A review on photoneutrons characteristics in radiation therapy with high-energy photon beams
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A B S T R A C T
In radiation therapy with high-energy photon beams (E > 10 MeV) neutrons are generated mainly in linacs head through \((\gamma,n)\) interactions of photons with nuclei of high atomic number materials that constitute the linac head and the beam collimation system. These neutrons affect the shielding requirements in radiation therapy rooms and also increase the out-of-field radiation dose of patients undergoing radiation therapy with high-energy photon beams. In the current review, the authors describe the factors influencing the neutron production for different medical linacs based on the performed measurements and Monte Carlo studies in the literature.

Keywords: Photoneutron, Radiation therapy, Photon beams, Neutron spectra, Neutron source strength