

Ultraviolet (UV) Light Therapy

DME.SW.108.A

v1.0.2026

Introduction

Ultraviolet light therapy will be addressed in this guideline.

Health Equity Consideration

Health equity is the highest level of health for all individuals; health inequity is the avoidable difference in health status or distribution of health resources due to the social conditions in which individuals are born, grow, live, work, and age. Social determinants of health are the conditions in the environment that affect a wide range of health, functioning, and quality of life outcomes and risks. Examples include the following: safe housing, transportation, and neighborhoods; racism, discrimination, and violence; education, job opportunities, and income; access to nutritious foods and physical activity opportunities; access to clean air and water; and language and literacy skills.

Criteria

An **Ultraviolet (UV) light therapy system** (HCPCS E0691-E0694) is considered medically necessary for an individual when **both** of the following conditions are met:

- There is documentation of **any** of the following:
 - atopic dermatitis
 - psoriasis (including subtypes: guttate, plaque, palmoplantar psoriasis, palmoplantar pustulosis)
 - vitiligo
 - cutaneous T-cell lymphoma (mycosis fungoides, early stages IA, IB, IIA)
 - polymorphic light eruption
 - graft-versus-host disease
 - morphea
 - lichen planus
 - uremic pruritus
 - prurigo nodularis
 - acquired perforating dermatosis
 - granuloma annulare
 - urticaria pigmentosa
 - pityriasis lichenoides chronica

- pityriasis lichenoides et varioliformis acuta
- lymphomatoid papulosis
- pruritus associated with polycythemia vera
- pruritus in HIV
- aquagenic pruritus
- pruritus from chronic liver disease
- The documentation supports the need for treatment at home rather than an alternative site (e.g., outpatient, office-based setting) for **any** of the following:
 - The individual is unable to attend therapy in an outpatient, office-based phototherapy center due to a medical condition.
 - The individual requires multiple weekly treatment sessions over a period of several months.
 - The individual is not in close proximity to an outpatient, office-based phototherapy center.

Absolute Contraindications

UV Light Therapy is contraindicated for the following conditions:

- history of melanoma
- multiple non-melanoma skin cancers
- cutaneous cancer syndromes
- generalized erythroderma
- photosensitivity disorders
- history of arsenic exposure or ionizing radiation therapy

Relative Contraindications

UV Light Therapy should be used with caution for individuals with the following conditions:

- numerous atypical nevi
- immunosuppression
- current use of photosensitizing medications
- pregnancy
- pediatric patients with anxiety or inability to cooperate with treatment

Special Populations

Pediatric Individuals (0-18 years of age)

Parental education by a provider or trained staff, preparation, and supervision is required.

Older Adults (65 years of age or older)

Older adults will require increased skin cancer surveillance.

Evidence Discussion

Modern phototherapy has been medically used for over 40 years and can be safely combined with many treatment modalities, such as biologics (Torres et al., 2021). Phototherapy counteracts pathologic changes that are characteristic of skin diseases through a few different mechanisms, depending on the pathogenesis of the disease and the specific modality: induction of apoptosis; modification of the cytokine milieu; and immunosuppression (Bae et al., 2017).

UV phototherapy, specifically Ultraviolet–Blue–Visual (UVB) therapy, is a popular treatment for psoriasis when lesions cover at least 10% of the body. A randomized, double-blind comparison of high and low doses of narrowband UVB (NB-UVB) showed that higher doses of NB-UVB prolonged remissions, especially when combined with other topical therapies (e.g., emollients or calcipotriene) (Zhang & Wu, 2018).

A 2017 systematic review and meta-analysis by Bae et al. found that phototherapy, particularly NB-UVB, produced consistently favorable repigmentation outcomes for generalized vitiligo, with at least mild repigmentation ($\geq 25\%$) achieved in approximately 74% of individuals at 6 months and 75% at 12 months, while marked repigmentation ($\geq 75\%$) increased from 19% at 6 months to nearly 36% at 12 months. Treatment response varied significantly by body site, with the highest repigmentation seen on the face and neck (approximately 44%) and the poorest responses observed on the hands and feet (0% marked response after ≥ 6 months), underscoring anatomical differences in melanocyte reservoir and phototherapy responsiveness. psoralen–UV-A (PUVA) phototherapy demonstrated lower overall response rates than NB-UVB, and across studies, longer treatment duration consistently correlated with better outcomes, reinforcing the importance of sustained therapy. The authors stated that despite logistical burdens, (e.g., frequent clinic visits and prolonged treatment courses) phototherapy remains a cornerstone of vitiligo management.

Across 32 randomized trials ($n=1219$), Musters et al. (2021) found that phototherapy, particularly NB-UVB showed the most consistent benefit for atopic eczema, with low-certainty evidence suggesting that NB-UVB improved physician-assessed disease severity (e.g., one trial showing a mean reduction of -9.4 points on a 0–90 activity scale vs placebo) and increased the proportion of patients reporting reduced itch. NB-UVB also appeared to increase the likelihood of achieving moderate or greater global improvement without increasing withdrawals due to adverse events, which remained rare across trials. Adverse events were generally mild (e.g., phototoxicity, irritation, UV burn, or occasional infection), and serious safety signals were not identified. However, the overall strength of evidence for all modalities other than NB-UVB was limited by

small sample sizes, inconsistent outcome reporting, and high or unclear risk of bias. The review concludes that NB-UVB remains the most evidence-supported phototherapy option for patients who do not respond adequately to topical therapy, while the efficacy and long-term safety of UVA1 (long-wave portion of ultraviolet A radiation), PUVA, and other modalities remain uncertain and require higher-quality research (Musters et. al, 2021).

Codes addressed in this guideline

HCPCS code descriptions

HCPCS Code	Description
A4633	Replacement bulb/lamp for ultraviolet light therapy system, each
E0691	Ultraviolet light therapy system, includes bulbs/lamps, timer and eye protection; treatment area 2 square feet or less
E0692	Ultraviolet light therapy system panel, includes bulbs/lamps, timer and eye protection, 4 foot panel
E0693	Ultraviolet light therapy system panel, includes bulbs/lamps, timer and eye protection, 6 foot panel
E0694	Ultraviolet multidirectional light therapy system in 6 foot cabinet, includes bulbs/lamps, timer and eye protection

References

1. Archier, E., Devaux, S., Castela, E., et al. (2012). *Carcinogenic risks of psoralen UV#A therapy and narrowband UV#B therapy in chronic plaque psoriasis: A systematic literature review*. Journal of the European Academy of Dermatology and Venereology, 26(Suppl 3), 22–31. <https://doi.org/10.1111/j.1468-3083.2012.04520.x>
2. Bae, J. M., Jung, H. M., Hong, B. Y., et al. (2017). *Phototherapy for vitiligo: A systematic review and meta#analysis*. JAMA Dermatology, 153(7), 666–674. <https://doi.org/10.1001/jamadermatol.2017.0002>
3. Boswell, K., Cameron, H., West, J., et al. (2018). *Narrowband ultraviolet B treatment for psoriasis is highly economical and causes significant savings in cost for topical treatments*. British Journal of Dermatology, 179(5), 1148–1156. <https://doi.org/10.1111/bjd.16716>
4. Gambichler, T., Breuckmann, F., Boms, S., Altmeyer, P., & Kreuter, A. (2005). *Narrowband UVB phototherapy in skin conditions beyond psoriasis*. Journal of the American Academy of Dermatology, 52(4), 660–670. <https://doi.org/10.1016/j.jaad.2004.08.047>
5. Griffiths, C. E. M., Armstrong, A. W., Gudjonsson, J. E., & Barker, J. N. W. N. (2021). *Psoriasis*. Lancet, 397(10281), 1301–1315. [https://doi.org/10.1016/S0140-6736\(20\)32549-6](https://doi.org/10.1016/S0140-6736(20)32549-6)
6. Jacob, J., Pona, A., Cline, A., & Feldman, S. (2020). *Home UV phototherapy*. Dermatologic Clinics, 38(1), 109–126. <https://doi.org/10.1016/j.det.2019.09.001>

7. Jury, C. S., McHenry, P., Burden, A. D., Lever, R., & Bilisland, D. (2006). *Narrowband ultraviolet B phototherapy in children*. Clinical and Experimental Dermatology, 31(2), 196–199. <https://doi.org/10.1111/j.1365-2230.2006.02061.x>
8. Koek, M. B., Buskens, E., van Weelden, H., Steegmans, P. H., Bruijnzeel-Koomen, C. A., & Sigurdsson, V. (2009). *Home versus outpatient ultraviolet B phototherapy for mild to severe psoriasis* (PLUTO study). BMJ, 338, b1542. <https://doi.org/10.1136/bmj.b1542>
9. Kupsa, R., Gruber-Wackernagel, A., Hofer, A., Quehenberger, F., Wolf, P., & Legat, F. J. (2023). *Narrowband#ultraviolet B vs broadband#ultraviolet B in treatment of chronic pruritus: A randomized non#inferiority trial*. Acta Dermato-Venereologica, 103, adv9403. <https://doi.org/10.2340/actadv.v103.9403>
10. Kurz, B., Berneburg, M., Bäuml, W., & Karrer, S. (2023). *Phototherapy: Theory and practice*. Journal der Deutschen Dermatologischen Gesellschaft, 21(8), 882–897. <https://doi.org/10.1111/ddg.15126>
11. Lancz, A., Meznerics, F. A., Árok, R., et al. (2026). *Efficacy and safety of conventional and biologic therapies in prurigo nodularis: A systematic review and meta#analysis*. International Journal of Dermatology. Advance online publication. <https://doi.org/10.1111/ijd.70246>
12. Marchitto, M. C., Qureshi, A., Marks, D., et al. (2019). *Emerging nonsteroid#based procedural therapies for alopecia areata: A systematic review*. Dermatologic Surgery, 45(12), 1484–1506.
13. Medicare National Coverage Determination (NCD) for Durable Medical Equipment Reference List (280.1). (n.d.). Centers for Medicare & Medicaid Services. <https://www.cms.gov/medicare-coverage-database/view/ncd.aspx?NCDId=190> <https://doi.org/10.1097/DSS.0000000000002053>
14. Medicare National Coverage Determination (NCD) for Treatment of Psoriasis (250.1). (n.d.). Centers for Medicare & Medicaid Services. <https://www.cms.gov/medicare-coverage-database/view/ncd.aspx?NCDId=88>
15. Medicare National Coverage Determination (NCD) for Durable Medical Equipment (250). (n.d.). Centers for Medicare & Medicaid Services. <https://www.cms.gov/medicare-coverage-database/view/ncd.aspx?ncdid=88&ncdver=1>
16. Musters AH, Mashayekhi S, Harvey J, Axon E, Lax SJ, Flohr C, Drucker AM, Gerbens L, Ferguson J, Ibbotson S, Dawe RS, Garritsen F, Brouwer M, Limpens J, Prescott LE, Boyle RJ, Spuls PI. *Phototherapy for atopic eczema*. Cochrane Database of Systematic Reviews. 2021, Issue 10. Art. No.: CD013870. DOI: 10.1002/14651858.CD013870.pub2
17. Ohe, S., Danno, K., Sasaki, H., Isei, T., Okamoto, H., & Horio, T. (2004). *Treatment of acquired perforating dermatosis with narrowband UVB*. Journal of the American Academy of Dermatology, 50(6), 892–894. <https://doi.org/10.1016/j.jaad.2004.02.009>
18. Olsen, E., Vonderheid, E., Pimpinelli, N., et al. (2007). *Revisions to the staging and classification of mycosis fungoides and Sézary syndrome*. Blood, 110(6), 1713–1722. <https://doi.org/10.1182/blood-2007-03-055749>
19. Olsen, E. A., Hodak, E., Anderson, T., et al. (2016). *Guidelines for phototherapy of mycosis fungoides and Sézary syndrome*. Journal of the American Academy of Dermatology, 74(1), 27–58. <https://doi.org/10.1016/j.jaad.2015.09.033>
20. Pavlovsky, M., Baum, S., Shpiro, D., Pavlovsky, L., & Pavlotsky, F. (2011). *Narrowband UVB: Is it effective and safe for pediatric psoriasis and atopic dermatitis?* Journal of the European Academy of Dermatology and Venereology, 25(6), 727–729. <https://doi.org/10.1111/j.1468-3083.2010.03832.x>
21. Qureshi, A. A., Abate, L. E., Yosipovitch, G., & Friedman, A. J. (2019). *Systematic review of evidence#based treatments for prurigo nodularis*. Journal of the American Academy of Dermatology, 80(3), 756–764. <https://doi.org/10.1016/j.jaad.2018.09.020>
22. Resnik, K. S., & Vonderheid, E. C. (1993). *Home UV phototherapy of early mycosis fungoides: Long#term follow#up*. Journal of the American Academy of Dermatology, 29(1), 73–77. [https://doi.org/10.1016/0190-9622\(93\)70155-M](https://doi.org/10.1016/0190-9622(93)70155-M)
23. Rivard, J., & Lim, H. W. (2005). *Ultraviolet phototherapy for pruritus*. Dermatologic Therapy, 18(4), 344–354. <https://doi.org/10.1111/j.1529-8019.2005.00032.x>
24. Sezer, E., & Erkek, E. (2012). *Acquired perforating dermatosis successfully treated with photodynamic therapy*. Photodermatology, Photoimmunology & Photomedicine, 28(1), 50–52. <https://doi.org/10.1111/j.1600-0781.2011.00634.x>
25. Sidbury, R., Davis, D. M., Cohen, D. E., et al. (2014). *Management and treatment of atopic dermatitis with phototherapy and systemic agents*. Journal of the American Academy of Dermatology, 71(2), 327–349. <https://doi.org/10.1016/j.jaad.2014.03.030>

26. Torres, A. E., Lyons, A. B., Hamzavi, I. H., & Lim, H. W. (2021). *Role of phototherapy in the era of biologics*. Journal of the American Academy of Dermatology, 84(2), 479–485. <https://doi.org/10.1016/j.jaad.2020.04.095>
27. Vieyra-Garcia, P. A., & Wolf, P. (2021). *A deep dive into UV#based phototherapy: Mechanisms of action and emerging molecular targets*. Pharmacology & Therapeutics, 222, 107784. <https://doi.org/10.1016/j.pharmthera.2020.107784>
28. Wang, T. J., Lan, L. C., Lu, C. S., et al. (2014). *Efficacy of narrowband ultraviolet phototherapy on renal pruritus*. Journal of Clinical Nursing, 23(11–12), 1593–1602. <https://doi.org/10.1111/jocn.12252>
29. Weidinger, S., & Novak, N. (2016). *Atopic dermatitis*. Lancet, 387(10023), 1109–1122. [https://doi.org/10.1016/S0140-6736\(15\)00149-X](https://doi.org/10.1016/S0140-6736(15)00149-X)
30. Whitton, M. E., Pinart, M., Batchelor, J., et al. (2015). *Interventions for vitiligo*. Cochrane Database of Systematic Reviews, 2015(2), CD003263. <https://doi.org/10.1002/14651858.CD003263.pub5>
31. Yosipovitch, G., & Bernhard, J. D. (2013). *Chronic pruritus*. The New England Journal of Medicine, 368(17), 1625–1634. <https://doi.org/10.1056/NEJMcp1208814>
32. Zhang, P., & Wu, M. X. (2018). *A clinical review of phototherapy for psoriasis*. Lasers in Medical Science, 33(1), 173–180. <https://doi.org/10.1007/s10103-017-2360-1>