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### Original Article

**Evaluating the relevance of dosimetric considerations to patient instructions regarding skin care during radiation therapy**

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### Abstract

**Introduction** Patient teaching in radiation therapy may include restrictions on applying skin products owing to concerns that the presence of such materials may increase skin dose. These restrictions may create unnecessarily complicated and conflicting self-care instructions.

**Purpose** To determine what thickness of skin product is necessary to produce a clinically meaningful dose increase to the skin, and provide recommendations for evidence-based patient instructions.

**Methods** Dosimetric measurements and Monte Carlo simulations were used to calculate skin dose under 0–1.5 mm thicknesses of two common classes of skin product for a variety of treatment geometries. The thickness of product required to produce a clinically significant dose increase to the skin was determined.

**Results** The thickness of product required to create a clinically meaningful dose increase was >0.7 mm for 10 × 10 cm<sup>2</sup> fields and >1.5 mm for 1 × 1 cm<sup>2</sup> fields. A typical application of product would be only 0.3 mm.

**Conclusion** It seems unrealistic to anticipate patients using sufficiently large quantities of skin product to be of clinical concern. We therefore recommend that there are no dosimetric reasons to restrict the use of these types of skin products during radiation therapy for common treatment scenarios.

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### Keywords

medical dosimetry; patient education; patient teaching; radiation therapy; radiation skin dose; self-care instructions; side-effect management; skin care during radiation therapy

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