SonoCiné™

COMPARISON of SONOCINE AWBUS & HANDHELD ULTRASOUND

	HANDHELD	SONOCINE AWBUS
SCREENING EQUIPMENT	• Uses the doctor's / facility's ultrasound machine	• AWBUS is an automated add-on to the doctor's / facility's ultrasound machine - not a replacement • AWBUS assists the operator performing the procedure in systematically scanning and recording all breast tissue
PROBE SIZE	• 5cm - Standard	• 5cm - Standard
PAIN CAUSED BY THE PROCEDURE	• The 5cm probe causes no pain during the exam	• The 5cm probe causes no pain during the exam
BREAST COVERAGE DURING SCANNING	• Depends on experience, expertise & education of the tech/physician • Inconsistent - varies person to person • Concentration divided between good-enough scanning and detection	• AWBUS program prevents skipped areas on the surface and deepest parts of the breast • Concentration is focused solely on doing the best possible scan
HOW IMAGES ARE GATHERED	• Gathering & viewing are done simultaneously and, therefore, at the same speed • When gathered quickly, does not provide sufficient images for recognition of small lesion • When gathered slowly does not allow for recognition of an aberrant disruption • Very few permanent images gathered	• Gathering and reviewing are separated and therefore optimized • Gathering is done slowly to collect sufficient images for quality interpretation • Depending on breast size, 4,000-8,000 permanent images are gathered

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HOW IMAGES ARE VIEWED	• Large screen format while scanning in a distracting environment, not optimized for viewing	• Small screen format in a non-distracting environment • Images are viewed as a ciné loop at an optimized speed (quickly) and size, enabling recognition by the maculae of aberrant disruptions • Disruptions are detected as motion, for which the human eye is very sensitive
AVERAGE DIAMETER OF CANCERS FOUND	Hand Scanning (Astound Study): • 8% 5-10mm • 33% 11-14mm • 58% 15mm or larger	AWBUS: • About 75% less than 10mm • About 15% 10-13mm • About 10% 13mm or larger • The mean for 3 major AWBUS sites is 8mm
INTERPRETATION	On-line in exam room, patient can demand biopsy for any lesion found, even when a radiologist believes it to be benign	Off-line reading, a radiologist can call more lesions benign, and reduce false positive rates
MULTITASKING	• Scanning and detection are done simultaneously, preventing full needed attention to each task	• Scanning and detection are done separately, allowing full attention needed for each task
RECOGNITION OF PATHOLOGY	May be missed by: • Distracted viewing • Improperly large image • Shorter persistence of the image due to fewer recorded images • Imaging display factors set by the technologist	Optimized by: • Non-distracted viewing • Proper sizing of the image • Increased persistence of the image due to decreased distance between images • Complete control of display factors of the images by the reading radiologist

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PERMANENT RECORD	No permanent recording of entire scan: • If abnormality not seen during scanning, it goes undetected • Prevents off-site reading • Only a verbal description and a few single images of a recognized abnormality can be archived	Permanent recording of entire scan: • Recordable to a CD or stick • Easily reviewed by other physicians at a distance or even years later • Allows off-site reading for radiologists, FPs, OBGYNs and breast surgeons • All images transfer to PACS or other image archiving system • The radiologist's report is based on review of all possible findings in the breasts
FINANCIAL IMPLICATIONS	• Possible loss of revenue from competing sites adopting AWBUS	• Will increase business and result in a net positive bottom line.
TRAINING	• Training to scan consistently the entirety of both the breast at a steady rate & steady pressure is challenging • Training someone to simultaneously scan well, recognize malignancy & know if any tissue has been missed is very difficult	• AWBUS uses the radiologist's standard ultrasound machine and format, and requires no additional training • AWBUS relieves the operator of determining probe speed & position, and recognition of malignancy all at the same time • Training is almost entirely about capturing quality images by manipulating the pressure and incidence of the probe to the skin
WORK FLOW	• The radiologist either sees fewer cases a day due to both acquiring and reading images, or relies on the skill and judgement of a non-physician operator	• Allows the radiologist to see more cases a day if he/she only reads the images & doesn't spend time acquiring them
JOB FLEXIBILITY	• Inflexible: radiologists need to be present during patient exams	• Flexible: radiologists needn't be present during exams, which can be read at their convenience (evenings, weekends, etc.)

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PROPERTIES OF A GOOD SCREEN	• Not reproducible • Every screen is variable, regardless of place, time or operator	• Reproducible • Every screen is the same, regardless of place, time or operator

A note about 3D: **Screening is used to find unexpected abnormalities. Diagnosis is used to evaluate abnormalities that have already been found.** Screening answers the question: W**here** is a possible abnormality in the breast? Diagnosis answers the question: W**hat** is the abnormality that has been found? **3-D is not relevant in screening,** and in fact actually increases reading time without increasing screening accuracy. However, for a diagnostic callback from a SonoCiné, it is appropriate to use the 3-D function of any ultrasound machine.