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## Radiation protection in nuclear medicine in Eastern Province, KSA

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The main aim of the project is to explore the concern of radiation dosimetry when using the multimodality systems and how health care providers and patients can protect themselves from the radiation and its harmful effects in nuclear medicine. Understanding radiation dosimetry and the potential of PET/CT for deleterious health effects, having knowledge of the magnitude of the effective dose and the dose to the specific organs from the multimodality system, and considering the role of CT in this system will allow us reduce the radiation dose to the patient and the health workers without compromising the quality of the patient's care. The research took place in nuclear medicine departments in Eastern Province hospitals. Taking measurements and reading radiation personal dosimeters for technologists who work in nuclear medicine departments with multimodality imaging system was carried out. The data analysis was run through excel

or SPSS program. Combining a solid understanding of radiation dosimetry and its associated risk for deleterious health effects, awareness of the magnitude of the effective dose and the dose to specific organs from both the PET and the CT portions of the scan, and knowledge about how the CT scan will be used for specific applications can lead to a substantial reduction in the radiation dose to the patient, without compromising the quality of the patient's care. The advice of useful practical practices, include wearing a lead apron, rings, or gloves; sitting as far as possible from patients; using lead wall during exam; and using less activity as possible to reduce the absorbed dose. Thus, the use of multimodalities in nuclear medicine is recommended with proper precautionary measures which will improve the quality health care within the community in Eastern Province hospitals.

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