



Silicone-Based Film Reduces Rates of Radiation Dermatitis

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Radiation dermatitis is a very common side effect of external beam breast radiation. This side effect is characterized by erythema, or reddening of the skin, and dry or moist desquamation, or peeling of the outer layer of the skin, swelling, and bleeding. The National Cancer Institute's Common Terminology Criteria for Adverse Events (NCI-CTCAE) classifies radiation dermatitis into six grades (0-5) based on the level of severity (Figure 1, MD = moist desquamation).

NCI CTCAE V4.0 grade	0	1	2	3	4	5
Corresponding descriptor for radiation dermatitis	None	Faint erythema or dry desquamation	Moderate to brisk erythema; <u>patchy MD, mostly confined to skin folds and creases;</u> moderate edema	<u>MD in areas other than skin folds and creases;</u> bleeding induced by minor trauma or abrasion	Life-threatening consequences; skin necrosis or ulceration of full thickness dermis; spontaneous bleeding from involved site; skin graft indicated	Death

Figure 1: NCI-CTCAE radiation dermatitis grading system

While most people experience some degree of radiation dermatitis during breast radiation, those with large breasts after a lumpectomy, or those who receive postmastectomy radiation are at higher risk for developing higher grade symptoms.

A phase three clinical trial investigated whether radiation dermatitis could be prevented by covering the radiated area with an adhesive silicone-based polyurethane film called Mepitel. The results of this multicenter Canadian study were presented at the American Society of Clinical Oncology Plenary Series in October 2022. Three hundred and seventy-six patients participated in the clinical trial and were randomly assigned to either wear the Mepitel Film or not. Patients who wore the film put it on prior to their first radiation session and kept it on for two weeks following treatment. Participants were assessed for severity of radiation dermatitis during treatment and within



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three months following treatment, as well as for other skin-related patient and doctor reported outcomes.

Researchers found that use of Mepitel Film significantly decreased rates of grade 2 and 3 radiation dermatitis. Among people who wore the film, 15.5% developed grade 2 or 3 dermatitis, whereas 45.6% of patients who did not wear the film developed grade 2 or 3 symptoms. Furthermore, patients who wore the film reported less skin pain, burning, tenderness, blistering, peeling, and swelling. They were also less likely to be prescribed antibiotic creams (23% versus 43% in the control group). Wearing the Mepitel Film was tolerable to nearly all patients; only three had to discontinue use prematurely due to an allergic rash or excessive itchiness.

Based on the encouraging results of this clinical trial, researchers are hopeful that preventative use of Mepitel Film will become standard practice for those that are at high risk of developing radiation dermatitis. The film is a relatively low-cost measure for improving the patient experience during radiation therapy for breast cancer. In the future, hopefully additional studies will address the effectiveness of this prevention method in non-white skin tones.

References:

[Current Oncology](#): Validation of a Patient-Reported Outcome Measure for Moist Desquamation among Breast Radiotherapy Patients

[Journal of Clinical Oncology](#): Mepitel Film for the prevention of radiation dermatitis in breast cancer: a randomized multi-centre open-label phase 3 trial.

[ASCO Daily News](#): Adhesive Silicone Dressing Significantly Reduces Radiation Dermatitis Following Breast Cancer Treatment.