Excimer Laser for Vitiligo

Clinical Policy ID: CCP.1303

Recent review date: 6/2026

Next review date: 10/2027

Policy contains: Excimer laser; vitiligo.

First Choice Next has developed clinical policies to assist with making coverage determinations. First Choice Next's clinical policies are based on guidelines from established industry sources, such as the Centers for Medicare & Medicaid Services (CMS), state regulatory agencies, the American Medical Association (AMA), medical specialty professional societies, and peer-reviewed professional literature. These clinical policies along with other sources, such as plan benefits and state and federal laws and regulatory requirements, including any state- or plan-specific definition of "medically necessary," and the specific facts of the particular situation are considered, on a case by case basis, by First Choice Next when making coverage determinations. In the event of conflict between this clinical policy and plan benefits and/or state or federal laws and/or regulatory requirements, the plan benefits and/or state and federal laws and/or regulatory requirements shall control. First Choice Next's clinical policies are for informational purposes only and not intended as medical advice or to direct treatment. Physicians and other health care providers are solely responsible for the treatment decisions for their patients. First Choice Next's clinical policies are reflective of evidence-based medicine at the time of review. As medical science evolves, First Choice Next will update its clinical policies as necessary. First Choice Next's clinical policies are not guarantees of payment.

Coverage policy

Monochromatic excimer laser light therapy (i.e., wavelength 308 nanometers) is clinically proven and, therefore, may be medically necessary for repigmentation of localized vitiligo, when all of the following criteria are met (Ludmann, 2026; Taieb, 2013):

- For lesions located on the face and neck
- Failure, intolerance, or contraindication to at least one topical corticosteroid and at least one topical calcineurin inhibitor
- To avoid side effects associated with total ultraviolet B irradiation or when conventional narrow-band ultraviolet B irradiation is contraindicated

For any determinations of medical necessity for medications, refer to the applicable state approved pharmacy policy.

Limitations

An initial regimen of monochromatic excimer laser therapy for vitiligo considered medically necessary is generally administered two to three times per week for up to 12 weeks but may be extended if repigmentation is recurring (Taieb, 2013).

Monochromatic excimer laser therapy is investigational/not clinically proven and, therefore, not medically necessary if (Taieb, 2013):

- No repigmentation occurs within the first 12 weeks of treatment
- There is an unsatisfactory response (< 25% repigmentation) after 24 weeks of treatment
- Treatment duration exceeds 104 weeks

Alternative covered services

- Primary care and specialty physician (including surgical) evaluation and management
- Narrow-band ultraviolet B phototherapy
- Topical and oral psoralen photochemotherapy plus ultraviolet A radiation
- Topical tacrolimus and pimecrolimus (calcineurin inhibitors)
- Topical and systemic corticosteroids

Background

Vitiligo is a chronic disorder in which the skin's melanocytes are lost or destroyed. The disease is marked by well-defined white patches on one or multiple parts of the skin, and sometimes on the head or body hair, which can spread over time. Concerns about appearance and ethnic identity caused by vitiligo can lead to serious psychological, social, and emotional concerns (Bergqvist, 2020).

Vitiligo is the most common cause of skin depigmentation. The prevalence of vitiligo ranges between 0.2% in the population at-large to 1.8% in a hospital-based population. The highest prevalence occurs in African Americans and among females. Prevalence increases gradually with age (Zhang, 2016).

The cause of vitiligo remains unknown, but several mechanisms have been implicated in melanocyte destruction. These include genetic, autoimmune responses, oxidative stress, inflammatory mediators, and melanocyte detachment mechanisms. There is consensus on the multifactorial and autoimmune nature of vitiligo, but not on the contribution of specific individual factors (Bergqvist, 2020). Individuals with vitiligo are at risk for developing autoimmune thyroid disease, thyroid cancer, and psoriasis (Fan, 2018; Yen, 2019).

Diagnosis of vitiligo is typically a straightforward process based on physical symptoms, often made by a dermatologist. Several diseases, such as tinea versicolor, progressive macular hypomelanosis, and idiopathic guttate hypomelanosis, can be mistaken for vitiligo, and should be ruled out by clinicians. Wood's light — a hand-held ultraviolet irradiation device — can be used to identify the extent of areas of pigment loss and to monitor patient response to treatment (Ahmed jan, 2022).

Vitiligo is classified into segmental or nonsegmental subtypes, each with prognostic and treatment implications. The available treatments are not curative but may halt disease progression and produce repigmentation, often with acceptable cosmesis. The major nonsurgical treatments for vitiligo are listed below, used alone or in combination (Ahmed jan, 2023):

- First-line treatments are topical corticosteroids (moderate- to high-strength) that dampen the cellular immune response (e.g., mometasone 0.1% or clobetasol 0.05%) and topical calcineurin inhibitors (e.g., tacrolimus and pimecrolimus), and vitamin D analogs.
- Afamelanotide and Janus kinase inhibitors (e.g., topical ruxolitinib) are emerging treatments.
- Phototherapy — Ultraviolet B therapy is able to stimulate repigmentation in vitiligo treatment, and is classified as narrowband (311–313nm) or broadband (280–320nm). It has largely replaced psoralen photochemotherapy because of its toxic side effects.
- Monochromatic excimer laser or lamp therapy is targeted phototherapy, similar to focused, high-intensity ultraviolet B light therapy using a wavelength of 308nm. Excimer laser used alone or with topical or

systemic medications treats limited, stable patches of vitiligo. Several excimer laser systems have received 510(k) premarket approval (U.S. Food and Drug Administration, 2025).

Findings

Guidelines

The international Vitiligo Task Force issued a consensus statement recommending excimer laser for localized disease along with a shared decision-making process that considers its safety, tolerability, and costs relative to narrowband ultraviolet B. The presence of melanocyte reservoir (e.g., pigmented hairs) improves the likelihood of treatment success. The final response will depend on the total number of treatments and not frequency (Seneschal, 2023).

The American Academy of Dermatology Association lists excimer laser among available vitiligo treatments. Excimer laser is recommended for small areas, and lamps are recommended for larger areas. Patients typically need several treatments. Excimer laser may be combined with other treatments (Ludmann, 2026).

The European Dermatology Forum recognizes vitiligo as an immune-mediated disease with a silent inflammatory phase. The Forum recommends targeted phototherapies for localized vitiligo, particularly for small lesions of recent onset and childhood vitiligo. These interventions are designed to avoid the side effects from total body irradiation with ultraviolet B and when total body irradiation using conventional narrow band ultraviolet B is contraindicated (e.g., risk for skin cancer, photoaggravated disease, etc.). Limited, low quality evidence suggested excimer laser combined with topical medications may be more effective than laser monotherapy. Contraindications have not been well elucidated (Taieb, 2013).

There was no consensus on the optimum treatment duration. Experts advised continuing targeted phototherapy as long as repigmentation is occurring up to a maximum period of one or two years. Treatment is typically discontinued if no repigmentation occurs within the first three months of treatment or if there is an unsatisfactory response (< 25% repigmentation) after six months of treatment. Maintenance treatment is not recommended (Taieb, 2013).

Evidence review

The evidence of effectiveness of excimer laser therapy for vitiligo from secondary analyses consists of small studies with fewer than 50 participants, and very few included children or participants with segmental vitiligo. Excimer light is an effective therapeutic option for vitiligo of the face and neck, particularly when combined with adjunctive therapies such as topical calcineurin inhibitors or corticosteroids. Most adverse effects were short-lived and did not interfere with continued treatment. As a targeted phototherapy, excimer can address specific lesions while sparing surrounding healthy skin, while reserving narrow-band ultraviolet B for more extensive and progressive vitiligo. Long-term studies reporting on secondary outcomes of cessation of spread or long-term repigmentation are needed.

A comprehensive systematic review and network meta-analysis of 37 randomized controlled trials (n = 1,841) analyzed the efficacy of treatment combinations using excimer light in achieving optimal repigmentation outcomes in patients with vitiligo (Liu, 2026). Primary outcomes were achieving ≥ 50%, ≥ 75%, and 100% skin repigmentation. Excimer light was administered at a median frequency of two times per week, over a median duration of 12 weeks. Results were summarized as risk ratios with 95% confidence intervals.

Excimer laser monotherapy offers repigmentation effects comparable to those of narrow-band ultraviolet B phototherapy. Oral vitamin E, topical antioxidants, and platelet-rich plasma as monotherapies are not more effective in achieving 50% or 75% repigmentation than excimer monotherapy. Excimer light was effective at achieving at least 50% repigmentation when combined with adjunctive therapies such as topical calcineurin

inhibitors with corticosteroids. Other adjunctive treatments such as topical antioxidants, intramuscular corticosteroid alone, and platelet rich plasma may enhance ≥ 50% repigmentation but were supported by lower quality evidence. However, the relative effectiveness of these combinations remains unclear. In many instances, evidence was derived from small single trials or from indirect evidence from a few and sometimes conflicting trials. As a result, some network estimates were accompanied with wide confidence intervals and deemed unreliable. There was no clear association between the level of repigmentation and the frequency of excimer treatment sessions per week (Liu, 2026).

A systematic review and network meta-analysis of 11 randomized controlled trials confirmed the superior efficacy of excimer laser combined with topical antioxidant therapy in terms of achieving a repigmentation rate of at least 75%. Excimer laser monotherapy had the highest rate of treatment failure in vitiligo (Li, 2024).

Two systematic reviews and meta-analyses compared the efficacy of phototherapy as either monotherapy or combination therapy for repigmentation of vitiligo. The results suggest combination therapy using either narrowband-ultraviolet B phototherapy or excimer laser with tacrolimus (Chang, 2021), or narrowband ultraviolet B, psoralen ultraviolet A, or excimer laser with calcirotriol (Hu, 2021) may provide greater clinical improvement than phototherapy alone. Heterogeneous selection criteria and treatment protocols prevent determination of the optimal candidate or treatment administration.

In a Cochrane review update of 12 studies of laser phototherapy, most studies had fewer than 50 subjects, and very few included children or participants with segmental vitiligo. The primary outcomes were quality of life (one study), percentage of repigmentation > 75% (six studies), and adverse effects (six studies). The majority of participants achieving > 75% repigmentation were administered combination interventions that included some form of excimer phototherapy. Most adverse effects were short-lived and did not interfere with continued treatment. No studies reported on secondary outcomes of cessation of spread or long-term repigmentation (at two years' follow up). Study quality was "poor to moderate at best" due to variations in study designs and outcome measures, limiting the ability to measure efficacy (Whitton, 2016).

A systematic review of 39 studies (n = 1,624) assessing benefits of adding phototherapy to melanocyte transplant to treat vitiligo was conducted. Phototherapy modalities included narrow band ultraviolet B (nine studies), psoralen ultraviolet A (19 studies), ultraviolet A (one study), monochromatic excimer light (four studies), and active sunlight exposure (nine studies). No significant differences were observed in studies directly comparing phototherapy modalities. Study quality was moderate to poor, and heterogeneity between studies was high, limiting comparisons and conclusions on effectiveness (Lommerts, 2018).

In 2022, we added an American Academy of Dermatology Association statement to the policy. We narrowed the focus of the policy to address excimer laser only, as the other treatments for vitiligo are either pharmaceuticals or phototherapy options addressed in clinical policy CCP.1169. Their findings are consistent with the previous policy findings.

In 2023, we deleted older references and updated the references. We modified the medical necessity criteria to align with the American Academy of Dermatology Association's recommendations, which omit a lower age limit and recommend excimer laser when topical creams or other phototherapy options have failed or are not tolerated.

In 2024, we updated the references and added a position statement from the Vitiligo Task Force, which requires no policy changes.

In 2025, we updated the references. No policy changes are warranted.

In 2026, we updated the references. No policy changes are warranted.

References

On March 17, 2026, we searched PubMed and the databases of the Cochrane Library, the U.K. National Health Services Centre for Reviews and Dissemination, the Agency for Healthcare Research and Quality, and the Centers for Medicare & Medicaid Services. Search terms were “vitiligo” (MeSH), “lasers, excimer” (MeSH), “phototherapy,” “excimer laser,” and “vitiligo.” We included the best available evidence according to established evidence hierarchies (typically systematic reviews, meta-analyses, and full economic analyses, where available) and professional guidelines based on such evidence and clinical expertise.

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Policy updates

1/2018: initial review date and clinical policy effective date: 3/2018

5/2019: Policy references updated. Policy number changed to CCP.1303.

5/2020: Policy references updated.

5/2021: Policy references updated.

5/2022: Policy references updated. Coverage modified.

5/2023: Policy references updated. Coverage modified.

5/2024: Policy references updated.

5/2025: Policy references updated.

5/2026: Policy references updated.

Related codes

Below are the most commonly submitted codes for the service(s)/item(s) subject to this policy CCP.1303. This is not an exhaustive list of codes. Providers are expected to consult the appropriate coding manuals and bill accordingly.

Code	Code description
96999	Unlisted special dermatological service or procedure