Clinical Policy Title: Dermabrasion and chemical peels

Clinical Policy Number: 16.02.09

Effective Date: August 1, 2017
Initial Review Date: July 20, 2017
Most Recent Review Date: July 3, 2018
Next Review Date: July 2019

Related policies:
CP# 16.02.04 Phototherapy and photochemotherapy (PUVA) for skin conditions
CP# 01.03.01 Indications for Mohs micrographic surgery

ABOUT THIS POLICY: Select Health of South Carolina has developed clinical policies to assist with making coverage determinations. Select Health of South Carolina’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 by Select Health of South Carolina when making coverage determinations. In the event of conflict between this clinical policy and plan benefits and/or state and federal laws and/or regulatory requirements, the plan benefits and/or state and federal laws and/or regulatory requirements shall control. Select Health of South Carolina’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. Select Health of South Carolina’s clinical policies are reflective of evidence-based medicine at the time of review. As medical science evolves, Select Health of South Carolina will update its clinical policies as necessary. Select Health of South Carolina’s clinical policies are not guarantees of payment.

Coverage policy

Select Health of South Carolina considers the use of dermabrasion to be clinically proven, and therefore, medically necessary, when the procedure removes superficial basal cell carcinoma or pre-cancerous actinic keratosis, providing conventional methods are not effective due to the large number of lesions, and treatment with non-contraindicated 5-fluorouracil (Efidex) or imiquimod (Aldara) has failed (Russo, 2005).

Select Health of South Carolina also considers the use of medium and deep chemical peels to be clinically proven, and therefore, medically necessary, for actinic keratosis and other pre-malignant skin conditions, when multiple lesions are present (Martin, 2011; Russo, 2005; Wiest, 2015).

Limitations:

All other uses of dermabrasion and chemical peels, including those performed for cosmetic purposes, are considered not medically necessary, and thus investigational/experimental.
Alternative covered services:

- Topical therapies.
- Systemic antibiotics.
- Hormonal agents.
- Physical modalities, e.g., intralesional steroids (Zaenglein, 2016).

Background

Dermabrasion is a procedure that employs a hand-held, rapidly rotating wire brush or diamond fraise (steel wheel) that planes or sands the skin on the face, removing the epidermis and superficial dermis. Traditional dermabrasion has been used less often in recent years, due to the availability of less invasive procedures.

One less invasive procedure is microdermabrasion, a non-invasive, non-surgical cosmetic procedure that exfoliates or removes the top layer of skin (stratum corneum), after aluminum oxide crystals or other abrasive substances are blown into the face using a hand-held device. Frequently, this procedure is performed for cosmetic purposes (Karimipour, 2010). Another less invasive procedure is laser dermabrasion, involving an argon laser, ultrapulse carbon dioxide (CO$_2$) laser, or flash lamp-pumped pulsed dye laser to re-surface the face (Cole, 2016).

Chemical peels involve applying a solution to the skin, causing exfoliation and eventual peeling, leaving the skin smoother and less wrinkled than before the procedure. Peels are divided into three levels (American Society for Dermatologic Surgery, 2017):

1. Superficial peels, which gently exfoliates the outer layer of skin, and take one to seven days to heal.

2. Medium peels, which involve application of glycolic or trichloroacetic acid to remove damaged skin cells in the outer and middle layers of skin, and take seven to 14 days to heal.

3. Deep peels, which involve application of tricholoracetic acid or phenol to deeply penetrate the middle layer of skin, and remove damaged skin cells, and take 14 – 21 days to heal.

Acne vulgaris is a common condition for which superficial chemical peels and microdermabrasion are employed (Kempiak, 2008). Skin cancer reconstruction using dermabrasion, chemical peels, and related approaches often results in a gradual healing process that may proceed in stages. Secondary procedures to remove scars and local flaps are often needed (Brenner, 2009).

Many procedures in these categories are performed for cosmetic purposes only. Others are performed to address functional impairments in the skin.
Searches

Select Health of South Carolina searched PubMed and the databases of:

- United Kingdom National Health Services Centre for Reviews and Dissemination.
- Agency for Healthcare Research and Quality’s National Guideline Clearinghouse and other evidence-based practice centers.
- The Centers for Medicare & Medicaid Services.

We conducted searches on May 10, 2018. Search terms were: “dermabrasion,” “microdermabrasion,” “laser dermabrasion,” “chemical peel,” “acne vulgaris,” “actinic keratosis,” “lesions,” and “carcinoma.”

We included:

- **Systematic reviews**, which pool results from multiple studies to achieve larger sample sizes and greater precision of effect estimation than in smaller primary studies. Systematic reviews use predetermined transparent methods to minimize bias, effectively treating the review as a scientific endeavor, and are thus rated highest in evidence-grading hierarchies.
- **Guidelines based on systematic reviews.**
- **Economic analyses**, such as cost-effectiveness, and benefit or utility studies (but not simple cost studies), reporting both costs and outcomes — sometimes referred to as efficiency studies — which also rank near the top of evidence hierarchies.

Findings

Understanding efficacy of dermabrasion and chemical peels is hampered by the lack of controlled trials in the literature, along with a lack of professional guidelines that specifically address these treatments.

The American Academy of Dermatology produced a recent guideline for managing acne. The Academy’s work group of 17 experts reviewed 242 articles, and noted that while studies of chemical peels exist, large multicenter double-blinded control trials are lacking (Zaenglein, 2016). Another guideline determined that chemical peels are indicated for pigmentary disorders, superficial acne scars, aging skin changes, and benign epidermal growths. Contraindications include patients with active bacterial, viral, or fungal infection, tendency to keloid formation, facial dermatitis, taking photosensitizing medications, and unrealistic expectations (Khunger, 2008).

A guideline of European experts on actinic keratosis did not address dermabrasion or chemical peels (Werner, 2015). A French guideline included surgical treatment as one acceptable option to actinic keratosis (Dreno, 2014). A Canadian guideline concluded actinic keratosis should be treated, using surgical, topical, or photodynamic therapies; combined therapies can be used when initial treatment is not successful (Poulin, 2015). A review of treatments for actinic keratosis mentions chemical peels as a treatment option, but not dermabrasion (McIntyre, 2007).
A 2011 literature review found only 13 trials addressing chemical peels of acne; and while they generally showed favorable results, these studies generally included small numbers of patients and were not controlled (Dreno, 2011). However, chemical peels and dermabrasion have long been considered standard methods of treating actinic keratosis, basal cell carcinoma, and squamous cell carcinoma (Russo, 2005). An article analyzing whether laser or topical therapies are effective for skin cancers other than melanoma have “various degrees of efficacy” (Brightman, 2011).

A review of indications for dermabrasion and microdermabrasion determined that these are still effective tools, and that safety is established based on evidence of low complication rates, mostly pigment changes, hypertrophic scarring, and infection (Kim, 2011).

Chemical peels are considered by one panel of experts as the “gold standard” of treating actinic keratosis, acne, acne scars, and sun-damaged skin (Wiest, 2015). A recent review of actinic keratosis indicated that dermabrasion is not often used, but is indicated when progression to carcinoma is suspected (Peris, 2015). Another review concluded that new methods of treating actinic keratosis, including chemical peels, are being used successfully, as the condition is now considered the start of the actual continuum leading to squamous cell carcinoma (Martin, 2011).

Policy updates:

In 2018, we did not identify any new relevant publications.

Summary of clinical evidence:

<table>
<thead>
<tr>
<th>Citation</th>
<th>Content, Methods, Recommendations</th>
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<tbody>
<tr>
<td>Zaenglein (2016)</td>
<td>Key points:</td>
</tr>
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</table>
| American Academy of Dermatology guideline for managing acne | • Work group of 17 experts, reviewing 242 articles.  
• Studies of chemical peels exist, but large, multicenter double-blinded control trials are lacking. |
| Wiest (2015)        | Key points:                        |
| Review of chemical peel treatments                     | • Positive results of deep peels are considered the gold standard in acne treatment.  
• Conditions include acne, acne scars, actinic keratosis, and sun-damaged skin. |
| Martin (2011)      | Key points:                        |
| Interval and combined therapies for actinic keratosis | • Actinic keratosis now believed to be the earliest phase of squamous cell carcinoma.  
• New topical and procedural therapies are being developed, including interval, sequential, short-course, and short-contact therapies; combining therapies; and combining topical and procedural therapies. |
<table>
<thead>
<tr>
<th>Citation</th>
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<tbody>
<tr>
<td>Dreno (2011)</td>
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<tr>
<td></td>
<td>• Search of the medical literature of chemical peels to treat active acne.</td>
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<tr>
<td></td>
<td>• Very few (n=13) trials of chemical peels in acne, many not controlled/have small size.</td>
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**References**

**Professional society guidelines/other:**


**Peer-reviewed references:**


**CMS National Coverage Determinations (NCDs):**

No NCDs identified as of the writing of this policy.

**Local Coverage Determinations (LCDs):**

No LCDs identified as of the writing of this policy.

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

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