

ClearRead Bone Suppress

Building Confidence Through Enterprise Imaging

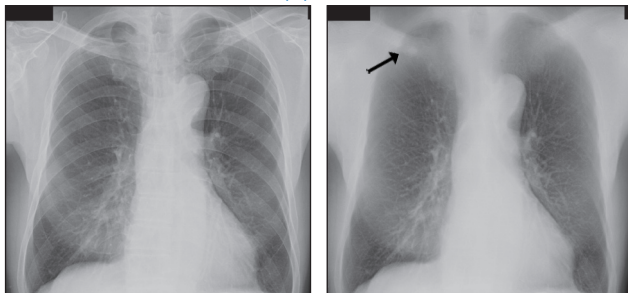
Riverain Technologies' ClearRead Bone Suppress software transforms standard PA/AP chest X-rays into secondary soft tissue images across the entire hospital enterprise without additional radiation dose to the patient or changes to existing imaging protocols. It allows clinicians to discover the unseen diagnostic potential in every chest X-ray, resulting in earlier detection of lung disease.

ClearRead Bone Suppress increases the clarity of chest X-rays by suppressing the ribs and clavicles, allowing radiologists to maximize the detection of lung disease. As a hospital-wide solution, ClearRead Bone Suppress uses existing X-ray equipment and PACS systems to provide a soft tissue image for every adult chest X-ray in the facility.

Key Advantages of ClearRead Bone Suppress

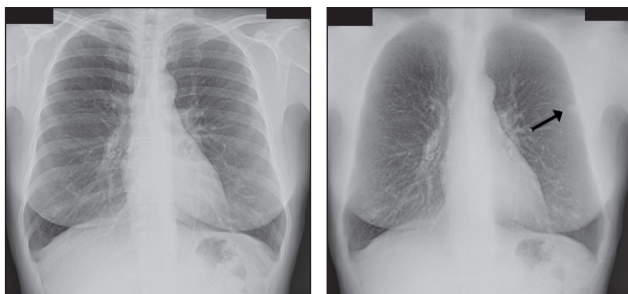
- Provides a soft tissue image for every digital chest X-ray
- Enables detection of 1 in 6 previously missed nodules¹
- Enables a statistically significant increase in the detection of pneumonia and pulmonary fungal infections^{2,3,4}
- Provides immediate display of the soft tissue images on the existing PACS viewer, eliminating the need for a separate workstation
- Provides an optional bone image
- No additional radiation dose or changes to existing imaging protocols are required
- Automatically inserts the images into the patient's file for instant access
- FDA cleared

ClearRead Bone Suppress



Original

ClearRead Bone Suppress



Original

ClearRead Bone Suppress

* Arrow on the ClearRead Bone Suppress image indicates a CT confirmed lung nodule. The arrow is for demonstration purposes only and not a part of the product offering.

16.8%

Improvement in nodule detection with the use of Riverain's ClearRead Bone Suppress™ technology.¹

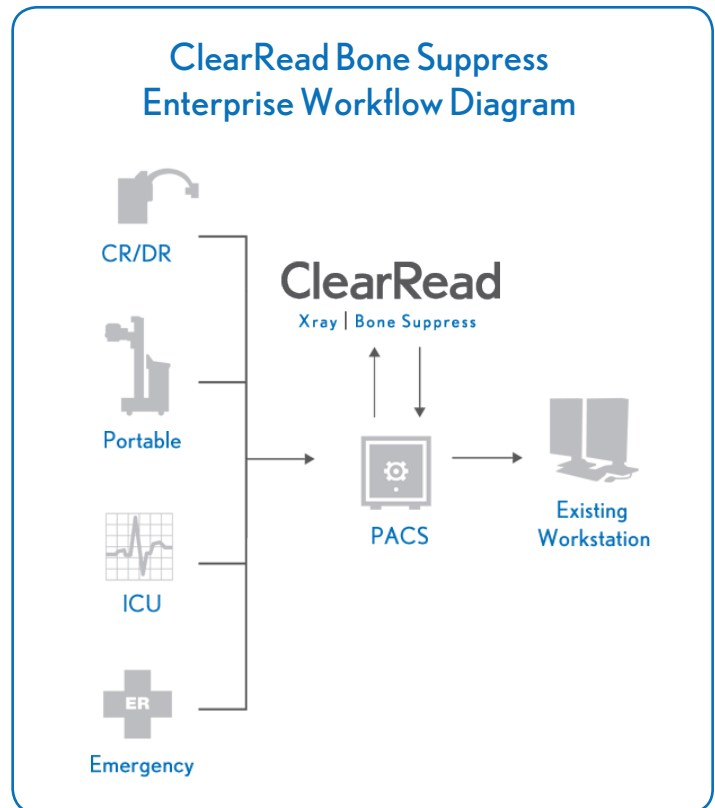
“Certainly in our practice we absolutely have had proven cancers where, when we were reading the study, we did not see them until we looked at the bone-suppressed image.”

- Dr. Peter B. Sachs, University of Colorado Hospital and Anschutz Medical Campus

Early detection of lung disease, including lung cancer, is critical to improving patient outcomes. ClearRead Bone Suppress improves clarity by subtracting the bone that occludes over 40% of a chest X-ray - allowing radiologists to see more and detect more.

A pivotal study proved that radiologists detected 16.8% more actionable nodules when using ClearRead Bone Suppress. This study, along with others, confirms that removing the ribs and clavicles allows radiologists to see more and improve image interpretations.

Missing actionable lung nodules isn't a risk that radiologists and hospitals can afford to take. ClearRead Bone Suppress reduces the risk, enabling radiologists to detect 1 in 6 previously missed nodules.¹



* Modality licensing is also available

About Riverain

Riverain Technologies™ is a medical software innovator that develops solutions to aid radiologists in the early detection of disease. With the use of Riverain's ClearRead X-ray Suite and ClearRead CT, radiologists are able to optimize the use of existing equipment. This enables radiologists to better utilize their diagnostic expertise in image interpretation for identification of diseases, such as lung cancer.

References

1. Freedman M, Lo B, Seibel J, and Bromley E. Improved detection of lung nodules with novel software that suppresses the rib and clavicle shadows on chest radiographs. *Radiology*. July 2011. 260, 265-273
2. Bone suppressed images improve pulmonary fungal detection in chest radiographs. S. Schalekamp, I.A.H. Van Den Berk, I.J.C. Hartmann, M.M. Snoeren, A.E. Odink, S.A.H. Pegge, L.J. Schijf, N.Karssemeijer, C.M. Schaefer-Prokop, European Congress of Radiology, March 2014
3. Improved detection of focal pneumonia by chest radiography with bone suppression imaging. Feng L, Engelmann R, Pesce L, Armato III S, MacMahon H, European Society of Radiology, May 2012
4. Schalekamp S, van Ginneken B, van den Berk IAH, Hartmann IJC, Snoeren MM, et al. (2014) Bone Suppression Increases the Visibility of Invasive Pulmonary Aspergillosis in Chest Radiographs. *PLoS ONE* 9(10): e108551. doi:10.1371/journal.pone.0108551