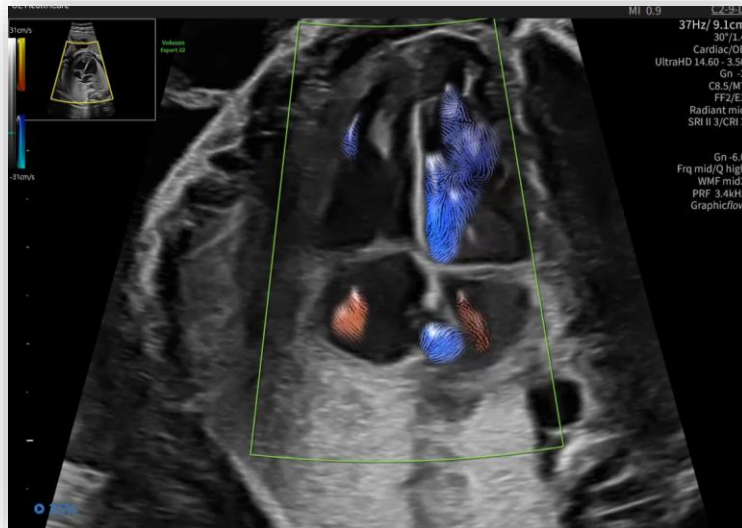


# Graphicflow



Provides a graphical representation of the trajectories of the blood cells in real-time to visualize complex blood flow quickly and clearly, helping you to differentiate normal from abnormal hemodynamics

- High framerates with true velocity & angle direction (vs. color doppler)
- Available on eM6C, RM7C, and C2-9 probes within OB & fetal cardiac applications





# Unique Probe Technology

With the Lyric Architecture, we have taken our probe technology to the next level.

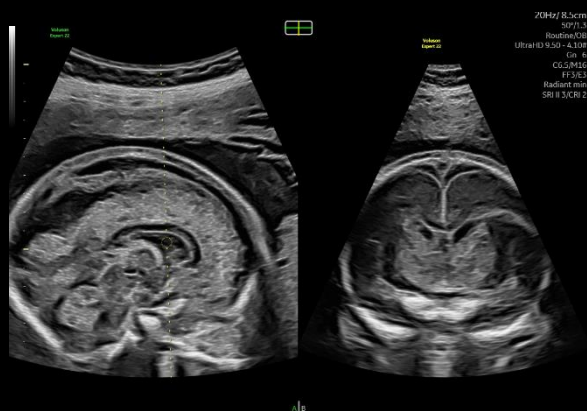
Extraordinary image quality helps meet your clinical and ergonomic needs to simplify exams and your day.



# eM6C - More Information in Less Time

Cutting edge technology to assist with the most complex cases while having the flexibility and comfort to integrate into daily workflow

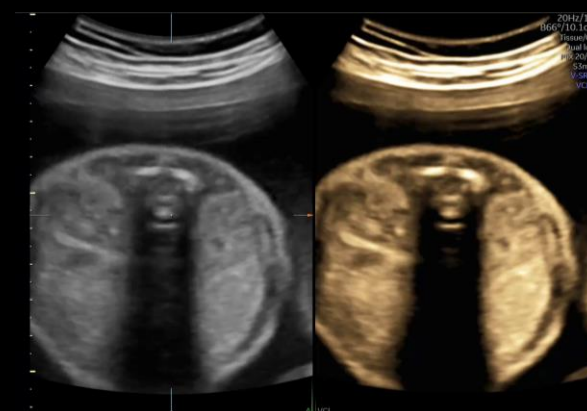
- First commercially available curved matrix electronic 4D technology designed for women's health
- Amazing image quality based on Lyric Architecture – even faster frame rates, processing power, and resolution
- Workflow enhancement features include Bi-Plane, SnapShot, eSTIC, VCI-A and VCI-2D



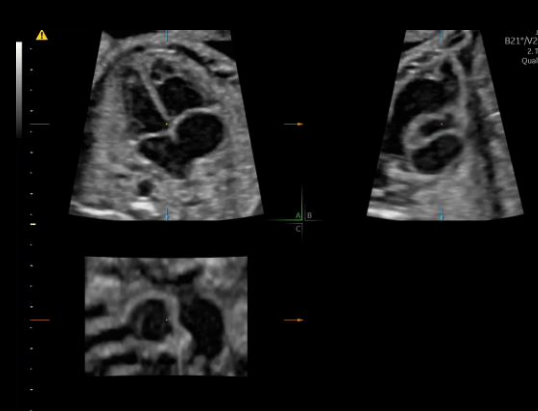
Bi-Plane Imaging



VCI-2D

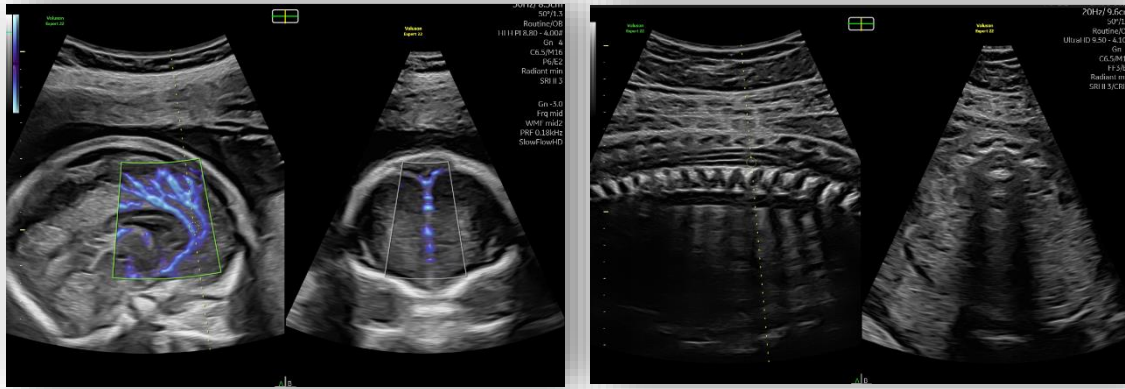


VCI-A (Volume Contrast Imaging)



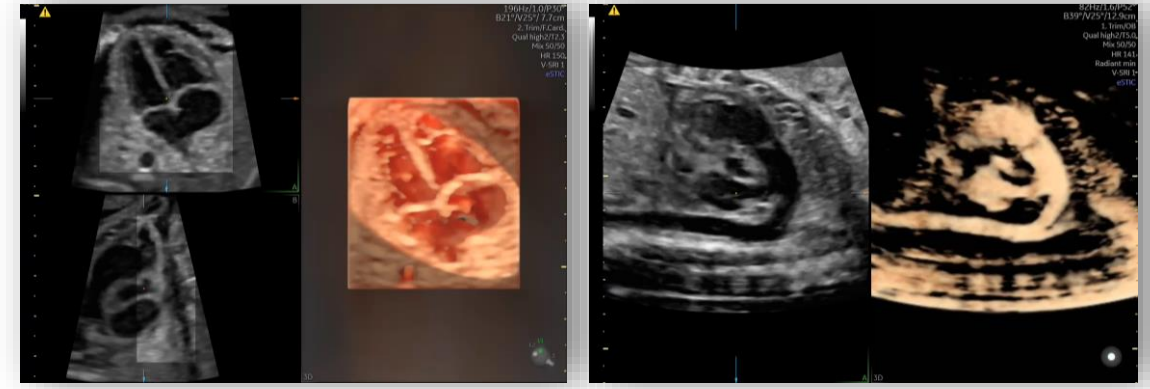
eSTIC

# eM6C Imaging Technologies



**Bi-Plane imaging** – Provides simultaneous display of high resolution, high frame rate images in two perpendicular planes. Technology may be used in 2D and color Doppler

**Clinical use:** Spine, palate, heart, brain, limbs, and procedures including amniocentesis, percutaneous umbilical cord blood sampling (PUBS), chorionic villus sampling (CVS); Confirmation of perpendicular (i.e., NT, fetal heart) – View potential obstructions during interventional procedures

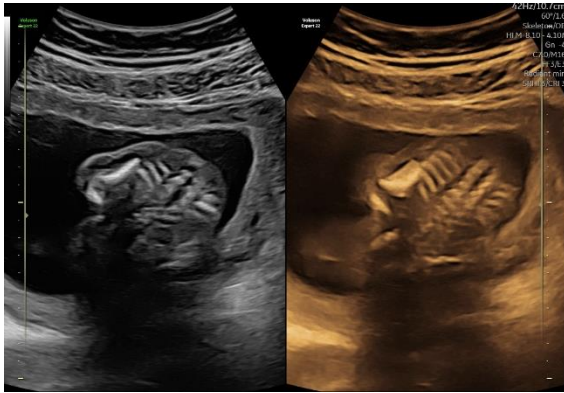


**eSTIC (Spatio-Temporal Image Correlation)** enhances fetal cardiac exams with up to 75% reduction in acquisition time over traditional STIC. Reduces artifact from fetal movement. Improves B & C plane. Acquisition time reduced from 12 secs to 1.3 secs\*

**Clinical use:** Fetal heart - Evaluate anatomy, pathology, and physiology in 3 dimensions

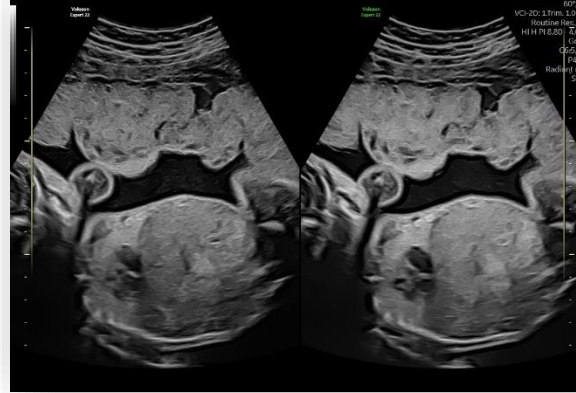
\* As compared to volume rates on e4D vs mechanical probes (RAB6) on Voluson E10 BT20

# e4D Imaging Technologies



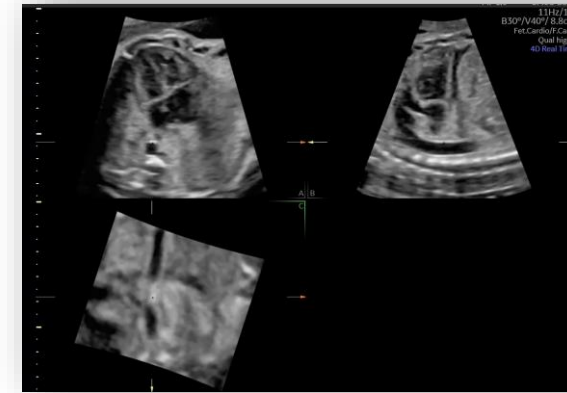
## VCI (Volume Contrast Imaging) –

Delivers excellent contrast resolution through thick slice volume of grey scale and color Doppler images.



## VCI – 2D

Enhance B-Mode Imaging across different render modes and improved tissue differentiation in hard to scan patients



**Real-Time 4D** - Presents exceptional visibility with an 86% increase in 4D volume rates for real-time display of motion\*

**Clinical use:** Fetal brain sutures, extremities, spine, palate, soft tissue, heart in *any* plane - Added contrast resolution in soft tissue, brain, heart, etc.

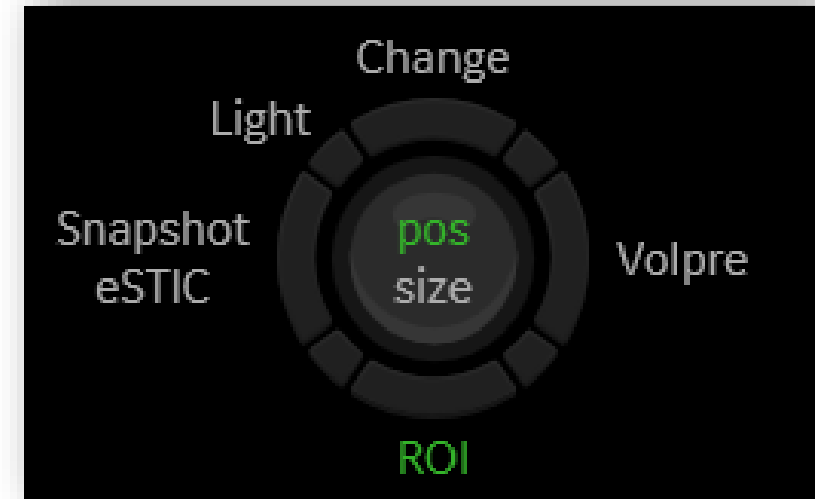
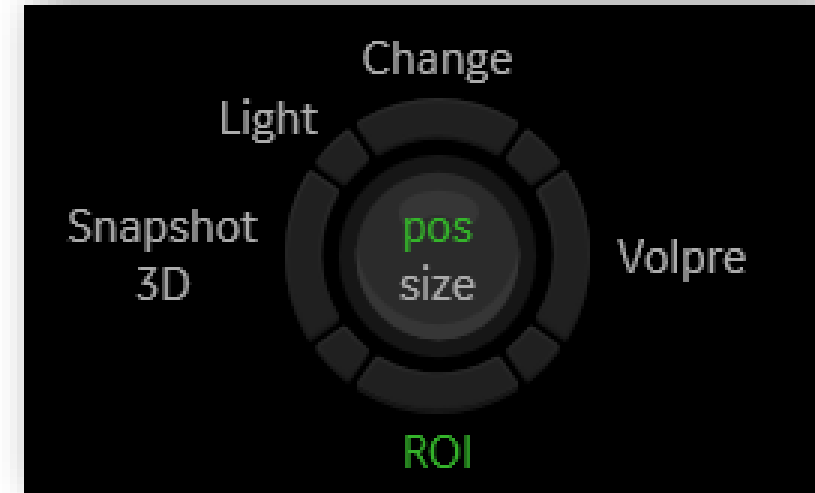
\* As compared to volume rates on e4D vs mechanical probes (RAB6) on Voluson E10 BT20



# e4D SnapShot

Optimize exam time with speed and ease.

- Seamlessly and quickly capture high quality 3D or eSTIC volumes without interruption in workflow
- SnapShot optimizes exam time with one button access from Real-Time 4D to acquire high resolution images



# RIC6-12 – Earlier than Ever Before

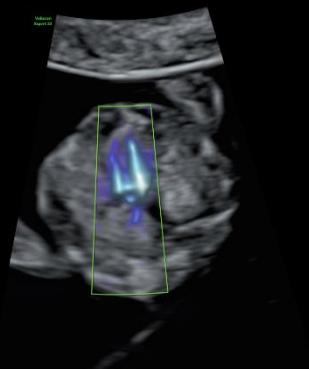


Confidently explore fetal images in the earliest stages with the RIC6-12 probe

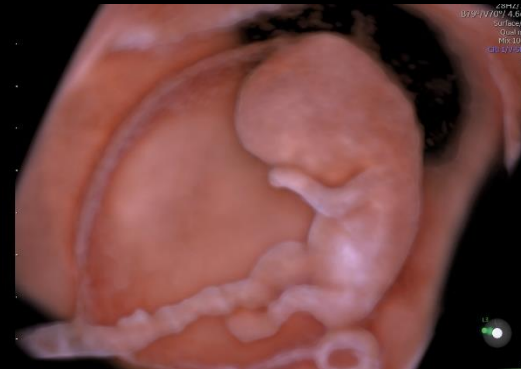
- High frequency, high resolution probe
- Delivers extremely detailed images required for visualizing and detecting anomalies in the first trimester



7-week gestational sac



10-week fetal heart



10-week embryo



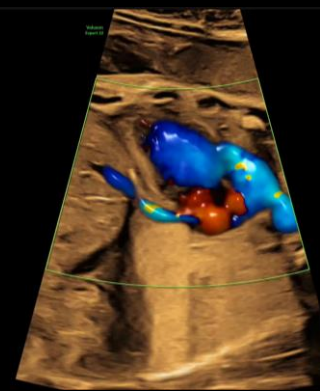
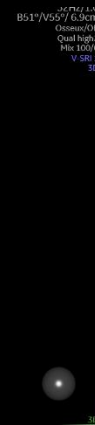
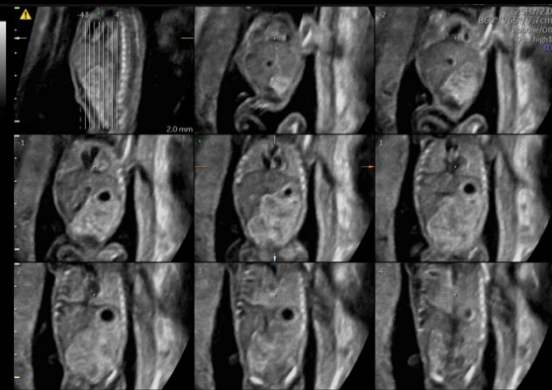
Early cord visualization

# RM7C – Seeing is Believing

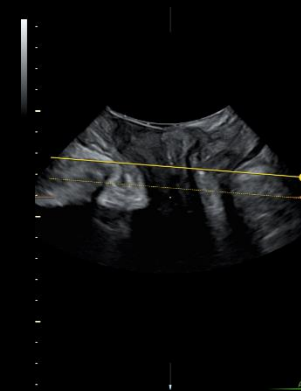


From the first trimester to the third, our RM7C volume matrix probe helps you set new standards in performance and image quality

- XDclear™ technology provides exceptional 2D, 3D, and 4D resolution and color sensitivity.
- High resolution matrix convex array probe
- Remarkable performance offering sharp imaging, even with difficult to scan patients
- Increased user comfort - reduced weight by 80g or 17% over its RM6C predecessor



Fetal heart



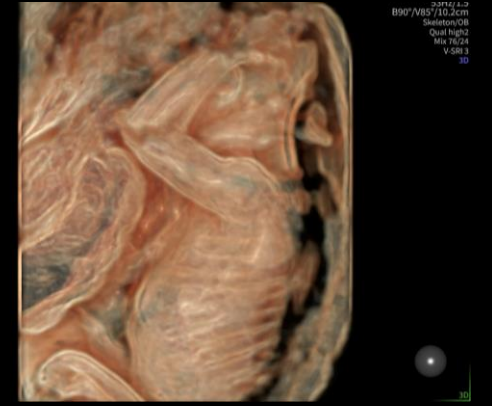
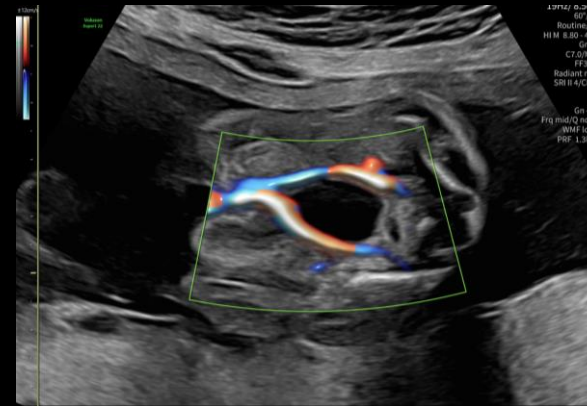
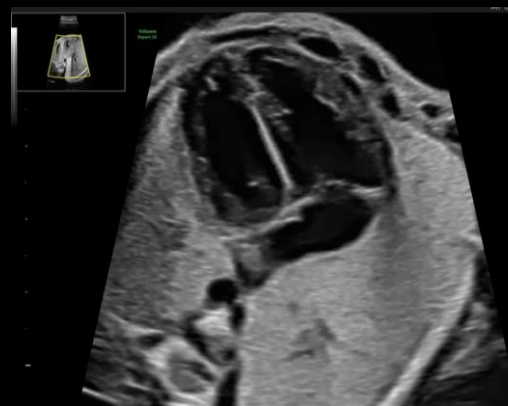
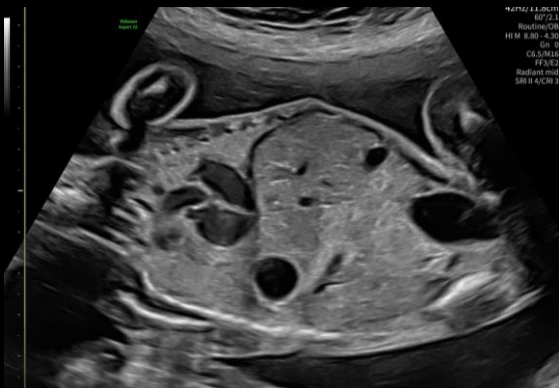
SonoPelvicFloor

# RAB7 – Effortless Imaging



From first to third trimester, the RAB7 helps you in performance and image quality

- XDclear™ technology provides exceptional 2D, 3D, and 4D resolution and color sensitivity.
- High resolution convex ultra-light volume probe





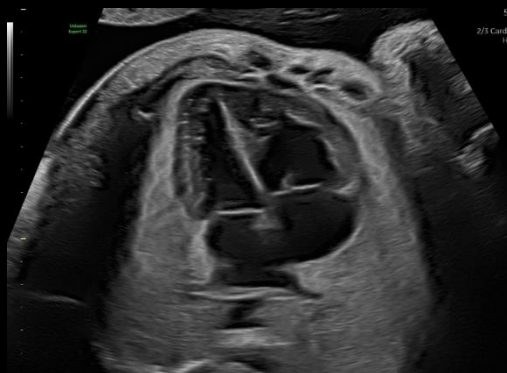
# C2-9/C1-6 – Simply Stunning

Achieve exceptional tissue and detail resolution with our XDclear™ probes: C2-9 and C1-6. The combination of single crystal, acoustic amplification, and cool stack technology offers extraordinary 2D imaging, even with difficult to scan patients

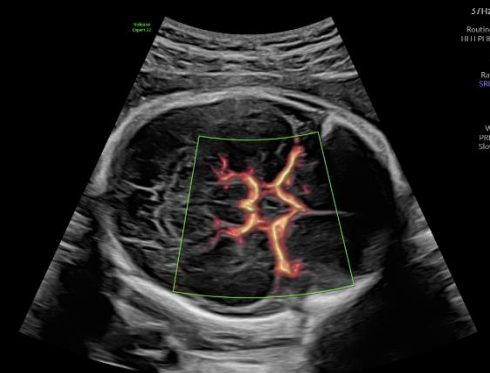
- C1-6 - Penetration and robustness covering wide range of patients, even the more challenging scans
- C2-9 - High Frequency imaging for fine details and 1<sup>st</sup> trimester exams



C2-9 Probe



C1-6 Probe



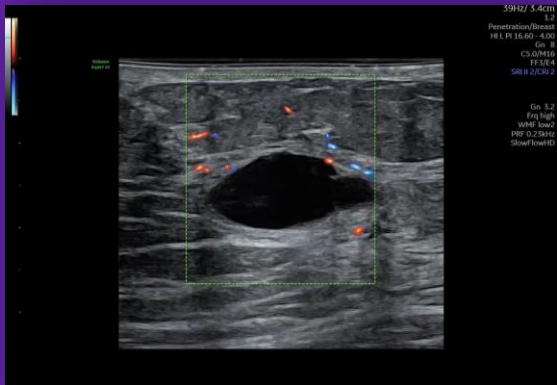
# VScan Air™ CL/SL

## Wireless probes access now a reality

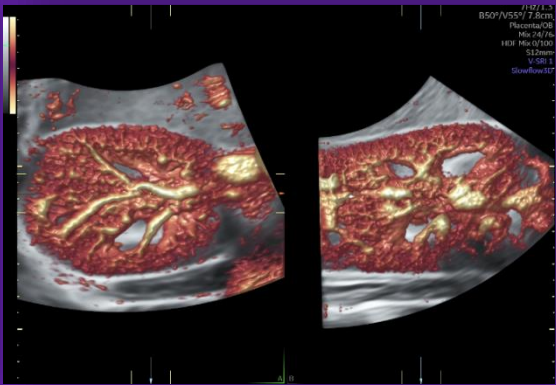
- VScan Air™ CL/SL wireless dual curved linear or sector/linear
- Cordless making it ideal for interventional use
- Convenient bedside scanning
- Easy disinfecting/cleaning
- Can be used across other GE HealthCare ultrasound systems making it ideal for sharing across platforms



# Shared Service Gallery



Breast cyst with RSP6-16 probe



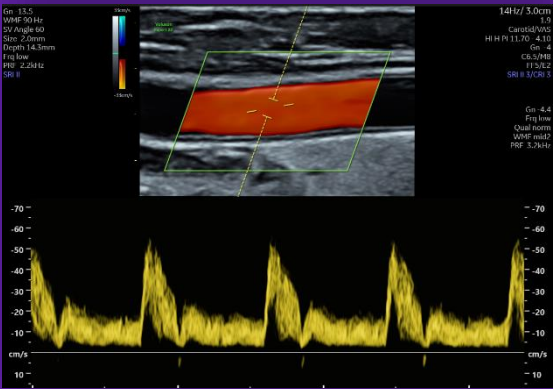
Adult kidney shown with RM7C probe and Slowflow3D



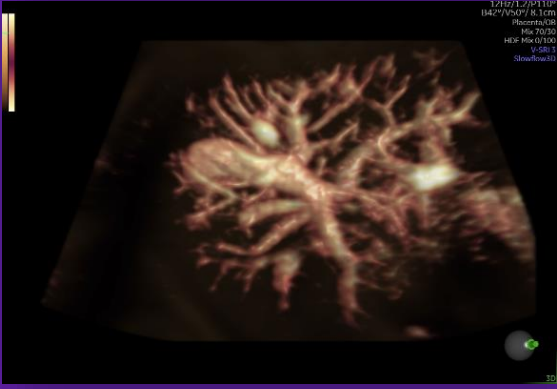
Pediatric kidney with C2-9 probe



High detail pediatric brain with Radiant acquired with 6S probe



Liver with Power Doppler



Abdomen with HDlive Studio+ and Slowflow3D

# Detect the Undetectable

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Early Detection



# Detect the Undetectable – Early Detection

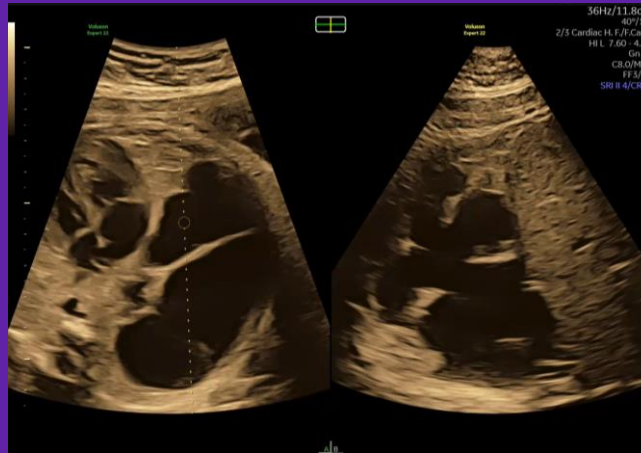
Complex cases come with enough uncertainty. That is why the Voluson Expert 22 delivers extraordinary image quality and unique tools to help you focus on early detection and intervention.

## 1<sup>st</sup> Trimester



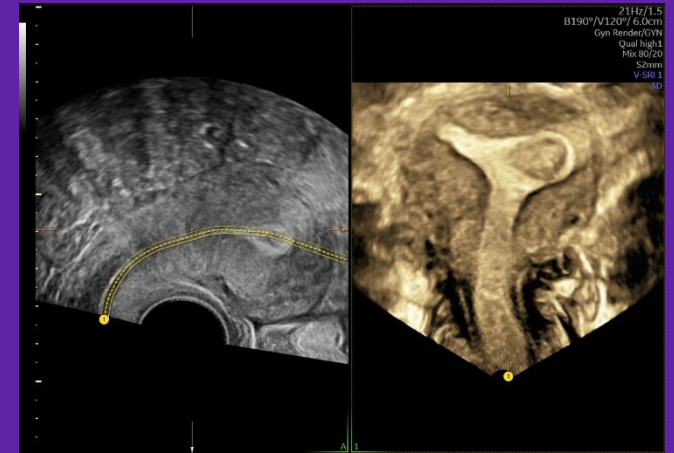
Examine developing structures earlier to uncover anomalies with high resolution probe & imaging technologies.

## Fetal Heart



Increase detection, diagnose confidently, and effectively monitor the fetal heart.

## Pelvic Health



Simplify reproductive health with advanced analysis tools and easy 3D technologies.

# First Trimester

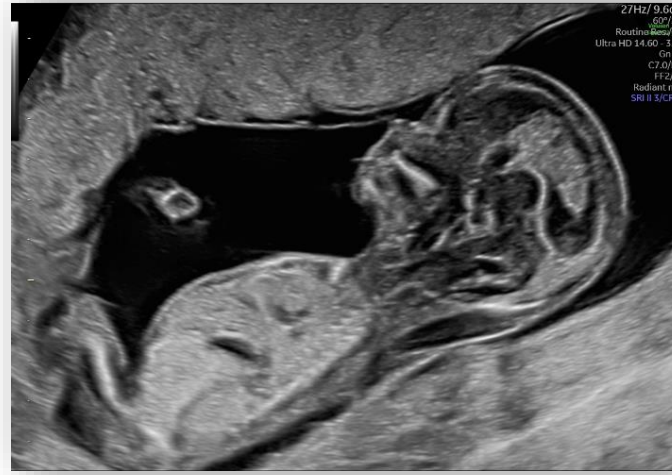
## Small Anatomy. Fine Details. Timely Diagnosis.

Improving detection rates of chromosomal and structural anomalies in the earliest stages of development is critical for better decision making. With small anatomy, exposing anomalies requires clear, high-resolution imaging and simplified assessment tools



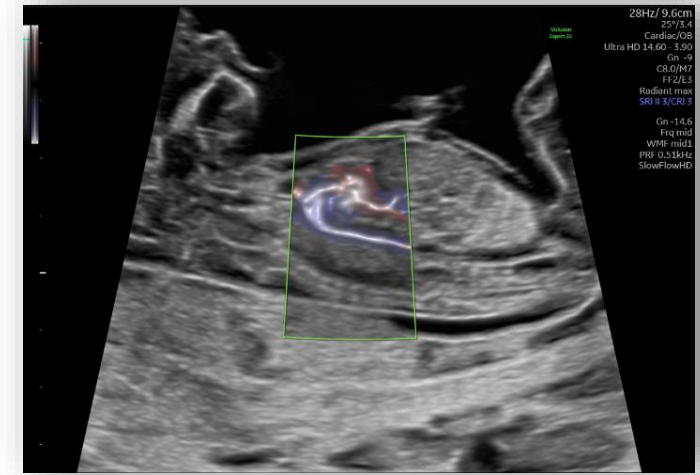
### UltraHD

Obtain highly detailed images of early pregnancy development with increased axial and lateral resolution for fine details



### Radiant

Utilize Radiant for greater definition and clarity. Change the levels to enhance the 3D-like elevation effect for greater border visibility and sharpness.



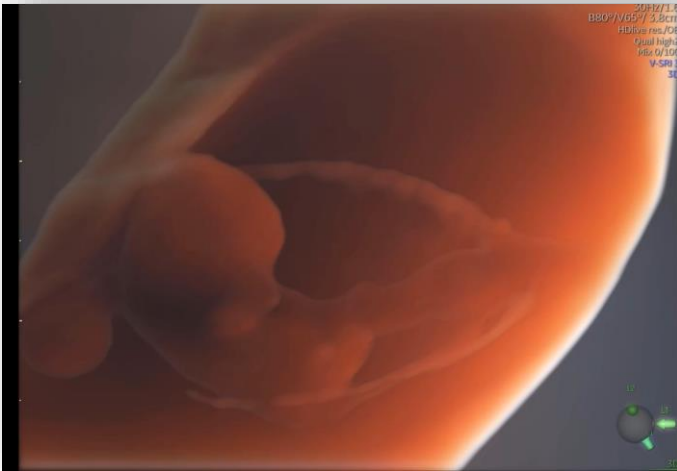
### Color Imaging

Increase resolution and sensitivity in color for unprecedented clarity with Radiantflow, SlowflowHD, and Slowflow3D

# First Trimester

## Small Anatomy. Fine Details. Timely Diagnosis.

Improving detection rates of chromosomal and structural anomalies in the earliest stages of development is critical for better decision making. With small anatomy, exposing anomalies requires clear, high-resolution imaging, and simplified assessment tools



### HDlive Studio+

Essential problem-solving tools for a deeper understanding of relational anatomy and developing structures. Easily obtain volume images with unprecedented depth and clarity.



### SonoNT/SonoIT

(Sonography-based Nuchal /Intracranial Translucency) – semi-automatic, standardized measurements of nuchal and intracranial translucencies



### RIC6-12 Probe

Delivers extremely detailed images required for visualizing and detecting anomalies in the first trimester

# SonoLyst*live*

No freezing, no annotating, no storing.

Take image recognition to the next level by capturing images as you scan, in real-time. Let the tool measure, annotate, and store images, checking them off the list of required views. SonoLyst*live* helps reduce keystrokes and exam time while helping ensure more complete exams.

SonoLyst*live* is available:

- **In the first trimester to easily perform a detailed 11–13 weeks scan**
- For 2nd trimester anatomical evaluation of the fetus, reduce exam time up to 30% <sup>1</sup>

<sup>1</sup> Internal study of mid-trimester anatomy scans using SonoLyst*live* versus manual exam, not including image review process





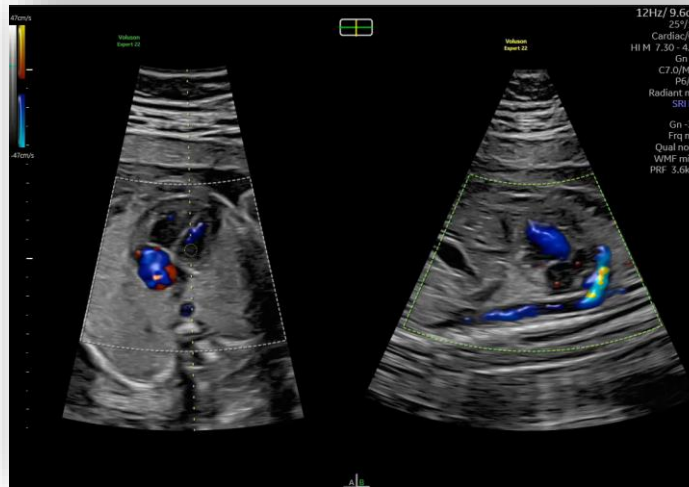
# Fetal Heart Evaluation

## Get to the heart of the matter

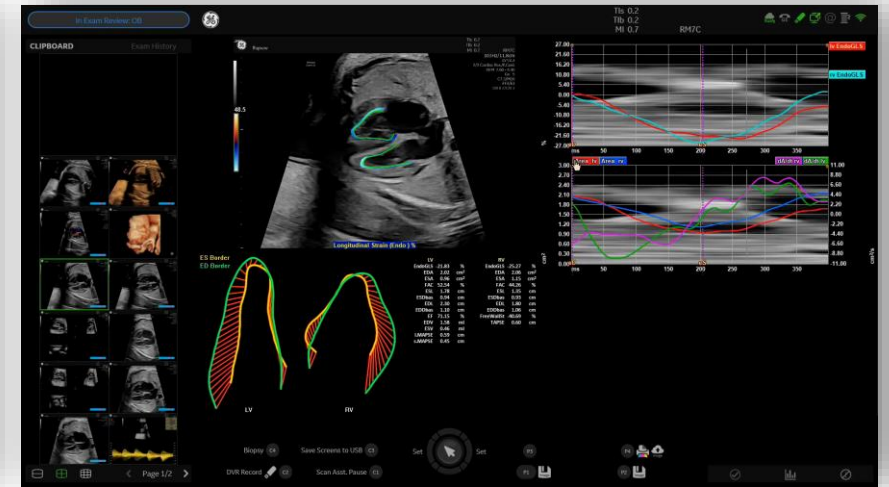
Identifying fetal cardiac abnormalities earlier means you can intervene sooner, plan for delivery, and potentially improve outcomes. The Voluson Expert 22 provides a full suite of progressive tools to help distinguish the tiniest structures with stunning clarity to detect patient answers faster.



## Detection



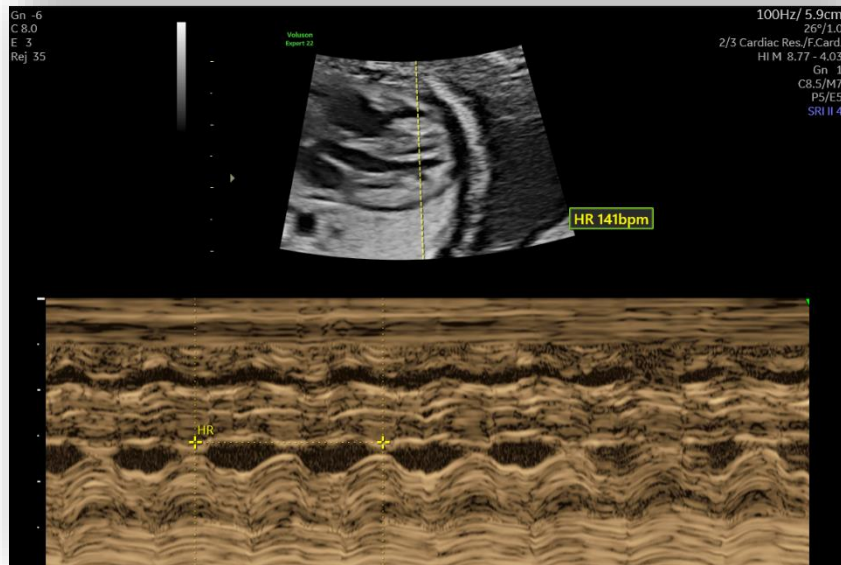
## Diagnosis



## Monitor

# Fetal Heart Detection

Utilize easy automation to help obtain and visualize the recommended fetal heart view for a complete exam.



## SonoFHR

Automation tool that automatically places calipers in M-mode or pulsed wave Doppler to quickly obtain the fetal heart rate

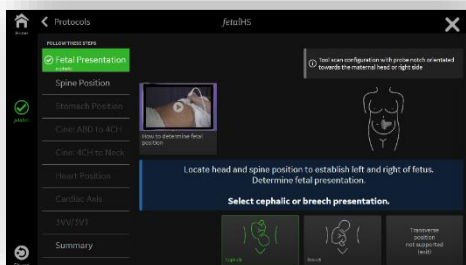


## fetalHS

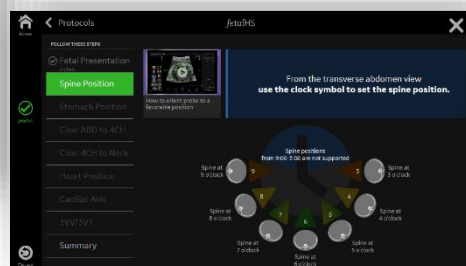
AI-guided workflow to support views of the 4-chamber, 3 vessel view, and heart angle measurement (cardiac axis) to help detect fetal heart anomalies

# fetalHS

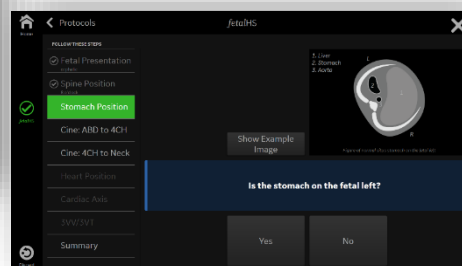
An AI-guided workflow with step-by-step instructions to help identify normal anatomy with a focus on Fetal Situs, 4-Chamber Heart, 3-Vessels and Trachea View, and Cardiac Axis. Includes instructional messages, reference images, and diagrams that represent normal anatomy. 4CH, 3VV/3VT, and Cardiac Axis automatically generated from user acquired cine loops.



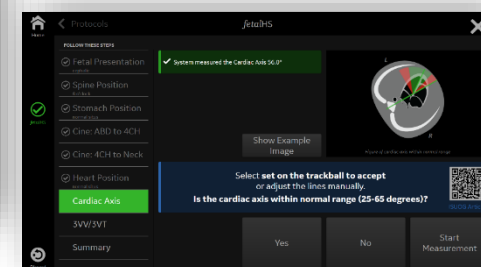
Fetal presentation - helps confirm proper situs of stomach and heart



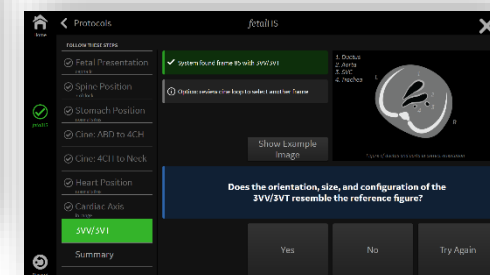
Fetal spine - helps to determine fetal position and situs



Fetal stomach - helps confirm stomach location is on fetal left



Stomach to 4-chamber sweep - From this sweep, fetalHS automatically locates and documents the 4-chamber view to confirm heart situs and measures a cardiac axis.

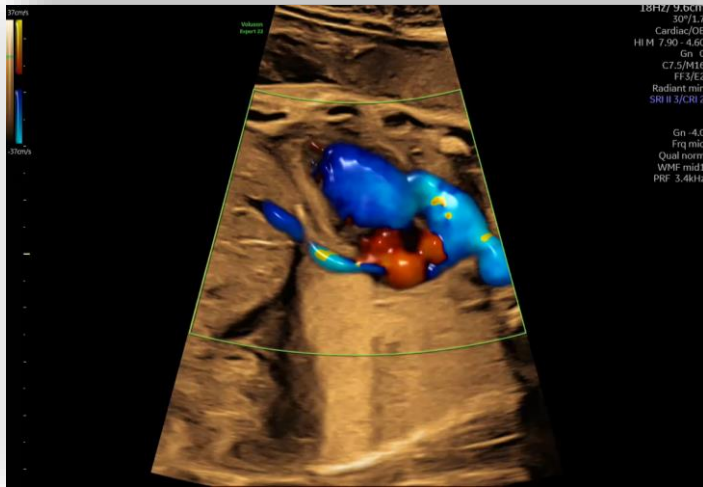


4-chamber to neck sweep - -from this sweep, fetalHS automatically finds and documents the 3 vessels and trachea view to confirm the size, alignment, and arrangement of the Pulmonary Artery, Aorta, SVC and Trachea to rule out anomalies



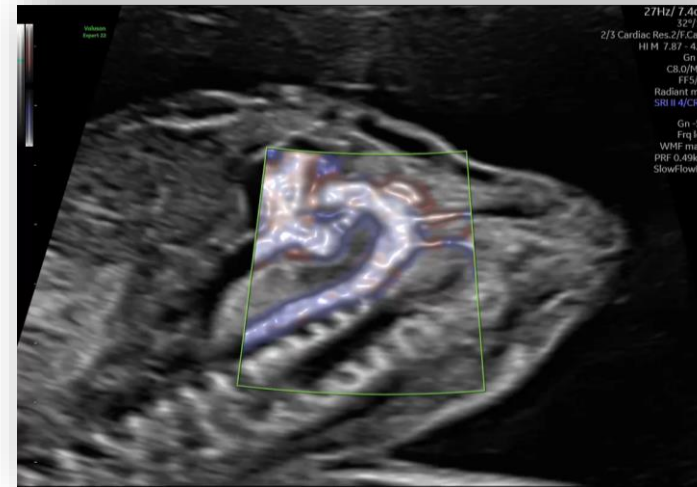
# Fetal Heart Diagnosis

Find answers to your challenging exams with cutting edge tools that help provide more clarity, more speed, and more flexibility



## Radiantflow

Delivers easy, fast visualization of blood flow using the amplitude of the color Doppler signal to enhance robustness and create a 3D-like appearance



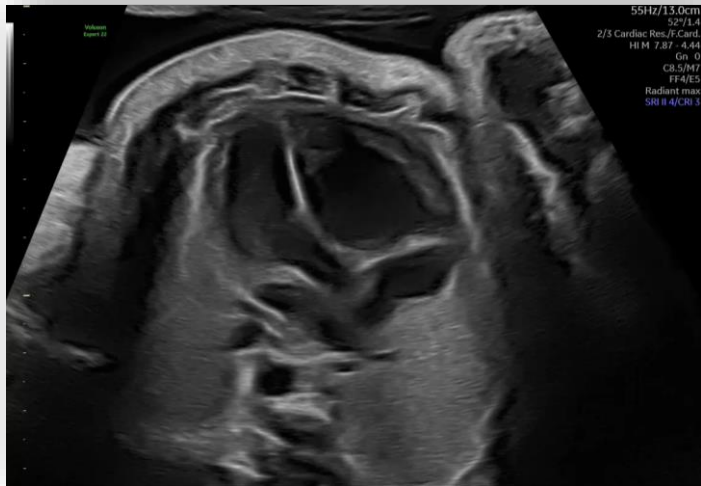
## Slowflow

Increase resolution and sensitivity in color for unprecedented clarity with Radiantflow, SlowflowHD, and Slowflow3D



# Fetal Heart Diagnosis

Find answers to your challenging exams with cutting edge tools that help provide more clarity, more speed, and more flexibility



## Radiant

Utilize Radiant for greater definition and clarity. Change the levels to enhance the 3D-like elevation effect for greater border visibility and sharpness.



## Graphicflow

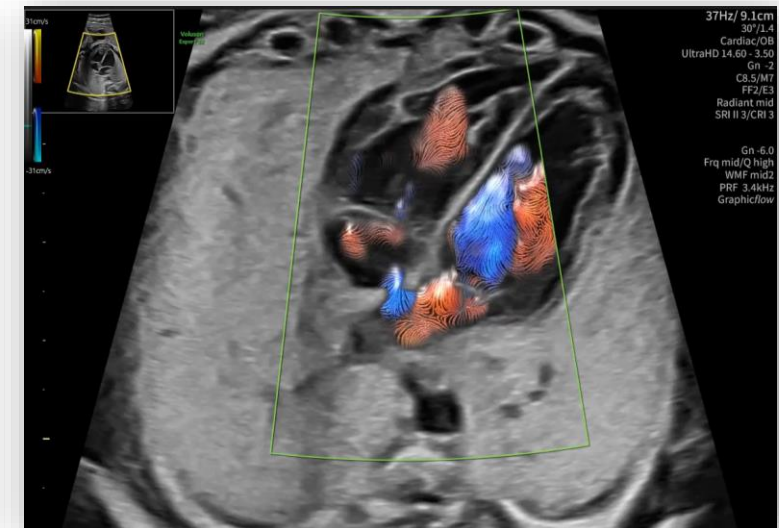
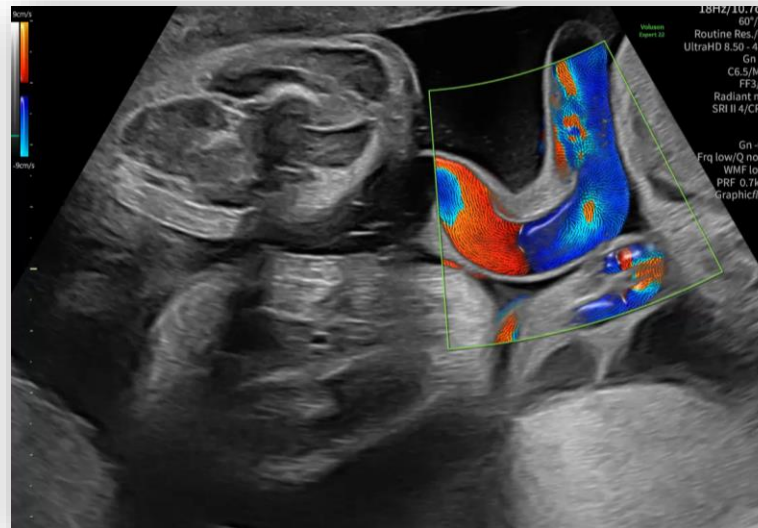
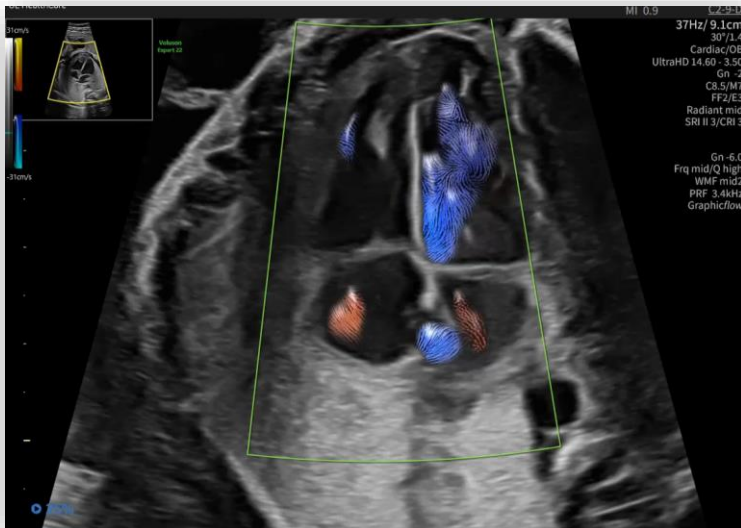
Utilize Graphicflow for a more precise visualization and understanding of hemodynamics to help determine normal and abnormal patterns of bloodflow

# Graphicflow



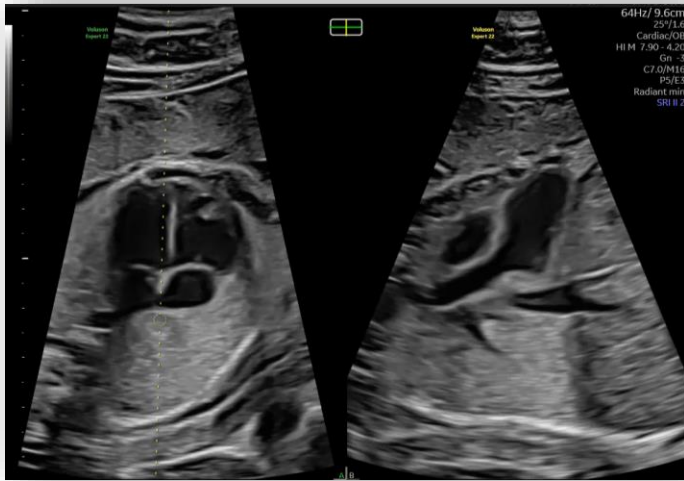
Provides a graphical representation of the trajectories of blood cells in real-time to visualize complex blood flow quickly and clearly, helping you to differentiate normal from abnormal hemodynamics

- High framerates with true velocity & angle direction (vs. color doppler)
- Available on eM6C, RM7C, and C2-9 probes within OB & fetal cardiac applications



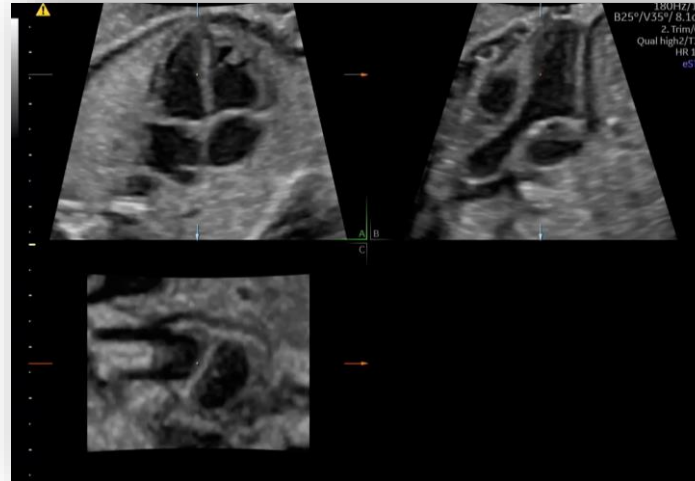
# Fetal Heart Diagnosis

Find answers to your challenging exams with cutting edge tools that help provide more clarity, more speed, and more flexibility



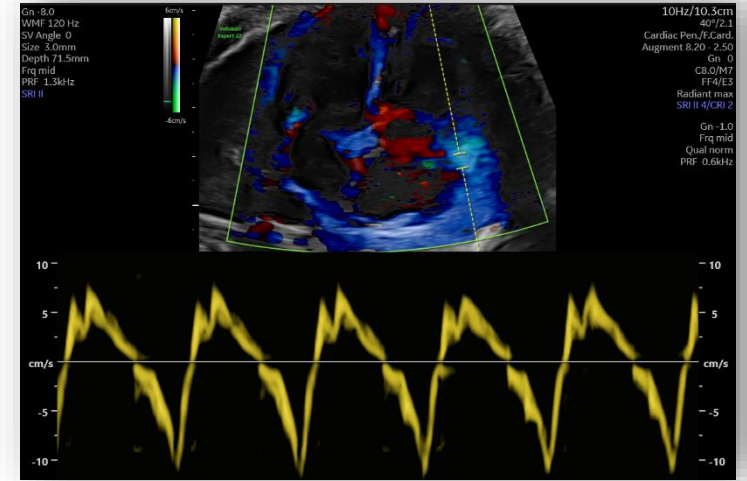
## eM6C Bi-Plane Imaging

Provides simultaneous display of high resolution, high frame rate images in two perpendicular planes. Technology available in 2D and color Doppler modes



## eM6C eSTIC

Enhances fetal cardiac exams with up to 75% reduction in acquisition time over traditional STIC and delivers improved resolution in the B and C planes\*



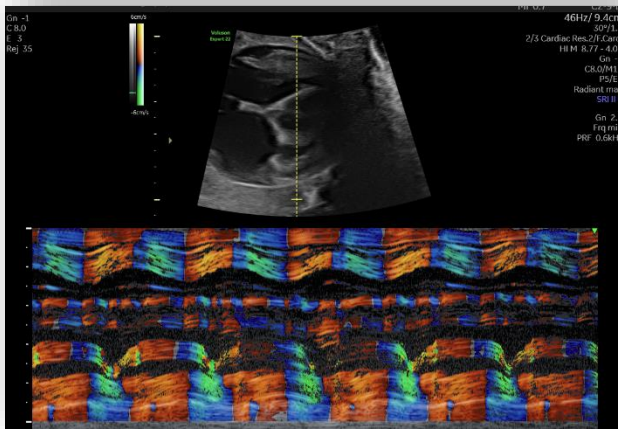
## Specialized Tools

Continuous Wave on curved probes, phased array probe for fetal and maternal cardiac imaging, and many more specialized tools

\* As compared to volume rates on e4D vs mechanical probes (RAB6) on Voluson E10 BT20

# Fetal Heart Monitoring

Not only anomalies can impact the fetal heart. Monitoring the Size, Shape, and Contractility of the fetal heart can provide additional data to help you make more informed decisions about maternal/fetal well-being and delivery planning.

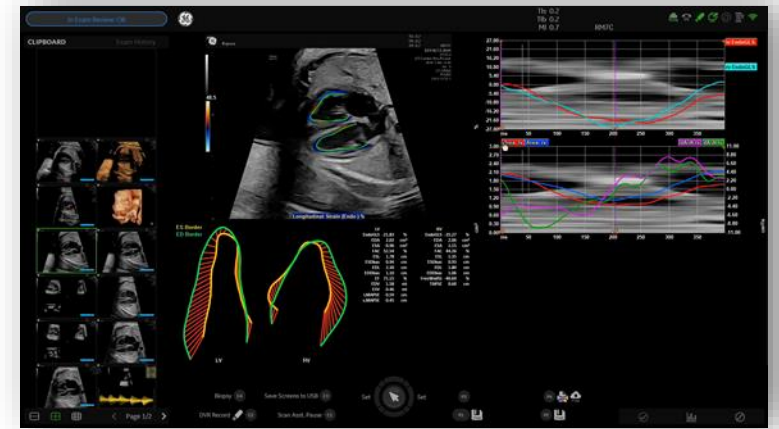


## Qualitative

- B-Mode
- Color Doppler
- Tissue Doppler

## Quantitative

- Spectral Tissue Doppler
- TEI Index
- PW and CW Doppler – Valves
- Ejection Fraction



## Tissue Doppler

Conduct a more comprehensive assessment of fetal cardiac function with Tissue Doppler for wall and valve motion analysis - use with pulsed wave for quantitative movement analysis

## Fetal Echo Measurement Package

Dedicated measurements to include Z-scores, Cardiovascular Profile Scores, and more

## *fetalHQ*

Conduct an easy and comprehensive evaluation of the size, shape and contractility of the fetal heart from the 4-chamber view using measurements based on 2D imaging and speckle tracking



# fetaHQ

Conduct an easy and comprehensive evaluation of the size, shape, and contractility of the fetal heart from the 4-chamber view using measurements based on 2D imaging and speckle tracking. *feta/HQ* contains an in-depth report including Z-scores and percentiles for each of the cardiac measurements. AutoFlip and Quiver features help simplify the fetal heart orientation and identification of the endocardial border and valve insertions

Report package supports both qualitative and quantitative results to offer insights based on your preference

## Qualitative

- Visual representation of ventricular contractility

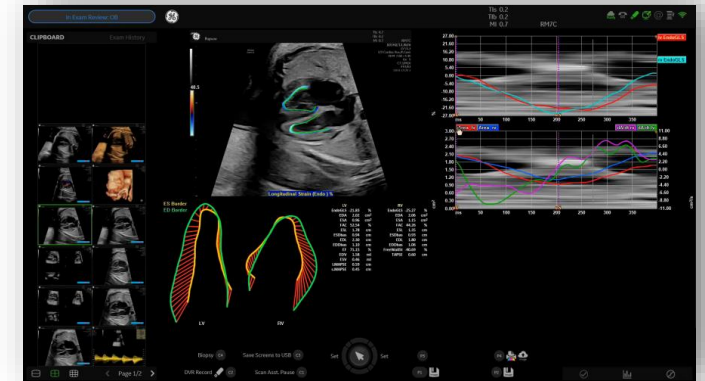


Global Sphericity Index (GSI) helps assess size and shape of the fetal heart

## Quantitative

GSI for assessment of fetal heart size and shape

- Ventricular shape and contractility (assessed with speckle tracking)
- Comprehensive measurements extracted such as ejection fraction, cardiac output, TAPSE/MAPSE, etc.

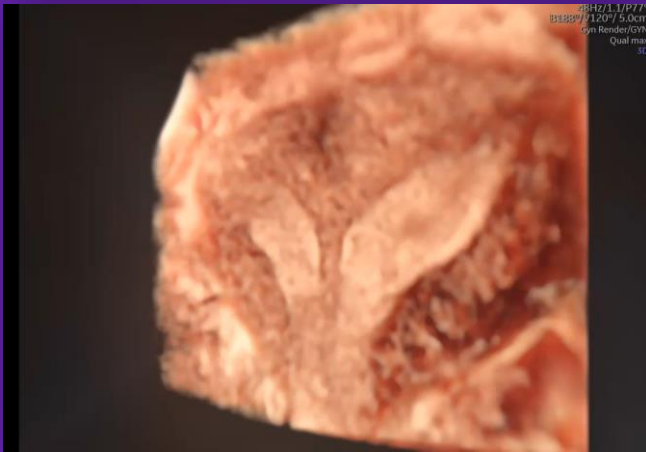


Fetal heart contractility outlined in an in-depth report

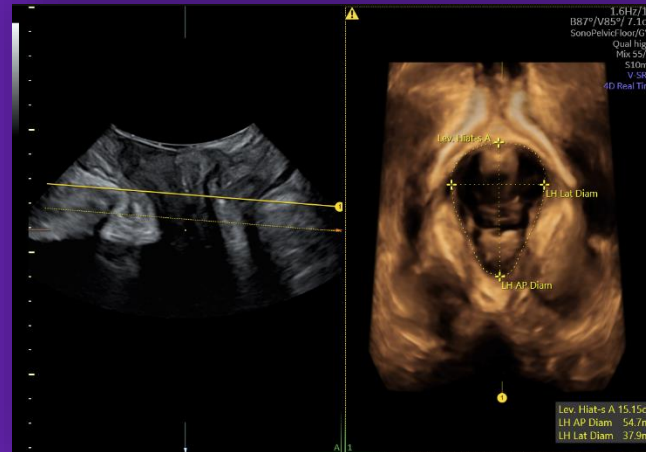


# Pelvic Health

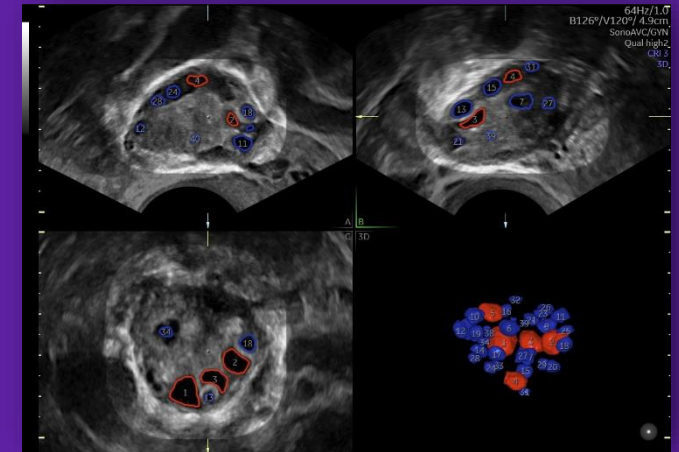
Symptoms such as pelvic pain, post-menopausal bleeding, genitourinary dysfunction, and infertility can be confusing and concerning for your patients. Exceptional imaging and advanced analysis tools can help provide clinical insights into gynecological health.



Gynecology



Pelvic Floor

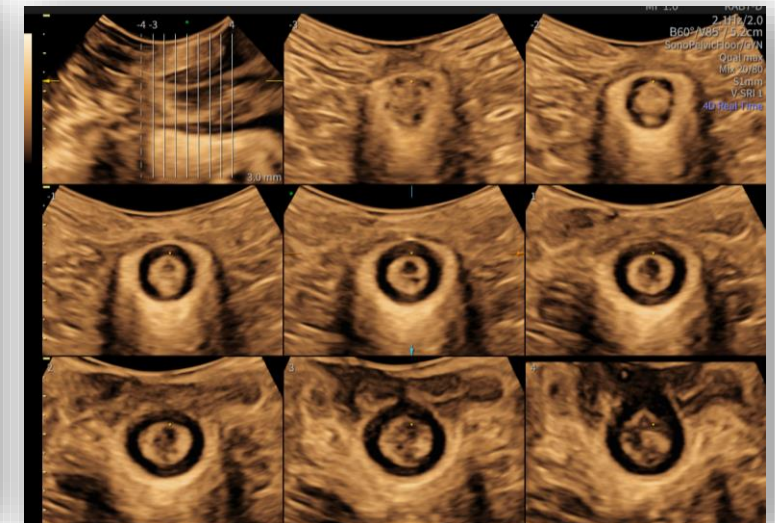
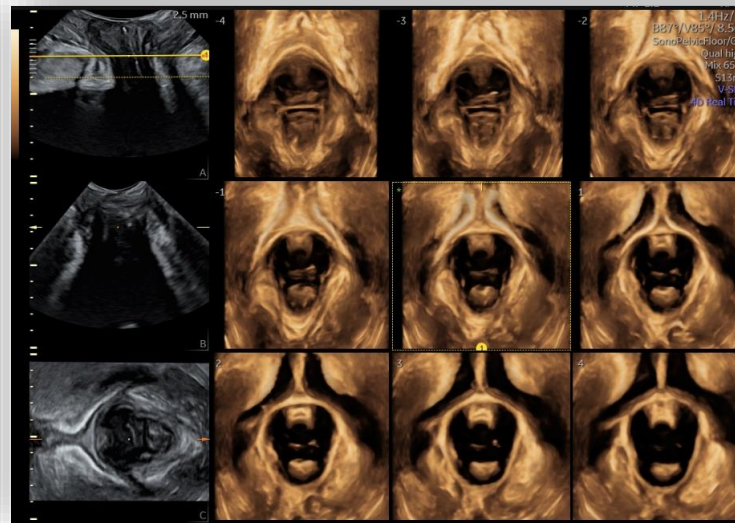
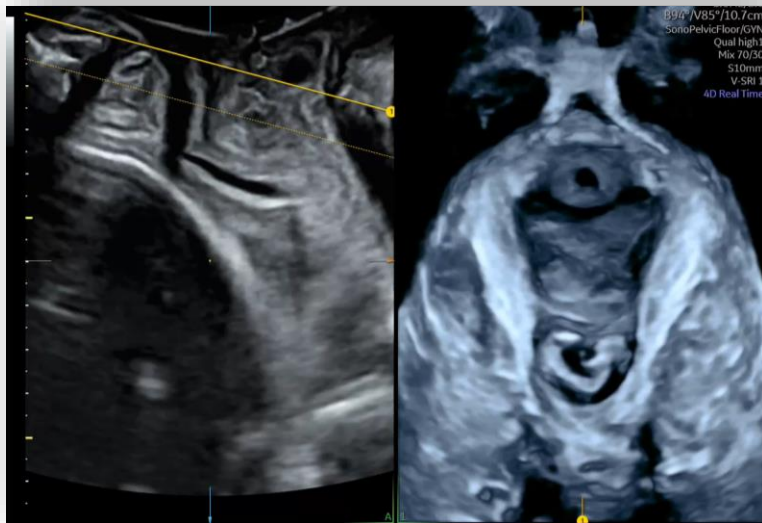


Reproductive Medicine

# SonoPelvicFloor<sup>3.0</sup>



- AI-based feature to help obtain pelvic floor measurements for more consistent and reproducible results
- Automates plane alignment & Live C-plane tracking to follow movement of muscles during exam
- Automated measurement of levator hiatus (AP, lateral and area/circumference) in 3 phases R/V/C
- **Now includes anal sphincter segmentation & alignment as well as valsalva detection**
- *TUI View* accessible in 3 phases
- Comprehensive pelvic floor measurement package
- Offers users a timesaving of 80% with the introduction of automated plane alignment and automated measurements<sup>1</sup>



<sup>1</sup> As compared to manual exam process

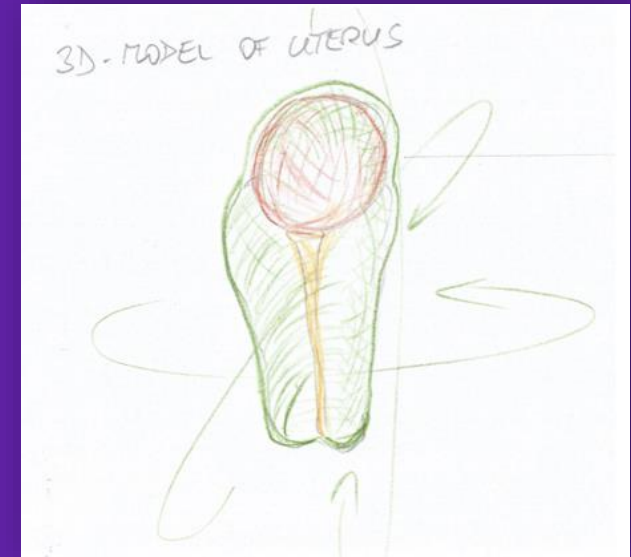


# Fibroid Assessment

## Clinical challenge:

- Fibroids are a common condition and frequently cause symptoms that require interventions
- Differentiation between sub-types in 2D can be challenging → focus on 3D
- Grading of fibroids provides standardization, defines management strategy, including surgical intervention
- Current documentation possibilities are time consuming – Manual drawings

<b>Leiomyoma Subclassification System</b>		
SM- Submucosal	0	Pedunculated Intracavitary
	1	<50% Intramural
	2	≥50% Intramural
O - Other	3	Contacts endometrium; 100% Intramural
	4	Intramural
	5	Subserosal ≥50% Intramural
	6	Subserosal <50% Intramural
	7	Subserosal Pedunculated
	8	Other (specify e.g. cervical, parasitic)
<b>Hybrid Leiomyomas (impact both endometrium and serosa)</b>		
Two numbers are listed separated by a hyphen. By convention, the first refers to the relationship with the endometrium while the second refers to the relationship to the serosa. One example is below.		
	2-5	Submucosal and subserosal, each with less than half the diameter in the endometrial and peritoneal cavities, respectively.

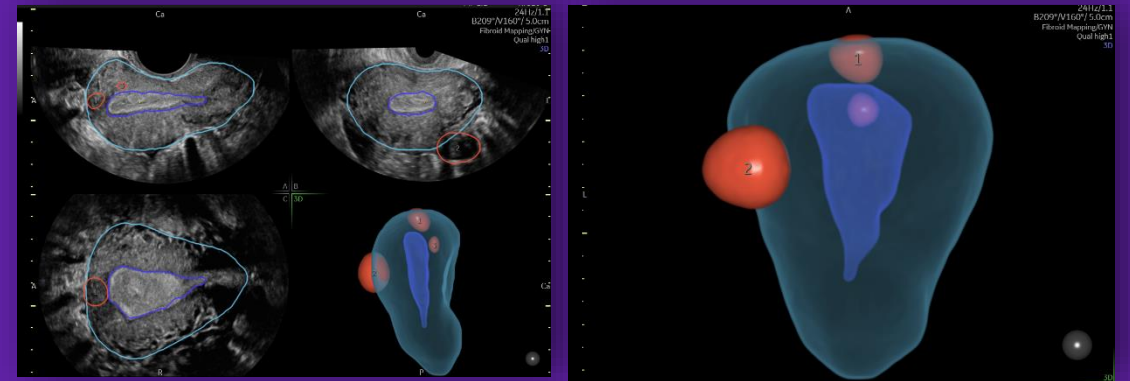
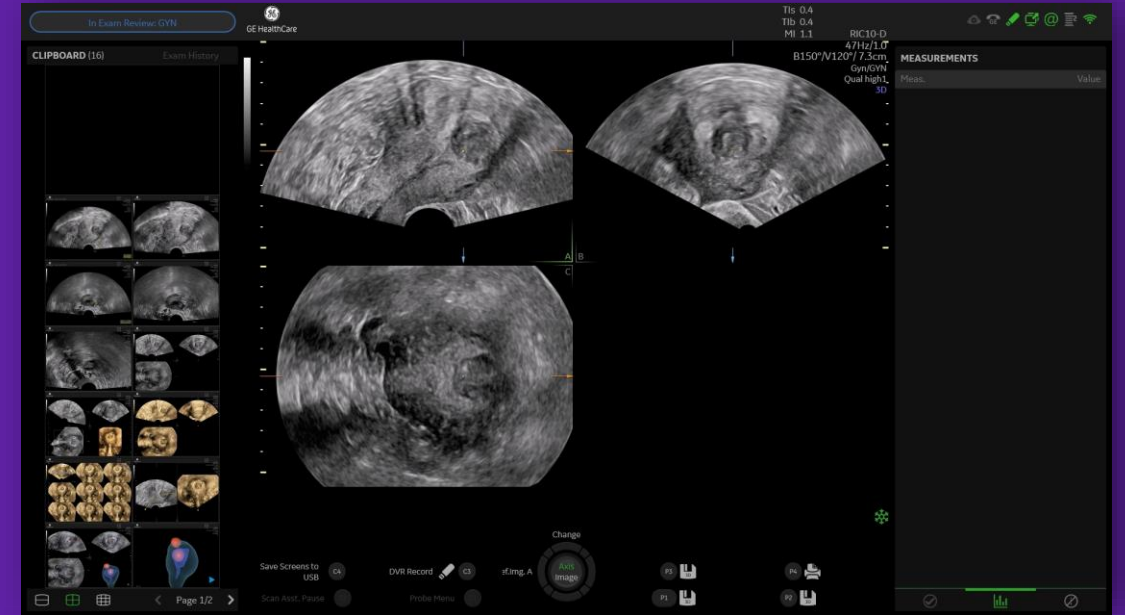




# Fibroid Mapping

## Voluson Solution:

- Efficient and standardized documentation – AI reporting tool, that maps fibroids in 3D with exact position in relationship to uterus & endometrium
- Classification according to FIGO for each fibroid
- Simplified communication with colleagues, referring physicians and patients



# Ovarian-Adnexal Reporting & Data System (O-RADS) Protocol



- O-RADS™ is an acronym for Ovarian-Adnexal Imaging-Reporting-Data System, a clinical support system for the standardized description and classification of ovarian/adnexal lesions.
- O-RADS protocol, available on the Voluson-Series, guides the user through the classification process according to O-RADS imaging terminology to provide patient management recommendations

**O-RADS™ US v2022 — Assessment Categories**

O-RADS Score	Risk Category (OTA Model)	Lesion Descriptions	Management
0	Normal Ovary (NA)	No ovarian lesion	Repeat US study in 12 months
1	Low Risk (<5%)	Simple cyst	Follow-up US in 12 months
2	Intermediate Risk (5-10%)	Unilocular, anechoic, non-septate cyst (simple cyst)	Follow-up US in 12 months
3	Low Risk (<5%)	Unilocular, anechoic, non-septate cyst (simple cyst)	Follow-up US in 12 months
4	Intermediate Risk (5-10%)	Unilocular, anechoic, non-septate cyst (simple cyst)	Follow-up US in 12 months
5	High Risk (>10%)	Unilocular, anechoic, non-septate cyst (simple cyst)	Follow-up US in 12 months

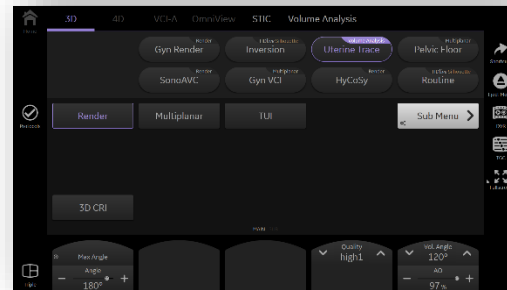
**O-RADS™ US v2022 — Classic Benign Lesions**

Lesion	Descriptions and Definitions	Management
Typical Hemorrhagic Cyst	Unilocular cyst, no internal vascularity, echogenic debris, no septations	Follow-up US in 12 months
Typical Dermoid Cyst	Cystic lesion with echogenic debris, no internal vascularity, echogenic debris, no septations	Follow-up US in 12 months
Typical Endometrioma	Cystic lesion with echogenic debris, no internal vascularity, echogenic debris, no septations	Follow-up US in 12 months
Typical Peritoneal Cyst	Simple cyst separate from the ovary	Follow-up US in 12 months
Typical Peritoneal Inclusion Cyst	Fluid collection with every at margin or suspended within that conforms to adjacent pelvic organs	Follow-up US in 12 months
Typical Hydronephrosis	Anechoic, fluid-filled tubular structure	Follow-up US in 12 months

# Uterine Trace

Taking the effort out of 3D with Uterine Trace – In 3 simple steps, obtain the coronal plane of the uterus. Links directly to Uterine Classification pictograms for easy documentation of uterine shape.

Select Uterine Trace Preset  
in 3D pre-mode



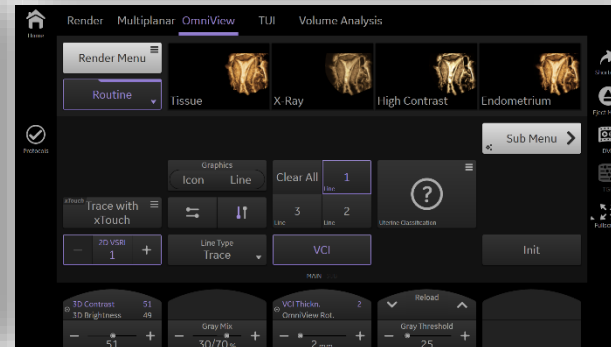
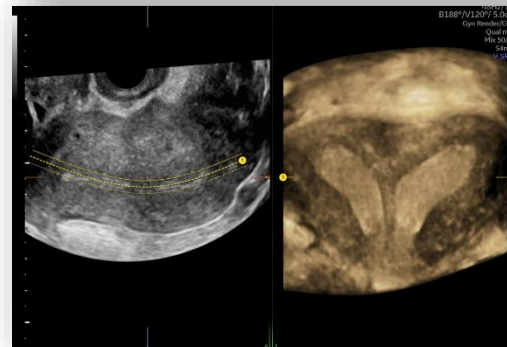
Trace endometrium on touch panel.  
See guide area on main screen  
3D sweep started automatically



Adjust OmniView line if needed



Classify uterine cavity according to ESHRE  
or ASRM



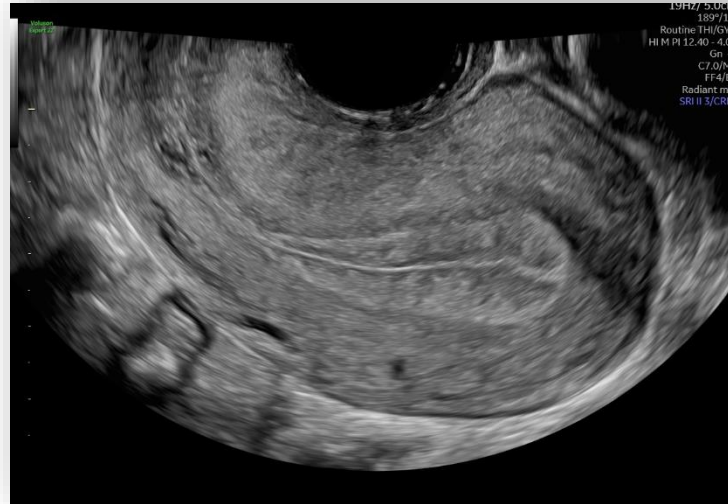
# Pelvic Health

Exceptional imaging and advanced analysis tools can help provide clinical insights into gynecological health



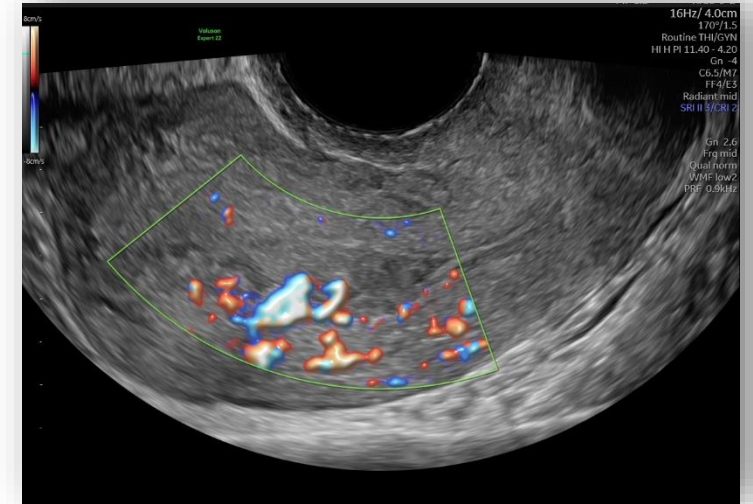
## UltraHD

Obtain highly detailed images with increased axial and lateral resolution for fine details



## Radiant

Utilize Radiant for greater definition and clarity. Change the levels to enhance the 3D-like elevation effect for greater border visibility and sharpness.



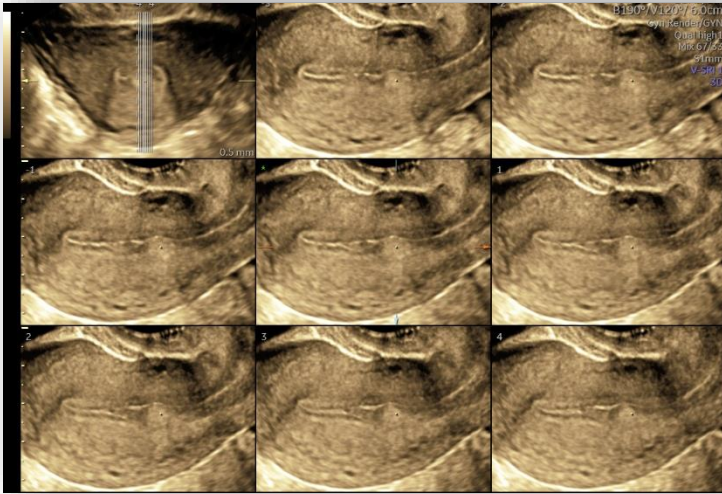
## Color Imaging

Increase resolution and sensitivity in color for unprecedented clarity with Radiantflow, SlowflowHD, and Slowflow3D



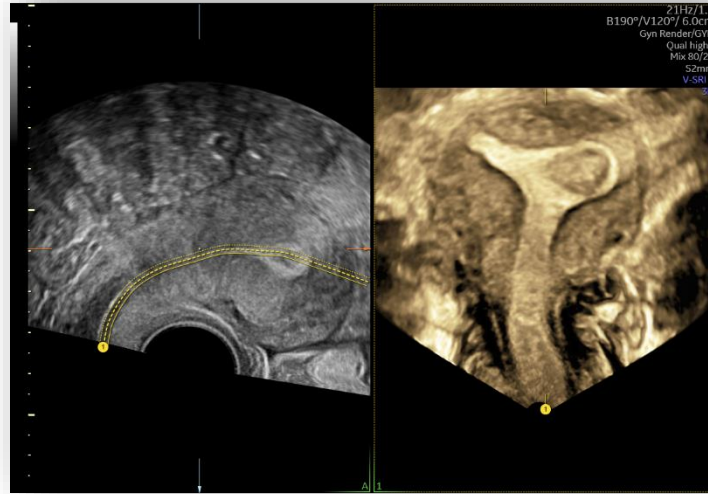
# Pelvic Health

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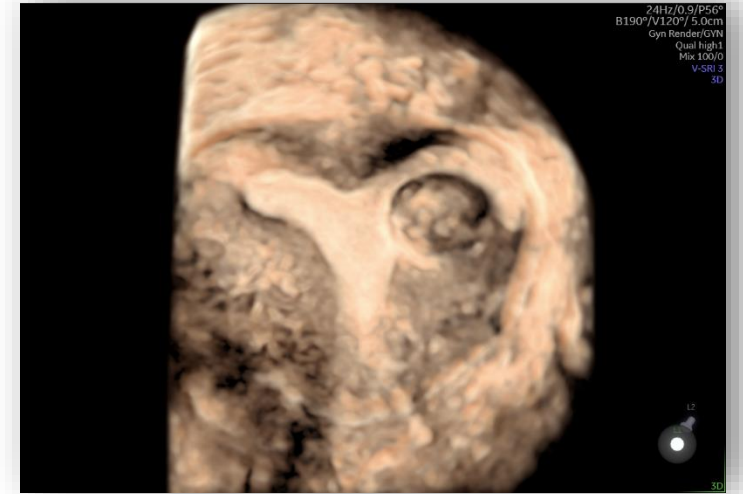
## Tomographic Ultrasound Imaging (TUI)

Simplifies analysis and documentation of dynamic studies with a simultaneous view of multiple slices of a volume data set



## Advanced VCI with OmniView

Obtain any plane from a 3D or 4D volume by simply drawing a line, curve, poly-line, or trace through a structure. This valuable technology enables views of even irregularly shaped structures not attainable in 2D imaging



## HDlive Studio+

Illuminate anatomy and surrounding fluid with up to 3 independent light sources with various intensity and hues – Perspective Rendering and additional silhouette controls to aid with making a confident diagnosis

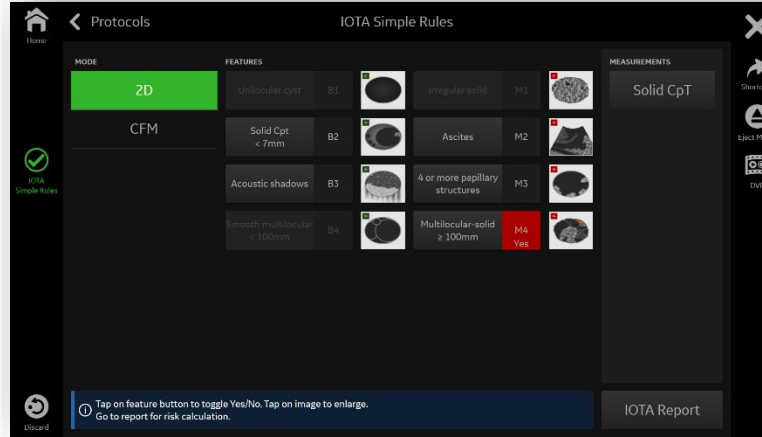
# Pelvic Health

Exceptional imaging and advanced analysis tools can help provide clinical insights into gynecological health



## Uterine Classifications

Simplify identification and reporting of uterine abnormalities with **Uterine Classifications** based on ESHRE, ESGE, or ASRM guidelines



## IOTA

Ovarian cancer risk estimate based on **IOTA (International Ovarian Tumor Analysis)**

Simple Rules  
IOTA LR2  
IOTA ADNEX

*First ultrasound supplier to offer all 3 IOTA models validated and approved by the IOTA group*



## IETA/IDEA

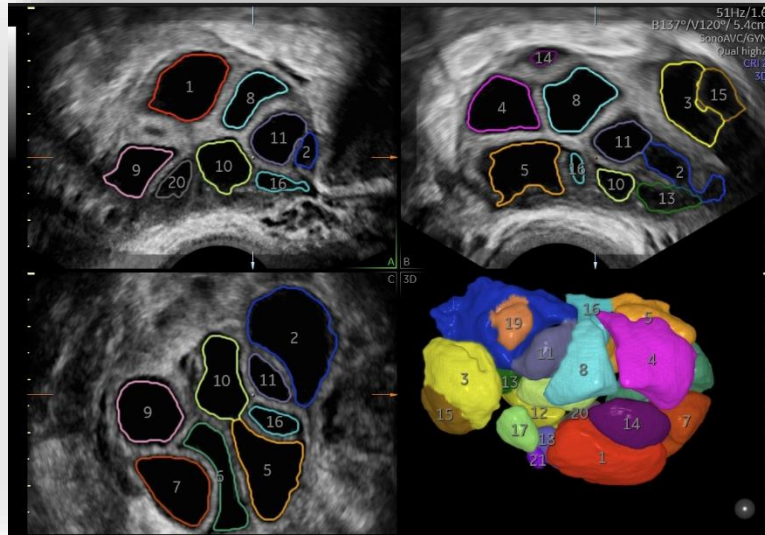
Evaluate risk and assign scoring of the endometrial lining based on **IETA (International Endometrial Tumor Analysis)**

**IDEA assessment tool** helps guide through the protocol for quick and comprehensive evaluation of endometriosis and deep infiltrating endometriosis (DIE). Can be used with and without Scan Assistant

# Pelvic Health

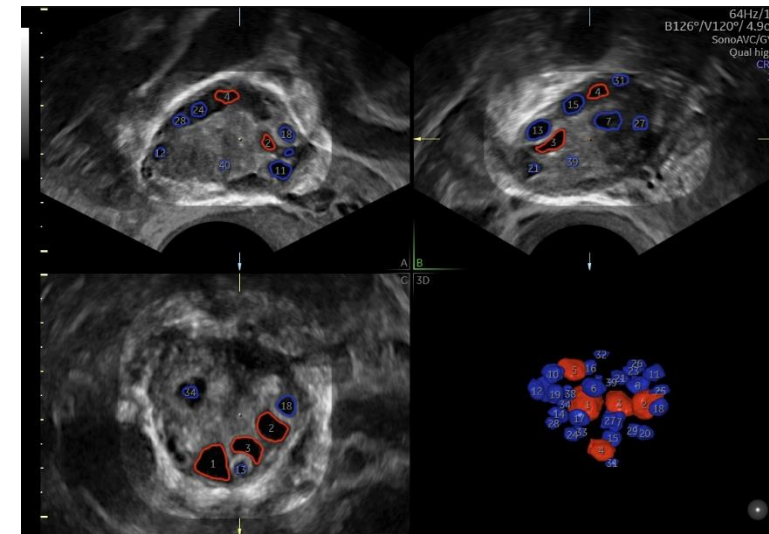


Exceptional imaging and advanced analysis tools can help provide clinical insights into gynecological health



## SonoAVC™*follicle*<sup>2.0</sup>

(Sonography-based Automated Volume Count follicle) – Automatically calculates the number, dimensions, and volume of hypoechoic structures in a volume sweep to help monitor patient follicles faster. **Incorporation of AI helps improve accuracy in follicle detection.**



## SonoAVCantral<sup>2.0</sup>

More accurately evaluate ovarian reserve and increase success for Assisted Reproductive Medicine treatments

# Achieve the Unachievable

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Workflow Efficiency



# Achieve the Unachievable - Workflow Efficiency

Modern, yet familiar, the Voluson Expert 22 is our most intuitive and customizable ultra-premium ultrasound. Designed with a new generation of Artificial Intelligence and automation tools, it helps increase exam speed and accuracy to streamline your day. Just think of the potential.

## Design



Sleek and modern with advanced ergonomics and familiar user interface.

## Artificial Intelligence & Automation



Designed with a new generation of Artificial Intelligence to help increase exam speed and accuracy to streamline your day.

## Personalization & Customization



Personalize the user interface for your unique preferences and select system colors to suit your mood

# A Modern Classic Design

Incorporating the same intuitive functionality, Voluson's **familiar workflow** is simple and seamless

Work comfortably and see finer details with ease – 23.8" **High-definition ultrasound (HDU)** display offer 3 imaging sizes

**Probe ports** conveniently located for less reach and easier access

**Gel warmer** keeping gel at a comfortable temperature



# Personalization & Customization

Customize the **user interface** >23M options

- Large touch panel (individual button arrangements)
- Tailored hard keys



Personalize **colors & lights** >4000 combinations

- Trackball colors
- User interface illumination
- Ambient trolley lighting
- Touch panel color scheme

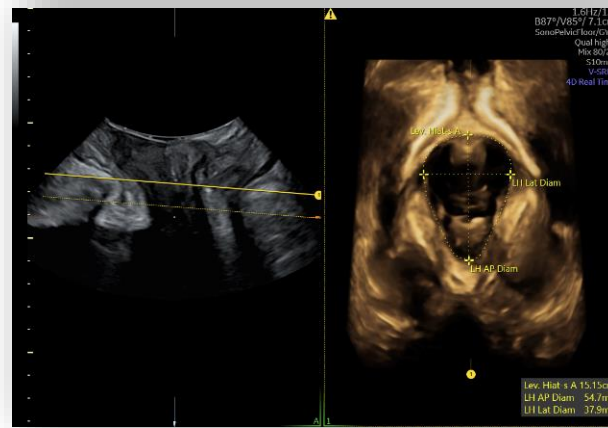


# Achieve the Unachievable

Artificial Intelligence (AI) has become part of our everyday lives – reducing tasks and simplifying our daily routines. It is also beginning to play an important role in women's health – helping to improve the delivery of care and efficiency of ultrasound exams.



**SonoLyst**



**SonoPelvicFloor<sup>2.0</sup>**



**fetalHS**

The Voluson™ Expert 22 contains AI tools to help you be more efficient, allowing you to reduce repetitive tasks and focus on your patients and practice needs.



# The SonoLyst Collection

A virtual on-board assistant utilizing the power of AI to help simplify exams. This scalable AI solution can be customized based on exam protocols and user experience level through image recognition and automated annotations and measurements. SonoLyst provides staff education and exam quality assurance adding exam efficiency and consistency to the practice.

There are 3 efficiency aspects to this feature:

- SonoLystIR (Image Recognition) - Simply scan, then freeze
- SonoLystX - Build and refine your skills
- SonoLyst*live* - No freezing, no annotating, no storing - taking IR to next level by capturing images as you scan, in real-time

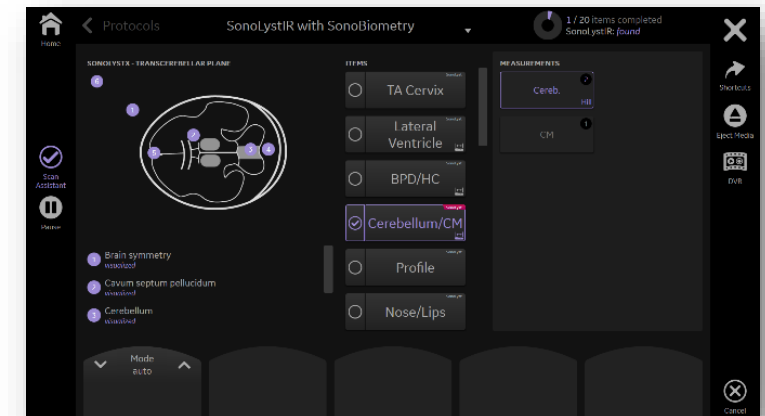


# SonoLyst IR/X

***Reduce routine second trimester exam time by 40% by utilizing SonoLyst<sup>3</sup>***

**SonoLystIR:** Simply scan, then freeze and SonoLystIR (Image Recognition) does the rest. Using ISUOG practice guidelines for performance of the routine mid-trimester fetal ultrasound scan, SonoLystIR automatically detects the 21 recommended views. It identifies anatomy then selects all applicable annotations and measurements. Confirm, and data is entered into the Scan Assistant checklist and report, enhancing workflow and reducing variability between operators for improved consistency.

**SonoLystX:** Build and refine your skills with SonoLystX, your virtual, on-board ultrasound assistant. Using AI, the system compares the image or view acquired to standard criteria accepted by experts to ensure it meets clinical standards. SonoLystX can help enhance accuracy and quality with anatomy diagrams plus the ability to insert image examples. Ideal for teaching and training, progress can be monitored for quality assurance to ensure the highest quality imaging standards and consistency.



# SonoLyst*live*

No freezing, no annotating, no storing.

Take image recognition to the next level by capturing images as you scan, in real-time. Let the tool measure, annotate, and store images, checking them off the list of required views. SonoLyst*live* helps reduce keystrokes and exam time while helping ensure more complete exams.

SonoLyst*live* is available:

- **In the first trimester to easily perform a detailed 11–13 weeks scan**
- For 2nd trimester anatomical evaluation of the fetus, reduce exam time up to 30% <sup>1</sup>

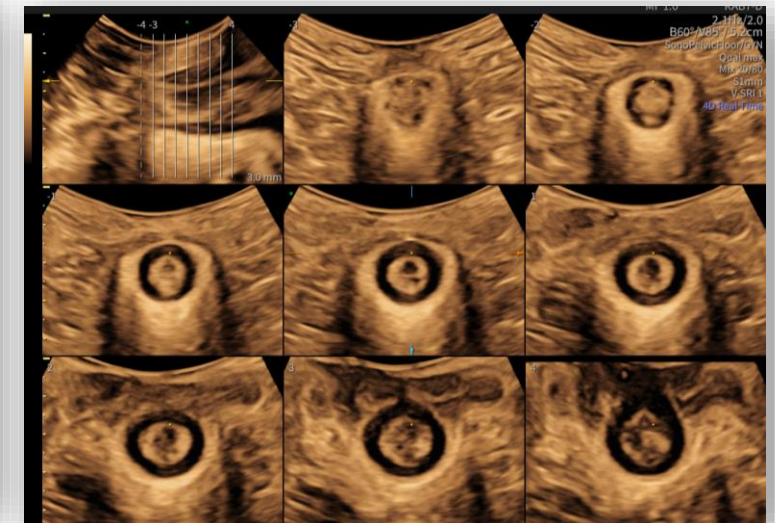
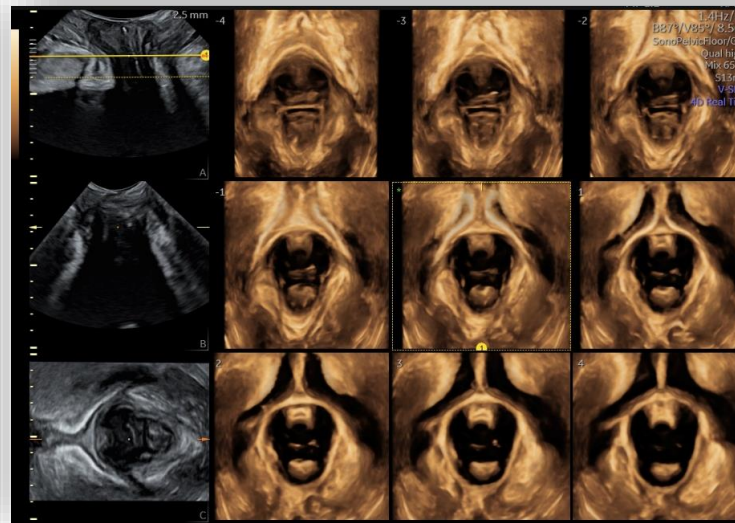
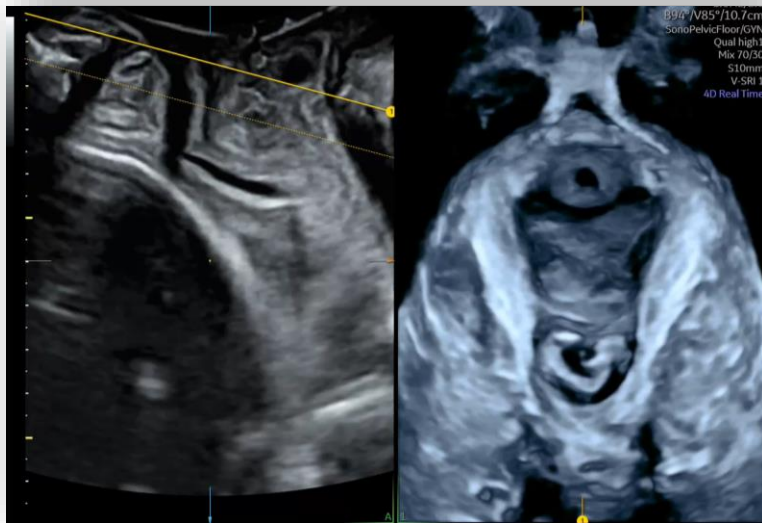
<sup>1</sup> Internal study of mid-trimester anatomy scans using SonoLyst*live* versus manual exam, not including image review process



# SonoPelvicFloor<sup>3.0</sup>



- AI-based feature to help obtain pelvic floor measurements for more consistent and reproducible results
- Automates plane alignment & Live C-plane tracking to follow movement of muscles during exam
- Automated measurement of levator hiatus (AP, lateral and area/circumference) in 3 phases R/V/C
- **Now includes anal sphincter segmentation & alignment as well as valsalva detection**
- *TUI View* accessible in 3 phases
- Comprehensive pelvic floor measurement package
- Offers users a timesaving of 80% with the introduction of automated plane alignment and automated measurements<sup>1</sup>



<sup>1</sup> As compared to manual exam process



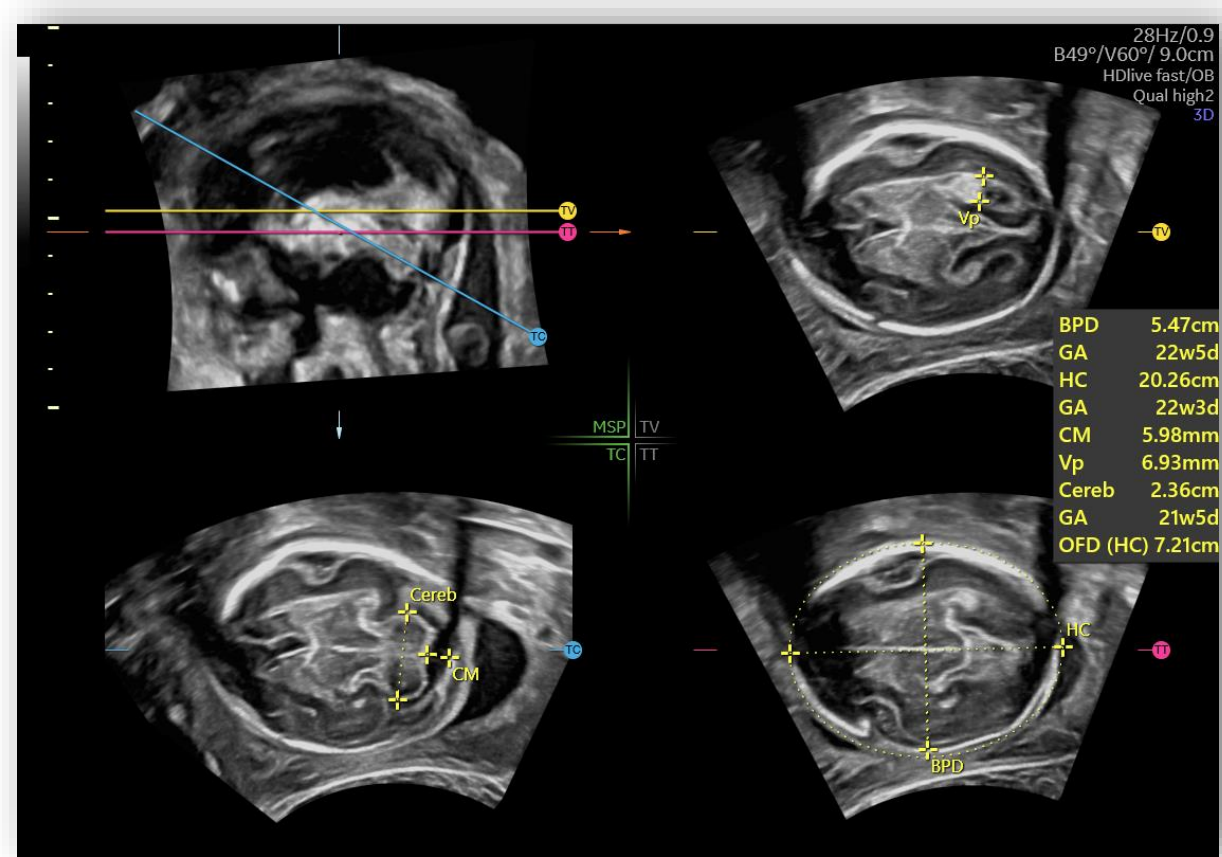
# fetaHS

An AI-based guided workflow with step-by-step instructions to help identify normal anatomy with a focus on Fetal Situs, 4-Chamber Heart, 3-Vessels and Trachea View, and Cardiac Axis. Includes instructional messages, reference images, and diagrams that represent normal anatomy. 4CH, 3VV/3VT and Cardiac Axis automatically generated from user acquired cine loops.



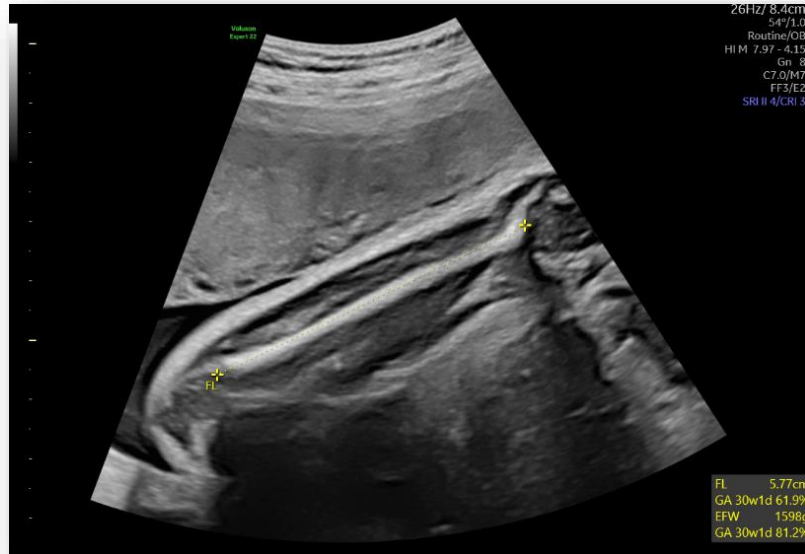
# SonoCNS

AI tool that supports consistent measurements and helps drive workflow efficiency by helping align and display recommended views and measurements of the fetal brain from a 3D volume



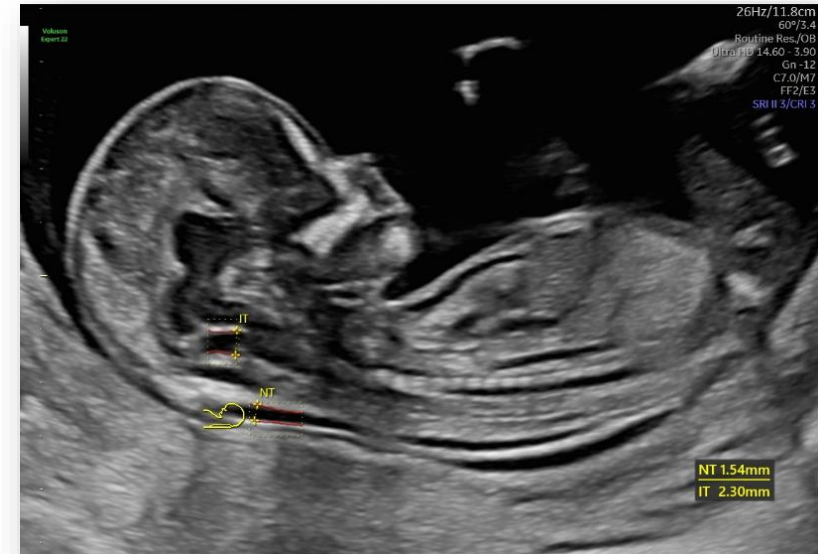
# Achieve the Unachievable

Remove obstacles and drive productivity to transform your day with the Voluson Expert 22 Sono-Automation tools - so you can keep pushing what is possible.



## SonoBiometry

Helps reduce keystrokes and improves exam time with automatic caliper placement and fetal measurements of bi-parietal diameter (BPD), head circumference (HC), abdominal circumference (AC), femur length (FL), humerus length (HL), lateral ventricle, cerebellum, and cisterna magna.

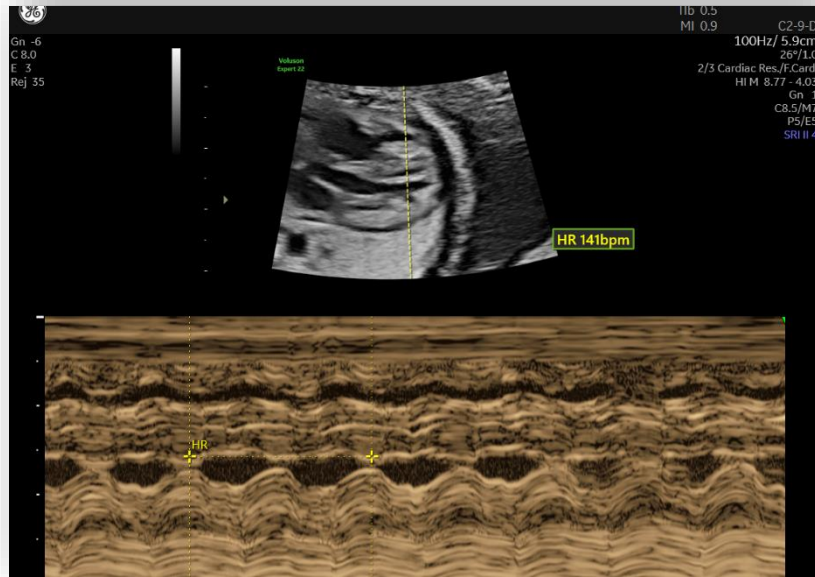


## SonoNT/SonoIT

(Sonography-based Nuchal /Intracranial Translucency)  
Semi-automatic, standardized measurements of nuchal and intracranial translucencies

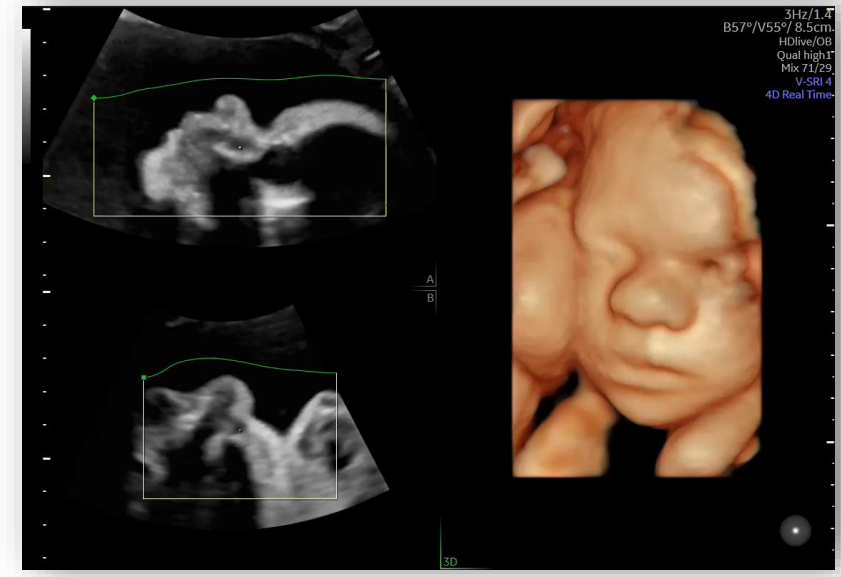
# Achieve the Unachievable

Remove obstacles and drive productivity to transform your day with the Voluson Expert 22 Sono-Automation tools - so you can keep pushing what is possible.



## SonoFHR

Automation tool that automatically places calipers in M-mode or pulsed wave Doppler to quickly obtain the fetal heart rate



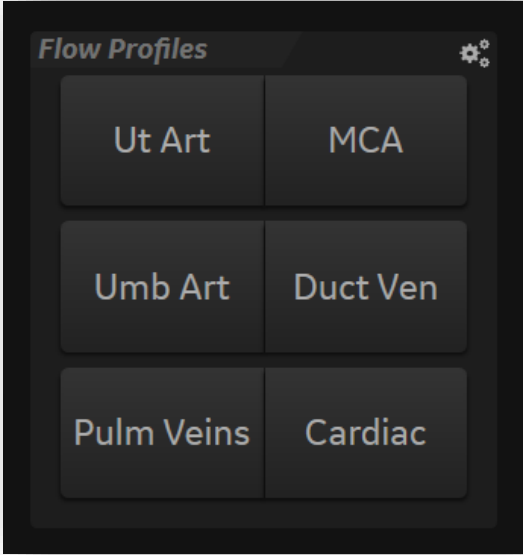
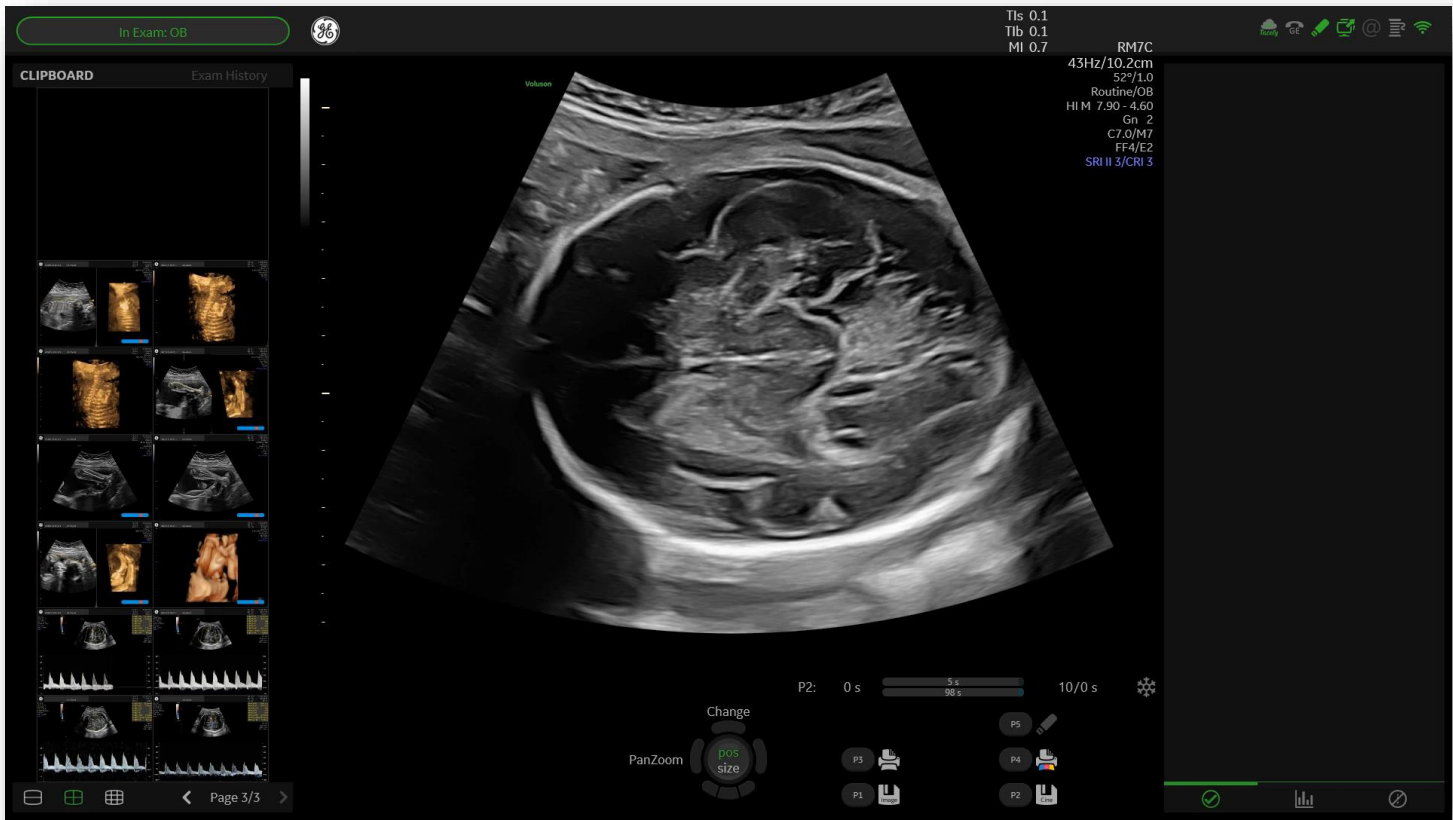
## SonoRenderlive

Simplifies volume rendering by automating render line placement in 3D and 4D imaging



# Flow Profiles

Predefined and optimized preset tool for color and pulsed wave Doppler modes for more efficient imaging

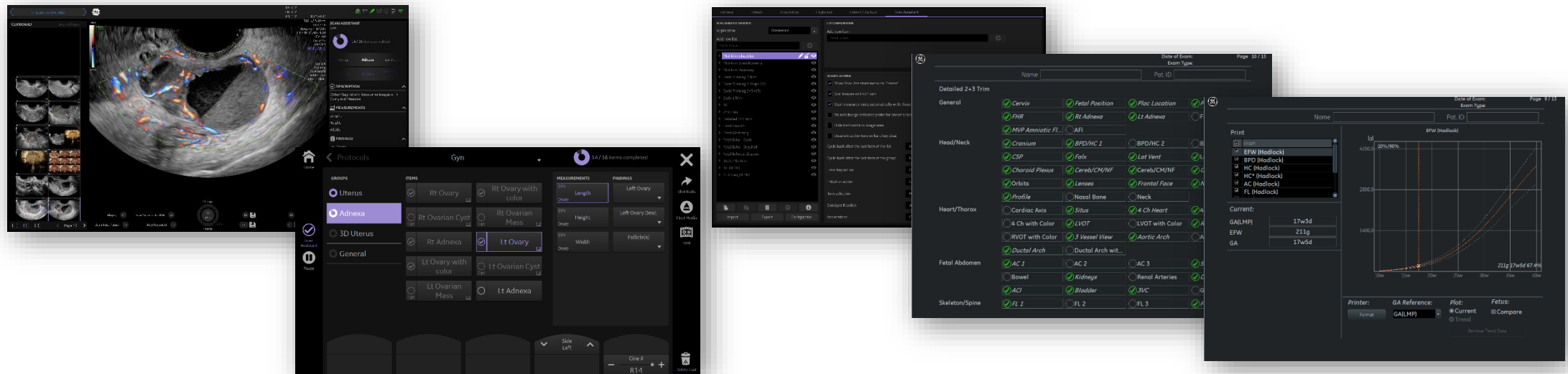


# Scan Assistant

Balance imaging schedules while increasing patient satisfaction with complete exams and less callbacks

These flexible, customizable exam protocols help reduce time required to conduct and document results by guiding you through an exam more efficiently, aiding in annotation, measuring, reporting, and transferring data to an image management system or PACS based system on your order sequence and output requirements

- Status monitor onscreen
- Anatomy page completion during exam
- Comparison Image option
- Improved configuration page
- Image shuffling
- Link probes & presets to items
- Improved efficiency with Scan Assistant offline configurator



Patient scan time reduced by as much as 45% with Scan Assistant 2.0 and ViewPoint, saving an average of 7 min x exam\*

\*Reference White Paper – *Enhanced Efficiency with Customized Ultrasound Exam Protocols and Quality Reporting* - PB/GYN specialists of Palm Beach – USA

# Expect the Unexpected

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Support Excellence

# Exceed your Expectations

Leverage our entire ecosystem of support for peace of mind – now and in the future. Combined with a flexible service program. Experience more. More services. More support. More future-focused solutions. Finally, a partnership that won't leave you wanting more.

## Education & Training



Take advantage of **clinical and technical education, along with training support**, to help you provide the highest quality of care and achieve operational excellence.

## Collaboration



**Digital Expert Connect** offers real-time collaboration opportunities where clinicians can easily consult with collaborators within their network anytime, anywhere.

## Maintenance, Repair & Remote Support Services



Manage your total cost of ownership while improving system uptime with maintenance contracts and features like **OnWatch proactive monitoring with InSite™ connectivity**.



# Exceed your Expectations

Leverage our entire ecosystem of support for peace of mind – now and in the future. Combined with a flexible service program. Experience more. More services. More support. More future-focused solutions. Finally, a partnership that won't leave you wanting more.

## Updates, Upgrades, and Device Protection



Download critical Windows® patches, security updates and Voluson extension release software at your convenience with **eDelivery\***. Protect your ultrasound system from cyber-attacks with Voluson's comprehensive **SonoDefense** solution.

## Probe Repair and Hygiene Solutions



A continuum of support for your probes, including disinfection and hygiene solutions. Stay a step ahead with **Probe Check**, which assesses the health of your probes and can alert you to potential issues.

## Performance Optimization Solutions



Maximize the performance, workflow and utilization of your Voluson ultrasound system using Imaging Insights, **iCenter Performance Management** tools and other digital solutions.

# Exceed your Expectations

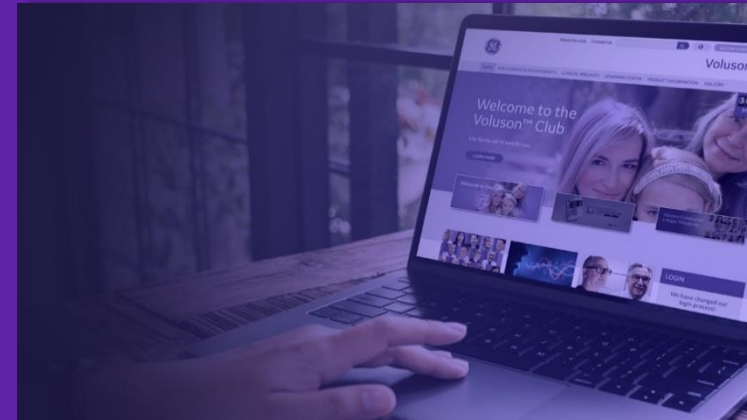
Leverage our entire ecosystem of support for peace of mind – now and in the future. Combined with a flexible service program. Experience more. More services. More support. More future-focused solutions. Finally, a partnership that won't leave you wanting more.

## Centralized Device Management



AVURI is a cloud-based solution that lets you manage devices remotely from one central location. Monitor devices across your fleet with the ability to view, back up, and deploy device configurations, all without leaving your desk.\*

## Voluson Club



Like family, we are here for you. The only ultrasound community dedicated to the education and collaboration of women's health practitioners to help expand your expertise and your practice.

# Exceed your Expectations

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## ViewPoint™ 6



ViewPoint 6 is a dedicated ultrasound reporting and image management solution with enhanced features to help improve workflow.

## 4D View



Optimize, manipulate and analyze volume ultrasound data offline – when and where you need it. 4DView extends the capabilities of your Voluson and gives you the flexibility to free up your ultrasound machine for additional patients.

# Exceed your Expectations

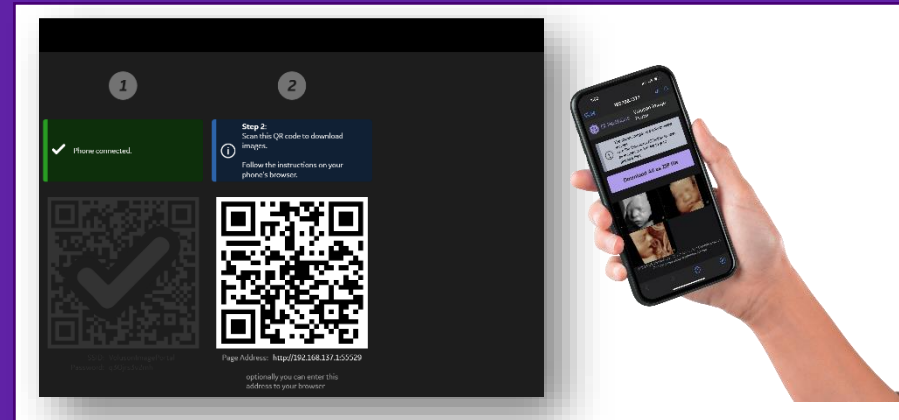
Leverage our entire ecosystem of support for peace of mind – now and in the future. Combined with a flexible service program,. Experience more. More services. More support. More future-focused solutions. Finally, a partnership that won't leave you wanting more.

## Email



Send selected images directly to patients' email from the Voluson ultrasound system

## Voluson Image Portal



Patient scans QR code to collect selected images to their mobile phone via the Voluson Image Portal.





# You Set the Limits

Voluson Expert 22



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August 2024

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