



Nanox.ARC Clinical Case

Lung nodules and masses

Nanox.ARC is a digital multi source 3D tomosynthesis imaging system aims to bring advanced radiographic visualization to all markets.

The Next Generation in Medical Imaging



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FDA Cleared



Enhanced Anatomy Visualization & Reduced Super-Imposition of Structures.



Affordable, Advanced Digital Imaging Solution with a Flexible Business Model.



Nanox.ARC Enhancing Detection of Chest Abnormalities

Detection of abnormalities in chest X-rays is challenging due to the overlapping anatomical structures. While chest CT provides greater sensitivity than radiographs, its use is often restricted by factors such as higher radiation exposure, increased costs for both patients and healthcare systems, the need for pre-authorization, reliance on skilled technologists, and longer interpretation times by radiologists. For example, according to the American Lung Association, only 16% of eligible patients undergo lung screening^[1].

Scientific evidence demonstrates that chest tomosynthesis offers significant advantages over conventional radiography. It enhances the visualization of anatomical structures, reduces image clutter, and improves the detection of small lung nodules^[2]. Furthermore, in some cases tomosynthesis can reduce the need for CT scans in patients with suspected thoracic lesions initially identified on radiography^[3]. Cost effectiveness research has shown that tomosynthesis can save significant costs to the hospital^[4].

Nanox.ARC bridges the gap between conventional radiography and CT by providing clinicians with more diagnostic information than X-rays while exposing patients to significantly less radiation than CT scans.

[1] State of Lung Cancer | Key Findings | American Lung Association gathered from <https://www.lung.org/research/state-of-lung-cancer/key-findings>

[2] Dobbins JT 3rd, McAdams HP. Chest tomosynthesis: technical principles and clinical update. *Eur J Radiol*. 2009 Nov;72(2):244-51. doi: 10.1016/j.ejrad.2009.05.054. Epub 2009 Jul 18. PMID: 19616909; PMCID: PMC3693857.

[3] Quaia E, Grisi G, Baratella E, Cuttin R, Poillucci G, Kus S, & Cova M. A. (2014). Diagnostic imaging costs before and after digital tomosynthesis implementation in patient management after detection of suspected thoracic lesions on chest radiography. *Insights into Imaging*, 5(1), 147-155. <https://doi.org/10.1007/s13244-013-0305-1>

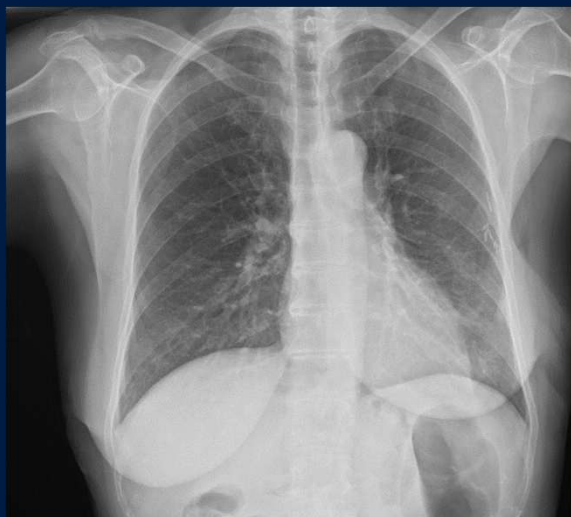
[4] Quaia E, Baratella E, Cernic S, Lorusso A, Casagrande F, Cioffi V., & Cova M. A. (2012). Analysis of the impact of digital tomosynthesis on the radiological investigation of patients with suspected pulmonary lesions on chest radiography. *European Radiology*, 22(9), 1912-1922. <https://doi.org/10.1007/s00330-012-2440-3>

Clinical Case Study: A 2.5cm lung lesion not seen on radiography

A 2D conventional erect chest radiograph (left) and the corresponding DTS (right). A prominent nodule at the base of the left lung is clearly seen on the DTS. The lesion is barely seen on 2D radiography even after knowing its there.



Chest AP Radiograph



Nanox.ARC



Images were taken under the ethical committee (Helsinki) permit to conduct a clinical study in Israel, using our multisource Nanox.ARC system, 2023-2024. Images courtesy of Beilinson Hospital.

Lung Nodules

Lung nodules are small, rounded opacities in the lung parenchyma, typically less than 3 cm in diameter. Nodules >3 cm are defined as masses. Some lung nodules and masses raise concerns of malignancy. Lung nodules are common incidental findings, and their management is guided by size, morphology, growth, and risk factors.



NANOX

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