

Subject: Scar Revision

Effective Date: 4/15/2005

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INSTRUCTIONS FOR USE

This Medical Necessity Guideline outlines the factors CareAllies considers in determining medical necessity for this indication. Please note, the terms of a participant's particular benefit plan document or summary plan description (SPD) may differ significantly from the standard upon which this Medical Necessity Guideline is based. For example, a participant's benefit plan document or SPD may contain a specific exclusion related to the topic addressed. In the event of a conflict, a participant's benefit plan document or SPD always supercedes the information in this Medical Necessity Guideline. In the absence of a controlling federal or state coverage mandate, benefits are ultimately determined by the terms of the applicable benefit plan document or SPD. Coverage determinations in each specific instance require consideration of 1) the terms of the applicable group benefit plan document or SPD in effect on the date of service; 2) any applicable laws/regulations, and; 3) the specific facts of the particular situation. Medical Necessity Guidelines are not recommendations for treatment and should never be used as treatment guidelines. ©2007 Intracorp/CareAllies

Scar revision is considered medically necessary when the scar in question is documented to be causing a functional impairment (e.g., restricted movement) or is symptomatic (e.g., painful, ulcerated, inflamed, pruritic, prior infections) and ANY of the following treatment modalities are utilized as either monotherapy or combination therapy:

- compression/pressure therapy
- intralesional corticosteroid injections
- pulsed-dye laser therapy
- radiation
- silicone gel sheeting
- skin grafting/flap surgery
- surgical excision

The following injectable medications,, when used for scar revision, are considered experimental, investigational or unproven and thus not medically necessary:

- bleomycin injections
- interferon therapy
- intralesional 5-fluorouracil
- verapamil hydrochloride

The following because they are considered cosmetic in nature and not medically necessary:

- scar revision when performed solely to improve physical appearance
- any of the following modalities of treatment for scar revision (this list may not be all-inclusive):
 - chemical peels
 - collagen injections and fat transfers
 - cryosurgery
 - dermabrasion
 - punch grafts

General Background

When cutaneous injuries occur, several healing processes take place in the skin. In most cases, wound healing (e.g., surgical or traumatic) results in repaired skin that is normal in appearance. However, some patients develop suboptimal healing responses and resultant scar formation, which may compromise physiological function or result in symptoms such as pain and itching. While scars may be considered a natural part of the healing process associated with cutaneous injuries, they often have decreased tensile strengths and permanent textural irregularities because of disturbed collagen production. Scar formation is affected by the patient's age and location of injury (American Academy of Dermatology [AAD], 2004); in addition, it may result from excessive wound tension, improper surgical repair, delayed re-epithelialization and a history of radiation to the affected area (Lupton and Alster, 2002). Abnormal scarring is also noted commonly in some specific body locations, such as anterior chest, shoulders and scapula, and in darker-skinned persons. Scars that do not result in a functional impairment do not require any intervention; treatment would be considered cosmetic in nature and not medically necessary.

Hypertrophic scars, keloids and contractures are examples of suboptimal tissue healing that may result in impaired function and/or symptoms. Hypertrophic scars remain within the borders of the original incision or area of trauma. They appear as raised, red and nodular areas of tissue, occurring more commonly in areas subject to increased tension or movement or in areas with slow wound healing. The hypertrophic scar may be associated with itching and dysesthesias. Most hypertrophic scars spontaneously involute.

Keloids are similar to hypertrophic scars; however, they are bulkier and extend beyond the borders of the original site of injury. They appear as nodules that can be painful, itchy and disfiguring. Keloids are most often found on the earlobe, the shoulder and over the anterior chest and upper back area. They occur most commonly in dark-skinned individuals and may occur in patients with a family history of keloid formation. A genetic component has also been found to exist, resulting in the formation of keloids. Patients with genetic diseases that affect their ability to balance between collagen synthesis and breakdown are more prone to excessive scarring. Keloid formation may result in pain, pruritis, hyperpigmentation and disfigurement (Porter, 2002). In rare cases, keloids may become infected or ulcerate, and, in severe cases, the bulk of the tumor or, rarely, the contraction of the scar, may actually restrict movement (Shaffer, et al., 2002).

Contractures are the most severe form of a scar and usually occur as a result of the loss of a large area of skin. This type of scar is commonly found in patients who have experienced burn injuries. Contractures form when the full-thickness edges of skin overlying a joint pull together, affecting the underlying tissues, resulting in constriction of normal movement. Correcting contractures involves excising the scar and replacing it with additional tissue (i.e., graft or flap) or redirecting the tension lines with techniques such as W-plasty or Z-plasty.

Other classifications of scars include striae distensae (i.e., stretch marks), atrophic scars that result from an acute inflammatory reaction such as acne, and pigmented scars that result from excessive pigment deposition following injury. Treatment of these types of scars is generally aimed at improving physical appearance and is considered a cosmetic therapy, since they typically do not result in functional impairment.

Scar tissue may also result from therapeutic procedures, and, in some cases, less than optimal results have been reported. In particular, breast scarring as a result of mastectomy or reconstruction has been reported in the literature.

Depending on the severity of the scar, revision may aid in the restoration of function, as well as improvement of physical appearance. Several techniques have been employed to minimize scar tissue with proven success. In most cases, combination therapies seem to provide fewer recurrences, particularly for the treatment of keloids. Standard methods that are utilized to revise scar tissue include silicone gel sheeting; compression therapy; radiation; surgical excision; dermabrasion; laser resurfacing with pulsed-dye laser; collagen injections and fat transfers; punch grafts and punch excision; chemical peels; cortisone injections; and cryosurgery (American Society of Plastic Surgeons [ASPS], 2005; AAD, 2004; Mustoe, et al., 2002). Silicone gel sheeting, also known as hydrocolloid dressing, has been effective in reducing scar thickness and pain. Compression therapy is utilized to flatten scars. Radiation used as monotherapy or combined with surgery is also efficacious for treating hypertrophic scars and keloids. Surgical excision removes the bulk of the scar and has the potential to improve the appearance

with a thinner scar. When employed as a sole treatment for keloids, it has been associated with a high rate of recurrence; when employed with intralesional steroids, the recurrence rate appears to be lower than with surgery alone. Dermabrasion removes the upper layer of skin and is typically recommended for minor scarring. Other treatments, such as collagen injections and fat transfers, have been used to elevate indented scar tissue. Punch grafts may be used to provide a smoother skin surface for deep or pitted scars. Chemical peels involve the use of a chemical to remove the top layer of skin in order to improve appearance of superficial scars. Cortisone injections have been employed to reduce itching and improve pain associated with scar tissue. Cryosurgery involves freezing the upper layer of skin, possibly resulting in decreased size of scar formation. More involved surgical revision may include skin grafting and flap surgery. While their cosmetic results may be less than optimal, grafts and flaps may greatly improve the function of scarred areas.

Recently, laser therapy has become a widely utilized treatment for scar revision. High-energy light is used to remove the damaged skin. Several lasers are available to treat scar tissue, including the pulsed-dye laser, the carbon dioxide laser and the neodymium: yttrium-aluminum-garnet (Nd:YAG) laser. Authors report that lasers, such as the continuous-wave argon, Nd:YAG and carbon dioxide laser, when used for revision of scars, have resulted in a high incidence of recurrent scarring, dyspigmentation and pain (Shaffer, et al., 2002; Mustoe, et al., 2002). Currently, these lasers are not widely used for the treatment of scars.

Research studies confirm that the newer pulsed-dye laser has been effective primarily in reducing erythematous color and, in some cases, in flattening and decreasing the bulk of scar tissue with minimal adverse effects (Chen and Davidson, 2005; Berman, et al., 2005; Kono, et al., 2003; Alster, et al., 1995). Authors have also reported improvement in pliability and decreased symptoms with pulsed-dye laser therapy (Alster, 1994; Dierickx, et al., 1995; Alster, 2003), in addition to improved healing of keloid scars when laser treatment is provided in combination with steroid therapy (Connell and Harland, 2000). The pulsed-dye laser works through absorption by oxyhemoglobin, causing a direct effect on the blood vessels and an indirect effect on the surrounding tissue. Pulsed-dye laser treatments for hypertrophic scars result in significant improvement after 1–2 laser treatments. Some authors report a greater treatment response when using multiple sessions employing lower energy densities. Keloids or thicker hypertrophic scars may require additional treatments.

Evidence in the published scientific literature (Berman, 2007; Levanthal, et al. 2006; Al-Attar, et al., 2006; Chen and Davidson, 2005; Berman, et al., 2004; Mustoe, et al., 2002) and textbook sources suggest that use of pharmacologic agents has shown potential benefit in the treatment of scar formation with varying degrees of success. Authors have reported there is some evidence of efficacy for scar treatment with intralesional injections of interferon, bleomycin, 5-fluorouracil, and verapamil hydrochloride, although studies are limited. Other emerging topical therapies are being investigated such as 5% imiquimod cream and retinoic acid, to name a few.

These and other therapies have been used as either monotherapy or combined therapy. Some are considered off-label prescription drug use (e.g., interferon, 5-fluorouracil, bleomycin and verapamil). Interferon has been shown to increase collagen breakdown producing an antifibrotic effect, and has also been utilized to improve cosmetic appearance of the scar. However, interferon has been associated with considerable side effects (e.g., flu-like symptoms, fever, headache, and myalgia). Intralesional 5-fluorouracil has also been used for treatment of hypertrophic scars and keloids and has shown fewer side effects, although it has been associated with recurrences. Limited evidence suggests bleomycin has been used by some authors with good response to treatment of surgical/traumatic hypertrophic scars and patients with older scars resistant to corticosteroids. Verapamil hydrochloride injection has also been investigated as a treatment for scar tissue by some authors with promising results. However, at this time the evidence to support use of any of these modalities is insufficient and does not allow strong conclusions regarding safety and efficacy. Clinical studies are few, involve small patient populations, lack controls, and generally evaluate short-term outcomes. Further large-scale prospective studies evaluating long-term outcomes are required before these treatments can be considered standard therapy.

Summary

While the formation of scar tissue may lead to disfigurement and symptomatic complaints, it may also be psychologically debilitating for some patients. Revision of scar tissue solely to improve physical

appearance is considered cosmetic and not medically necessary. When scar tissue results in a functional impairment (e.g., restricted movement, pain or itching), revision may be medically necessary and may be performed by a wide variety of techniques. Several modalities have resulted in decreased erythema, pain and pruritis, in addition to increased tissue pliability. Comparison between treatment modalities is difficult, due to differences among patient populations, study size, measured outcomes, length of follow-up, lack of controls and variability in subjective outcomes. Most authors agree that no single treatment has been shown to be clearly superior to others, although pulsed-dye laser therapy appears very promising in reducing erythema and, in some cases, subjective symptoms.

Coding/Billing Information

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

When medically necessary:

CPT®* Codes	Description
11400	Excision, benign lesion including margins, except skin tag (unless listed elsewhere), trunk, arms or legs; excised diameter 0.5 cm or less
11401	Excision, benign lesion including margins, except skin tag (unless listed elsewhere), trunk, arms or legs; excised diameter 0.6 to 1.0 cm
11402	Excision, benign lesion including margins, except skin tag (unless listed elsewhere), trunk, arms or legs; excised diameter 1.1 to 2.0 cm
11403	Excision, benign lesion including margins, except skin tag (unless listed elsewhere), trunk, arms or legs; excised diameter 2.1 to 3.0 cm
11404	Excision, benign lesion including margins, except skin tag (unless listed elsewhere), trunk, arms or legs; excised diameter 3.1 to 4.0 cm
11406	Excision, benign lesion including margins, except skin tag (unless listed elsewhere), trunk, arms or legs; excised diameter over 4.0 cm
11420	Excision, benign lesion including margins, except skin tag (unless listed elsewhere), scalp, neck, hands, feet, genitalia; excised diameter 0.5 cm or less
11421	Excision, benign lesion including margins, except skin tag (unless listed elsewhere), scalp, neck, hands, feet, genitalia; excised diameter 0.6 to 1.0 cm
11422	Excision, benign lesion including margins, except skin tag (unless listed elsewhere), scalp, neck, hands, feet, genitalia; excised diameter 1.1 to 2.0 cm
11423	Excision, benign lesion including margins, except skin tag (unless listed elsewhere), scalp, neck, hands, feet, genitalia; excised diameter 2.1 to 3.0 cm
11424	Excision, benign lesion including margins, except skin tag (unless listed elsewhere), scalp, neck, hands, feet, genitalia; excised diameter 3.1 to 4.0 cm
11426	Excision, benign lesion including margins, except skin tag (unless listed elsewhere), scalp, neck, hands, feet, genitalia; excised diameter over 4.0 cm
11440	Excision, other benign lesion including margins, except skin tag (unless listed elsewhere), face, ears, eyelids, nose, lips, mucous membrane; excised diameter 0.5 cm or less
11441	Excision, benign lesion including margins, except skin tag (unless listed elsewhere), face, ears, eyelids, nose, lips, mucous membrane; excised diameter 0.6 to 1.0 cm
11442	Excision, benign lesion including margins, except skin tag (unless listed elsewhere), face, ears, eyelids, nose, lips, mucous membrane; excised diameter 1.1 to 2.0 cm
11443	Excision, benign lesion including margins, except skin tag (unless listed elsewhere), face, ears, eyelids, nose, lips, mucous membrane; excised diameter 2.1 to 3.0 cm
11444	Excision, benign lesion including margins, except skin tag (unless listed elsewhere), face, ears, eyelids, nose, lips, mucous membrane; excised diameter 3.1 to 4.0 cm

11446	Excision, benign lesion including margins, except skin tag (unless listed elsewhere), face, ears, eyelids, nose, lips, mucous membrane; excised diameter over 4.0 cm
15002	Surgical preparation or creation of recipient site by excision of open wounds, burn eschar, or scar (including subcutaneous tissues), or incisional release of scar contracture; each additional 100 sq cm or each additional one percent of body area of infants and children (List separately in addition to code for primary procedure)
15003	Surgical preparation or creation of recipient site by excision of open wounds, burn eschar, or scar (including subcutaneous tissues), or incisional release of scar contracture, trunk, arms, legs; each additional 100 sq cm or each additional 1% of body area of infants and children (List separately in addition to code for primary procedure)
15004	Surgical preparation or creation of recipient site by excision of open wounds, burn eschar, or scar (including subcutaneous tissues), or incisional release of scar contracture, face, scalp, eyelids, mouth, neck, ears, orbits, genitalia, hands, feet and/or multiple digits; first 100 sq cm or 1% of body area of infants and children
15005	Surgical preparation or creation of recipient site by excision of open wounds, burn eschar, or scar (including subcutaneous tissues), or incisional release of scar contracture, face, scalp, eyelids, mouth, neck, ears, orbits, genitalia, hands, feet and/or multiple digits; each additional 100 sq cm or each additional 1% of body area of infants and children (List separately in addition to code for primary procedure)
15040	Harvest of skin for tissue cultured skin autograft, 100 sq cm or less
15100	Split-thickness autograft, trunk, arms, legs; first 100 sq cm or less, or one percent of body area of infants and children (except 15050)
15101	Split-thickness autograft, trunk, arms, legs; each additional 100 sq cm, or each additional one percent of body area of infants and children, or part thereof (List separately in addition to code for primary procedure)
15110	Epidermal autograft, trunk, arms, legs; first 100 sq cm or less, or one percent of body area of infants and children
15111	Epidermal autograft, trunk, arms, legs; each additional 100 sq cm, or each additional one percent of body area of infants and children, or part thereof (List separately in addition to code for primary procedure)
15115	Epidermal autograft, face, scalp, eyelids, mouth, neck, ears, orbits, genitalia, hands, feet, and/or multiple digits; first 100 sq cm or less, or one percent of body area of infants and children
15116	Epidermal autograft, face, scalp, eyelids, mouth, neck, ears, orbits, genitalia, hands, feet, and/or multiple digits; each additional 100 sq cm, or each additional one percent of body area of infants and children, or part thereof (List separately in addition to code for primary procedure)
15120	Split-thickness autograft, face, scalp, eyelids, mouth, neck, ears, orbits, genitalia, hands, feet, and/or multiple digits; first 100 sq cm or less, or one percent of body area of infants and children (except 15050)
15121	Split-thickness autograft, face, scalp, eyelids, mouth, neck, ears, orbits, genitalia, hands, feet, and/or multiple digits; each additional 100 sq cm, or each additional one percent of body area of infants and children, or part thereof (List separately in addition to code for primary procedure)
15130	Dermal autograft, trunk, arms, legs; first 100 sq cm or less, or one percent of body area of infants and children
15131	Dermal autograft, trunk, arms, legs; each additional 100 sq cm, or each additional one percent of body area of infants and children, or part thereof (List separately in addition to code for primary procedure)
15135	Dermal autograft, face, scalp, eyelids, mouth, neck, ears, orbits, genitalia, hands, feet, and/or multiple digits; first 100 sq cm or less, or 1% of body area of infants and children

15136	Dermal autograft, face, scalp, eyelids, mouth, neck, ears, orbits, genitalia, hands, feet, and/or multiple digits; each additional 100 sq cm, or each additional one percent of body area of infants and children, or part thereof (List separately in addition to code for primary procedure)
15200	Full thickness graft, free, including direct closure of donor site, trunk; 20 sq cm or less
15201	Full thickness graft, free, including direct closure of donor site, trunk; each additional 20 sq cm (List separately in addition to code for primary procedure)
15220	Full thickness graft, free, including direct closure of donor site, scalp, arms, and/or legs; 20 sq cm or less
15221	Full thickness graft, free, including direct closure of donor site, scalp, arms, and/or legs; each additional 20 sq cm (List separately in addition to code for primary procedure)
15240	Full thickness graft, free, including direct closure of donor site, forehead, cheeks, chin, mouth, neck, axillae, genitalia, hands, and/or feet; 20 sq cm or less
15241	Full thickness graft, free, including direct closure of donor site, forehead, cheeks, chin, mouth, neck, axillae, genitalia, hands, and/or feet; each additional 20 sq cm (List separately in addition to code for primary procedure)
15260	Full thickness graft, free, including direct closure of donor site, nose, ears, eyelids, and/or lips; 20 sq cm or less
15261	Full thickness graft, free, including direct closure of donor site, nose, ears, eyelids, and/or lips; each additional 20 sq cm (List separately in addition to code for primary procedure)
15600	Delay of flap or sectioning of flap (division and inset); at trunk
15610	Delay of flap or sectioning of flap (division and inset); at scalp, arms, or legs
15620	Delay of flap or sectioning of flap (division and inset); at forehead, cheeks, chin, neck, axillae, genitalia, hands, or feet
15630	Delay of flap or sectioning of flap (division and inset); at eyelids, nose, ears, or lips
15650	Transfer, intermediate, of any pedicle flap (eg, abdomen to wrist, Walking tube), any location
15740	Flap; island pedicle
15750	Flap; neurovascular pedicle
15760	Graft; composite (eg, full thickness of external ear or nasal ala), including primary closure, donor area
15770	Graft; derma-fat-fascia

HCPCS Codes	Description
A6025	Gel sheet for dermal or epidermal application, (e.g., silicone, hydrogel, other), each
A6448	Light compression bandage, elastic, knitted/woven, width less than 3 in., per yd.
A6449	Light compression bandage, elastic, knitted/woven, width greater than or equal to 3 in. and less than 5 in., per yd.
A6450	Light compression bandage, elastic, knitted/woven, width greater than or equal to 5 in., per yd.
A6451	Moderate compression bandage, elastic, knitted/woven, load resistance of 1.25 to 1.34 foot pounds at 50% maximum stretch, width greater than or equal to 3 in. and less than 5 in., per yd.
A6452	High compression bandage, elastic, knitted/woven, load resistance greater than or equal to 1.35 foot pounds at 50% maximum stretch, width greater than or equal to 3 in. and less than 5 in., per yd.
J1700	Injection, hydrocortisone acetate, up to 25 mg
J1710	Injection, hydrocortisone sodium phosphate, up to 50 mg
J1720	Injection, hydrocortisone sodium succinate, up to 100 mg

ICD-9-CM Diagnosis Codes	Description
701.4	Keloid scar
709.2	Scar condition and fibrosis of skin

Experimental/Investigational/Unproven/Not medically necessary:

CPT* Codes	Description
11950 [†]	Subcutaneous injection of filling material (eg, collagen); 1 cc or less
11951 [†]	Subcutaneous injection of filling material (eg, collagen); 1.1 to 5.0 cc
11952 [†]	Subcutaneous injection of filling material (eg, collagen); 5.1 to 10.0 cc
11954 [†]	Subcutaneous injection of filling material (eg, collagen); over 10.0 cc
15780 [†]	Dermabrasion; total face (eg, for acne scarring, fine wrinkling, rhytids, general keratosis)
15781 [†]	Dermabrasion; segmental, face
15782 [†]	Dermabrasion; regional, other than face
15783 [†]	Dermabrasion; superficial, any site, (eg, tattoo removal)
15786 [†]	Abrasion; single lesion (eg, keratosis, scar)
15787 [†]	Abrasion; each additional four lesions or less (List separately in addition to code for primary procedure)
15788 [†]	Chemical peel, facial; epidermal
15789 [†]	Chemical peel, facial; dermal
15792 [†]	Chemical peel, nonfacial; epidermal
15793 [†]	Chemical peel, nonfacial; dermal

HCPCS Codes	Description
J1825 [†]	Injection, interferon beta-1a, 33 mcg
J1830 [†]	Injection interferon beta-1b, 0.25 mg (code may be used for Medicare when drug administered under direct supervision of a physician, not for use when drug is self-administered)
J9040 [†]	Bleomycin sulfate, 15 units
J9190 [†]	Fluorouracil, 500 mg
J9212 [†]	Injection, interferon alfacon-1, recombinant, 1 mcg
J9213 [†]	Interferon alfa-2A, recombinant, 3 million units
J9214 [†]	Interferon alfa-2B, recombinant, 1 million units
J9215 [†]	Interferon alfa-N3, (human leukocyte derived), 250,000 IU
Q3026 [†]	Injection, interferon beta-1a, 11 mcg for subcutaneous use
S0145 [†]	Injection, pegylated interferon alfa-2a, 180 mcg per ml
S0146 [†]	Injection, pegylated interferon alfa-2b, 10 mcg per 0.5 ml

ICD-9-CM Diagnosis Codes	Description
701.4	Keloid scar
709.2	Scar condition and fibrosis of skin

[†]Note: Not medically necessary when provided for the treatment of scar revision.

*Current Procedural Terminology (CPT®) © 2006 American Medical Association: Chicago, IL.

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