

## Complementary Therapeutic Approaches: Mohs Micrographic Surgery and Immunotherapy in Non-Melanoma Skin Cancer

Resource	Address
Boutros A, Cecchi F, Tanda ET, et al. Immunotherapy for the treatment of cutaneous squamous cell carcinoma. <i>Front Oncol.</i> 2021;11:733917.	<a href="https://pubmed.ncbi.nlm.nih.gov/34513710/">https://pubmed.ncbi.nlm.nih.gov/34513710/</a>
Carballo GB, Honorato JR, Farias de Lopes GPF, Spohr TCLSE. A highlight on Sonic hedgehog pathway. <i>Cell Commun Signal.</i> 2018;16:11.	<a href="https://pubmed.ncbi.nlm.nih.gov/29558958/">https://pubmed.ncbi.nlm.nih.gov/29558958/</a>
Chang ALS, Tran DC, Cannon JGD, et al. Pembrolizumab for advanced basal cell carcinoma: An investigator-initiated, proof-of-concept study. <i>J Am Acad Dermatol.</i> 2019;80:564-566.	<a href="https://www.jaad.org/article/S0190-9622(18)32471-X/fulltext">https://www.jaad.org/article/S0190-9622(18)32471-X/fulltext</a>
Corchado-Cobos R, García-Sancha N, González-Sarmiento R, Pérez-Losada J, Cañueto J. Cutaneous squamous cell carcinoma: From biology to therapy. <i>Int J Mol Sci.</i> 2020;21:2956.	<a href="https://pubmed.ncbi.nlm.nih.gov/32331425/">https://pubmed.ncbi.nlm.nih.gov/32331425/</a>
Dummer R, Guminski A, Gutzmer R, et al. Long-term efficacy and safety of sonidegib in patients with advanced basal cell carcinoma: 42-month analysis of the phase II randomized, double-blind BOLT study. <i>Br J Dermatol.</i> 2020;182:1369-1378.	<a href="https://pubmed.ncbi.nlm.nih.gov/31545507/">https://pubmed.ncbi.nlm.nih.gov/31545507/</a>
Foote MC, McGrath M, Guminski A, et al. Phase II study of single-agent panitumumab in patients with incurable cutaneous squamous cell carcinoma. <i>Ann Oncol.</i> 2014;25:2047-2052.	<a href="https://pubmed.ncbi.nlm.nih.gov/25091317/">https://pubmed.ncbi.nlm.nih.gov/25091317/</a>
Gold KA, Kies MS, William WN Jr, et al. Erlotinib in the treatment of recurrent or metastatic cutaneous squamous cell carcinoma: A single-arm phase 2 clinical trial. <i>Cancer.</i> 2018;124:2169-2173.	<a href="https://pubmed.ncbi.nlm.nih.gov/29579331/">https://pubmed.ncbi.nlm.nih.gov/29579331/</a>
Grob JJ, Gonzalez R, Basset-Seguín N, et al. Pembrolizumab monotherapy for recurrent or metastatic cutaneous squamous cell carcinoma: A single-arm phase II trial (KEYNOTE-629). <i>J Clin Oncol.</i> 2020;38:2916-2925.	<a href="https://pubmed.ncbi.nlm.nih.gov/32673170/">https://pubmed.ncbi.nlm.nih.gov/32673170/</a>
Gross ND, Miller DM, Khushalani NI, et al. Neoadjuvant cemiplimab for stage II to IV cutaneous squamous-cell carcinoma. <i>N Engl J Med.</i> 2022;87:1557-1568.	<a href="https://pubmed.ncbi.nlm.nih.gov/36094839/">https://pubmed.ncbi.nlm.nih.gov/36094839/</a>
Haanen JBAG, Carbonnel F, Robert C, et al. Management of toxicities from immunotherapy: ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up. <i>Ann Oncol.</i> 2017;28(suppl 4):iv119-iv142.	<a href="https://pubmed.ncbi.nlm.nih.gov/28881921/">https://pubmed.ncbi.nlm.nih.gov/28881921/</a>
Hughes BGM, Munoz-Couselo E, Mortier L, et al. Pembrolizumab for locally advanced and recurrent/metastatic cutaneous squamous cell carcinoma (KEYNOTE-629 study): An open-label, nonrandomized, multicenter, phase II trial. <i>Ann Oncol.</i> 2021;32:1276-1285.	<a href="https://pubmed.ncbi.nlm.nih.gov/34293460/">https://pubmed.ncbi.nlm.nih.gov/34293460/</a>

<p>Karia PS, Han J, Schmults CD. Cutaneous squamous cell carcinoma: Estimated incidence of disease, nodal metastasis, and deaths from disease in the United States, 2012. <i>J Am Acad Dermatol</i>. 2013;68:957-966.</p>	<p><a href="https://pubmed.ncbi.nlm.nih.gov/23375456/">https://pubmed.ncbi.nlm.nih.gov/23375456/</a></p>
<p>Kwan W, Wilson D, Moravan V. Radiotherapy for locally advanced basal cell and squamous cell carcinomas of the skin. <i>Int J Radiat Oncol Biol Phys</i>. 2004;60:406-411.</p>	<p><a href="https://pubmed.ncbi.nlm.nih.gov/15380573/">https://pubmed.ncbi.nlm.nih.gov/15380573/</a></p>
<p>Lear JT, Migden MR, Lewis KD, et al. Long-term efficacy and safety of sonidegib in patients with locally advanced and metastatic basal cell carcinoma: 30-month analysis of the randomized phase 2 BOLT study. <i>J Eur Acad Dermatol Venereol</i>. 2018;32:372-381.</p>	<p><a href="https://pubmed.ncbi.nlm.nih.gov/28846163/">https://pubmed.ncbi.nlm.nih.gov/28846163/</a></p>
<p>Maubec E, Boubaya M, Petrow P, et al. Phase II study of pembrolizumab as first-line, single-drug therapy for patients with unresectable cutaneous squamous cell carcinomas. <i>J Clin Oncol</i>. 2020;38:3051-3061.</p>	<p><a href="https://pubmed.ncbi.nlm.nih.gov/32730186/">https://pubmed.ncbi.nlm.nih.gov/32730186/</a></p>
<p>Migden MR, Guminski A, Gutzmer R, et al. Treatment with two different doses of sonidegib in patients with locally advanced or metastatic basal cell carcinoma (BOLT): A multicentre, randomised, double-blind phase 2 trial. <i>Lancet Oncol</i>. 2015;16:716-728.</p>	<p><a href="https://pubmed.ncbi.nlm.nih.gov/25981810/">https://pubmed.ncbi.nlm.nih.gov/25981810/</a></p>
<p>Migden MR, Khushalani NI, Chang ALS, et al. Cemiplimab in locally advanced cutaneous squamous cell carcinoma: Results from an open-label, phase 2, single-arm trial. <i>Lancet Oncol</i>. 2020;21:294-305.</p>	<p><a href="https://pubmed.ncbi.nlm.nih.gov/31952975/">https://pubmed.ncbi.nlm.nih.gov/31952975/</a></p>
<p>National Comprehensive Cancer Network®. NCCN Clinical Practice Guidelines in Oncology. Squamous Cell Skin Cancer. Version 1.2023.</p>	<p><a href="https://www.nccn.org/professionals/physician_gls/pdf/squamous.pdf">https://www.nccn.org/professionals/physician_gls/pdf/squamous.pdf</a></p>
<p>Negbenebor NA. The power of a multidisciplinary tumor board: Managing unresectable and/or high-risk skin cancers. <i>Cutis</i>. 2021;107:E22-E23.</p>	<p><a href="https://pubmed.ncbi.nlm.nih.gov/34288865/">https://pubmed.ncbi.nlm.nih.gov/34288865/</a></p>
<p>Parikh SA, Patel VA, Ratner D. Advances in the management of cutaneous squamous cell carcinoma. <i>F1000Prime Rep</i>. 2014;6:70.</p>	<p><a href="https://pubmed.ncbi.nlm.nih.gov/25165569/">https://pubmed.ncbi.nlm.nih.gov/25165569/</a></p>
<p>Postow MA, Sidlow R, Hellmann MD. Immune-related adverse events associated with immune checkpoint blockade. <i>N Engl J Med</i>. 2018;378:158-168.</p>	<p><a href="https://pubmed.ncbi.nlm.nih.gov/29320654/">https://pubmed.ncbi.nlm.nih.gov/29320654/</a></p>
<p>Rischin D, Migden MR, Lim AM, et al. Phase 2 study of cemiplimab in patients with metastatic cutaneous squamous cell carcinoma: Primary analysis of fixed-dosing, long-term outcome of weight-based dosing. <i>J Immunother Cancer</i>. 2020;8:e000775.</p>	<p><a href="https://pubmed.ncbi.nlm.nih.gov/32554615/">https://pubmed.ncbi.nlm.nih.gov/32554615/</a></p>
<p>Schmults CD, Karia PS, Carter JB, Han J, Qureshi AA. Factors predictive of recurrence and death from cutaneous squamous cell carcinoma: A 10-year, single-institution cohort study. <i>JAMA Dermatol</i>. 2013;149:541-547.</p>	<p><a href="https://pubmed.ncbi.nlm.nih.gov/23677079/">https://pubmed.ncbi.nlm.nih.gov/23677079/</a></p>

<p>Sekulic A, Migden MR, Basset-Seguin N, et al. Long-term safety and efficacy of vismodegib in patients with advanced basal cell carcinoma: Final update of the pivotal ERIVANCE BCC study. <i>BMC Cancer</i>. 2017;17:332.</p>	<p><a href="https://bmccancer.biomedcentral.com/articles/10.1186/s12885-017-3286-5">https://bmccancer.biomedcentral.com/articles/10.1186/s12885-017-3286-5</a></p>
<p>Sekulic A, Migden MR, Oro AE, et al. Efficacy and safety of vismodegib in advanced basal-cell carcinoma. <i>N Eng J Med</i>. 2012;366:2171-2179.</p>	<p><a href="https://www.nejm.org/doi/full/10.1056/nejmoa1113713">https://www.nejm.org/doi/full/10.1056/nejmoa1113713</a></p>
<p>Shalhout SZ, Emerick KS, Kaufman HL, Miller DM. Immunotherapy for non-melanoma skin cancer. <i>Curr Oncol Rep</i>. 2021;23:125.</p>	<p><a href="https://pubmed.ncbi.nlm.nih.gov/34448958/">https://pubmed.ncbi.nlm.nih.gov/34448958/</a></p>
<p>Stratigos A, Garbe C, Lebbe C, et al. Diagnosis and treatment of invasive squamous cell carcinoma of the skin: European consensus-based interdisciplinary guideline. <i>Eur J Cancer</i>. 2015;51:1989-2007.</p>	<p><a href="https://pubmed.ncbi.nlm.nih.gov/26219687/">https://pubmed.ncbi.nlm.nih.gov/26219687/</a></p>
<p>Stratigos AJ, Sekulic A, Peris K, et al. Cemiplimab in locally advanced basal cell carcinoma after hedgehog inhibitor therapy: An open-label, multi-centre, single-arm, phase 2 trial. <i>Lancet Oncol</i>. 2021;22:848-857.</p>	<p><a href="https://pubmed.ncbi.nlm.nih.gov/34000246/">https://pubmed.ncbi.nlm.nih.gov/34000246/</a></p>
<p>Stratigos AJ, Sekulic A, Peris K, et al. LBA47 Primary analysis of phase II results for cemiplimab in patients (pts) with locally advanced basal cell carcinoma (laBCC) who progress on or are intolerant to hedgehog inhibitors (HHIs). <i>Ann Oncol</i>. 2020;31(suppl 4):S1175-S1176.</p>	<p><a href="https://www.annalsofoncology.org/article/S0923-7534(20)42359-2/abstract">https://www.annalsofoncology.org/article/S0923-7534(20)42359-2/abstract</a></p>
<p>Sung H, Ferlay J, Siegel RL, et al. Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. <i>CA Cancer J Clin</i>. 2021;71:209-249.</p>	<p><a href="https://pubmed.ncbi.nlm.nih.gov/33538338/">https://pubmed.ncbi.nlm.nih.gov/33538338/</a></p>
<p>Verkouteren JAC, Ramdas KHR, Wakkee M, Nijsten T. Epidemiology of basal cell carcinoma: Scholarly review. <i>Br J Dermatol</i>. 2017;177:359-372.</p>	<p><a href="https://pubmed.ncbi.nlm.nih.gov/28220485/">https://pubmed.ncbi.nlm.nih.gov/28220485/</a></p>
<p>Villani A, Fabbrocini G, Costa C, Scalvenzi M. Sonidegib: Safety and efficacy in treatment of advanced basal cell carcinoma. <i>Dermatol Ther (Heidelb)</i>. 2020;10:401-412.</p>	<p><a href="https://pubmed.ncbi.nlm.nih.gov/32297221/">https://pubmed.ncbi.nlm.nih.gov/32297221/</a></p>
<p>Weinberg AS, Ogle CA, Shim EK. Metastatic cutaneous squamous cell carcinoma: An update. <i>Dermatol Surg</i>. 2007;33:885-899.</p>	<p><a href="https://pubmed.ncbi.nlm.nih.gov/17661931/">https://pubmed.ncbi.nlm.nih.gov/17661931/</a></p>
<p>William WN Jr, Feng L, Ferrarotto R, et al. Gefitinib for patients with incurable cutaneous squamous cell carcinoma: A single-arm phase II clinical trial. <i>J Am Acad Dermatol</i>. 2017;77:1110-1113.e2.</p>	<p><a href="https://pubmed.ncbi.nlm.nih.gov/28964539/">https://pubmed.ncbi.nlm.nih.gov/28964539/</a></p>
<p>Work Group; Invited Reviewers, Kim JYS, et al. Guidelines of care for the management of cutaneous squamous cell carcinoma. <i>J Am Acad Dermatol</i>. 2018;78:560-578.</p>	<p><a href="https://pubmed.ncbi.nlm.nih.gov/29331386/">https://pubmed.ncbi.nlm.nih.gov/29331386/</a></p>
<p>Xie P, Lefrançois P. Efficacy, safety, and comparison of sonic hedgehog inhibitors in basal cell carcinomas: A systematic review and meta-analysis. <i>J Am Acad Dermatol</i>. 2018;79:1089-1100.e17.</p>	<p><a href="https://pubmed.ncbi.nlm.nih.gov/30003981/">https://pubmed.ncbi.nlm.nih.gov/30003981/</a></p>

## Resources and Societies

Resource	Address
<b>American Academy of Dermatology Association (AAD). Skin Cancer.</b>	<a href="https://www.aad.org/media/stats-skin-cancer">https://www.aad.org/media/stats-skin-cancer</a>
<b>American Cancer Society (ACS). Basal and Squamous Cell Skin Cancer.</b>	<a href="https://www.cancer.org/cancer/basal-and-squamous-cell-skin-cancer.html">https://www.cancer.org/cancer/basal-and-squamous-cell-skin-cancer.html</a>
<b>American College of Mohs Surgery (ACMS)</b>	<a href="https://www.mohscollege.org/">https://www.mohscollege.org/</a>
<b>American Society of Clinical Oncology (ASCO)</b>	<a href="https://www.asco.org/">https://www.asco.org/</a>
<b>Centers for Disease Control and Prevention (CDC). What Is Skin Cancer?</b>	<a href="https://www.cdc.gov/cancer/skin/basic_info/what-is-skin-cancer.htm">https://www.cdc.gov/cancer/skin/basic_info/what-is-skin-cancer.htm</a>
<b>National Comprehensive Cancer Network®. NCCN Clinical Practice Guidelines in Oncology. Basal Cell Skin Cancer. Version 1.2023.</b>	<a href="https://www.nccn.org/guidelines/guidelines-detail?category=1&amp;id=1416">https://www.nccn.org/guidelines/guidelines-detail?category=1&amp;id=1416</a>
<b>National Comprehensive Cancer Network®. NCCN Clinical Practice Guidelines in Oncology. Squamous Cell Skin Cancer. Version 1.2023.</b>	<a href="https://www.nccn.org/guidelines/guidelines-detail?category=1&amp;id=1465">https://www.nccn.org/guidelines/guidelines-detail?category=1&amp;id=1465</a>
<b>Skin Cancer Foundation. Basal Cell Carcinoma Overview.</b>	<a href="https://www.skincancer.org/skin-cancer-information/basal-cell-carcinoma/">https://www.skincancer.org/skin-cancer-information/basal-cell-carcinoma/</a>
<b>Skin Cancer Foundation. Squamous Cell Carcinoma Overview.</b>	<a href="https://www.skincancer.org/skin-cancer-information/squamous-cell-carcinoma/">https://www.skincancer.org/skin-cancer-information/squamous-cell-carcinoma/</a>

All URLs accessed June 7, 2023