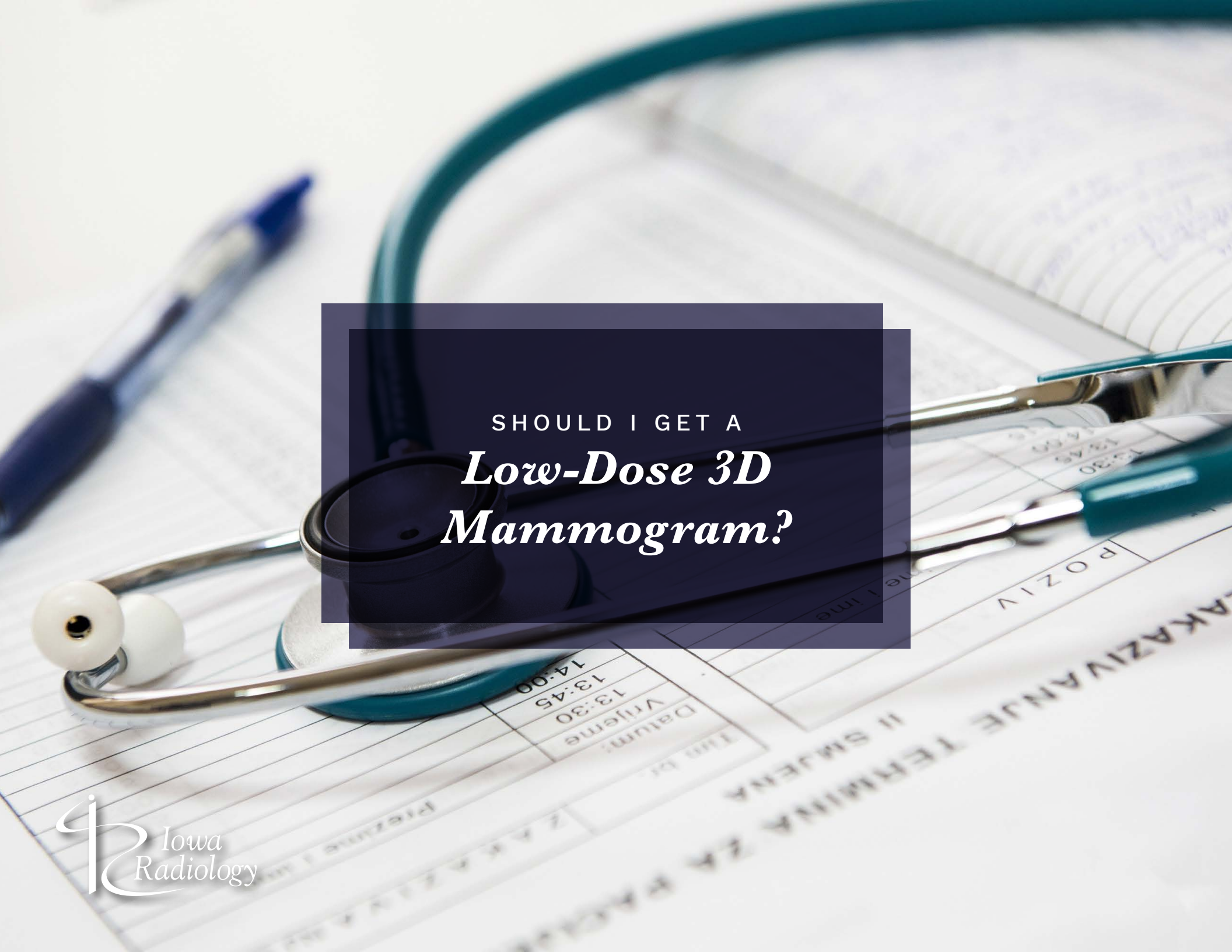


SHOULD I GET A

Low-Dose 3D Mammogram?

Iowa Radiology

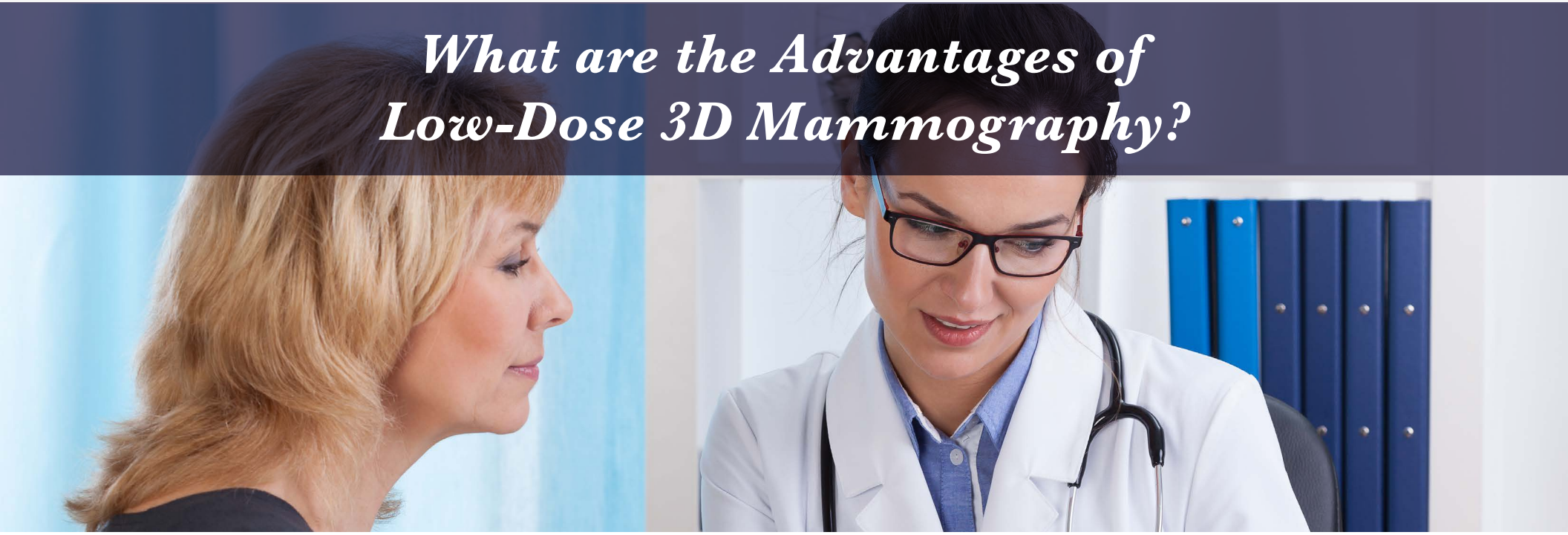
What is Low-Dose 3D Mammography?

Standard mammography relies upon two-dimensional X-ray images of the breast to detect possible areas of concern. 3-D mammography, or tomosynthesis, is a process that incorporates many X-ray images taken from a range of angles to create a three-dimensional image of the breast that can be closely examined a millimeter at a time.[1] In the past, this processed a combined 2-D and 3-D exam, which meant that patients received a higher radiation dose during mammography screening. Hologic's C-View software allows both sets of images to be taken simultaneously, allowing for quicker procedure times and lower radiation doses than previously possible.[2]

How is it Different from Traditional Mammography?

The computer can translate 3-D tomosynthesis images into 2-D images that are clearer and more detailed than images from a traditional 2-D mammogram. This allows radiologists to view a much clearer picture of structures within the breast tissue. The appearance of linear structures, radiating lines, and bright spots, which can be indicative of particular breast conditions, is enhanced with tomosynthesis.[3]

What are the Advantages of Low-Dose 3D Mammography?



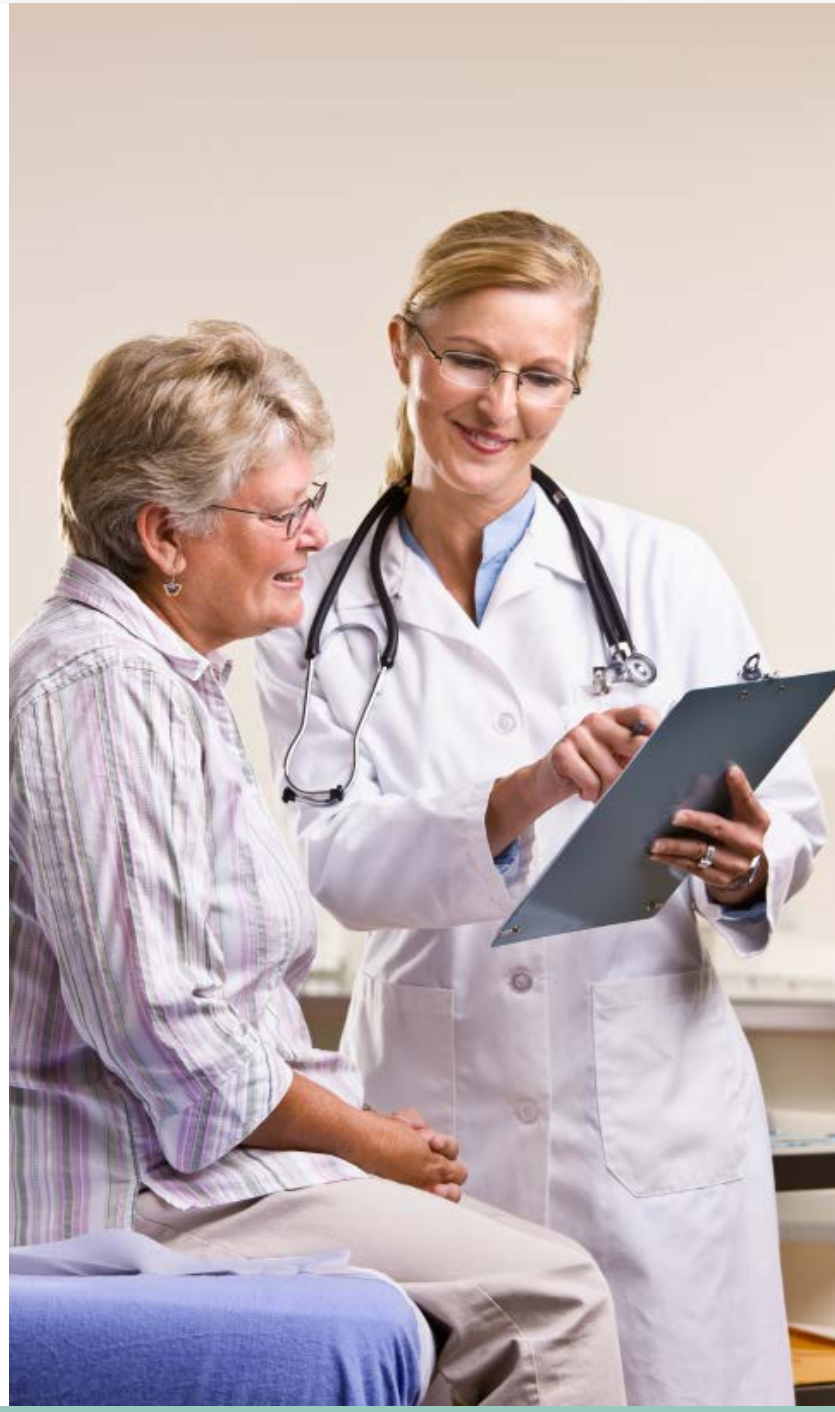
3-D mammography allows for more accurate diagnosis of masses, distortions, and variations in density than standard mammograms, especially in women with dense or fibrous breasts—those having a higher percentage of fibrous or glandular tissue versus the percentage of fatty tissue.[4] Research has linked higher breast density with higher breast cancer risk,[5] so increased vigilance in detection is even more vital in women with denser breasts.

Getting the clearest picture possible is especially important for women with dense breasts because both dense breast tissue and tumors appear white on traditional X-rays. As a result, cancerous abnormalities can be missed. Also, many benign conditions appear on mammograms; dense tissue can more frequently appear to be suspicious, resulting in many costly (and often stress-inducing) additional tests such as biopsies to test the questionable tissue.

Using 3-D tomosynthesis, practitioners are able to make 20–40% fewer callbacks for diagnostic procedures while detecting invasive cancers at an approximately 41% higher rate compared with digital mammography alone. The rate of false positives decreases by 15% with the addition of tomosynthesis.[6]

Low-dose 3-D mammograms are also both faster and safer. The procedure cuts the amount of time a patient must remain still with her breast compressed from 10 seconds to 4 seconds and delivers a radiation dose that is 45% lower than that required by traditional 3-D mammography technology.[7]

At Iowa Radiology, we're proud to offer the Genius 3-D exam with SmartCurve compression. Pain is the most common complaint about mammography procedures,[8] and seven out of ten women report some degree of pain during a mammogram.[9] Unlike the flat plates used in most mammograms, the SmartCurve compression device mirrors the shape of the breast to reduce pinching and deliver uniform pressure over the entire breast. The result is that SmartCurve has been shown to increase comfort for 93% of women who report moderate to severe discomfort from standard mammography technology.[10]



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[3] Friedewald, Sarah M., MD, et al. “Breast Cancer Screening Using Tomosynthesis in Combination With Digital Mammography.” JAMA 311, 24 (2014): 2499-2507. Accessed 11 Sept 2018.

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