

## FEATURE ARTICLE

# The Validity of Skin Care Protocols Followed by Women With Breast Cancer Receiving External Radiation

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Skin care in women receiving external radiation to the breast varies among institutions. Studies have been conducted looking at the effect that various skin care products have on the onset and severity of radiation-induced skin reactions in those patients. Results show that no significant difference exists among these products. The practice of avoiding aluminum-based deodorant on the treated side and avoiding use of any skin care products four hours prior to treatment is not evidence based but often is part of skin care protocols for women receiving breast irradiation. A review of the literature since 1996 in the United States, Canada, United Kingdom, and Australia revealed some evidence to refute the practice but no supporting evidence. Because minimal disruption in a woman's normal hygiene routine could mitigate anxiety and improve coping during a time of extreme stress brought on by a cancer diagnosis, further research is warranted to support changing the practice.

Some degree of skin reaction will occur in an estimated 90% of women undergoing breast irradiation following lumpectomy or mastectomy (Harper, Franklin, Jenrette, & Aguero, 2004). Reactions can range from faint erythema to painful skin breakdown. They can impact quality of life and affect outcomes if they become a source of significant pain or discomfort, limit daily activities, or interrupt treatment.

Breast irradiation following lumpectomy or mastectomy commonly is delivered through medial and lateral tangential x-ray beams for six to seven weeks. The beam arrangement is designed to avoid normal lung and cardiac tissue (Harper et al., 2004). However, the beam must travel through the skin to reach its target. Porock, Kristjanson, Nikoletti, Cameron, and Pedler (1998) conducted a study to identify risk factors for radiation-induced skin reactions in patients with breast cancer. They found that predictive factors include weight, larger breast size, lymphocele aspiration, cigarette smoking, history of skin cancer anywhere on the body, tumor stage, and radiation dose. Treatment-related factors revealed in the literature are fraction size (dose delivered with each treatment), total dose, volume of tissue treated, type of radiation, and concurrent chemotherapy (Harper et al.). An unexpected finding in the Porock et al. investigation was that the sternal skin reaction at week five was less severe in women 60 years of age or older. The finding may be explained by the reduction in epidermal mitosis with age, rendering the skin less susceptible to radiation damage.

### At a Glance

- ◆ Skin care protocols used by women receiving external radiation to the breast vary widely and are not always supported by research.
- ◆ Skin products present during radiation treatment do not increase the risk of skin reactions.
- ◆ Minimal disruption of a woman's hygiene routine during treatment may decrease stress and increase quality of life.

Knowledge of the pathophysiology and sequence of radiation skin reactions enhances understanding of how radiation damages the skin. Normal skin is composed of two layers: the outer epidermis and the underlying connective tissue layer or dermis. The outer layer is formed from the basal layer that lies between the epidermis and the dermis. During a period of 14

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