



# CIGNA MEDICAL COVERAGE POLICY

The following Coverage Policy applies to all plans administered by CIGNA Companies including plans administered by Great-West Healthcare, which is now a part of CIGNA.

**Subject** Phototherapy,  
Photochemotherapy, and  
Excimer Laser Therapy for  
Dermatologic Conditions

**Effective Date** ..... 4/15/2009  
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**Coverage Policy Number** ..... 0031

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## Hyperlink to Related Coverage Policies

- Acne Procedures
- Alefacept (Amevive®)
- Etanercept (Enbrel®)
- Infliximab (Remicade®)
- Laser Therapy and Grenz Ray Therapy for Treatment of Psoriasis
- Photodynamic Therapy for Dermatologic Conditions
- Photopheresis (Extracorporeal Photochemotherapy)

## INSTRUCTIONS FOR USE

Coverage Policies are intended to provide guidance in interpreting certain **standard** CIGNA HealthCare benefit plans as well as benefit plans formerly administered by Great-West Healthcare. Please note, the terms of a participant's particular benefit plan document [Group Service Agreement (GSA), Evidence of Coverage, Certificate of Coverage, Summary Plan Description (SPD) or similar plan document] may differ significantly from the standard benefit plans upon which these Coverage Policies are based. For example, a participant's benefit plan document may contain a specific exclusion related to a topic addressed in a Coverage Policy. In the event of a conflict, a participant's benefit plan document **always supercedes** the information in the Coverage Policies. In the absence of a controlling federal or state coverage mandate, benefits are ultimately determined by the terms of the applicable benefit plan document. Coverage determinations in each specific instance require consideration of 1) the terms of the applicable group benefit plan document in effect on the date of service; 2) any applicable laws/regulations; 3) any relevant collateral source materials including Coverage Policies and; 4) the specific facts of the particular situation. Coverage Policies relate exclusively to the administration of health benefit plans. Coverage Policies are not recommendations for treatment and should never be used as treatment guidelines. Proprietary information of CIGNA. Copyright ©2009 CIGNA

## Coverage Policy

Coverage for home phototherapy devices is subject to the terms, conditions and limitations of the applicable benefit plan's Durable Medical Equipment (DME) benefit and schedule of copayments. In addition, some types of home phototherapy devices, such as ultraviolet cabinets, are specifically excluded under some benefit plans. Please refer to the applicable benefit plan document to determine benefit availability and the terms, conditions and limitations of coverage. Under many benefit plans, coverage for DME is limited to the lowest-cost alternative.

Coverage for the treatment of vitiligo is dependent on benefit plan language, may be subject to the provisions of a cosmetic exclusion and/or reconstructive surgery benefit, and may be governed by state mandates. Please refer to the applicable benefit plan language to determine benefit availability and the terms, conditions and limitations of coverage.

CIGNA covers office-based phototherapy and photochemotherapy\* as medically necessary when there has been a failure, intolerance or contraindication to treatment using conventional medical management for ANY of the following medical conditions:

- atopic dermatitis (atopic eczema)
- connective tissue diseases involving the skin (e.g., cutaneous graft vs. host disease [GVHD], localized scleroderma, lupus erythematosus)
- cutaneous T-cell lymphoma (CTCL), including mycosis fungoides
- lichen planus
- photodermatoses (e.g., polymorphic light eruption, actinic prurigo, chronic actinic dermatitis)
- psoriasis

\*Office-based phototherapy includes actinotherapy, type A ultraviolet (UVA) radiation; type B ultraviolet (UVB) radiation; and combination UVA/UVB radiation. Photochemotherapy includes psoralens (P) and type A ultraviolet (UVA) radiation, known as PUVA photochemotherapy and combinations of P/UVA/UVB.

**CIGNA does not cover excimer laser therapy for the treatment atopic dermatitis because it is considered experimental, investigational or unproven.**

**CIGNA does not cover phototherapy, photochemotherapy or excimer laser therapy for the treatment of localized or generalized vitiligo because such treatment is considered cosmetic and not medically necessary. Services that are cosmetic are not covered under most benefit plans.**

If coverage for home phototherapy devices is available, the following conditions of coverage apply:

**CIGNA covers the use of an ultraviolet B (UVB) home phototherapy device as medically necessary for individuals who meet the above criteria for office-based phototherapy and photochemotherapy,\* and outpatient phototherapy has been utilized and has been demonstrated to be beneficial and the use of phototherapy is expected to be long-term.**

**CIGNA does not cover the use of an ultraviolet A (UVA) phototherapy device in the home setting as this use is considered not medically necessary.**

**CIGNA does not cover the use of tanning beds/units for any reason in any setting because they are not considered medical in nature and as such do not meet the standard plan definition of Durable Medical Equipment. In addition, CIGNA does not cover the use of tanning beds/units in any setting, including the home, for the treatment of dermatologic conditions because they are considered not medically necessary.**

## General Background

Phototherapy (e.g., actinotherapy) is defined as exposure to non-ionizing, ultraviolet (UV) radiation for therapeutic benefit. It involves exposure to type A ultraviolet (UVA) radiation or type B ultraviolet (UVB) radiation or various combinations of UVA and UVB. The differences in these ultraviolet light forms are the length of the waves. UVA wavelength is 320–400 nanometers [nm], broadband (bb) UVB is 290–320 nm and narrowband (nb) UVB is 311–312 nm. The longer wavelengths emit a lower energy level. UVA bulbs, for example, are used in tanning beds for cosmetic effects because they promote tanning using lower energy with less erythema than UVB (ECRI, 2008; Scheinfeld and Deleo, 2003).

The AAD guidelines for the use of phototherapy and photochemotherapy include the following three modalities for the treatment of dermatologic conditions:

- 1) **“UV Phototherapy:** exposure to UVB and/or UVA radiation using suberythemogenic or erythemogenic doses. The initial doses of radiation are determined by skin typing or phototesting to determine erythema responses. Before using an erythemogenic protocol, the patient must be cautioned that the development of erythema is an integral component of the treatment.
- 2) **Psoralen Photochemotherapy:** exposure to UVA radiation after medication with methoxsalen or trioxsalen, given orally, topically, or in a bath. The doses of UVA radiation are intended to be

suberythemogenic, but erythema is an inevitable consequence in a proportion of patients because of wide variation in individual absorption of methoxsalen. Patients should be warned of this risk.

- 3) **Combination Therapies:** phototherapy and photochemotherapy may be used in combination with topical agents, such as tar, anthralin and corticosteroids, and systemic agents, such as retinoids and methotrexate” (AAD, 1994).

Excimer laser is another modality that has been proposed for the treatment of atopic dermatitis, psoriasis and vitiligo. An excimer laser releases a spectrum of 308-nm UVB wavelengths and is used to treat small, focused areas of the body (e.g., 2 X 2 centimeters). Laser therapy is proposed to increase the precision and delivery of UVB energy to targeted tissue. The increased precision results in a faster therapeutic effect and decreases the total number of treatments needed, limits the amount of UV radiation exposure, and decreases the risk of skin cancer. However, this precision makes total-body treatment difficult with laser therapy. Some propose that laser therapy is effective, safe and well tolerated when limited to less than 20% of the body surface. Treatments are typically given two to three times a week on nonconsecutive days for 4–36 weeks (Nicolaidou, et al., 2009; Groysman and Sami, 2008; Esposito, et al., 2004; Spencer, et al., 2002).

The success of phototherapy and photochemotherapy will depend upon the dermatologic condition, location and types of lesions, duration and severity of the condition, and skin type. Some of the peer-reviewed studies evaluate the safety and efficacy of these therapies based upon skin types, which fall into the following six categories:

- Type I: always burns easily, never tans, extremely sun-sensitive skin
- Type II: usually burns easily, tans minimally, very sun-sensitive skin
- Type III: sometimes burns, tans gradually to light brown, sun-sensitive skin
- Type IV: burns minimally, always tans to moderate brown, minimally sun sensitive
- Type V: rarely burns, tans well, sun-insensitive skin
- Type VI: never burns, deeply pigmented, sun-insensitive skin

#### **U.S. Food and Drug Administration (FDA)**

Phototherapy and photochemotherapy light sources are approved by the FDA 510(k) process as Class II phototherapy units. There are a variety of light sources on the market that are appropriate for use. Examples of phototherapy light sources include: VersaClear™ Skin Therapy System (TheraLight, Inc., Carlsbad, CA); Home UVB Light Source (Jordan Light®) (Richmond Light Co., Inc., Richmond, VA); and the Houva Phototherapy System with PhotoSense II™ (National Biological Corporation, Twinsburg, OH).

XeCl excimer lasers are also approved by the FDA 510(k) process. Not all lasers are approved for the treatment of the same dermatological conditions. The FENCER Excimer Laser System (Kera Harvest/Laser Max Medical Technologies Corporation, Visalia, CA) is approved for the treatment of psoriasis, vitiligo, leukoderma, and atopic dermatitis (FDA, 2008). The 308 Excimer Lamp Phototherapy system (Quantel Medical, Hasbrouck Heights, NJ) is approved for the treatment of psoriasis and vitiligo (FDA, 2007). The XTRAC XL Plus Excimer Laser System (PhotoMedex, Inc., Carlsbad, CA) is approved for the treatment of psoriasis, vitiligo, leukoderma, and atopic dermatitis (FDA, 2003).

#### **Indications for Phototherapy, Photochemotherapy and Excimer Laser Therapy**

Phototherapy and photochemotherapy are indicated for the treatment of multiple dermatologic conditions (e.g., atopic dermatitis, cutaneous T-cell lymphomas, lichen planus, photodermatoses, psoriasis and vitiligo) for patients who do not tolerate or are unresponsive to conventional medical management (e.g., diet restrictions, stress control, oral immunosuppressive agents, biologic agents, topical and oral steroids). There is sufficient evidence in the peer-reviewed scientific literature, including randomized controlled trials and case series, to support the use of phototherapy and photochemotherapy for the treatment of these conditions. Textbooks, professional organizations and societies (e.g., American Academy of Dermatology, National Cancer Institute [NCI], National Psoriasis Foundation), as well as technology assessments support phototherapy and photochemotherapy as a safe and effective standard of care for these conditions.

Excimer laser therapy is proposed for the treatment of localized atopic dermatitis, psoriasis and vitiligo. There is insufficient evidence in the peer-reviewed literature to support the efficacy of excimer laser therapy for the treatment of atopic dermatitis. The evidence in the scientific studies supports the safety and efficacy of the

treatment of localized vitiligo with excimer laser. (For information on the treatment of psoriasis with laser therapy, refer to the CIGNA Coverage Policy Laser Therapy and Grenz Ray Therapy for Treatment of Psoriasis).

### **Atopic Dermatitis (Eczema)**

Atopic dermatitis, or eczema, is a chronic skin condition characterized by a dry, itchy rash on the face, elbows, hands, feet, and inside the knees. The disease has periods of remissions and exacerbations (e.g., redness, swelling, cracking, weeping, crusting, and scaling). The etiology of atopic dermatitis is unknown. In addition to skin care and avoidance of substances that might irritate the skin, ointments and creams (e.g., immunomodulators and corticosteroids) may be indicated. If topical drugs are ineffective, an oral corticosteroid may be prescribed. Antibiotics may also be used if the skin is infected. For severe cases in adults, immunosuppressants are an option. If unresponsive to medication, phototherapy and photochemotherapy (i.e., UVA, UVB and PUVA) may be a treatment option (Brown and Reynolds, 2006; Wise, 2006).

**Literature Review:** There is good evidence in the peer-reviewed scientific literature in the form of clinical trials, systematic reviews, consensus opinion, and therapeutic guidelines and recommendations to support the use of UVB, nbUVB, and UVA phototherapy, PUVA, and combination treatments as safe, effective and well-tolerated therapies for the treatment of atopic dermatitis. Studies reported appreciative improvement in symptoms and in some cases long-term remission (Clayton, et al., 2007; Meduri, et al., 2007; Sezer and Etikan, 2007; Berneburg, et al., 2005; Ibbotson, et al., 2004; Schiener, et al., 2003).

There are a limited number of studies evaluating the use of laser therapy for the treatment of atopic dermatitis. B. Baltas et al. (2006) conducted a prospective case series to evaluate the efficacy of 308-nm XeCl excimer laser for the treatment of vitiligo (n=15 patients). Lesions were located on the arms and/or legs and involved less than 20% of the body surface. A wash-out period of two to four weeks for topical and systemic therapy was required prior to the beginning of the study. Patients were treated twice a week on nonconsecutive days for four weeks or less if lesions cleared. The local Eczema Area Severity Index (EASI), the sum of clinical symptoms of erythema, infiltration, lichenification and excoriation, was used to score the severity of atopic dermatitis. At the end of the therapy, EASI scores reflected relief from symptoms with a mean score of 3.57 compared to a mean score of 8.5 prior to treatment. An 81% reduction in itching score was reported at the completion of therapy. The quality of life scores also reflected an improvement at the end of treatment (mean 1.71 vs. mean 9.57, respectively). No "serious or unpleasant" side effects were observed. Limitations of the study include the small patient population, short-term follow-up and lack of a control or comparison group.

The National Institute for Clinical Excellence (NICE) (United Kingdom) published guidance for the treatment of atopic eczema in children up to age 12 years. The clinical trials revealed limited evidence of the effectiveness of phototherapy in the treatment of children and possible serious adverse effects. The Guidance Development Group concluded that phototherapy should only be considered "for the treatment of severe atopic eczema in children when other management options have failed or are inappropriate and where there is a significant negative impact on quality of life" The use of laser therapy is not discussed (NICE, 2007).

**Professional Societies/Organizations:** The AAD Practice Management "Guidelines of Care for Atopic Dermatitis" contain phototherapy recommendations for atopic dermatitis. These care guidelines are based upon a systematic review of literature. Generally, the atopic dermatitis guidelines recommend treatment with UV phototherapy, including combination bbUVB/UVA, nbUVB, PUVA and UVA (Hanifin, et al., 2004).

### **Connective Tissue Disease, Including Cutaneous Graft Versus Host Disease (GVHD)**

Connective tissue disease, also referred to as sclerosing skin diseases, includes numerous conditions that affect the connective tissue in various parts of the body. Sclerosing skin diseases include: systemic sclerosis localized scleroderma, also known as morphea; sclerodermoid GVHD; extragenital lichen sclerosus et atrophicus; lupus erythematosus; and sclerodermoid rarities (e.g., eosinophilic fasciitis, pansclerotic morphea [a severe variant of localized scleroderma]); and POEMS syndrome, which is characterized by polyneuropathy, organomegaly, endocrinopathy, monoclonal gammopathy, and skin changes. Symptoms and treatment options vary according to each condition. In some diseases, topical steroids are indicated and in others, phototherapy and photochemotherapy are considered a treatment option (Brenner, et al., 2005).

**Literature Review:** Randomized controlled trials have shown the effectiveness of UVA phototherapy in treating localized scleroderma, systemic sclerosis and systemic lupus erythematosus (Kreuter, et al., 2006; El-Mofty, et

al., 2004; Polderman, et al., 2004). The scientific literature suggests that PUVA and UVA treatment are effective for cutaneous graft-versus-host disease (Wetzig, et al., 2005; Wolff, et al., 2004). Phototherapy and photochemotherapy have improved the treatment options for patients with sclerosing skin diseases. The choice of the best therapeutic option is contingent upon the disease entity and the clinical manifestations (Brenner, et al., 2005).

### **Cutaneous T-Cell Lymphoma, Including Mycosis Fungoides**

Cutaneous T-cell lymphoma (CTCL) is a slowly evolving form of non-Hodgkin's lymphoma of the T-cell. In mild cases, there is the appearance of a rash. If the condition progresses tumors may form and the lymph nodes may enlarge. Two-thirds of CTCL cases are mycosis fungoides, a form of CTCL that evolves from scaly skin patches and plaques. Sezary syndrome is an aggressive form of mycosis fungoides. CTCL may be initially treated with topical chemotherapy agents. PUVA is a widely used treatment for early cutaneous T-cell lymphoma and mycosis fungoides and Sezary syndrome. (El-Mofty, et al., 2005; Gokdemir, et al., 2006; New Zealand Dermatological Society [NZDS], 2007; Olsen, et al., 2007; National Cancer Institute [NCI], 2008).

**Literature Review:** Gokdemir et al. (2006) conducted a prospective study to determine the effects of phototherapy nbUVB on early stage (IA [n=6], IB [n=15] and IIA [n=2]) mycosis fungoides. Following nbUVB, all patch patients and three plaque patients experienced complete clinical response. Seventeen patch patients and one plaque patient demonstrated complete response. El-Mofty et al. (2005) recruited patients who had a diagnosis of stage I or IIA mycosis fungoides. Patients in group I received nbUVB on the right half of the body and PUVA on the left side for 48 sessions (n=10), and group II received nbPUVB on the right side of the body and PUVA on the left side of the body for 36 sessions (N=10). In group I, treatment with nbUVB was as effective as PUVA, and in group II, nbPUVB was as effective as PUVA.

Outcomes from additional clinical trials suggested that phototherapy and photochemotherapy (i.e., UVA1, UVB, nbUVB and PUVA) can successfully treat cutaneous T-cell lymphoma (Berneburg, 2005; Ibbotson, et al., 2004; Breuckmann, et al., 2004; Scheinfeld, et al., 2003; Whitaker, et al., 2003). Baron stated in a 2003 review on CTCL that the efficacy of bbUVB is limited to the patch stage, while psoralen with ultraviolet A (PUVA) is capable of clearing plaques and, sometimes, early tumors (Baron, et al., 2003). Narrowband and UVB are effective for early stages. UVA1 has likewise shown efficacy, supported by findings of apoptosis induction in UVA1-treated cells. Baron also notes that long-term remissions have been reported for PUVA, but in the majority of cases, maintenance therapy was necessary. Although beneficial as monotherapy for early stages of the disease, phototherapy is also a useful adjunct to other modalities, such as interferons, retinoids and electron beam therapy.

**Professional Societies/Organizations:** The National Cancer Institute (NCI) (2008) recognizes PUVA and UVB phototherapy as treatment options for mycosis fungoides/Sezary's syndrome.

The NZDS (2007) lists UVB phototherapy and PUVA as treatment options for cutaneous T-cell lymphomas and states that PUVA may be used for the treatment of mycosis fungoides twice a week. The condition often reoccurs when PUVA is discontinued.

The European Organization for Research and Treatment for Cancer (EORTC, Belgium) published consensus recommendations for the treatment of mycosis fungoides/Sezary's syndrome. The EORTC made the following first-line recommendations (Trautinger, et al., 2006):

- mycosis fungoides stages IA, IB, IIA: PUVA is a treatment option for these three stages, but the effect of PUVA on overall survival is unclear. Because UVB only reaches superficial layers of the skin, it is recommended only for the treatment of patch lesions. UVB should not be used for the treatment of plaque lesions.
- mycosis fungoides stage IIB: based upon expert opinion, PUVA plus acitretin is a treatment option.
- mycosis fungoides stage III: PUVA plus interferon is a treatment option.

In their guidelines for the treatment of cutaneous B-cell lymphoma, the EORTC does not include phototherapy or photochemotherapy as a treatment option (Senff, et al., 2008).

The Joint British Association of Dermatologists and UK recommends the use of phototherapy for the treatment of stages IA-IIA mycosis fungoides and PUVA for patients with stage IB-IIA mycosis fungoides/Sezary's syndrome unresponsive to topical treatments (Whittaker, et al., 2003).

The AAD Practice Management "Guidelines of Care for Phototherapy and Photochemotherapy" considers photochemotherapy a treatment option for mycosis fungoides (AAD, 1994).

### **Lichen Planus**

Lichen planus is an inflammatory disease that usually affects the skin and/or the mouth, but may also affect the genital skin. It is characterized by recurrent, itchy, inflammatory rash or lesions. The cause of lichen planus is unknown but most likely is an allergic or immune reaction. Since there is no cure for lichen planus, treatment is aimed at relieving symptoms. Milder cases may be treated with corticosteroid creams and ointments, anti-inflammatory drugs, and antihistamines. More severe cases may require oral or injectable corticosteroids and phototherapy.

**Literature Review:** A review of the literature suggests that both PUVA and nbUVB phototherapy are effective in treating lichen planus (Wackernagle, et al., 2007; Berneburg, et al., 2005; Saricaoglu, et al., 2003; Reichrath, et al., 2002). A 2000 Cochrane review (Chan, et al., 2000) assessed the effectiveness and safety of cyclosporins, retinoids, steroids and phototherapy for the treatment of oral lichen planus. Nine randomized controlled trials were identified for review. One study involved 18 patients with oral lichen planus who were treated with PUVA and placebo. The report concluded that there is a lack of strong evidence to support palliative treatment of oral lichen planus due to the small size of the trials, but there was enough circumstantial evidence to justify larger trials. All treatment was reported as effective, but how much more effective than placebo is unknown.

**Professional Societies/Organizations:** The AAD Practice Management "Guidelines of Care for Phototherapy and Photochemotherapy" recommend phototherapy and photochemotherapy as treatment options for lichen planus (AAD, 1994).

### **Photodermatoses (e.g., Polymorphic Light Eruption, Actinic Prurigo, Chronic Actinic Dermatitis)**

Photodermatoses refers to skin conditions that are aggravated by sunlight. The primary photodermatoses include polymorphic light eruption, actinic prurigo, and chronic actinic dermatitis. Polymorphic light eruption, a type of hypersensitivity immunological reaction, is the most common form of photosensitivity in white people. The name polymorphic refers to the fact that the rash can take many forms, although in one individual it usually looks the same each time it appears. It might manifest itself in spots, blisters, plaques, eczematous areas, and bruising. Chronic actinic dermatitis is also known as photosensitivity dermatitis. Treatment options include avoiding sun exposure and using sunscreens and topical and oral steroids. Phototherapy is a treatment option and is viewed as a mainstay of treatment for severe cases.

**Literature Review:** Gambichler et al. (2006) conducted a three-arm, prospective, randomized controlled trial and compared the effects of bath PUVA (n=9), medium-dose (MD)-UVA1 (n=11), and phototherapy nbUVB (n=13) on patients with subacute prurigo. Subjects were skin type II or III, age range 30–81 years. PUVA baths were administered four times weekly, and phototherapy was administered five times weekly. Outcomes were measured based upon clinical scores which estimated papules, infiltration and pruritus (PIP) before and six weeks following therapy. Skin lesions were evaluated based upon diameter, texture, color and infiltration. Patients treated with PUVA and MD-UVA1 demonstrated a significantly higher PIP score than patients treated with nbUVB. At six weeks post-therapy, one nbUVB patient and five MD-UVA1 patients had stable disease; all others had relapsed. All groups demonstrated lower PIP scores compared to baseline.

With polymorphic light eruption, consideration should be given to a brief course of nbUVB phototherapy, if oral or topical corticosteroids are unsuccessful. PUVA, nbUVB, or bbUVB phototherapy is the mainstay of treatment for severe polymorphic light eruption. Phototherapy each spring may be an effective preventive measure for polymorphic light eruption; spontaneous remissions of polymorphous light eruption are uncommon (Morison, 2004). The outcomes of clinical trials suggested that most photodermatoses can be successfully treated with UVA, UVB, UVA/UVB, nbUVB phototherapy, and PUVA (Berneburg, et al., 2005; Ibbotson, et al., 2004; Honigsmann, 2003; Millard, et al., 2002).

**Professional Societies/Organizations:** The AAD Practice Management "Guidelines of Care for Phototherapy and Photochemotherapy" recommends phototherapy and photochemotherapy as treatment options for

photodermatoses. The most common idiopathic photodermatoses include polymorphic light eruption, actinic prurigo, and chronic actinic dermatitis (AAD, 1994).

### **Psoriasis**

Psoriasis is a skin disease that is classically characterized by thickened, red areas of skin covered with silvery scales. The extent of skin involvement can range from discrete, localized areas to generalized body involvement. Severe psoriasis may cover large areas of the body. The disease is lifelong and characterized by chronic, recurrent exacerbations and remissions. Medical management of psoriasis may include bath solutions, moisturizers, topical corticosteroid ointments and creams, vitamin D ointment, retinoid gel and coal tar (i.e., Goeckerman treatment). Phototherapy is also a recognized treatment option for psoriasis (For information on the treatment of psoriasis with laser therapy, refer to the CIGNA Coverage Policy Laser Therapy and Grenz Ray Therapy for Treatment of Psoriasis)

**Literature Review:** Evidence in the published, peer-reviewed scientific literature supports the use of phototherapy and photochemotherapy as established treatment options for psoriasis, reporting improvement in severity index scores and symptoms following therapy. Randomized controlled trials have reported favorable response to treatment using bbUVB, nbUVB, PUVA, and baths followed by phototherapy (e.g., balneophototherapy) (Kirke, et al., 2007; Brockow, et al., 2007; Schiener, et al., 2007; Amornpinyokeit and Asawanonda, 2006; Boztepe, et al., 2006; Yones, et al., 2006; Vongthongsri, et al., 2006; Asawanonda, et al., 2005).

Small case series and earlier clinical trials also reported improvement in the symptoms of psoriasis following phototherapy and photochemotherapy treatment sessions (Erkin, et al., 2007; Sezer, et al., 2007; Asawanonda, et al., 2005; Lebwohl, et al., 2005; Berneburg, et al., 2005; Ibbotson, et al., 2004; Zanolli, 2004; Tahir, et al., 2004). Broadband UVB is an option but requires at least three treatments a week for several months. PUVA is more effective than nbUVB, and both are more effective than bbUVB.

A Cochrane systematic review reported results from 95 randomized controlled studies involving 5663 patients. Fifty studies (n=2876) involved the use of phototherapy and photochemotherapy, comparing them with another intervention or placebo. This review concluded that there was firm evidence to support the treatment of psoriasis with PUVA, bbUVB, and nbUVB (Griffiths, et al., 2000).

**Professional Societies/Organizations:** In their 2008 guidelines on the treatment of psoriasis, the AAD recommendations include the use of UVB phototherapy and PUVA. They state UVB phototherapy is safe and effective, and bbUVB phototherapy is more effective than nbUVB phototherapy. To achieve significant improvement, AAD states that a total of 20–25 nbUVB phototherapy treatments given two to three times a week may be required. They state that UVB phototherapy can be given in the office or at home. PUVA is also effective and may result in long remissions, but may increase the risk for squamous cell carcinoma and malignant melanoma (Menter, et al., 2008).

The National Psoriasis Foundation (2005) supports the use of phototherapy for the treatment of psoriasis. They indicate that nbUVB and bbUVB phototherapy may be used to treat adults and children with thin plaques, moderate to severe disease (i.e., involving more than 3% of the skin), and responsive to sunlight. Due to its ineffectiveness, UVA phototherapy is not normally used alone to treat psoriasis, but in conjunction with psoralen (i.e., PUVA), it is an effective means of treating moderate to severe cases in adults.

The AAD Practice Management "Guidelines of Care for Phototherapy and Photochemotherapy" list both photochemotherapy and phototherapy as treatment options for psoriasis (AAD, 1994).

### **Other Indications**

**Vitiligo:** Vitiligo is an autoimmune disease resulting in a loss of pigment cells (i.e., melanocytes), producing white patches. Treatments that repigment the affected areas such as phototherapy, photochemotherapy and laser therapy, are aimed at improving the untoward cosmetic sequelae associated with the condition and do not treat the underlying autoimmune condition. Patients can avoid sun exposure, and use sunscreens and self-tanning dyes. In some cases, the use of interventions that repigment is only temporizing and may not result in long-term or permanent repigmentation. Follow-up data on the long-term effectiveness of phototherapy maintaining pigment are limited, but relapse has been reported in up to 25–44% of patients within 12–18 months

following cessation of nbUVB therapy. Some patients have reportedly relapsed within three months (Nicolaidou, et al., 2009).

**Other Dermatologic Conditions:** The use of phototherapy and photochemotherapy has been proposed for the treatment of other dermatologic conditions, but its efficacy remains unclear based on limited supporting data. Safety and adverse events associated with phototherapy has also been studied in children. Rombold et al. (2008) reviewed the data of patients treated with UVA1 phototherapy for atopic eczema (n=86), scleroderma (n=54), granuloma annulare (n=20), urticaria pigmentosa (n=19), prurigo nodularis (n=17), lichen sclerosus et atrophicus (n=10), T-cell lymphoma (n=7), keratosis lichenoides chronica (n=5), chronic urticaria (n=4) and some rare, sclerosing skin diseases (n=8). Except for chronic urticaria and some sclerosing diseases, slight improvement to complete remission was reported in a percentage of most skin diseases. Complete remission was reported in three atopic eczema and one keratosis lichenoides chronica patient, and marked improvement was reported in 37 atopic eczema, seven prurigo nodularis, one lichen sclerosus et atrophicus, 15 scleroderma, one keratosis lichenoides chronica, four urticaria pigmentosa, and three granuloma annulare patients. Dosage and number of treatments varied based upon type and severity of disease. Adverse events included erythema, hyperpigmentation, polymorphic light eruption, pruritus, photoaging, and skin cancer. A limitation of the study is the retrospective study design.

Martin et al. (2007) conducted a three-center review of adverse events experienced by 8784 patients treated with nbUVB (68%), systemic PUVA (3%), bath PUVA (19%), or hand/foot PUVA (10%) between October 2003 and October 2004. A total of 70 acute adverse events were recorded. Overall, 0.6% adverse events were associated with nbUVB, 1.3% each with systemic and bath PUVA, and 0.8% with hand/foot PUVA. Fifteen events were due to patient noncompliance resulting in mild to moderate erythema. Two events were attributed to operator error. Three episodes of severe erythema and blistering were associated with nbUVB, and one patient experienced nausea, vomiting and collapse from PUVA therapy. Author-noted limitations of the study included: the data was collected by clinical audits, patients treated prior to the study who experienced positive outcome may have affected the adverse event rate, and the possibility of potential bias associated with the reporting of adverse events by patients and staff.

A retrospective review (Jury, et al., 2006) specifically looked at the safety and efficacy of nbUVB for the treatment of dermatologic conditions for children (n=77). The authors reviewed the records of children less than age 16 for a seven-year period. Eighty-seven percent of the conditions treated included psoriasis (n=35) and atopic eczema (n=25). The adverse events, mainly erythema, were similar to those reported in the literature for adults. The study indicated that nbUVB was useful and well tolerated by this age group with intractable inflammatory skin diseases, but data regarding long-term risks are not available. Due to the uncertainty regarding sunburn and risk of carcinogenic potential, nbUVB should be used with caution in carefully selected children.

### **Home Phototherapy**

In some cases, UVB phototherapy may be transitioned to home use if the individual has extensive, widespread disease (e.g., psoriasis) that is going to require long-term use, and the phototherapy has been proven to be effective. The AAD states that home devices emitting predominantly UVB phototherapy are used for the treatment of psoriasis and requires that the patient be motivated, reliable, able to administer the treatment correctly, keep records of exposure and attend regular follow-up visits (AAD. 1994).

There are various types of home UVB phototherapy devices available (i.e., full-body, half-body, hand and/or foot, localized/spot treatment units).

Full-body UVB panels include six-foot stand-alone panels, such as the 6-Foot Panosol II™ (Lerner Medical Devices, Inc., Los Angeles, CA). Half-body units include two- to four-foot stand-alone panels that are indicated for localized treatment areas (i.e., the back). Examples of these UVB units are the 4-Foot Panosol II™ and the 2-Foot Panosol II™.

Hand and foot UVB units may be in the form of a combined unit or may be individual units. A combined unit has the appearance of a desk and allows the patient to sit facing the unit, place their hands and feet into the unit, receiving treatment simultaneously (e.g., Hand/Foot II™, Daavlin Distributing Co., Bryan OH). Individual hand and foot units may have the appearance of a tabletop device such as the SolRX 500 Series (Solarc Systems, Inc., Ontario, Canada).

Localized/spot treatment devices may be of a portable tabletop UVB device, as the SolRx 500 mentioned above or a handheld wand-type device, such as the Handisol™ (Lerner Medical Devices, Inc., Los Angeles, CA), for small areas.

Once the size of unit is determine, a decision will be made by the physician as to the type of UVB light source indicated for treatment. The physician may prescribe bbUVB or nbUVB. The number of bulbs needed will be determined based upon the size of the unit.

UVA phototherapy is primarily used in combination with psoralen (i.e, PUVA) for the treatment of disease (e.g., psoriasis) and is administered in an outpatient setting. On its own, UVA is ineffective in treating conditions such as psoriasis and atopic dermatitis and is therefore not generally used in the home setting.

Tanning beds, or units, which typically emit UVA, are used for self-tanning solely for the purpose of improvement in appearance (i.e., cosmetic); they are not medical devices designed to be used to administer physician-prescribed treatment for a dermatologic condition.

### Summary

The evidence in the published peer-reviewed scientific literature and professional society guidelines supports the efficacy and safety of the use of phototherapy and photochemotherapy for the treatment of certain dermatologic conditions, including: atopic dermatitis, connective tissue diseases, cutaneous T-cell lymphoma including mycosis fungoides, lichen planus, photodermatoses, and psoriasis.

Phototherapy, photochemotherapy and excimer laser therapy for the treatment of vitiligo are administered for the purpose of repigmentation to improve appearance and therefore, are cosmetic in nature.

Ultraviolet B (UVB) home phototherapy may be indicated in a subset of individuals who meet the criteria for office-based phototherapy and photochemotherapy, have gained benefit from office-based therapy, and the use of phototherapy is expected to be long-term.

There is a lack of evidence in the published peer-reviewed literature to support the therapeutic effectiveness of excimer laser therapy for the treatment of atopic dermatitis and home-use of ultraviolet A (UVA) phototherapy. Tanning beds are not considered medical devices and are not used to treat medical conditions.

## Coding/Billing Information

**Note:** This list of codes may not be all-inclusive.

**Covered when medically necessary:**

CPT®*	Description
96900	Actinotherapy (ultraviolet light)
96910	Photochemotherapy; tar and ultraviolet B (Goeckerman treatment) or petrolatum and ultraviolet B
96912	Photochemotherapy; psoralens and ultraviolet A (PUVA)
96913	Photochemotherapy (Goeckerman and/or PUVA) for severe photoresponsive dermatoses requiring at least four to eight hours of care under direct supervision of the physician (includes application of medication and dressings)

HCPCS Codes	Description
E0691	Ultraviolet light therapy system panel, includes bulbs/lamps, timer and eye protection; treatment area two square feet or less
E0692	Ultraviolet light therapy system panel, includes bulbs/lamps, timer and eye protection, four foot panel

E0693	Ultraviolet light therapy system panel, includes bulbs/lamps, timer and eye protection, six foot panel
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ICD-9-CM Diagnosis Codes	Description
202.10-202.18	Mycosis fungoides
691.8	Other atopic dermatitis and related conditions
692.72	Acute dermatitis due to solar radiation
692.74	Other chronic dermatitis due to solar radiation
695.4	Lupus erythematosus
696.1	Other psoriasis and similar disorders
697.0	Lichen planus
701.0	Circumscribed scleroderma
710.1	Systemic sclerosis
710.9	Unspecified diffuse connective tissue disease
996.85	Complications of bone marrow transplant

**Not Medically Necessary/Cosmetic/Not Covered:**

ICD-9-CM Diagnosis Codes	Description
709.01	Vitiligo

**Not Covered/Specifically Excluded Under Some Benefit Plans:**

HCPCS Codes	Description
E0694	Ultraviolet multidirectional light therapy system in six foot cabinet, includes bulbs/lamps, timer and eye protection

ICD-9-CM Diagnosis Codes	Description
	All codes

**Experimental/Investigational/Unproven/Not Covered when used to report excimer laser therapy for the treatment of atopic dermatitis.**

CPT® Codes	Description
96920	Laser treatment for inflammatory skin disease (psoriasis); total area less than 250 sq cm
96921	Laser treatment for inflammatory skin disease (psoriasis); 250 sq cm to 500 sq cm
96922	Laser treatment for inflammatory skin disease (psoriasis); over 500 sq cm

\*Current Procedural Terminology (CPT®) © 2008 American Medical Association: Chicago, IL.

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## Policy History

<b>Pre-Merger Organizations</b>	<b>Last Review Date</b>	<b>Policy Number</b>	<b>Title</b>
CIGNA HealthCare	4/15/2008	0031	Phototherapy and Photochemotherapy for Dermatological Conditions
Great-West Healthcare	03/14/06	06.339.01	Phototherapy for Psoriasis, Home Use

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Connecticut General Life Insurance Company has acquired the business of Great-West Healthcare from Great-West Life & Annuity Insurance Company (GWLA). Certain products continue to be provided by GWLA (Life, Accident and Disability, and Excess Loss). GWLA is not licensed to do business in New York. In New York, these products are sold by GWLA's subsidiary, First Great-West Life & Annuity Insurance Company, White Plains, N.Y.