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## Acne Scars

For reasons that are not understood some people develop severe acne that leads to permanent and sometimes disfiguring scarring. The term "scarring" refers to a process where collagen within the skin is damaged from inflammation, leading to permanent texture changes in the skin. However, many patients refer to scarring when they see color changes that remain for months after an acne lesion has healed. Scarring and color changes are different processes and are treated differently. Acne scarring is a reaction to the inflammation in the skin caused by acne. During the inflammatory process, tissue is destroyed and in an attempt to heal the skin, a reaction called fibrosis occurs. Fibrosis leads to changes in the texture of the skin that can be thinner (called atrophic) or thicker (called hypertrophic) than normal skin. Scarring is permanent. Thus, treating acne early, before scar formation and discoloration is crucial.

There are different kinds of acne scarring:

1. Ice Pick Scarring - deep pitted scars with steep edges
2. Atrophic Scarring - pitted but have smooth borders
3. Hypertrophic Scarring/Keloids are more common on the back and chest and are thick lumpy scars that sit above the surface of the skin

Color changes in acne are more common than scarring and can resolve but may take years to completely disappear. Color changes come in three basic flavors:

1. Post Inflammatory Erythema (pink and purple patches at the site of acne lesions)
2. Post Inflammatory Hyperpigmentation (brown/black discoloration at the site of the acne lesion) which is very common in darker skin toned individuals or in those who tan easily and can significantly worsen the appearance of acne
3. Post Inflammatory Hypopigmentation (white marks at the site of a healed acne lesion)

Treatment for acne scarring is difficult. Thus, the best treatment is prevention. Different scars require different treatments. Acne scarring is permanent but can be treated. No treatment is 100% effective and the best result is improvement, not perfection. Treatment of scarring may require many different modalities, depending on the skin type and the kind of scarring. Treatment of acne scarring can be expensive and is usually not covered by insurance. It is important that all the acne is clear before treating scarring. Otherwise, new scars form and the procedures are wasted. The most effective treatments are surgical and there are many types.

If the scars are depressed and they disappear when you stretch the skin, laser often helps a great deal. If the scars are what we call "ice-pick scars" -- meaning they don't change even if you stretch the skin -- then laser is much less likely to work. Most times, people have combinations of both, and the laser will help the distensible scars. Filler materials, such as collagen and Restylane, can also fill in depressed scars, especially if they are distensible.

Pigmented scars can be treated with prescription bleach creams. If that only helps somewhat, compounded bleach creams, usually sold from a dermatologist's office, may work better. Chemical peels can also help reduce the pigmentation and scarring.

Elevated scars can be treated with injections of a mild cortisone to flatten them.



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Dermabrasion involves the use of abrasive tools to remove the outer layers of the skin to produce an improved appearance. Dermabrasion is primarily used for the treatment of acne scarring. Superficial and deep techniques are available. There are two layers of the skin; the outer layer is called the epidermis and the inner layer, the dermis. Superficial dermabrasion removes portions of the epidermis and deep dermabrasion removes all of the epidermis and portions of the dermis. Deep methods are the preferred method for treatment of scarring. Deep methods are effective but generally require weeks of healing time and carry a higher risk of complications. Improvements continue for months after the procedure as collagen remodels underneath the skin. It is important that the physician performing dermabrasion is trained and experienced in the procedure. Deep ice pick scars typically do not improve significantly with dermabrasion. Dermabrasion may not be recommended for those with darker skin types because of the risk of hyperpigmentation or darkening of the skin. You and your doctor will decide if dermabrasion is the right procedure for you.

Laser surgery is expensive so be aware that there are many lasers that treat acne scars; some work better than others. The CO2 laser is still considered the gold standard among lasers. Its main drawback is that it takes a long time to heal, often more than one month. Other lasers may require less healing time, but are also less effective. Laser Resurfacing has been used for the treatment of acne scarring. All lasers use a high-energy beam of light that targets specific structures in the skin. The CO2 and Erb:Yag lasers used for laser resurfacing are less specific and target the epidermis and superficial dermis. Laser resurfacing is ablative meaning that it destroys the outer layers of the skin. Ablative techniques are more effective but less popular because they require recovery time. Side effects are similar to dermabrasion and need to be discussed in detail with your doctor.

Subcision is used for atrophic scarring. Local anesthesia is used and a needle is then inserted under the scar and gently moved underneath the skin to release the scar tissue. This method has been tested in recent studies and shown to be effective.

Punch excision and grafting is the only effective treatment for deep ice pick scars because it completely removes the scar. A small round cookie cutter like device (called a punch) is used to cut out the scar and the edges of the wound are sewn together with a stitch. In this case, a deep, large scar is traded for a tiny line scar that can later be treated to further blend into the rest of the skin. Larger scars can be removed and then filled with a skin graft, taken from skin (usually behind the ear). Grafts are later contoured with dermabrasion to blend them into the rest of the skin.

Fillers Substances, like collagen, Restylane and Juvederm, add volume to the skin and can be used alone or in combination with the above procedures. Fillers can improve the appearance of acne scars by flattening the scar but their effect is temporary. To maintain the result, the lesions must be re-injected at regular intervals.

Chemical peels, also known as chemical resurfacing, are chemical placed on the skin by an experienced dermatologist to produce an improved appearance of the face, including acne scars. Chemical peels produce controlled injury to the skin that promotes the growth of new skin with an improved appearance. Many different chemicals are used including glycolic acid, trichloroacetic acid (TCA), salicylic acid, "Jessners" solution, and phenol. The different chemical solutions produce different degrees of injury to the skin. Medium depth and deep peels produce injury within the dermis and can improve the appearance of



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atrophic acne scars. The deeper peels are more effective but carry more risks. Chemical are also effective for improving discoloration from acne. More superficial peels have proven effective which is beneficial because there is less risk and less recovery time. However, several peels may be needed to obtain the desired effect.

Microdermabrasion is a popular procedure which is classified as light, or very superficial dermabrasion. This method employs aluminum oxide crystals that are propelled at the skin and immediately sucked up. Although not scientifically proven to improve the appearance of skin, many patients report that their skin feels smoother. It is used to treat acne, and the hyperpigmentation caused by acne. It is also popular because it is painless and there is no recovery time after the procedure. However, to effectively treat acne discoloration, up to 15 treatments may be necessary which can be very expensive. Newer devices now are crystal-less.