Acne is a common condition experienced by up to 85% of people between 11 and 30 years of age and by up to 5% of older adults. In some patients, during the healing process of active acne, the severe inflammatory response results in permanent, disfiguring scars.\(^1\)

**Skin Structure**

Skin is the largest organ of the body in the aspect of weight and surface. It consists of three layers: the epidermis, dermis and subcutaneous (fat) layer (Figure 1). The epidermis or outer layer of the skin is mainly composed of keratinocytes and melanocytes. The dermis is a thick layer of supportive connective tissue that provides the skin its strength, flexibility and moisture. Fibroblasts are a primary component of the dermis, producing mainly collagen (makes up 70% of the dermis) and elastin which combines with collagen and maintains the skin’s elasticity and flexibility. The dermis contains blood vessels that nourish both the dermal and epidermal cells, nerve endings, sweat glands and oil glands. The subcutaneous layer insulates the body from heat and cold and serves as an energy storage area.

**Classification of Acne Scars**

There are two basic types of acne scars depending on whether there is a net loss or gain of collagen. 80%-90% of people with acne scars have scars associated with a loss of collagen (atrophic scars) compared to a minority who show hypertrophic scars and keloids. It is unclear why some acne patients develop scars while others do not, as the degree of acne does not always correlate with the incidence or severity of scarring.\(^2\)

The atrophic acne scars can be further divided into 3 sub-categories (Figure 2):

- **Boxcar Scars** have sharp cliff-drop-like vertical margins and a larger, flatter base and usually appear on the temples and the cheeks. Their appearance is similar to chicken pox scars.
- **Rolling Scars** are wide and shallow and create a wave-like appearance. They become visible when the tissue beneath the skin gets damaged. Their aspect resembles rolling hillsides.
- **Ice pick scars** are deep and narrow and form pits in the skin. This condition is usually caused by a deep pimple or cyst that has destroyed the follicle.

**Hypertrophic/keloid scars**

Unlike the more common atrophic scars, here we see extra tissue where the scar is, in the form of a bump. Hypertrophic scars occupy the site of the original acne lesion, while keloid scars grow beyond the boundary of the original wound. Both are more commonly found on the chest and back, however they can occur on the face as well.

![Figure 1: Skin Structure](https://www.syneron-candela.com)

![Figure 2: Classification of Acne Scars](https://www.syneron-candela.com)
Treatment of Acne Scars

It is essential for the clinician to choose a modality that can effectively reach the appropriate depth of both superficial and deep scars. Acne scar treatments include surgical solutions such as punch excision, subcision, chemical reconstruction, laser resurfacing or combinations of modalities. Non-surgical options such as dermal fillers, chemical peels and dermabrasion are also available. Ablative procedures are associated with long recovery times and adverse effects such as post-inflammatory hyperpigmentation, especially in darker skin types, while non-ablative and fractional laser devices have fewer side effects but multiple treatments are required to achieve acceptable outcomes.3,4

Sublative is the only technology proven to reduce moderate to severe acne scars for all skin types.

The Sublative™ RF applicator is designed to deliver radiofrequency energy to the skin in a fractional manner, via an array of multi-electrode pins (Figure 3). The array delivers bipolar RF energy to the skin. Microscopic zones of epidermis and dermis are thermally ablated in a grid over the skin surface, where non-ablated zones serve as a reservoir of cells that promote rapid healing. Efficacy is higher than non-ablative, while safety and recovery times are better than ablative resurfacing.

Unlike fractional ablative laser treatments, which can disrupt 10-70% of the epidermis and most of the effect is in the epidermis (Figure 4), the Sublative rejuvenation technique impacts only up to 5% of the epidermis and most of the effect is deep in the dermis (Figure 5). As a result, healing is rapid and downtime is minimal. The treatment is appropriate for all skin types and is an effective alternative for patients with darker skin who may be at risk for hyperpigmentation from laser treatments. Skin appears smoother, more elastic with improvement in tone.

Sublative Technology is available with these Syneron devices:

- elōs Plus™
- eMatrix™
- eTwo™

References: