PHILIPS

Ultrasound

PureWave technology

Ease in imaging the technically difficult patient

Philips EPIQ ultrasound system with PureWave technology

Confidence in diagnosis for difficult exams

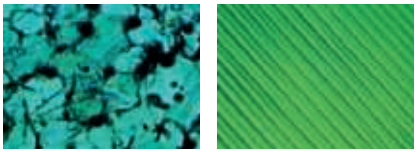
A worldwide challenge

Since 1980, the number of overweight and obese adults has increased by 27.5% worldwide. Overweight and obese rates among children and adolescents have increased by 47.1%. Collectively, the number of overweight and obese people worldwide has increased from 857 million in 1980 to 2.1 billion in 2013. Of these, 671 million are obese.*

Obese patients present special challenges for ultrasound imaging because of the difficulty in achieving the penetration required for diagnostic-quality images. As a result, pathology may be missed or the technically difficult patient may require additional studies, which can increase the cost of diagnosis and expose the patient to unnecessary radiation.

The PureWave solution

Providing a solution to imaging the technically difficult patient was the driving force behind the development of Philips PureWave transducer technology. PureWave transducers deliver extraordinary levels of detail and contrast resolution, and allow for improved penetration at higher frequencies – even on technically difficult patients.



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

PureWave features pure, uniform crystals that are 85% more efficient than conventional piezoelectric material.

The C5-1 Purewave transducer set the standard for imaging technically difficult and obese patients. A multi-site study that compared the C5-1 PureWave transducer to conventional transducer technologies produced some impressive results.

PureWave transducers on the EPIQ ultrasound system offer ultra-wide dynamic range and unique beam reconstruction that reinforce exceptional tissue information at greater depths with less noise.

The next generation PureWave transducer

Philips EPIQ ultrasound system introduces the next generation C9-2 PureWave transducer. The C9-2 PureWave transducer allows you to visualize extraordinary levels of detail and contrast resolution with exceptional penetration at higher frequencies even on technically difficult patients through ultra-wide dynamic range and unique beam reconstruction that reinforces exceptional tissue information at greater depths with less noise.

A three-site clinical study** using the EPIQ ultrasound system compared the C5-1 PureWave transducer to the C9-2 PureWave transducer. Each site conducted 25 abdominal scans on technically difficult patients using both the C5-1 and C9-2, and reported on their findings.

C5-1 study results

- Exam times reduced by 2% to 38%
- A reduction in pain and fatigue from scanning in 29% to 85% of the cases
- Sonographers felt that they had to push less in 48% to 86% of the cases
- Marked improvement in color sensitivity in 31% to 86% of the cases
- Using the C5-1 transducer prevented a recommendation for additional studies with CT or MR due to an inadequate ultrasound study in 8% to 69% of the cases

C9-2 study results

- Clinicians were able to complete more than 88% of their technically difficult patient exams using the high frequency C9-2 PureWave transducer
- Clinicians reported that the C9-2 provided additional diagnostic information not provided by the C5-1 in 28% to 64% of the exams
- At two sites, the additional C9-2 diagnostic information changed the call in 16% of the exams

* A team of international researchers, led by Prof. Emmanuela Gakidou of the Institute for Health Metrics and Evaluation at the University of Washington, published findings in The Lancet (May 21, 2014). The team conducted a comprehensive review of surveys, reports, and scientific literature looking at overweight and obesity prevalence among adults aged 20 years or older and children ages 2-19 years between 1980 and 2013. Data was drawn from 188 countries over all 21 regions of the world. Overweight was defined as a body mass index (BMI) of 25 kg/m2 or higher and obese was defined as a BMI of 30 kg/m2 or higher.

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