Improving diagnostic confidence on technically difficult patients

Philips Affiniti 70 ultrasound system delivers PureWave imaging across all major clinical segments

Many conditions can make it challenging to obtain diagnostic-quality ultrasound images. Among the most common are obesity and liver disease.

A global pandemic of obesity affects more than one in ten of the world's adult population.[1] Obese patients present special challenges for ultrasound imaging because it is difficult to achieve the penetration required for high quality, diagnostic resolution. Obesity can be accompanied by other prevalent conditions that make ultrasound examinations even more complicated.

- Patients with liver disease are frequently difficult to image because of challenges associated with sound attenuation that accompany many liver diseases and inability to clearly visualize the flow in hepatic vasculature
- Obese patients during pregnancy are at greater risk for fetal anomalies, and anomalies can be missed as a result of not being able to see anatomy clearly due to patient size
- Challenges presented by obesity hamper visualization of the myocardium and endocardium, wall motion, and heart size that is critical for assessment of heart function

As a result, pathology or anomalies may be missed and heart function can be misinterpreted, and additional imaging studies or tests may be required that can increase the cost of diagnosis and expose patients to unnecessary radiation. In addition, the inability to obtain diagnostic images may lead to lost revenue, and is disruptive to the practitioners' workflow due to the additional scanning required to generate a diagnostic study.

Scan technically difficult patients with ease

Affiniti 70 precision beamforming combined with Philips PureWave technology and Tissue Specific Presets (TSP) make imaging technically difficult patients easy. Philips exclusive PureWave technology provides for acoustic efficiency in transducer tuning and system optimization that facilitates imaging of a wide range of patient types with few artifacts and enhanced penetration. Precision beamforming and PureWave combine to negate the traditional trade-off between penetration and resolution.

[1] http://www.who.int/mediacentre/factsheets/fs311/en/index.html

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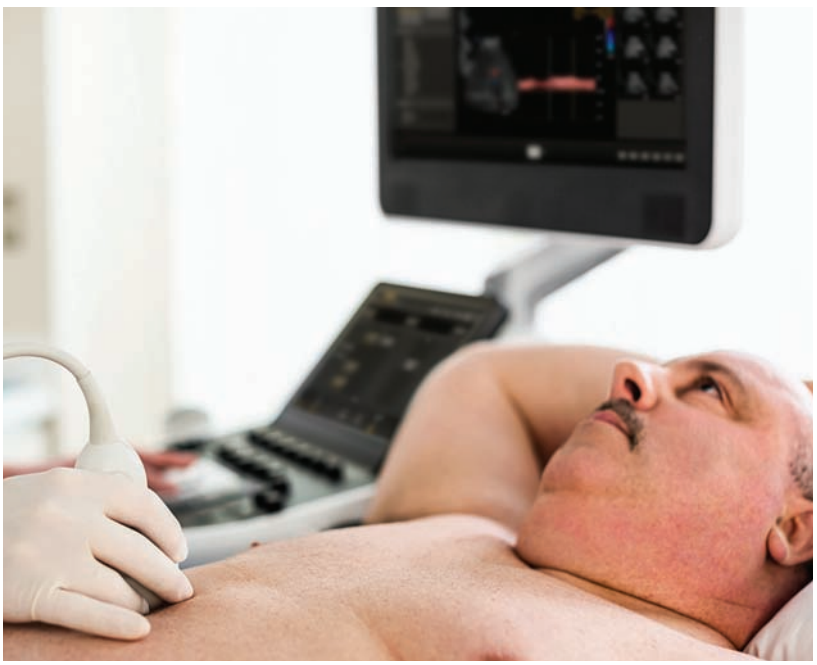
Confidence in diagnosis for difficult exams

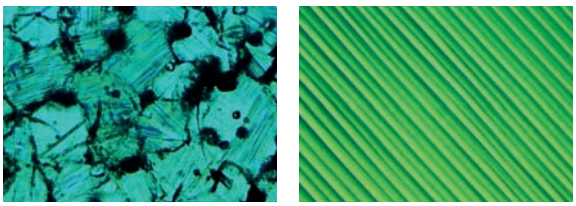
Affiniti 70's powerful precision beamforming capabilities strengthen the power of PureWave. The PureWave transducer family employs sophisticated technology to support excellent image quality.

PureWave crystal technology

Affiniti 70's transducers use Philips clinically proven PureWave crystal technology. The biggest breakthrough in piezoelectric transducer material in 40 years, PureWave technology leads to increased penetration compared to conventional transducers and the ability to scan technically difficult patients with ease.

PureWave crystals are the result of a manufacturing technique that creates a near-perfect atomic level arrangement. The uniformity and lack of grain boundaries help transfer energy with up to 85% greater precision and efficiency over conventional material,* resulting in exceptional performance and enhanced diagnostic confidence for all patient types. PureWave technology combined with TSP optimizes the transducers for specific exam types, producing excellent image quality with little or no need for image adjustment.





Conventional (x800) **PureWave** (x800)

PureWave crystals have virtually perfect uniformity for greater bandwidth and twice the efficiency of conventional ceramic materials. The result is excellent imaging and Doppler performance.

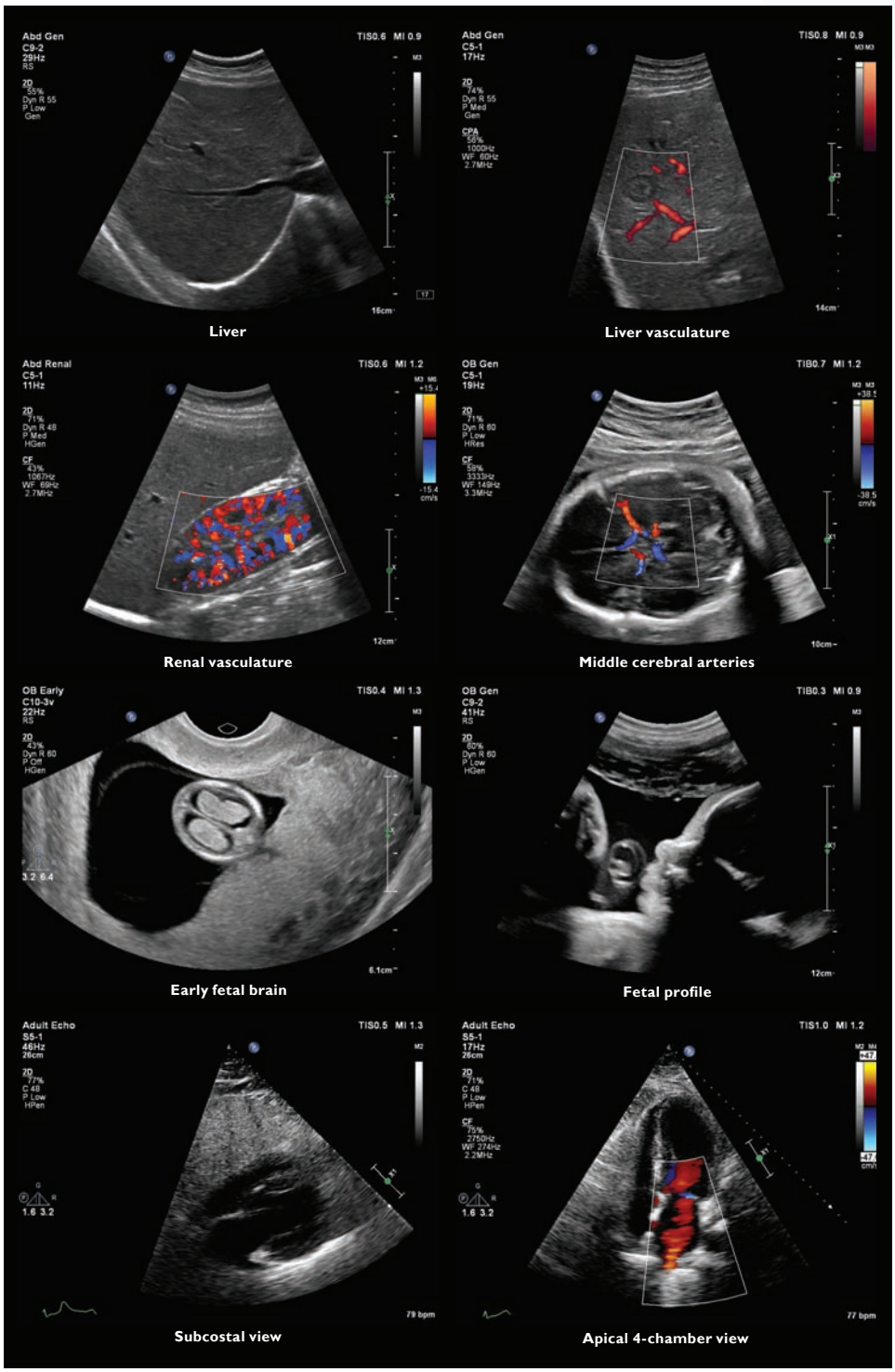
Transducer design

Extraordinary design efforts have resulted in powerful transducers that are both lightweight and easy to hold. The PureWave transducers feature highly flexible cables and superb transducer balance that contributes to scanning comfort during extended or difficult exams. In addition, minimized elevation dimension enhances intercostal access when imaging challenging patients with reduced rib spaces.

Tissue aberration correction technology

A main cause of ultrasound image degradation arises from the improper assumption of speed of sound characteristics when scanning patients with significant adipose layers. The resulting beam aberrations account for the loss of detail resolution seen on obese patients. The PureWave transducer works in conjunction with the Affiniti 70 ultrasound system to accommodate for the altered speed of high-frequency sound waves through adipose layers versus other tissue. In this unique mode, the ultrasound system becomes "aware" of increased adipose content and applies aberration correction algorithms. The result is high image quality throughout the entire beam length.

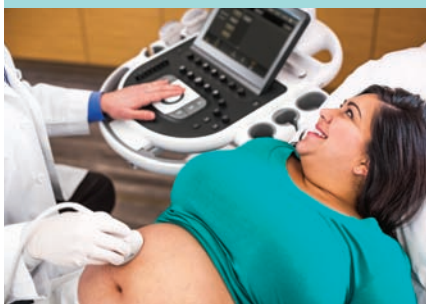
Experience high levels of performance with PureWave transducers, achieving both superb penetration and excellent image quality.



Affiniti 70 is the only system in its class with PureWave imaging across all major clinical segments. PureWave transducers are designed to increase penetration in technically difficult patients, so that each transducer can help provide diagnostic confidence on easy patients as well as difficult patients.

Transducers include:

- PureWave C5-1 and C9-2 for abdominal and OB exams
- PureWave S5-1 for cardiology and transcranial applications
- PureWave C10-3v for early obstetrical and gynecological exams



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