





Allison Betof Warner, MD, PhD

Assistant Professor of Medicine (Oncology)

Medicine - Oncology

 NIH Biosketch available Online

 Curriculum Vitae available Online

CLINICAL OFFICES

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Bio

BIO

Dr. Betof Warner is a board-certified, fellowship-trained medical oncologist with the Cutaneous Oncology Program and an Assistant Professor in the Department of Medicine, Division of Medical Oncology. She also serves as Director of Melanoma Medical Oncology, Director of Solid Tumor Cellular Therapy, and co-Director of the Pigmented Lesion and Melanoma Program.

Clinical interests of Dr. Betof Warner include treatment of advanced melanoma, immunotherapy, and cellular therapies for solid tumors. She has been a pioneer in the use of commercial tumor infiltrating lymphocyte (TIL) therapy, which is expected to become standard of care for immunotherapy-refractory melanoma.

Dr. Betof Warner serves as the leader of the Melanoma & Cutaneous Oncology Clinical Research Group, with research interests focused on tumor response to immunotherapy. She has been the principal investigator of multiple clinical trials focusing on immunotherapy-refractory melanoma and is internationally recognized for her expertise in central nervous system metastases and the use of novel cellular therapies. Dr. Betof Warner collaborates with investigators around the world in surgery, neuro-oncology, neurosurgery, radiation oncology, and pathology. She has received funding and awards for her clinical and translational investigative work from multiple high-profile organizations, including the American Society of Clinical Oncology (ASCO), National Institutes of Health (NIH), and Melanoma Research Foundation.

In addition to publishing her research in peer-reviewed journals, Dr. Betof Warner has served as an editorial and grant reviewer for multiple organizations, including the Melanoma Research Foundation. She has authored book chapters and case reports, contributed to national guidelines, and presented her findings at regional, national, and international meetings.

Dr. Betof Warner is a member of multiple professional organizations and societies, including the American Association for Cancer Research, the American Society of Clinical Oncology, and the Society for Immunotherapy of Cancer, where she serves on the Early Career Scientist Committee. She is also a member of the American College of Sports Medicine and the European Society for Medical Oncology.

CLINICAL FOCUS

- Oncology
- Melanoma
- Cellular Therapy

ACADEMIC APPOINTMENTS

- Assistant Professor - University Medical Line, Medicine - Oncology
- Member, Stanford Cancer Institute

PROFESSIONAL EDUCATION

- Fellowship: Memorial Sloan Kettering Cancer Center (2019) NY
- Board Certification: Oncology, American Board of Internal Medicine (2018)
- Board Certification: Internal Medicine, American Board of Internal Medicine (2016)
- Residency: Massachusetts General Hospital Internal Medicine Residency (2016) MA
- Medical Education: Duke University School of Medicine (2013) NC

Publications

PUBLICATIONS

- **Leptomeningeal Carcinomatosis from Solid Tumor Malignancies: Treatment Strategies and Biomarkers.** *Seminars in neurology*
Malani, R., Bhatia, A., Warner, A. B., Yang, J. T.
2023
- **The features and management of acquired resistance to PD1-based therapy in metastatic melanoma.** *European journal of cancer (Oxford, England : 1990)*
Hepner, A., Versluis, J. M., Wallace, R., Allayous, C., Brown, L. J., Trojaniello, C., Gerard, C. L., Jansen, Y. J., Bhave, P., Neyns, B., Haydon, A., Michielin, O., Mangana, et al
2023; 196: 113441
- **Exercise as an Immune Boost: Mechanism-Driven Support for Lifestyle Interventions.** *Cancer immunology research*
Betof Warner, A.
2023: OF1
- **CD4+ TIL to the rescue of anti-PD-1 failure by targeting MHC-II.** *Clinical cancer research : an official journal of the American Association for Cancer Research*
Betof Warner, A., Luke, J. J.
2023
- **Perspectives in Melanoma: meeting report from the Melanoma Bridge (December 1st-3rd, 2022-Naples, Italy).** *Journal of translational medicine*
Ascierto, P. A., Agarwala, S. S., Warner, A. B., Ernstoff, M. S., Fox, B. A., Gajewski, T. F., Galon, J., Garbe, C., Gastman, B. R., Gershenwald, J. E., Kalinski, P., Krogsgaard, M., Leidner, et al
2023; 21 (1): 508
- **A pilot trial of autologous tumor infiltrating lymphocytes (lifileucel, LN-144) for patients with asymptomatic melanoma brain metastases**
Warner, A., Postow, M. A., Panageas, K., Smithy, J., Schoenfeld, A., Wolchok, J. D., Shoushtari, A.
LIPPINCOTT WILLIAMS & WILKINS.2023
- **Real-world treatment patterns and outcomes for patients with advanced melanoma treated with immunotherapy or targeted therapy.** *Pharmacoepidemiology and drug safety*
Lee, S., Bennett, A. V., Zhou, X., Betof Warner, A., Trogdon, J. G., Kent, E. E., Lund, J. L.
2023
- **Diversity, equity, and inclusion in the melanoma research community.** *Pigment cell & melanoma research*
Portuallo, M. E., Lu, D. Y., Alicea, G. M., Bolling, J., Lee, R., McQuade, J., Warner, A. B., Davies, M., Weeraratna, A., Villanueva, J., Rebecca, V. W.

2023

- **Beyond the 5-year milestone: Long-term survivorship of melanoma patients treated off-trial with anti-PD-1.** *Pigment cell & melanoma research*
Loo, K., Kalvin, H. L., Panageas, K. S., Callahan, M. K., Chapman, P. B., Momtaz, P., Shoushtari, A. N., Wolchok, J. D., Postow, M. A., Warner, A. B.
2023
- **T cell immunotherapies engage neutrophils to eliminate tumor antigen escape variants.** *Cell*
Hirschhorn, D., Budhu, S., Kraehenbuehl, L., Gigoux, M., Schröder, D., Chow, A., Ricca, J. M., Gasmi, B., De Henau, O., Mangarin, L. M., Li, Y., Hamadene, L., Flamar, et al
2023; 186 (7): 1432-1447.e17
- **Neoadjuvant relatlimab and nivolumab in resectable melanoma (vol 611, pg 155, 2022)** *NATURE*
Amaria, R. N., Postow, M., Burton, E. M., Tetzlaff, M. T., Ross, M. I., Torres-Cabala, C., Glitza, I. C., Duan, F., Milton, D. R., Busam, K., Simpson, L., McQuade, J. L., Wong, et al
2023: E23
- **Efficacy of immunotherapy for melanoma brain metastases in patients with concurrent corticosteroid exposure.** *CNS oncology*
Tringale, K. R., Reiner, A. S., Sehgal, R. R., Panageas, K., Betof Warner, A. S., Postow, M. A., Moss, N. S.
2023; 12 (1): CNS93
- **Decision-Making and Health-Related Quality of Life in Patients with Melanoma Considering Adjuvant Immunotherapy** *ONCOLOGIST*
Atkinson, T. M., Hay, J. L., Young Kim, S., Schofield, E., Postow, M. A., Momtaz, P., Warner, A., Shoushtari, A. N., Callahan, M. K., Wolchok, J. D., Li, Y., Chapman, P. B.
2023
- **Real-world outcomes of different lines and sequences of treatment in BRAF-positive advanced melanoma patients.** *Melanoma research*
Betof Warner, A., Tarhini, A., Kang, B., Nakasato, A., Ling, Y. L., Shah, R., Tang, J., Patel, J.
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- **Metformin is associated with improved clinical outcomes in patients with melanoma: a retrospective, multi-institutional study.** *Frontiers in oncology*
Augustin, R. C., Huang, Z., Ding, F., Zhai, S., McArdle, J., Santisi, A., Davis, M., Sander, C., Davar, D., Kirkwood, J. M., Delgoffe, G. M., Warner, A. B., Najjar, et al
2023; 13: 1075823
- **Tumor-Infiltrating Lymphocyte Therapy in Melanoma: Facts to the Future.** *Clinical cancer research : an official journal of the American Association for Cancer Research*
Betof Warner, A., Corrie, P. G., Hamid, O.
2022
- **Case report: Later onset of NRAS-mutant metastatic melanoma in a patient with a partially-excised giant congenital melanocytic nevus.** *Frontiers in medicine*
Costa, B. A., Zibara, V., Singh, V., Hamid, O., Gandhi, S., Moy, A. P., Betof Warner, A. S.
2022; 9: 1086473
- **Randomized Phase II Trial of Proton Craniospinal Irradiation Versus Photon Involved-Field Radiotherapy for Patients With Solid Tumor Leptomeningeal Metastasis.** *Journal of clinical oncology : official journal of the American Society of Clinical Oncology*
Yang, J. T., Wijetunga, N. A., Pentsova, E., Wolden, S., Young, R. J., Correa, D., Zhang, Z., Zheng, J., Steckler, A., Bucwinska, W., Bernstein, A., Betof Warner, A., Yu, et al
2022; 40 (33): 3858-3867
- **Neoadjuvant relatlimab and nivolumab in resectable melanoma.** *Nature*
Amaria, R. N., Postow, M., Burton, E. M., Tetzlaff, M. T., Ross, M. I., Torres-Cabala, C., Glitza, I. C., Duan, F., Milton, D. R., Busam, K., Simpson, L., McQuade, J. L., Wong, et al
2022; 611 (7934): 155-160
- **Inflammatory vulvar dermatoses following immune checkpoint inhibitor therapy.** *American journal of obstetrics and gynecology*
Sia, T. Y., Warner, A. B., Noor, S. J., Aviki, E. M., Long Roche, K.
2022
- **Benefit and toxicity of programmed death-1 blockade vary by ethnicity in patients with advanced melanoma: an international multicentre observational study.** *The British journal of dermatology*
Bai, X., Shoushtari, A. N., Betof Warner, A., Si, L., Tang, B., Cui, C., Yang, X., Wei, X., Quach, H. T., Cann, C. G., Zhang, M. Z., Pallan, L., Harvey, et al

2022; 187 (3): 401-410

- **The "Great Debate" at Melanoma Bridge 2021, December 2nd-4th, 2021.** *Journal of translational medicine*
Ascierto, P. A., Warner, A. B., Blank, C., Caracò, C., Demaria, S., Gershenwald, J. E., Khushalani, N. I., Long, G. V., Luke, J. J., Mehnert, J. M., Robert, C., Rutkowski, P., Tawbi, et al
2022; 20 (1): 200
- **Adaptive Dosing of Nivolumab + Ipilimumab Immunotherapy Based Upon Early, Interim Radiographic Assessment in Advanced Melanoma (The ADAPT-IT Study).** *Journal of clinical oncology : official journal of the American Society of Clinical Oncology*
Postow, M. A., Goldman, D. A., Shoushtari, A. N., Betof Warner, A., Callahan, M. K., Momtaz, P., Smithy, J. W., Naito, E., Cugliari, M. K., Raber, V., Eton, O., Nair, S. G., Panageas, et al
2022; 40 (10): 1059-1067
- **Adoptive Cell Transfer and Vaccines in Melanoma: The Horizon Comes Into View.** *American Society of Clinical Oncology educational book. American Society of Clinical Oncology. Annual Meeting*
Betof-Warner, A., Sullivan, R. J., Sarnaik, A.
2022; 42: 1-8
- **Quantitative cerebrospinal fluid circulating tumor cells are a potential biomarker of response for proton craniospinal irradiation for leptomeningeal metastasis.** *Neuro-oncology advances*
Wijetunga, N. A., Boire, A., Young, R. J., Yamada, Y., Wolden, S., Yu, H., Kris, M., Seidman, A., Betof-Warner, A., Diaz, M., Reiner, A., Malani, R., Pentsova, et al
2021; 3 (1): vdab181
- **Dermatologic infections in cancer patients treated with checkpoint inhibitors.** *Journal of the American Academy of Dermatology*
Do, M. H., Barrios, D. M., Phillips, G. S., Postow, M. A., Warner, A. B., Rosenberg, J. E., Noor, S. J., Markova, A., Lacouture, M. E.
2021; 85 (6): 1528-1536
- **Early Use of High-Dose Glucocorticoid for the Management of irAE Is Associated with Poorer Survival in Patients with Advanced Melanoma Treated with Anti-PD-1 Monotherapy.** *Clinical cancer research : an official journal of the American Association for Cancer Research*
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- **Cyclophosphamide enhances the antitumor potency of GITR engagement by increasing oligoclonal cytotoxic T cell fitness.** *JCI insight*
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- **Risks and benefits of reinduction ipilimumab/nivolumab in melanoma patients previously treated with ipilimumab/nivolumab.** *Journal for immunotherapy of cancer*
Chapman, P. B., Jayaprakasam, V. S., Panageas, K. S., Callahan, M., Postow, M. A., Shoushtari, A. N., Wolchok, J. D., Betof Warner, A.
2021; 9 (10)
- **Immune checkpoint inhibitors in patients with pre-existing psoriasis: safety and efficacy.** *Journal for immunotherapy of cancer*
Halle, B. R., Betof Warner, A., Zaman, F. Y., Haydon, A., Bhave, P., Dewan, A. K., Ye, F., Irlmeier, R., Mehta, P., Kurtansky, N. R., Lacouture, M. E., Hassel, J. C., Choi, et al
2021; 9 (10)
- **LAG-3 expression on peripheral blood cells identifies patients with poorer outcomes after immune checkpoint blockade.** *Science translational medicine*
Shen, R., Postow, M. A., Adamow, M., Arora, A., Hannum, M., Maher, C., Wong, P., Curran, M. A., Hollmann, T. J., Jia, L., Al-Ahmadie, H., Keegan, N., Funt, et al
2021; 13 (608)
- **Ipilimumab versus ipilimumab plus anti-PD-1 for metastatic melanoma reply** *LANCET ONCOLOGY*
da Silva, I., Ahmed, T., Reijers, I. M., Warner, A., Patrinely, J., Serra-Bellver, P., Allayous, C., Mangana, J., Zimmer, L., Trojaniello, C., Klein, O., Gerard, C. L., Michielin, et al
2021; 22 (8): E343-E344
- **Consensus disease definitions for neurologic immune-related adverse events of immune checkpoint inhibitors.** *Journal for immunotherapy of cancer*
Guidon, A. C., Burton, L. B., Chwalisz, B. K., Hillis, J., Schaller, T. H., Amato, A. A., Betof Warner, A., Brastianos, P. K., Cho, T. A., Clardy, S. L., Cohen, J. V., Dietrich, J., Dougan, et al
2021; 9 (7)

- **Ipilimumab alone or ipilimumab plus anti-PD-1 therapy in patients with metastatic melanoma resistant to anti-PD-(L)1 monotherapy: a multicentre, retrospective, cohort study.** *The Lancet. Oncology*
Pires da Silva, I., Ahmed, T., Reijers, I. L., Wepler, A. M., Betof Warner, A., Patrinely, J. R., Serra-Bellver, P., Allayous, C., Mangana, J., Nguyen, K., Zimmer, L., Trojaniello, C., Stout, et al
2021; 22 (6): 836-847
- **Therapeutic Implications of Detecting MAPK-Activating Alterations in Cutaneous and Unknown Primary Melanomas.** *Clinical cancer research : an official journal of the American Association for Cancer Research*
Shoushtari, A. N., Chatila, W. K., Arora, A., Sanchez-Vega, F., Kantheti, H. S., Rojas Zamalloa, J. A., Krieger, P., Callahan, M. K., Betof Warner, A., Postow, M. A., Momtaz, P., Nair, S., Ariyan, et al
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- **Success and failure of additional immune modulators in steroid-refractory/resistant pneumonitis related to immune checkpoint blockade.** *Journal for immunotherapy of cancer*
Beattie, J., Rizvi, H., Fuentes, P., Luo, J., Schoenfeld, A., Lin, I. H., Postow, M., Callahan, M., Voss, M. H., Shah, N. J., Betof Warner, A., Chawla, M., Hellmann, et al
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- **Factors Determining Long-Term Antitumor Responses to Immune Checkpoint Blockade Therapy in Melanoma.** *Frontiers in immunology*
Loo, K., Smithy, J. W., Postow, M. A., Betof Warner, A.
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- **The future of cancer immunotherapy: microenvironment-targeting combinations.** *Cell research*
Murciano-Goroff, Y. R., Warner, A. B., Wolchok, J. D.
2020; 30 (6): 507-519
- **Long-Term Outcomes and Responses to Retreatment in Patients With Melanoma Treated With PD-1 Blockade.** *Journal of clinical oncology : official journal of the American Society of Clinical Oncology*
Betof Warner, A., Palmer, J. S., Shoushtari, A. N., Goldman, D. A., Panageas, K. S., Hayes, S. A., Bajwa, R., Momtaz, P., Callahan, M. K., Wolchok, J. D., Postow, M. A., Chapman, P. B.
2020; 38 (15): 1655-1663
- **Another Victory for Immune Checkpoint Blockade in Melanoma: Adjuvant Ipilimumab Over Interferon** *JOURNAL OF CLINICAL ONCOLOGY*
Betof Warner, A., Postow, M. A.
2020; 38 (6): 529+
- **Selective inhibition of low-affinity memory CD8+ T cells by corticosteroids.** *The Journal of experimental medicine*
Tokunaga, A., Sugiyama, D., Maeda, Y., Warner, A. B., Panageas, K. S., Ito, S., Togashi, Y., Sakai, C., Wolchok, J. D., Nishikawa, H.
2019; 216 (12): 2701-2713
- **Modifiable Host Factors in Melanoma: Emerging Evidence for Obesity, Diet, Exercise, and the Microbiome.** *Current oncology reports*
Warner, A. B., McQuade, J. L.
2019; 21 (8): 72
- **Can Exercise-Induced Modulation of the Tumor Physiologic Microenvironment Improve Antitumor Immunity?** *Cancer research*
Zhang, X., Ashcraft, K. A., Betof Warner, A., Nair, S. K., Dewhirst, M. W.
2019; 79 (10): 2447-2456
- **Exercise as Adjunct Therapy in Cancer** *SEMINARS IN RADIATION ONCOLOGY*
Ashcraft, K. A., Warner, A., Jones, L. W., Dewhirst, M. W.
2019; 29 (1): 16-24
- **Bigger Is Not Always Better: Tumor Size and Prognosis in Advanced Melanoma** *CLINICAL CANCER RESEARCH*
Warner, A., Postow, M. A.
2018; 24 (20): 4915-4917
- **Combination Controversies: Checkpoint Inhibition Alone or in Combination for the Treatment of Melanoma?** *Oncology (Williston Park, N.Y.)*
Warner, A. B., Postow, M. A.
2018; 32 (5): 228-34
- **The brim of uncertainty in adjuvant treatment of melanoma** *LANCET ONCOLOGY*

Warner, A., Postow, M. A.
2018; 19 (4): 436-437

- **Peripheral blood clinical laboratory variables associated with outcomes following combination nivolumab and ipilimumab immunotherapy in melanoma.** *Cancer medicine*
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2018; 7 (3): 690-697
- **Safety of resuming anti-PD-1 in patients with immune-related adverse events (irAEs) during combined anti-CTLA-4 and anti-PD1 in metastatic melanoma.** *Annals of oncology : official journal of the European Society for Medical Oncology*
Pollack, M. H., Betof, A., Dearden, H., Rapazzo, K., Valentine, I., Brohl, A. S., Ancell, K. K., Long, G. V., Menzies, A. M., Eroglu, Z., Johnson, D. B., Shoushtari, A. N.
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- **End-of-Life Care for Patients with Potentially Resectable Pancreatic Cancer Who Received Radiation Therapy**
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- **Modulation of murine breast tumor vascularity, hypoxia and chemotherapeutic response by exercise.** *Journal of the National Cancer Institute*
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Betof, A. S., Dewhirst, M. W., Jones, L. W.
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- **Exercise modulation of the host-tumor interaction in an orthotopic model of murine prostate cancer.** *Journal of applied physiology (Bethesda, Md. : 1985)*
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Vujaskovic, Z., Kim, D. W., Jones, E., Lan, L., McCall, L., Dewhirst, M. W., Craciunescu, O., Stauffer, P., Liotcheva, V., Betof, A., Blackwell, K.
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