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#9-268 Monte Carlo simulation of dose distribution in the female thoracic region under photon irradiation for breast cancer radiotherapy

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Breast cancer is one of the leading causes of female mortality, and radiotherapy is a key therapeutic approach in its treatment. Accurate evaluation of the doses delivered to surrounding tissues is crucial for optimizing treatment plans while minimizing side effects. In this study, we use the Monte Carlo GEANT4 platform to simulate the female thoracic region and evaluate the doses deposited by a photon beam with energies ranging from 6 to 18 MeV. The simulation allows for the analysis of dose distribution within the tumor volume, as well as in adjacent organs at risk, taking into account the different beam characteristics used in external breast radiotherapy. The results will provide insights into the precision of targeting and the management of risks for surrounding organs, thus contributing to the improvement of radiotherapy treatment strategies.

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