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## *Clinical Champion Update*

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*Date: 12/4/23*

*Subject: (Breast) Cancer Screening*

### **Pros and Cons for Automated Breast Ultrasound (ABUS)**

Automated breast ultrasound (ABUS) is an ultrasound technique that is being increasingly utilized as a supplementary technique in the evaluation of patients with dense glandular breasts. Screening mammography in women with dense breasts has reduced sensitivity.<sup>1</sup> Dense glandular tissue is an independent risk factor in the development of breast cancer, the risk being 6–8 times higher than in women with fatty breasts.<sup>1</sup> Therefore, additional imaging modalities are required to improve cancer detection.

ABUS is a standardized examination with many advantages in both screening and diagnostic settings: it increases the detection rate of breast cancer, improves the workflow, and reduces the examination time.<sup>1</sup> A complete ABUS exam takes about 15 minutes. Positioned comfortably on the exam table, most patients report the ABUS procedure to be painless; however, some women with very sensitive breast tissue have complained about minor discomfort during the scanning process.<sup>1</sup>

Before starting the exam, the ABUS operator attaches a sheer membrane to the ultrasound scanner. A layer of lotion is then applied to the breast, which ensures good contact between the ultrasound transducer and the skin. To guarantee the best image quality, the sheer stabilizing membrane is positioned on the breast during scanning, which gently flattens the breast tissue against the body and prevents breast movement.

A 10-second preview scan automatically determines the patient's unique breast tissue signature so the ideal ultrasound imaging parameters can be set by the software. During the actual image scan, which takes about 60 seconds, the technologist follows the display monitor in real-time to ensure proper breast coverage and tissue contact during the scan. Typically, three scans are performed on each breast for a complete scan of the breast volume.<sup>2</sup>

A specialized radiologist interprets the ABUS scan along with the woman's mammogram and clinical history. All together, the result is a more accurate way of detecting breast cancer in women with dense breasts.<sup>1</sup> Women with prior cancer, breast surgery or implants can benefit from the additional information ABUS offers.<sup>2</sup>

On the other hand, like any imaging technique, ABUS has disadvantages and even some limitations. Disadvantages regarding image acquisition are the inability to assess the axilla, the vascularization, and the elasticity of a lesion, while concerning the interpretation; the disadvantages are the artifacts due to poor positioning, lack of contact, motion or lesion related.<sup>1</sup> These risks can be mitigated with proper training and good operator attention both for image acquisition and interpretation.<sup>1</sup>

Providers should be aware that this imaging modality may be recommended following initial screening/diagnostic mammograms and ultrasounds. ABUS is not readily available in Western Mass. The

Comprehensive Breast Program at UMass Memorial Health (UMass Worcester) does offer such imaging.<sup>3</sup>

**Sources –**

1. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8400952/>
2. <https://www.gwhospital.com/services/breast-center/automated-breast-ultrasound-system-abus#:~:text=ABUS%20can%20be%20used%20to,way%20to%20image%20dense%20breasts.>
3. <https://www.ummhealth.org/umass-memorial-cancer-center/women%E2%80%99s-health/services-we-provide/comprehensive-breast-program>

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