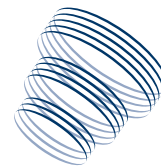
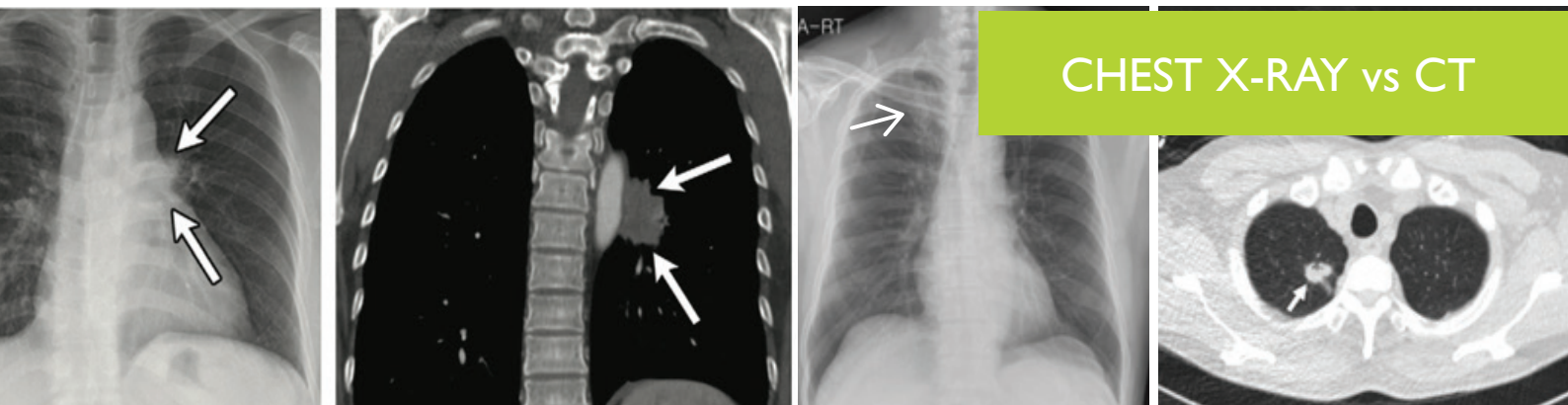


# CHALLENGING CLINICAL CONSIDERATIONS

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Despite the small increase in dose of CT over CXR, recommendations based on evidence suggest that the improved sensitivity and specificity of CT make it the optimal imaging technique for patients with suspected lung cancer

Radiology in Australia is constantly evolving to keep up with patient expectations, technology and Medicare indications. Our aim is to stay up to date, and provide the most effective and efficient imaging solution to help manage patients in our local community.

In this article we consider the utility of low dose CT as a diagnostic and screening tool in individuals at increased risk of lung cancer and the ancillary benefits of CT over chest x-ray as the investigation of choice.

Conventional chest xray has been long favoured due to its simplicity, ease of access, low cost and low radiation exposure however with new technology low dose CT has become a viable alternative.

Lung cancer is currently the leading cause of cancer death in men and women and whilst there is no medicare rebate for CT based lung cancer screening in Australia screening trials in Europe and the USA have reported a 20% decrease in mortality when low dose CT is used to screen people who had smoked at least one pack of cigarettes a day for 30 years [1,2,3].

A 2021 study published in the European Radiology Journal demonstrated initial investigation with chest x-ray for suspected lung cancer resulted in significant delay in diagnosis of lung cancer in the study population [4].

In terms of radiation exposure environmental radiation exposure totals approximately 2 milliSieverts (mSv) per year. Conventional chest x-ray dose is 0.1 mSv with low dose CT now available which is able to minimise radiation exposure to ~1mSv per scan. For patients above 50, the dose from a CT chest is very unlikely to have any meaningful risk.

CT can not only clarify plain film findings but can also avoid missed or delayed diagnosis. This is due to the 2D nature of CXR and superimposed structures. The images from 2 cases shown above demonstrate primary lung malignancies which were obscured by overlying structures on the chest x-rays, however are readily apparent on CT.

Low dose CT scans are available at Flinders Private Hospital, Marion, Calvary Central Districts, Woodville, Port Adelaide, Dulwich and Campbelltown.

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