

Beneath the Surface of Scars and Wound Healing

With the skin's constant ability to shed old cells and create new ones, cuts, wounds and surgical incisions are repaired. However, it is this very process that also results in scars of all shapes and sizes. While a visible scar may be the necessary and inevitable end to the healing process, the results vary with the individual. Some visible scars fade and improve in appearance, while others provide evidence of injury for decades to come. In these pages, we go beneath the surface and explore the reality of scars and their prognoses.

What exactly is a scar?

A scar is growth of collagen beneath the skin that is formed as the result of wound healing; therefore, every cut or injury to the skin heals to form a scar. The goal of every physician is to facilitate proper wound healing that will result in an invisible scar. Scars come in all shapes and sizes depending on the wound, your age, scar location and size, nutrition, genetics or infection. A scar usually takes 12 to 18 months to fully mature. Not all scars are the result of wounds, burns, surgeries and accidents. Skin diseases caused by bacteria, fungus, or viruses can also result in scarring. For example, acne often leaves a variety of scars, and stretch marks are a form of scars caused by weight loss or growth. Early in the process, scars are red or dark and raised, but will become paler and flatter over time. It can take up to 24 months for a scar to develop and mature to its stable form and appearance.

Are there different types of scars?

There are three different types of scars --- atrophic, hypertrophic, and keloidal. Atrophic scars are depressed and cause a valley or hole in the skin. Hypertrophic scars are elevated and will subside with time. Keloids are actually non-malignant tumors formed by scar tissue that exceeds the boundaries of an original incision or injury. Keloidal scars are elevated, expansive and continue to grow. In addition to appearance, location and orientation are also important considerations in determining scar type. If a scar is thickened, does not invade

normal tissue, and lies across the relaxed skin tension lines (creases in the skin), then it is a hypertrophic scar. If it is elevated and invading normal tissue, then it is a keloid scar. All types of scarring can occur on all areas of the body, but some areas such as the chest, knees and elbows are more likely to scar.

What exactly causes a scar?

Scars are the result of an injury to the skin that causes an exaggerated healing response that interferes with proper wound healing.

What makes a scar red?

Initially, all scars are red because when the body starts to heal, it produces an over abundance of healing tissue and new cells. An increased number of blood vessels are formed to feed the healing tissue and new cells. It is this increased blood flow that prompts the discoloration.

Is there anything that pre-determines what a scar looks like?

There is nothing specific that can indicate the ultimate appearance of a scar or what type of scar it will be. The way in which a wound heals is different for every individual and is determined by genetics, environment and many other factors. Doctor Alford will work with you to facilitate proper wound healing by preventing infection, using proper medications and dressings, encouraging good nutrition and avoiding damage to healing tissues. You and your doctor can minimize the chance of a noticeable scar; however, your own body's healing mechanism is the ultimate determining factor in scar development.

Can a scar be removed? If so, what technology is required for its removal?

Surgery and lasers can sometimes help to diminish a scar. Surgery works better in atrophic scars and lasers work better in hypertrophic scars. Injections of Triamcinolone, a medication which inhibits production of the collagen that makes up scar tissue, reduces inflammation and can also help a scar to regress. Triamcinolone is a

steroid that inhibits collagen formation as well as stimulating collagen resorption.

There are some cosmetic techniques that can be employed to improve the appearance of a scar, though in time, all scars improve on their own to some degree. Once a scar has matured, it most likely won't undergo any more changes and that's when you should look at your options with a doctor. There are also products marketed for improving the appearance of scars. Two of these are silicone patches and Mederma®.

Vitamin E has often been touted as being beneficial to making a scar less visible. Is this true?

Many studies have now shown that vitamin E does nothing to a scar. Aloe Vera, though, does have some anti-inflammatory properties and may also decrease the redness. While neither Vitamin E nor Aloe Vera will cause harm to a scar, it is recommended that they not be used during the first two weeks after the wound occurs.

Are some people more prone to developing scars than others?

There is a possibility that darker skinned people have a higher risk of developing keloids than people with lighter skin. Further, based on medical history, some people may develop more problematic scars. Problem scarring can also be caused by improper wound care and further injury to the wound. Location of the injury, poor nutrition, skin coloration, and age are also elements that can add to problematic scarring.

Do you have any advice for problem scars?

It is worth seeking advice from your facial plastic surgeon if a scar grows larger, remains red or dark and raised and does not fade, begins to hurt or itch, or causes the restriction of joint movement.

What advice can you offer on dealing with scars from prevention through to elimination?

The best advice is to prevent scar formation through proper cleaning and dressing of a wound, use of topical and/or systemic antibiotics, and techniques designed to reduce inflammation and potential injury

to the wound. The best advice is to seek proper medical care and supervision whenever an injury or wound occurs.

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