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Scars : Why they form and How to Treat them

When ever the skin is damaged, the body heals the area damaged with the formation of scar. As Plastic Surgeons we try to hide our work by placing our incisions in skin creases or in the hair line. But every incision still heals with scar formation. A good scar is flat (depressed or raised scars catch light and are there fore more visible), narrow (wide scars are easier to see) and do not displace anatomic landmarks. A flat, thin scar can not be improved. A depressed scar can be raised. A raised scar can be flattened. Wide scars can be narrowed. Scars that displace anatomic landmarks can be rearrange to correct the displacement.

Raised scars come in two favors; **Hypertrophic** and **Keloid**. Under a microscope hypertrophic and keloid scars look the same but on the skin they are defined by the extent of the scar formation. A raised scars that does not exceed the borders to the original wound is called a hypertrophic scar. A keloid scar exceeds the border of the original scar and appears like a tumor.

Scar formation is a multifactorial problem. Factors that effect scar formation include:

1. Age: as we age our abilities to quickly heal diminish. Young people heal very quickly and form heavy thick scars quickly. As we age our ability to form heavy scars diminish.
2. Genetic Factors: People of color can form very heavy and large scars (Keloid). But not all people of color for Keloid or even hypertrophic scars. I have operated on many people of color with excellent results and no excessive scar formation.
3. The source of the wound. A surgical scalpel cuts the skin sharply and will cause minimal surrounding tissue damage. A injury caused by a blunt object (a rock) will cut the skin but also damage the surrounding tissues. The additional damage requires more healing and there fore more scar formation. Injured surrounding tissues contract and create depressed scars. Injuries caused by heat, lasers, radiation, chemicals and abrasion caused extensive surrounding tissue damage and scarring. And also possible loss of skin pigment cells, which creates a white patch.
4. Tension and Inflammation: Incisions or injuries in areas were the skin is tight, tend to form wide scars. Incisions or injuries were the wound develops a significant amount of inflammation (reaction to the suture, infection, foreign body) form heavy thick scars.

Every wound takes up to two years to heal. The process is the same for a scratch and a tummy tuck.

1. The wound seals it self in 24-48 hours
2. During the first six weeks the wound begins to organize it self and strengthen.
3. At six weeks the wound edges begin to redden up. Heavy collagen scar formation is occuring and the wound is bring in more blood flow. This collagen development takes six months to complete.

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4. From six months to two years the final collagen organization is taking place. The red/purple color begins fade and the scar finally turns to hypopigmented (Translucent white). The raised portion of the scar flattens and softens.

How to Get the Best Post Injury Or Post Surgery Scar:

For my surgical patients I use different techniques depending on the the surgical location. My basic principles are the same: Reduce skin edge incision tension and to reduce wound inflammation. This involves layered wound closure with suture material that produces the least amount of wound inflammation. If it is possible, I will glue paper tape to the incisions , replacing it as needed and keeping it taped for the first six weeks.

After the three weeks (and starting at six weeks for taped incisions) I would recommend twice daily five minute scar massage with a moisturizing cream/ointment. I believe that the massage will help the scar mature quicker. Resulting in a flat scar with no redness. Scars will mature on their own but observations made with burn patients demonstrate more rapid scar improvement with the use of pressure and massage.

Patients frequently ask about advertised scar creams or ointments. It is my opinion that it is the massage which is the most important factor and that any of the moisturizing creams or ointments will work (As long as you spend five minutes massaging them in).

The use of lasers to remove the redness of a scar is also being promoted. If the scar is in a visible location, the expense may be warranted. Lasers do not help with raised scars, nor do they improve wide scars or depressed scars.

Scar Revision:

Chronic raised, heavy scar, depressed scars, wide scars and scars that displace normal anatomy may require revision. A consultation would be required in order to evaluate a particular scar and determine what would be needed to improve the scar. For a complimentary consultation call (858) 451 - 3060.