

**Don't Statement:** Don't use Aloe Vera on skin to prevent or treat radiodermatitis

**Statement of Rationale:**

Radiodermatitis can cause patient pain and pruritus that affect quality of life, body image, and sleep (Schnur et al., 2012). Severe radiodermatitis can necessitate dose reductions or treatment delays that negatively impact the ability to adequately treat the cancer. The incidence of radiodermatitis can be as high as 95% depending upon the population of patients receiving treatment (Gosselin, Schnei, Plambeck & Rowe, 2010; McQuestion, 2011). Studies documenting incidence have primarily occurred in women receiving treatment for breast cancer.

Many internet sites market aloe to individuals for what is commonly termed "sunburn type" reactions from radiation therapy. Research evidence shows that aloe vera is not beneficial for the prevention or treatment of radiodermatitis, and one study reported worse patient outcomes with use of aloe vera.

Patients undergoing radiation therapy need to know that aloe vera should not be used to prevent or treat skin reactions from radiation therapy, since it has been shown to be ineffective and has the potential to make skin reactions worse.

**Background:**

Aloe has been used for medicinal purposes for centuries as a treatment for cuts, burns, and skin irritations. Aloe has reportedly been used since the 1930s for skin reactions from radiation therapy (American Cancer Society, 2011). Many patients think of skin reactions from radiation therapy as "burns" or "sunburn like reactions," and so, may readily conclude that aloe will be helpful. Some health care providers continue to suggest use of preparations such as aloe vera gel for soothing radiation therapy-induced skin reactions. Patients may self-medicate with aloe vera based on inaccurate information about its efficacy found in the public arena and multiple internet sites.

**Evidence:**

- Aloe vera resulted in no benefit in several studies and systematic reviews. A small quasi experimental study showed that aloe vera-based gel was not as effective as a phospholipid-based cream to prevent effects on the skin and facilitate patient comfort among 45 pediatric patients receiving radiation therapy (Merchant et al., 2007).
- Two prospective randomized trials did not show a benefit of aloe vera gel to reduce the incidence of radiation therapy-induced skin toxicities (Heggie et al., 2002; Olsen et al., 2001).

- Systematic reviews have not provided evidence in support of the use of aloe vera for this purpose (Richardson, Smith, McIntyre, Thomas, & Pilkington, 2005; Salvo et al., 2010; Vogler & Ernst, 1999; Williams et al, 1996).
- Aloe vera was associated with higher toxicity in one meta-analysis (Kumar, Juresic, Barton, & Shafiq, 2010).

## References:

- American Cancer Society. (2011, July 22). Aloe. Retrieved from <http://www.cancer.org/treatment/treatmentsandsideeffects/complementaryandalternativemedicine/herbsvitaminsandminerals/aloe>
- Gosselin, T. K., Schneider, S. M., Plambeck, M. A., & Rowe, K. (2010). A prospective randomized, placebo-controlled skin care study in women diagnosed with breast cancer undergoing radiation therapy. *Oncology Nursing Forum*, *37*, 619–626. doi:10.1188/10.ONF.619-626
- Heggie, S., Bryant, G. P., Tripcony, L., Keller, J., Rose, P., Glendenning, M., & Heath, J. (2002). A phase III study on the efficacy of topical aloe vera gel on irradiated breast tissue. *Cancer Nursing*, *25*, 442–451. doi:10.1097/00002820-200212000-00007
- Kumar, S., Juresic, E., Barton, M., & Shafiq, J. (2010). Management of skin toxicity during radiation therapy: A review of the evidence. *Journal of Medical Imaging and Radiation Oncology*, *54*, 264–279. doi:10.1111/j.1754-9485.2010.02170.x
- McQuestion, M. (2011). Evidence-based skin care management in radiation therapy: Clinical update. *Seminars in Oncology Nursing*, *27*(2), e1–e17. doi:10.1016/j.soncn.2011.02.009
- Merchant, T. E., Bosley, C., Smith, J., Baratti, P., Pritchard, D., David, T., . . . Xiong, X. (2007). A phase III trial comparing an anionic phospholipid-based cream and aloe vera-based gel in the prevention of radiation dermatitis in pediatric patients. *Radiation Oncology*, *2*, 45. doi:10.1186/1748-717X-2-45
- Olsen, D. L., Raub, W., Jr., Bradley, C., Johnson, M., Macias, J. L., Love, V., & Markoe, A. (2001). The effect of aloe vera gel/mild soap versus mild soap alone in preventing skin reactions in patients undergoing radiation therapy. *Oncology Nursing Forum*, *28*, 543–547. Retrieved from <https://www.ons.org/practice-resources/onf>
- Richardson, J., Smith, J. E., McIntyre, M., Thomas, R., & Pilkington, K. (2005). Aloe vera for preventing radiation-induced skin reactions: A systematic literature review. *Clinical Oncology*, *17*, 478-484. doi:10.1016/j.clon.2005.04.013
- Salvo, N., Barnes, E., van Draanen, J., Stacey, E., Mitera, G., Breen, D., . . . De Angelis, C. (2010). Prophylaxis and management of acute radiation-induced skin reactions: A systematic review of the literature. *Current Oncology*, *17*, 94–112. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2913836>
- Schnur, J. B., Zivin, J. G., Mattson, D. M. K., Jr., Green, S., Jandorf, L. H., Wenicke, A. G., & Montgomery, G. H. (2012). Acute skin toxicity-related, out-of-pocket expenses in patients with breast cancer treated with external beam radiotherapy: A descriptive, exploratory study. *Supportive Care in Cancer*, *20*, 3105–3113. doi:10.1007/s00520-012-1435-6
- Vogler, B. K., & Ernst, E. (1999). Aloe vera: A systematic review of its clinical effectiveness. *British Journal of General Practice*, *49*, 823–828. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1313538>
- Williams, M. S., Burk, M., Loprinzi, C. L., Hill, M., Schomberg, P. J., Nearhood, K., . . . Eggleston, W. D. (1996). Phase III double-blind evaluation of an aloe vera gel as a prophylactic agent for radiation-

induced skin toxicity. *International Journal of Radiation Oncology, Biology, Physics*, 36, 345-349.  
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