Lens Exclusion on CT Head Scan In Patients Aged Under 50 Years at Northampton General Hospital: A 2-Cycle Audit Cycle

Background: The ocular lens is radiosensitive, and unnecessary exposure to ionising radiation during computed tomography (CT) of the head may increase the risk of radiation-induced cataract formation. Lens exclusion is particularly crucial in younger patients whose lenses are more radiosensitive and are therefore at a great risk of developing cataract formation.

Aim: To assess compliance with lens exclusion protocols during CT head scans in patients under 50 years of age and evaluate the impact of an educational intervention.

Methods: A retrospective audit was conducted at Northampton General Hospital. The first cycle reviewed 50 CT head scans performed between 1 and 31 March 2026. We then delivered a poster and teaching session on 12 May 2026 to raise awareness of lens protection. The second cycle reviewed 70 CT head scans performed between 20 May and 14 June 2026. Patients requiring assessment of orbital or paranasal sinus structures, and those with specified traumatic injuries or relevant fractures, were excluded. We collected and analysed data using Microsoft Excel.

Results: In the second cycle, 27 of 70 patients (38.6%) of patients had both lenses excluded from the scan field. 9 of 70 patients (12.9%) had 1 lens included, and 34 of 70 (48.6%) had both lenses included during their CT Head Scans. Compared with the first cycle, the proportion of patients with excluded lenses increased from 34.0% to 38.6%.

Conclusion: The data demonstrate that the educational intervention improved compliance with lens exclusion protocols, although unnecessary lens exposure remains common. Further staff education, visual reminders and emphasis on the use of eye shields are recommended. A subsequent audit is required to evaluate the effectiveness of further interventions.