

National Imaging Associates, Inc.*	
Clinical guidelines: SKIN CANCER	Original Date: May 2016
Radiation Oncology	Last Revised Date: January 2022
Guideline Number: NIA_CG_136	Implementation Date: January 2023

INDICATIONS FOR RADIATION THERAPY

Basal & Squamous Cell Skin Cancer^{1, 2}

2D or 3D-CRT EBRT (electron/ photon) are appropriate techniques for treatment of basal squamous cell skin cancer for any of the following: definitive treatment for non-surgical candidates, cancer surgery would be disfiguring, further resection needed post-operative or adjuvant therapy for cancers at risk for recurrence. Fractionation and treatment schedules range from single fraction to 33 fractions. Longer fractionation is associated with improved cosmetic results.

Dosage and Schedule Guidelines

- 30-70Gy to up to 38 fractions^{1, 2}

Melanoma³

2D or 3D-CRT EBRT (electron/ photon) are appropriate techniques for treatment of Melanoma skin cancer for any of the following: adjuvant treatment after resection of primary site, regional disease following resection of nodes, local recurrent disease, or palliative treatment

A wide range of dosage / fractionation schedules is effective up to 38 fractions³

Merkel Cell Carcinoma⁴

2D or 3D-CRT EBRT (electron/ photon) are appropriate techniques for treatment of Merkel Cell Carcinoma skin cancer for any of the following: adjuvant treatment after resection of primary site, regional disease following resection of nodes, local recurrent disease, or palliative treatment

A wide range of dosage / fractionation schedules is effective up to 38 fractions⁴

Cutaneous Lymphoma^{5, 6}

Total Skin Electron Beam Therapy (TSEBT) may be utilized to cover the entire cutaneous surface.

- Dosage Guidelines:

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- 8-36Gy, 1- 2Gy per fraction, 4-5 days per week, up to 36 fractions. “Shadowed” areas may need to be supplemented with individual electron fields. Individual tumors may be boost with doses of 4-12Gy

TREATMENT OPTIONS REQUIRING PHYSICIAN REVIEW:

Brachytherapy

LDR, HDR, surface or interstitial brachytherapy may be considered where excision or EBRT is contraindicated. Electronic brachytherapy is considered experimental and investigational at this time.¹

Intensity modulated radiation therapy (IMRT)

IMRT is not indicated as a standard treatment option and should not be used routinely for the delivery of radiation therapy for skin cancer. IMRT is strictly defined by the utilization of inverse planning modulation techniques. IMRT may be appropriate for limited circumstances in which radiation therapy is indicated and 3D conformal radiation therapy (3D-CRT) techniques cannot adequately deliver the radiation prescription without exceeding normal tissue radiation tolerance, the delivery is anticipated to contribute to potential late toxicity or tumor volume dose heterogeneity is such that unacceptable hot or cold spots are created. If IMRT is utilized, techniques to account for respiratory motion should be performed.

Clinical rationale and documentation for performing IMRT rather than 2D or 3D-CRT treatment planning and delivery will need to:

- Demonstrate how 3D-CRT isodose planning cannot produce a satisfactory treatment plan (as stated above) via the use of a patient-specific dose volume histograms and isodose plans. 3D-CRT techniques such as step-and-shoot or field-in-field should be considered for the comparison.
- Confirm the IMRT requested will be inversely planned (forward plans or 'field-in-field' plans are not considered IMRT).
- Provide tissue constraints for both the target and affected critical structures.

Proton Beam Radiation Therapy

Proton beam is not an approved treatment option for skin cancer. Proton beam has not been proven superior treatment to conventional radiation therapy.

Stereotactic Body Radiation Therapy (SBRT)

Stereotactic Body Radiation Therapy is not a standard treatment option for the treatment of skin cancer. A peer review is required with a radiation oncologist.

BACKGROUND

There are three main types of skin cancer:

- Basal cell carcinoma (BCC)
- Squamous cell carcinoma (SCC)
- Melanoma

BCC and SCC are the most common forms of skin cancer and are collectively referred to as nonmelanoma skin cancers. Nonmelanoma skin cancer is the most commonly occurring cancer in the United States. BCC is the more common type of the two nonmelanoma types, accounting for about three-quarters of nonmelanoma skin cancers. The incidence of nonmelanoma skin cancer appears to be increasing in some areas of the United States. Incidence rates in the United States have likely been increasing for several years. At least some of this increase may be attributable to increasing skin cancer awareness, resulting in an increase in investigation and biopsy of skin lesions.

Melanoma is a malignant tumor of melanocytes, which are the cells that make the pigment melanin and are derived from the neural crest. Melanomas may arise from mucosal surfaces or at other sites to which neural crest cells migrate, including the uveal tract, although most melanomas arise in the skin.

Skin cancer is the most common malignancy diagnosed in the United States, with 3.5 million cancers diagnosed in 2 million people annually and the incidence increasing over the past four decades. Melanoma represents less than 5% of skin cancers but results in most deaths. Elderly men are at highest risk; however, melanoma is the most common cancer in young adults aged 25 to 29 years and the second most common cancer in those aged 15 to 29 years.

POLICY HISTORY

Date	Summary
January 2022	<ul style="list-style-type: none"> • Added Merkel Cell Carcinoma • Added Total Skin Electron Beam Therapy (TSEBT) may be utilized to cover the entire cutaneous surface • Added dosage guidelines for TSEBT
February 2021	No Changes
February 2020	No Changes
February 2019	Added and updated references

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2. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines): Squamous Cell Skin Cancer Version 1.2022. National Comprehensive Cancer Network (NCCN). Updated November 17, 2021. Accessed December 8, 2021. https://www.nccn.org/professionals/physician_gls/pdf/squamous.pdf
3. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines): Melanoma: Cutaneous Version 1.2022. National Comprehensive Cancer Network (NCCN). Updated December 3, 2021. Accessed December 8, 2021. https://www.nccn.org/professionals/physician_gls/pdf/cutaneous_melanoma.pdf
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5. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines): T-Cell Lymphomas Version 1.2021. National Comprehensive Cancer Network (NCCN). Updated October 5, 2020. Accessed December 8, 2021. https://www.nccn.org/professionals/physician_gls/pdf/t-cell.pdf
6. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines): Primary Cutaneous Lymphomas Version 1.2021. National Comprehensive Cancer Network (NCCN). Updated March 4, 2021. Accessed December 8, 2021. https://www.nccn.org/professionals/physician_gls/pdf/primary_cutaneous.pdf

ADDITIONAL RESOURCES

1. American College of Radiology. ACR Appropriateness Criteria: Aggressive nonmelanomatous skin cancer of the head and neck. Updated 2014. Accessed November 9, 2021. <https://acsearch.acr.org/docs/3091669/Narrative>
2. Kim EY, Chapman TR, Ryu S, et al. ACR Appropriateness Criteria[®] non-spine bone metastases. *J Palliat Med*. Jan 2015;18(1):11-7. doi:10.1089/jpm.2014.9395
3. Sun A, Rumble RB, Warde P, Members of the IMRT Indications Expert Panel. The Role of IMRT in Skin Cancers. *Program in Evidence-based Care Evidence-based Series No. 2010;21-3-9*(Education and Information 2013):1-5.
4. National Cancer Institute. Melanoma Treatment (PDQ[®])—Health Professional Version. U.S. Department of Health and Human Services. Updated July 23, 2021. Accessed December 8, 2021. <https://www.cancer.gov/types/skin/hp/melanoma-treatment-pdq>
5. National Cancer Institute. NCI Dictionary of Cancer Terms. U.S. Department of Health and Human Services. Updated 2021. Accessed December 8, 2021. <https://www.cancer.gov/publications/dictionaries/cancer-terms>
6. National Cancer Institute. Skin Cancer Treatment (PDQ[®])—Health Professional Version. U.S. Department of Health and Human Services. Updated October 8, 2020. Accessed December 8, 2021. <https://www.cancer.gov/types/skin/hp/skin-treatment-pdq>

Reviewed / Approved by NIA Clinical Guideline Committee

GENERAL INFORMATION

It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. If applicable: All prior relevant imaging results and the reason that alternative imaging cannot be performed must be included in the documentation submitted.

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