

PHILIPS

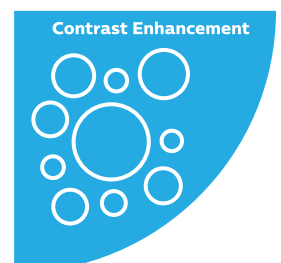
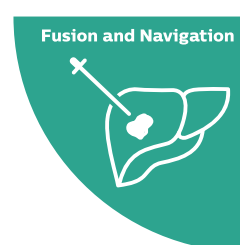
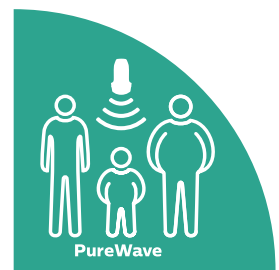
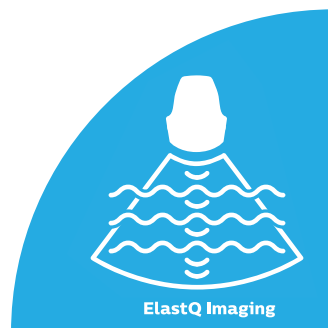
Ultrasound

EPIQ Evolution 3.0

The **ultimate ultrasound solution** for liver assessment

EPIQ is our new direction for premium ultrasound, featuring an exceptional level of clinical performance, workflow, and advanced features to meet the challenges of today's most demanding practices.

Now EPIQ with Evolution 3.0 brings a suite of features and capabilities that offers a comprehensive ultrasound solution for liver disease assessment, treatment, and monitoring.



Exceptional liver imaging – even on challenging patients

PureWave transducer technology

PureWave crystal technology represents the biggest breakthrough in piezoelectric transducer material in 40 years. The pure, uniform crystals of PureWave are 85% more efficient than conventional piezoelectric material, resulting in exceptional performance. This technology is integral in our C5-1, C9-2, and X6-1 transducers, allowing for improved penetration in difficult patients while maintaining excellent detail resolution, Doppler sensitivity, and CEUS performance.

New MaxVue display technology

With a touch of a button, MaxVue brings full high-definition display quality to ultrasound imaging. Now you can experience extraordinary visualization of liver anatomy with 1,179,648 more image pixels when compared to the standard 4:3 display format mode. MaxVue enhances ultrasound viewing during interventional procedures and provides 38% more viewing area to optimize the display of dual, side-by-side, biplane, and scrolling imaging modes.

Over **1 million more** pixels per image

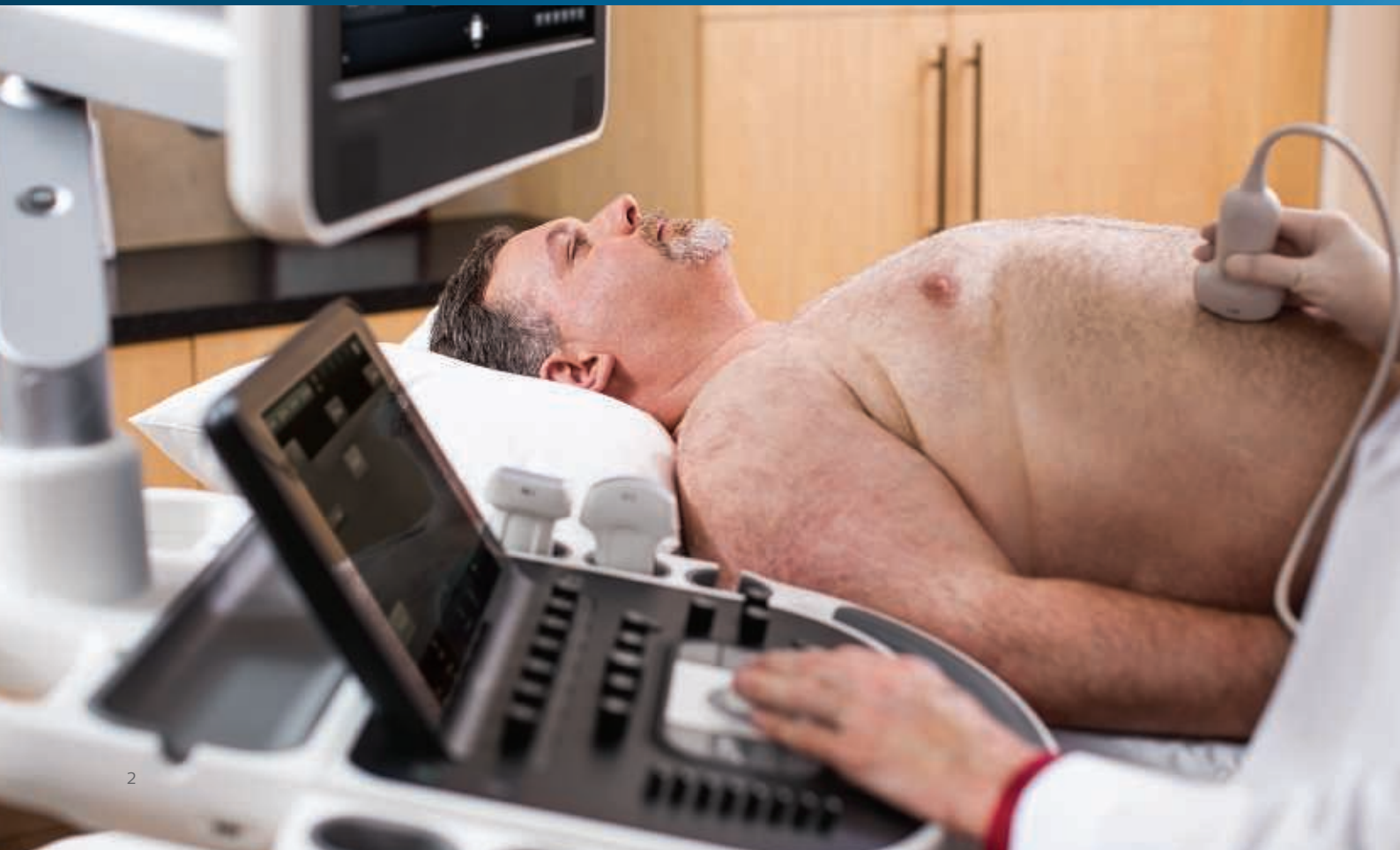
38% larger viewing area

Standard
format 4:3

1024 X 768 pixels

MaxVue
Full high definition
format 16:9

1920 X 1080 pixels





Liver transplant with abscess



Solid liver lesion



Liver hepatocellular carcinoma



Liver cirrhosis with ascites

xMATRIX array technology

Philips X6-1 xMATRIX array is our most leading-edge, versatile ultrasound transducer technology. With the touch of a button, xMATRIX offers all modes in a single solid-state transducer: thin slice 2D, 3D/4D, Live xPlane, Live MPR, MPR, Doppler, color Doppler, CPA, and CEUS. xMATRIX allows quantitative volume imaging of the liver for precise analysis of lesion size and location. In addition, 4D CEUS enables dynamic spatial assessment of liver lesion vascularity.

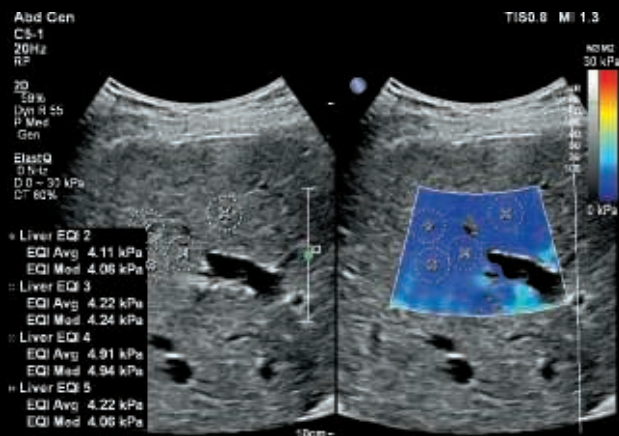
nSIGHT Imaging

EPIQ's nSIGHT Imaging architecture incorporates a custom multi-stage precision beamformer along with massive parallel processing. This proprietary architecture captures an enormous amount of acoustic data from each transmit operation and performs digital beam reconstruction along with mathematically optimized focal processing to create real-time images with exceptional resolution and uniformity.

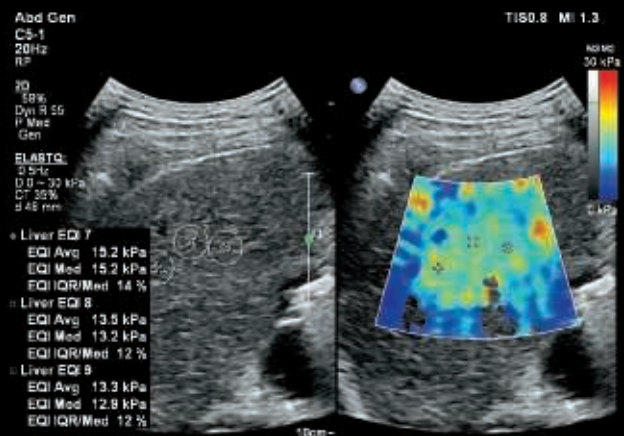
Shear wave elastography for **quantitative** tissue stiffness data

Ultrasound shear wave elastography provides a non-invasive, reproducible, and easily performed method of assessing tissue stiffness. A special pulse sequence technique using existing transducers produces ultrasound shear waves in tissue, and measures the propagation speed of the waves.

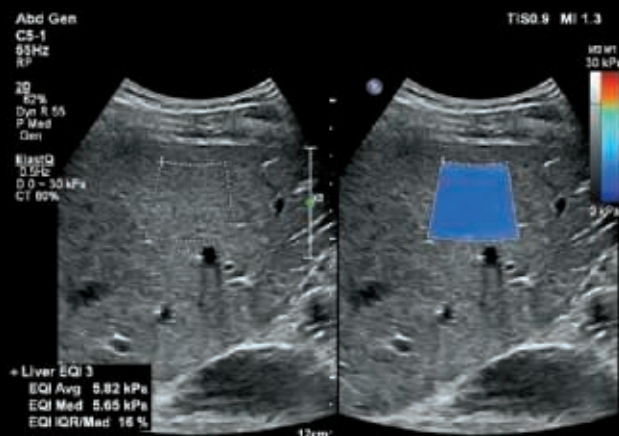
Now tissue stiffness samples can be acquired during a routine ultrasound examination of the liver. According to the latest studies,¹ using shear wave elastography may help reduce or avoid conventional liver biopsies. Many studies are suggesting that, instead of a costly and painful biopsy procedure, an easy ultrasound exam becomes the routine method to assess liver disease status.



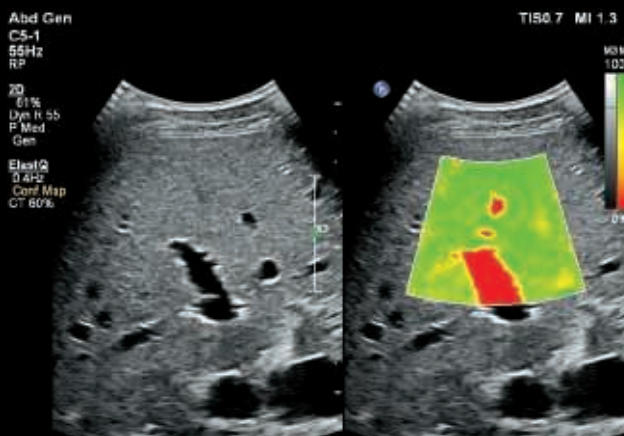
Normal liver with multiple measurements



Cirrhotic liver with multiple measurements



Normal liver with measurement of entire area



ElastQ Imaging confidence map

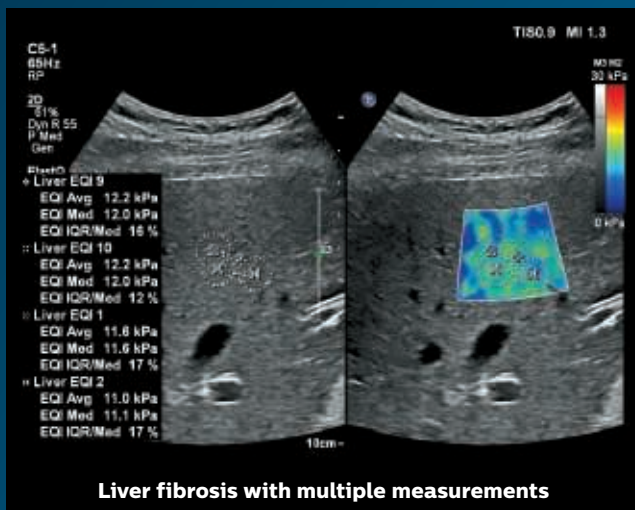


ElastQ Imaging

EPIQ with Evolution 3.0 brings a new high-performance shear wave imaging capability. ElastQ Imaging is a real-time, large Region of Interest (ROI), color-coded quantitative assessment of tissue stiffness. Now you can easily assess liver tissue stiffness using real-time feedback and make quantitative measurements with multiple sample points. ElastQ Imaging includes the ability to make retrospective measurements on stored images as well. Unique confidence map display utilizes intelligent analysis that adds additional assurance that user measurements are obtained on tissue areas with adequate shear wave propagation.

ElastPQ

ElastPQ is an easy-to-use method of obtaining tissue stiffness values of the liver on a predefined ROI. Using real-time imaging as a guide, the ROI is placed over the area of interest and tissue stiffness data such as AVG, MEAN, and new IQR indices are obtained and displayed in seconds. Multiple samples can be recorded and liver tissue report generated from the results.



Key takeaways for Philips shear wave liver stiffness assessment*

- Easily combine a routine ultrasound imaging exam of the liver anatomy with targeted tissue stiffness values
- Evaluate and obtain a baseline stiffness value in patients with chronic liver disease
- Follow up with patients under treatment to monitor progression, stabilization, or regression of liver disease
- Help avoid the need for liver biopsies when elastography results are consistent with other clinical findings

* Courtesy of Richard G. Barr, MD, PhD, FACR, Diagnostic Radiology, Southwoods Imaging, Youngstown, Ohio.



Contrast Enhanced Ultrasound (CEUS) for **superb** lesion detection and characterization

Ultrasound contrast agents can transform the role of ultrasound in the liver, allowing the user to study the enhancement patterns of suspicious liver lesions in real time, providing access to faster and more confident diagnoses.

With Philips EPIQ, CEUS is seamlessly integrated into the standard workflow, providing exceptional detail throughout arterial, portal, and late-phase scanning. Additionally, with advanced technologies at your fingertips – such as MaxVue FHD display, PureWave C9-2 transducer, fusion imaging, and Q-App quantification – EPIQ Evolution 3.0 delivers maximum confidence for lesion detection and characterization, even in the most challenging exams.



Liver focal nodular hyperplasia



Liver mass

Image fusion and navigation with **Anatomical Intelligence**

Image fusion combines the inherent advantages of multimodality imaging directly on the ultrasound system using electromagnetic tracking. By combining CT/MR/PET with the live ultrasound and real-time position of the patient, the clinician has access to a powerful diagnostic tool while reducing radiation burden and maximizing throughput in the department.

Conventional ultrasound

The time it takes:
10-15 minutes



Anatomical Intelligence

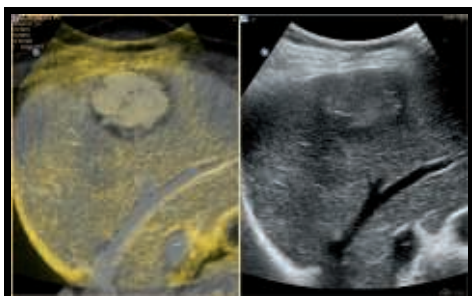
The time it takes:
< 1 minute

Auto Registration – image fusion, simplified

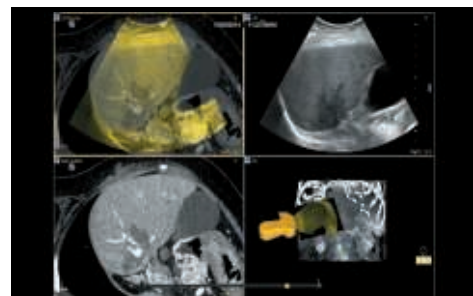
EPIQ's exclusive Anatomical Intelligence Ultrasound (AIUS) comes to image fusion with automated registration of CT/MR and ultrasound volumes. Unique anatomical information within the CT/MR volume is analyzed and automatically fused with the ultrasound structures, allowing the user to achieve image fusion within seconds – in 1/10 the standard alignment time. A complementary technique to diagnostic CEUS or biopsies/ablations, image fusion with AIUS is fast and simple, allowing you to focus less on setup and more on the procedure ahead.

Needle Navigation – enhanced confidence, with precision

Needle Navigation is a performance-enhancing tool for challenging interventional cases in the liver, and has been shown to improve workflow and reduce radiation exposure by using fewer confirmatory scans.² Philips EPIQ with Evolution 3.0 now features a full suite of solutions which includes the NEW CIVCO eTrax™, Philips Adaptive Needle Tracker, and Philips Co-axial Needle Trackers. With such a wide range of compatibility to biopsy and ablation devices, the clinician has freedom to choose the best tools for the procedure depending on the level of complexity.



Dual display of liver lesion with CT fusion



Quad display of liver lesion with CT fusion

- 1 Ferraioli G, et al. Point shear wave elastography method for assessing liver stiffness. World J Gastroenterology. 2014 April 28;20(16):4787-4796.
- 2 Kim E, et al. CT-Guided liver biopsy with electromagnetic tracking: results from a single-center prospective randomized controlled trial. American Journal of Roentgenology. 2014;203:W715-723.

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