INTRODUCTION
Radiation therapy is commonly used to treat many forms of cancer. Radiation dermatitis can range from a mild burning, similar to a sunburn to severe wet desquamation. This can lead to treatment interruptions, decreased quality of life and skin infections. Typically, radiation damage appears 10-14 days after beginning therapy. A compound effect, it continues to increase in severity until about 10 days after the completion of therapy. 92-96% of all women status post lumpectomy for breast cancer will experience some form of skin reaction. Those with other forms of cancer have about a 40% incidence of skin reaction.

Radiation Therapy (RT) is targeted at the cellular and nuclear membranes of the DNA molecules inside the cancer cells rendering them unable to divide and proliferate. RT creates free radicals in deep tissue, specifically at those cancer cells. Collateral damage is sometimes seen on the deep tissue, specifically at those cancer cells. Radiation dermatitis can range from a mild burning, similar to a sunburn to severe dermatitis and other skin maladies.

collagen, glycine, L-proline and L-cysteine have been the most abundant amino acids in collagen, as the melanocytes are found in the dermal-epidermal junction and can be damaged with radiation. People who have received chemotherapy along with radiation therapy are more susceptible to a skin reaction. Of note, the higher the dose of radiation therapy, the greater the risk of a skin reaction.

METHODOLOGY
Patients undergoing radiation therapy volunteered to participate in a topical skin care study. The objective of the study was to improve skin condition. Patients used nourishing, Olivamine containing skin care products, cleansing lotion, antimicrobial cleanser, treatment cream and a silicone-based barrier. There were 18 patients that participated, 17 females with breast cancer and subsequent radiation therapy and 1 gentleman who underwent RT for lung cancer.

Olivamine is a proprietary blend of amino acids, antioxidants and vitamin co-factors (B3 and B6) that play a vital role in basic cellular construction and protection. The three most abundant amino acids in collagen, glycine, L-proline and L-cysteine have been combined with the most potent antioxidants, L-taurine and hyaluronic acid, and with methylsulfonylmethane (MSM) that may slow the conduction of pain fibers.

To create Olivamine, each individual element has been carefully blended and then “actuated” with a patented photo acoustic resonance laser to make them “bioavailable”. This patented laser treatment alters the molecular structure rendering the amino acids more bioavailable.

Olivamine has been placed into a unique delivery system. The peptide is supported by omega 3 and 6 essential fatty acids, vitamins A and D3 and a sophisticated silicone system that supports the delivery system while protecting the skin from excessive transdermal water loss (e-TW WL).

This new line of products also uses natural oil, organic aloe vera and citron vanilla oil to provide a pleasant fragrance. Even though it is long thought that a fragrance should be contraindicated in skin care products, especially with the oncology population, this natural, mild blend is at 0.01% and was welcomed in this study group of oncology patients.

RESULTS
Upon weekly skin evaluations conducted by the principle investigator, the skin remained of good quality and within the lowest ranges of irritation based on the Oncology Nurses Society’s (ONS) Classification for Skin Reactions. This classification system ranges from 0 to 6. (see chart) Of the 18 patients evaluated, 16 scored the best possible score, a “zero” or “one”. There was one patient that had a score of 1.5 and one patient briefly scored a 2.5, that patient returned to score of 1.5 with continued appropriate use of the study products. The scores represent a significant improvement as compared to the national average of skin injury following radiation therapy. The national average of up to 96% of all women with breast cancer following radiation therapy, as with our study, only 11% showed any signs of dermatitis. This study also included one male with lung cancer.

DISCUSSION
According to the American Cancer Society, the second most common cause of death in 2002 was cancer, second only to heart disease. It is estimated that among females, breast cancer will account 15% of all cancer related deaths, yet represent 32% of all cancers in 2005. Because of this incidence, we are seeing more breast cancer patients and survivors, and we must be prepared to address the radiation induced dermatitis that is likely to affect nearly 9 out of every 10 patients. There is treatment for breast cancer, including radiation and chemotherapy, that will help cancer patients become cancer survivors. The National Coalition for Cancer Survivorship has defined a cancer survivor as “From the time of its discovery and for the balance of life, an individual diagnosed with cancer is a survivor.”

CONCLUSION
Olivamine containing advanced skin care products had a significant benefit to those undergoing radiation therapy by lessening the likelihood of treatment interruption. Based upon the success of this preliminary study, further investigation with these products into the prevention and treatment of skin reactions is warranted.

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