

Is there an advantage to using computer aided detection for the early detection of pulmonary nodules within chest X-Ray imaging?

HABER, M., DRAKE, Amelia and NIGHTINGALE, JulieJ
<<http://orcid.org/0000-0001-7006-0242>>

Available from Sheffield Hallam University Research Archive (SHURA) at:
<https://shura.shu.ac.uk/25866/>

This document is the Accepted Version [AM]

Citation:

HABER, M., DRAKE, Amelia and NIGHTINGALE, JulieJ (2020). Is there an advantage to using computer aided detection for the early detection of pulmonary nodules within chest X-Ray imaging? Radiography. [Article]

Copyright and re-use policy

See <http://shura.shu.ac.uk/information.html>

Full Length Article:

Objective: Using published literature, this research examines whether Computer-aided Detection (CAD) identifies more Pulmonary Nodules (PN) within Chest X-ray (CXR) systems, compared to radiologist diagnosis without CAD.

Key Findings: Although the primary papers were pointing to CAD being a beneficial system in the diagnosis of PN detection, a regression analysis of the data available within these papers showed no correlation between the higher sensitivity of CAD against the detrimental high False Positives (FP) of CAD. Findings of the studies were deemed inconclusive.

Conclusion: Further research is recommended to review the potential of CAD on CXR PN detection.

Implications for practice: CAD acting as a second reader could potentially reduce interpreter error rate.

Keywords: Computer-Aided Detection; Chest X-ray; Pulmonary Nodule