

INTERCOMPARISON OF FILM BADGE AND POCKET DOSIMETER  
FOR Tc-99m X-RAYS

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ABSTRACT

Intercomparison of film badge and pocket dosimeter for Tc-99m x-rays

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An intercomparison was made between the doses measured by film badges and pocket dosimeters for the personnel in a nuclear medicine department. The data was taken over a three year period (1984, 1985, 1986). The film badge data was processed by a commercial supplier (Siemens) and the pocket dosimeters were read and recharged weekly by the Radiation Safety office.

The dose measured by the pocket dosimeter was in very good agreement with the film badge reports. The correlation coefficient was 0.95 and the regression equation was:

$$\text{Dosimeter} = .884 \text{ BADGE} + 61.9$$

The measured mean annual dose was 226 mR for the film badge and 262 for the pocket dosimeter and the total dose range was 20-500 mR.

This data shows that the dose measured by the pocket dosimeters is an accurate representation of the dose received by the nuclear medicine personnel when compared to the commercially processed film badges.

Previous intercomparison of these two personnel dosimetry devices was done only for x-ray technologists and the correlation was not as meaningful at the lower x-ray energies.

This study demonstrates that the pocket dosimeters are an accurate and reliable device for personnel monitoring in nuclear medicine.