



CLINICAL

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DEFINITION OF SUPERFICIAL RADIATION THERAPY (SRT)

By definition, and for the purposes of the list of scientific articles presented here, Superficial Radiation Therapy (SRT) involves the emission of photon radiation from an x-ray machine and usually involves kV energies ranging from 10kV to 150kV, with a source to surface distance (SSD) of ≤ 30 cm, and a Half-Value Depth (D $\frac{1}{2}$) of 1-30mm.

SRT-100™, SRT-100+™ and SRT-100 Vision™ have kV energies specifically ranging from 20-100kV, an SSD of 10-30cm and D $\frac{1}{2}$ of 1-20mm.

GENERAL ARTICLES

SRT Review Articles

- Cagnetta et al., "Practice and Educational Gaps in Radiation Therapy in Dermatology". Dermatol Clin. 2016 Jul;34(3):319-33. <https://www.ncbi.nlm.nih.gov/pubmed/27363889>
- McGregor et al., "Superficial Radiation Therapy for the Treatment of Nonmelanoma Skin Cancers." J Clin Aesthet Dermatol. 2015;8(12):12–14. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4689506/>
- David CV. "Electronic brachytherapy and superficial radiation therapy: will you be adding it to your practice?" Cutis. 2013 Nov;92(5):E16-8. <https://www.ncbi.nlm.nih.gov/pubmed/24343219>
- Wolfe et al., "Radiation therapy (RT) for nonmelanoma skin cancer (NMSC), a cost comparison: Clarifying misconceptions". J Am Acad Dermatol 2016;75:654-5. <https://www.ncbi.nlm.nih.gov/pubmed/27543227>

SRT Book And Book Chapters

- Superficial Radiation Therapy and Electronic Brachytherapy. In: Jonathan Kantor, ed. Dermatologic Surgery. McGraw-Hill Education; 2018.

- Cognetta AB, Mendenhall WM, eds. Radiation Therapy for Skin Cancer. Springer; 2013.

<https://www.springer.com/us/book/9781461469858>

NON MELANOMA SKIN CANCER ARTICLES

Meta Analyses and Systematic Reviews

- Zaorsky et al., "Hypofractionated radiation therapy for basal and squamous cell skin cancer: A meta-analysis." Radiother Oncol.2017 Oct;125(1):13-20. <https://www.ncbi.nlm.nih.gov/pubmed/28843727>

To characterize the cosmetic outcomes and local recurrence rates of various hypofractionated radiation therapy regimens for skin basal and squamous cell cancers (BCCs/SCCs).

- Berking et al., "Basal cell carcinoma—treatments for the commonest skin cancer". Dtsch Arztebl Int 2014; 111: 389–95. <https://www.ncbi.nlm.nih.gov/pubmed/24980564>

This review is based on pertinent literature retrieved by a selective search in the Medline database, as well as the American Cancer Society guidelines on BCC and the German guidelines on BCC and skin cancer prevention.

- Lansbury et al., "Interventions for non-metastatic squamous cell carcinoma of the skin: systematic review and pooled analysis of observational studies." BMJ. 2013 Nov 4;347:f6153.

<https://www.ncbi.nlm.nih.gov/pubmed/24191270>

To assess the effects of treatments for non-metastatic invasive squamous cell carcinoma (SCC) of the skin using evidence from observational studies, given the paucity of evidence from randomized controlled trials. 118 publications were included, covering seven treatment modalities.

- Rowe et al., "Prognostic factors for local recurrence, metastasis, and survival rates in squamous cell carcinoma of the skin, ear, and lip. Implications for treatment modality selection." J Am Acad Dermatol. 1992 Jun;26(6):976-90. <https://www.ncbi.nlm.nih.gov/pubmed/1607418>

A large meta-analyses reporting 5-year recurrence rates after RT of primary and recurrent SCCs.

- Medenhall et al., “Radiotherapy for cutaneous squamous and basal cell carcinomas of the head and neck.” Laryngoscope. 2009 Oct;119(10):1994-9. <https://www.ncbi.nlm.nih.gov/pubmed/19688856>

To discuss the role of radiotherapy (RT) in the treatment of cutaneous squamous and basal cell carcinomas of the head and neck.

- Bath-Hextall et al., “Interventions for basal cell carcinoma of the skin.” Cochrane Database Syst Rev. 2007. <https://www.ncbi.nlm.nih.gov/pubmed/17253489>

Review of all trials identified and key review articles from the Cochrane Skin Group Specialised Register, the Cochrane Central Register of Controlled Trials, the Cochrane Database of Systematic Reviews, MEDLINE, EMBASE, the metaRegister of Controlled Trials.

- Halpern JN. “Radiation therapy in skin cancer. A historical perspective and current applications.” Dermatol Surg. Nov 1997;23(11):1089-1093. <https://www.ncbi.nlm.nih.gov/pubmed/9391570>

Old literature has been reviewed in order to give an appropriate historical perspective of treatment of skin with irradiation.

Cure Rates

- Grossi Marconi et al., “Head and Neck Non- Melanoma Skin Cancer Treated By Superficial X-Ray Therapy: An Analysis of 1021 Cases.” PLoS ONE 2016; 11(7). <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0156544>

To report a single-institutional experience with the use of Superficial X-Ray Therapy (SXRT) for head and neck non-melanoma skin cancer (N-MSK) and to compare outcomes by prescribed fractionation schedules.

- Cognetta et al., “Superficial x-ray in the treatment of basal and squamous cell carcinomas: A viable option in select patients.” J Am Acad Dermatol. 2012 Dec;67(6):1235-41. <https://www.ncbi.nlm.nih.gov/pubmed/22818756>

A retrospective analysis to evaluate the efficacy and viability of superficial x-ray therapy in the treatment of 1715 histologically confirmed primary cutaneous BCC and SCC in an outpatient setting with superficial x-ray therapy.

- Barysch et al., “Long term recurrence rate of large and difficult to treat cutaneous squamous cell carcinomas after superficial radiotherapy: Dermatology, 2012; 224(1):59-65.

<https://www.ncbi.nlm.nih.gov/pubmed/22433440>

To determine the outcome of superficial RTx of cSCC in correlation to histological differentiation grade and tumor localization.

- Hernandez-Machin et al., “Office-based radiation therapy for cutaneous carcinoma: Evaluation of 710 treatments” International Journal of Dermatology. 2007;46, 453–459.

<https://www.ncbi.nlm.nih.gov/pubmed/17472670>

A retrospective study of 604 basal cell carcinomas (BCCs) and 106 squamous cell carcinomas (SCCs) irradiated between 1971–96 was performed.

- Olschewski et al., “Radiotherapy of basal cell carcinoma of the face and head: Importance of low dose per fraction on long-term outcome.” J Dtsch Dermatol Ges. 2006 Feb;4(2):124-30.

<https://www.ncbi.nlm.nih.gov/pubmed/16503939>

This study investigates the efficacy, cosmesis, as well as acute and chronic toxicity, of a slightly hypofractionated radiotherapy schedule.

- Shulte et al., “Soft x-ray therapy for cutaneous basal cell and squamous cell carcinomas.” J Am Acad Dermatol. 2005 Dec;53(6):993-1001. <https://www.ncbi.nlm.nih.gov/pubmed/16310060>

Patients with 1267 consecutively irradiated (1988-1992) basal cell and squamous cell carcinomas were followed up (average 77 months).

- Zadronick et al., “Superficial Radiotherapy for Patients with Basal Cell Carcinoma Recurrence Rates, Histologic Subtypes, and Expression of p53 and Bcl-2.” Cancer. 2003 Dec 15;98(12):2708-14.

<https://www.ncbi.nlm.nih.gov/pubmed/14669293>

Retrospective study of 175 BCCs in 148 patients who were treated with radiotherapy.

- Locke et al., “Radiotherapy for Epithelial Skin Cancer.” Int. J. Radiation Oncology Biol. Phys., 2001; 51:3;748–755. <https://www.ncbi.nlm.nih.gov/pubmed/11697321>

To retrospectively review patterns of failure, cosmesis, and outcomes according to treatment modality of patients with histologically confirmed epithelial skin cancer.

- Silverman et al., "Recurrence rates of treated basal cell carcinomas. Part 4: X-ray therapy." The Journal of dermatologic surgery and oncology. Jul 1992;18(7):549-554.
<https://www.ncbi.nlm.nih.gov/pubmed/1624628>

This is the fourth report in a series that reviews the experience in the Skin and Cancer Unit, from 1955 through 1982, with the treatment of basal cell carcinomas (BCCs). It concerns 862 primary BCCs irradiated by a "standardized" x-ray therapy schedule.

- Landthaler et al., "Application of TDF-factor in soft x-ray therapy." Proceedings of the 17th World Congress of Dermatology. 1988:928-930.

Randomized control trial comparing high dose and low dose TDF factors in SRT in 319 patients with BCC and SCC.

- Hall et al., "Treatment of basal-cell carcinoma: comparison of radiotherapy and cryotherapy." Clin Radiol. Jan 1986;37(1):33-34. <https://www.ncbi.nlm.nih.gov/pubmed/3514075>

A prospective randomised trial to compare radiotherapy and cryotherapy in the treatment of basal-cell carcinomas.

- Fitzpatrick PJ. "Skin cancer of the head--treatment by radiotherapy". J Otolaryngol. 1984 Aug;13(4):261-6. <https://europepmc.org/abstract/med/6433042>

A retrospective review of 498 patients with 584 skin cancers occurring on the head and seen between 1971 and 1976 is reported. All were treated by radiotherapy.

Specific Population or Treatment Area

- Roth et al., "Superficial Radiation Therapy: A Viable Nonsurgical Option for Treating Basal and Squamous Cell Carcinoma of the Lower Extremities". JDD 2019 Feb;18 (2).
<http://jddonline.com/articles/dermatology/S1545961619P0130X/1>

Superficial radiation therapy is an appropriate primary option for treating elderly patients with nonmelanoma skin cancers on the lower extremities. Despite numerous comorbidities, the use of SRT resulted in 97.35% cure rate and an overall 5-year success rate of 97%.

- Caccialanza et al., "Radiotherapy of skin carcinomas of the pinna: a study of 115 lesions in 108 patients." Int J Dermatol. 2005 Jun;44(6):513-7. <https://www.ncbi.nlm.nih.gov/pubmed/15941445>

The aim of the study was to evaluate the effectiveness and safety of dermatologic radiotherapy in a series of patients affected by basal or squamous cell carcinoma of the pinna.

- Tsao et al., "Radiotherapy management for squamous cell carcinoma of the nasal skin: the Princess Margaret Hospital experience." Int J Radiat Oncol Biol Phys. 2002 Mar 15;52(4):973-9. <https://www.ncbi.nlm.nih.gov/pubmed/11958891>

This study evaluated the outcome of radiotherapy (RT) for squamous cell carcinoma (SCC) of the nasal skin.

- Silva et al., "Results of radiotherapy for epithelial skin cancer of the pinna: the Princess Margaret Hospital experience, 1982-1993". Int J Radiat Oncol Biol Phys. 2000 May 1;47(2):451-9. <https://www.ncbi.nlm.nih.gov/pubmed/10802373>

To assess the treatment outcome, late toxicity, and prognostic factors for radiotherapy (RT) of carcinoma of the pinna.

- Mitsuhashi et al., "Cancer in patients aged 90 years or older: radiation therapy." Radiology. 1999 Jun;211(3):829-33. <https://www.ncbi.nlm.nih.gov/pubmed/10352612>

Investigated the clinical efficacy of radiation therapy for cancer in patients aged 90 years or older.

- Rodriguez et al., "The treatment of periocular basal cell carcinomas by radiotherapy." British Journal of Ophthalmology, 1992,76,195-197. <https://bjo.bmj.com/content/76/4/195>

Study showed that superficial radiotherapy to be a highly effective treatment for periocular basal cell carcinoma with excellent control rates and minimal morbidity in often elderly patients.

- Avila et al., "Carcinoma of the pinna". Cancer. Dec 1977;40(6):2891-2895.

Prospective cohort study reporting 3-year cure rates comparing surgery to RT for carcinoma of the ear (pinna).

Cosmesis

- Kharofa et al., “Patient-Reported Outcomes in Patients With Nonmelanomatous Skin Cancers of the Face Treated With Orthovoltage Radiation Therapy: A Cross-Sectional Survey.” Int J Radiation Oncol Biol Phys, 2013 Vol. 87, No. 4, pp. 636-637. <https://www.ncbi.nlm.nih.gov/pubmed/24138912>

To evaluate patient-reported outcomes following orthovoltage radiation therapy (100-150 KV) for skin cancers of the face.

- Skiveren et al., “Skin reactions and quality of life after x-ray therapy of Basal cell carcinoma.” J Skin Cancer. 2012:825095. <https://www.hindawi.com/journals/jsc/2012/825095/>

To quantify the quality of life in BCC patients before and after X-ray therapy compared with matched healthy controls.

- Caccialanza et al., “Radiotherapy of carcinomas of the skin overlying the cartilage of the nose: our experience in 671 lesions.” JEADV 2009, 23, 1044 –1049. <https://www.ncbi.nlm.nih.gov/pubmed/19368616>

To verify both the therapeutic effectiveness of dermatologic radiotherapy and its ‘toxicity’ in the treatment of a large number of skin carcinomas overlying the cartilage of the nose.

- Petit et al., “Evaluation of cosmetic results of a randomized trial comparing surgery and radiotherapy in the treatment of basal cell carcinoma of the face.” Plast Reconstr Surg. 2000 Jun;105(7):2544-51. <https://www.ncbi.nlm.nih.gov/pubmed/10845311>

A randomized trial was performed at the Gustave-Roussy Institute to compare basal cell carcinomas of the face treated either by surgery or by radiotherapy.

- Avril et al., “Basal cell carcinoma of the face: surgery or radiotherapy? Results of a randomized study.” British Journal of Cancer (1997) 76(1), 100-106. <https://www.ncbi.nlm.nih.gov/pubmed/9218740>

A randomized trial was initiated in 1982 to compare surgery and radiotherapy in the treatment of primary BCC of the face measuring less than 4 cm.

- Childers et al., "Long-term results of irradiation for basal cell carcinoma of the skin of the nose." *Plast Reconstr Surg.* 1994 May;93(6):1169-73. <https://www.ncbi.nlm.nih.gov/pubmed/8171136>

To assess the long-term cosmetic and oncologic outcome of basal cell carcinoma of the nose in patients treated with radiation therapy.

- Cooper JS. "Patients' perceptions of their cosmetic appearance more than ten years after radiotherapy for basal cell carcinoma." *Radiat Med.* 1988 Nov-Dec;6(6):285-8. <https://www.ncbi.nlm.nih.gov/pubmed/3249818>

To evaluate patients' perceptions of their cosmetic appearance more than ten years after radiotherapy for basal cell carcinoma.

KELOID ARTICLES

Review Articles

- Berman et al., "Keloids and Hypertrophic Scars: Pathophysiology, Classification, and Treatment." *Dermatol Surg.* 2017 Jan;43 Suppl 1:S3-S18. <https://www.ncbi.nlm.nih.gov/pubmed/27347634>

Literature review was performed identifying relevant publications pertaining to the pathophysiology, classification, and treatment of keloid and hypertrophic scars.

- Berman et al., "Adjunct Therapies to Surgical Management of Keloids." *The American Society for Dermatologic Surgery, Inc.* 1996; 22:126-130. <https://www.ncbi.nlm.nih.gov/pubmed/8608373>

A review of the surgical treatment of keloids with emphasis on surgery combined with nonsurgical therapies is presented.

Meta Analyses and Systematic Reviews

- Berman et al., “Low rate of keloid recurrences following treatment of keloidectomy sites with a biologically effective dose 30 of superficial radiation”. SKIN 2018 Nov; 2(6) 402-403.

<https://jofskin.org/index.php/skin/article/view/370/pdf>

Case series report on the recurrence rate of keloids post keloidectomy with peri-operative treatment with a biological effective dose 30 of superficial radiation was determined

- Cheragi et al., “Radiation Therapy for the Adjunctive Treatment of Surgically Excised Keloids: A Review.” Journal of Clinical and Aesthetic Dermatology, 2017 Aug; 10(8): 12-15.

<https://www.ncbi.nlm.nih.gov/pubmed/28979658>

The objective of this review was to explore the use of radiation therapy as an adjuvant to surgically excised keloids.

- Mankowski et al., “Optimizing Radiotherapy for Keloids.” Burn Surgery and Research, 2017 Apr;78(4): 403–11. <https://www.ncbi.nlm.nih.gov/pubmed/28177974>

The purpose of this study was to review the radiation-based treatments (brachytherapy, electron beam and X-ray) used for keloid management and compare their outcomes.

- Kal et al., “Biologically Effective Doses of Postoperative Radiotherapy in the Prevention of Keloids.” Strahlentherapie und Onkologie, 2015;181:717-23. <https://www.ncbi.nlm.nih.gov/pubmed/16254707>

To review the recurrence rates of keloids after surgical excision followed by radiotherapy, and to answer the question whether after normalization of the dose, a dose-effect relationship could be derived.

Surgical Excision and Radiotherapy

- Bennett et al., “Treatment of Keloids with Excision and Adjuvant Radiation.” Burn Surgery and Research, 2017; 78(2): 157-61. <https://www.ncbi.nlm.nih.gov/pubmed/27775986>

This study sought to examine the outcomes of treating keloids with surgery and adjuvant radiation at a single institution and provides a synthesis of the current literature regarding keloid management.

- Mohammadi et al., “Surgical Excision Followed by Low Dose Rate Radiotherapy in the Management of Resistant Keloids.” World Journal of Plastic Surgery, 2013 Jun; 2(2): 81-6.

<https://www.ncbi.nlm.nih.gov/pubmed/25489509>

This study looked to determine the effectiveness of low dose rate radiotherapy following surgical excision in treating resistant keloids.

- Akita et al., “Combined surgical excision and radiation therapy for keloid treatment.” The Journal of Craniofacial Surgery, 2007 Sep;18(5):1164-9. <https://www.ncbi.nlm.nih.gov/pubmed/17912105>

The combined treatment of surgical excision and postoperative electron beam irradiation is effective for scar quality and reducing the recurrence rate in long-term follow up.

- Recalcatti et al., “Postoperative radiotherapy of auricular keloids: A 26-year experience.” Journal of Dermatological Treatment, 2011;22:38-42. <https://www.ncbi.nlm.nih.gov/pubmed/20653486>

Assessed through a retrospective review, the effectiveness and safety of postoperative radiotherapy performed over 26 years.

- Sclafani, AP et al., “Prevention of earlobe keloid recurrence with postoperative corticosteroid injections versus radiation therapy: a randomized, prospective study and review of the literature.” Dermatological Surgery, 1996 Jun;22(6): 569-74. <https://www.ncbi.nlm.nih.gov/pubmed/8646474>

This was a randomized, prospective trial comparing corticosteroid injections versus radiation therapy.

- Norris, J., “Superficial X-Ray Therapy in Keloid Management: A Retrospective Study of 24 Cases and Literature Review.” St. Luke's/Roosevelt Hospital Center, 1993; 95(6): 1051-55.

<https://www.ncbi.nlm.nih.gov/pubmed/7732115>

To determine the effectiveness and to examine the safety of the administration of superficial x-ray therapy in the treatment of keloid postexcisional wounds.

SRT with Multimodal Approach

- Jones et al., “Advancing Keloid Treatment: A Novel Multimodal Approach to Ear Keloids.” *Dermatol Surg.* 2017 Sep;43(9):1164-1169. <https://www.ncbi.nlm.nih.gov/pubmed/28375976>

Retrospective analysis of 49 patients treated with extralesional surgical excision of keloids localized to the ear followed by the application of autologous platelet-rich plasma (PRP) to wound site and postoperative in-office superficial radiation therapy (SRT).

- Jones et al., “Keloid Management: A Retrospective Case Review on a New Approach Using Surgical Excision, Platelet-Rich Plasma, and In-office Superficial Photon X-ray Radiation Therapy.” *Advances Skin Wound Care*, 2016; 29:303-7. <https://www.ncbi.nlm.nih.gov/pubmed/27300360>

The objective of this retrospective study was to evaluate the efficacy of a combination therapy protocol for keloid treatment.

- Jones et al., “Head and neck keloid management: A retrospective early review on a new approach using surgical excision, platelet rich plasma and in-office superficial photon X-ray radiation.” *Edorium J Otolaryngol* 2015;2:14–19. <http://www.edoriumjournalofotolaryngology.com/archive/2015-archive/100006MJO042015-jones/100006MJO042015-jones.pdf>

This is a retrospective study evaluating the efficacy of a combination therapy protocol for head and neck keloid treatment.

LONG TERM SAFETY

- McKeown et al., “Radiotherapy for benign disease; assessing the risk of radiation-induced cancer following exposure to intermediate dose radiation.” *Br J Radiol* 2015; 88: 20150405. <https://www.ncbi.nlm.nih.gov/pubmed/26462717>

Overall, the evidence suggests that the risks of cancer following RT for benign disease for currently advised protocols are small, especially in older patients. However, the balance of risk vs benefit needs to be considered in younger adults and especially if RT is being considered in adolescents or children.

- Caccialanza et al., “Risk of radiation-induced skin neoplasms after radiotherapy for cutaneous malignant tumors: a study on 5875 patients.” *G Ital Dermatol Venereol*. Aug 2015;150(4):488-489.
<https://www.ncbi.nlm.nih.gov/pubmed/24990279>

This study examined the records of 5875 patients treated with SRT by dermatologists from 1970 to 2007.

- Ogawa et al., “Is Radiation Therapy for Keloids Acceptable? The Risk of Radiation-Induced Carcinogenesis.” *Journal of the American Society of Plastic Surgeons*, 2009; 124(4): 1196-201.
<https://www.ncbi.nlm.nih.gov/pubmed/19935303>

The authors searched for previous reports of associations between carcinogenesis and keloid radiation therapy and examined the evidence-based opinions of radiation oncologists regarding the acceptability of using radiation to treat keloids.

- Leer et al., “Radiotherapy of non-malignant disorders: Where do we stand?” *Radiotherapy and Oncology* 83 (2007) 175–177. <https://www.ncbi.nlm.nih.gov/pubmed/17490769>

The ESTRO Nice conference on radiotherapy for nonmalignant diseases was aimed at finding the current clinical evidence of radiotherapy in well-selected non-malignant disorders.

- Shore et al., “Tumors and other diseases following childhood x-ray treatment for ringworm of the scalp (Tinea capitis)” *Health Phys*. 2003 Oct;85(4):404-8.
<https://www.ncbi.nlm.nih.gov/pubmed/13678280>

The objective of the study is to characterize the risk of tumors from radiation exposure to the head and neck. A cohort of 2,224 children given x-ray treatment and 1,380 given only topical medications for ringworm of the scalp (tinea capitis) during 1940–1959 have been followed up for a median of 39 y to determine tumor incidence.

- Shore et al., “Skin cancer after X-ray treatment for scalp ringworm.” *Radiat Res*. Apr 2002;157(4):410-418. <https://www.ncbi.nlm.nih.gov/pubmed/11893243>

A series of 2,224 children receiving RT for 484 tinea capitis were followed for up to 50 years to determine cancer incidence compared to a control 485 group of 1,380 patients receiving only topical medication.

- Karagas et al., “Risk of Basal Cell and Squamous Cell Skin Cancers After Ionizing Radiation Therapy.” *Journal of the National Cancer Institute*, 1996; 88,24, December 18.
<https://www.ncbi.nlm.nih.gov/pubmed/8961975>

Several aspects of the relationship of ionizing radiation exposure to the risk of skin cancer are not yet fully understood and warrant continued investigation.

- Landthaler et al., "Late irradiation damage to the skin caused by soft X-ray radiation therapy of cutaneous tumors." Arch Dermatol. Feb 1995;131(2):182-186.
<https://www.ncbi.nlm.nih.gov/pubmed/7857115>

The aim of this study was to determine the frequency of radiogenic ulcers and tumors following soft x-ray therapy of skin lesions.

- Shore et al., "Skin cancer incidence among children irradiated for ringworm of the scalp." Radiat Res. 1984 Oct;100(1):192-204. <https://www.ncbi.nlm.nih.gov/pubmed/6494429>

A series of about 2200 children who received X-ray treatment for ringworm of the scalp (tinea capitis) during the 1940s and 1950s, and a comparable group of 1400 treated without X ray, have been followed by mail questionnaire for an average of 26 years since treatment to tabulate the incidence of skin cancer.

- Ehring et al., "Radiotherapy of upper lip basalioma". Hautarzt. Aug 1974;25(8):368-372.
<https://europepmc.org/abstract/med/4421464>

Study of 2005 patient irradiated for BCC report only one second tumor 499 occurring 40 years after initial RT.

- Bart et al., "X-ray therapy of skin cancer: evaluation of a "standardized" method for treating basal-cell epitheliomas." Proc Natl Cancer Conf. 1970;6:559-569.
<https://www.ncbi.nlm.nih.gov/pubmed/5458122>

Series of 500 patients treated with RT for 500 skin cancer reporting three possible radiogenic carcinomas.

CONSENSUS GUIDELINES

- Nestor et al., "Consensus Guidelines on the Use of Superficial Radiation Therapy for Treating Nonmelanoma Skin Cancers and Keloids." J Clin Aesthet Dermatol.2019;12(2):12–18.
<http://jcadonline.com/feb-2019-superficial-radiation-therapy-guidelines/>

- Telfer et al., “Guidelines for the management of basal cell carcinoma.” British Journal of Dermatology 2008 159, pp35–48. <https://www.ncbi.nlm.nih.gov/pubmed/18593385>
 - Morton et al., “British Association of Dermatologists' guidelines for the management of squamous cell carcinoma in situ (Bowen's disease)”. Br J Dermatol. Feb 2014;170(2):245-260. <https://www.ncbi.nlm.nih.gov/pubmed/24313974>
 - Zloty et al., “Non-melanoma Skin Cancer in Canada Chapter 4: Management of Basal Cell Carcinoma”. J Cutan Med Surg. May-Jun 2015;19(3):239-248. <https://www.ncbi.nlm.nih.gov/pubmed/25986316>
 - Work Group; Invited Reviewers, Kim JYS, Kozlow JH, Mittal B, Moyer J, Olenecki T, Rodgers P. “Guidelines of care for the management of cutaneous squamous cell carcinoma.” J Am Acad Dermatol. 2018 Mar;78(3):560-578. [https://www.jaad.org/article/S0190-9622\(17\)32530-6/fulltext](https://www.jaad.org/article/S0190-9622(17)32530-6/fulltext)
 - Work Group; Invited Reviewers, Kim JYS, Kozlow JH, Mittal B, Moyer J, Olenecki T, Rodgers P. “Guidelines of care for the management of basal cell carcinoma.” J Am Acad Dermatol. 2018 Mar;78(3):540-559. <https://www.ncbi.nlm.nih.gov/pubmed/29331385>
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WEB REFERENCES

- NCCN Clinical Guidelines: https://www.nccn.org/professionals/physician_gls/default.aspx
- PubMed: <http://www.ncbi.nlm.nih.gov/pubmed>