



## An Intuitive Ultrasound System

How an easy-to-use system increased image quality  
and diagnostic confidence

In this case study, Amy Patel, MD, explores how the Hologic SuperSonic™ MACH™ ultrasound system's enhanced image quality and intuitive functionality compare to other ultrasound systems she has used over the course of her career. Learn how the MACH system allowed Dr. Patel and her colleagues to diagnosis difficult lesions with confidence and positively impact the patient experience.



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### Enhanced Image Quality and Diagnostic Confidence

Dr. Patel and her colleagues at the Breast Care Center at Liberty Hospital have been exposed to a variety of ultrasound systems over the course of their careers, including the Hologic SuperSonic MACH ultrasound system — and the MACH system's image clarity has stood out from the rest. The system boasts excellent image quality and is bolstered by innovative imaging modes that help improve diagnostic accuracy.

"The lesion conspicuity is second to none. There's less speckle and more shades of gray," noted Dr. Patel.

This enhanced image clarity can contribute to greater diagnostic confidence for clinicians. The MACH system's tiltable, 23" full HD resolution monitor offers deeper blacks and refined details in images, so radiologists can confirm their diagnosis quickly and instill confidence in their patients.

"It's important for us as breast imagers to ensure that what we are seeing on an ultrasound correlates accurately with what we're seeing on mammography," added Dr. Patel. "So, if we can find lesions accurately, particularly on ultrasound, it adds to our diagnostic confidence and allows more comfort for a patient."

The SuperSonic MACH ultrasound system, equipped with UltraFast™ imaging, captures up to 20,000 images per second that contain exceptional tissue differentiation with reduced speckle, regardless of tissue density.<sup>1</sup> Thanks to the system's optimized penetration settings, breast imagers can visualize lesions at variable depths.

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The MACH system also hosts a variety of cutting-edge imaging modes designed to improve a clinician's field of view. For example, Needle PLUS™ Imaging offers radiologists enhanced needle visibility and trajectory prediction. These optimizations offer users more control and confidence when performing biopsies.

"My experience with Hologic SuperSonic Imagine image clarity has been amazing, particularly during an ultrasound-guided core needle biopsy," said Dr. Patel. "If you're biopsying an area that is more posterior in the breast, in a sea of dense tissue, it can be difficult to ensure the needle is correctly going to that area of concern. I'm able to see the needle more conspicuously and the [image] clarity is invaluable so that we have diagnostic accuracy."

Hologic's SuperSonic MACH ultrasound system also supports panoramic imaging, providing additional image clarity when evaluating a larger lesion or area of concern.

In her experience, Dr. Patel has found that other ultrasound systems can cause the panoramic images to appear choppy, but the MACH system removes this choppiness by providing advanced precision and enhanced images.

### Intuitive & Ergonomic

Efficiency and a streamlined workflow are crucial in today's health care settings, and the MACH system delivers. The SuperSonic MACH ultrasound system functions intuitively, providing radiologists with a system that is easy to use and that may reduce the amount of time required for new users to learn how to operate the system. Not only does the system enhance workflow by creating an easy onboarding transition for radiologists, but appointments can be completed quickly while maintaining diagnostic confidence.

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“The transition was quite easy. I really feel that the SuperSonic ultrasound system provides an intuitive roadmap, like when you're using a smartphone. It's incredibly easy to navigate,” stated Dr. Patel.

This intuitive functionality stems from the innovative SonicPad™ touchpad, which is simple to operate and designed to cut down on examination time. The touchpad also helps reduce user movement on the control panel, allowing technicians and radiologists to focus less on the operating system and more on analyzing findings and interacting with patients.



The system is also optimized for enhanced ergonomics. It is designed to increase usability and offer more comfort to users while decreasing fatigue. This extends to the MACH ultrasound system's comprehensive family of transducers, which are optimized for a busy practice, lightweight and ergonomic in order to provide more comfort for users.

“The ultrasound probes are more lightweight, which the technologists really enjoy. From an ergonomic standpoint, it really has been amazing in reducing fatigue,” noted Dr. Patel.

### Patient Benefits

These benefits extend to patients, who value the improved workflow and increased diagnostic confidence the system offers. “As a radiologist, when we have diagnostic confidence, we exude it to our patients who are in turn confident in us, and the patient experience is very positive.” said Dr. Patel.

The enhanced workflow may also allow clinicians to capture and review images more quickly, enabling a greater volume of patients to be evaluated without sacrificing quality for speed.

“The system has improved our workflow in so many ways and not only for the radiologist,” said Dr. Patel. “We are able to arrive to a faster and, in our opinion, more accurate diagnosis. From a technologist's standpoint, we can scan patients at a faster pace and get them in and out the door more quickly.”

Shorter appointments may also help reduce the amount of stress and anxiety patients experience during their procedure. “At times we have patients driving for hours from rural areas to their breast imaging evaluation, and the fast image acquisition of the ultrasound system enhances the overall patient experience,” added Dr. Patel.

Every step of a patient's cancer journey is affected when their clinicians utilize advanced technology. When adding Hologic's SuperSonic MACH 40 ultrasound system to the continuum of care, both patients and clinicians can benefit from exceptional image quality, improved workflow, and, ultimately, greater diagnostic confidence.

**HOLOGIC**<sup>®</sup>  
**SUPERSONIC**  
**MACH**<sup>™</sup>

<sup>1</sup> Ultrafast Ultrasound Imaging, by Jeremy Bercoff (Published: August 23rd 2011 DOI: 10.5772/19729)