The CO₂RE™ laser [Syneron-Candela, Yoqneam] is intended for the performance of dermatological procedures requiring the excision, incision, ablation, coagulation, and resurfacing of soft tissue in dermatology and plastic surgery. High-energy CO₂ lasers remove the skin in a precisely controlled manner by creating thermally ablated areas surrounded by undamaged tissue, which are subsequently repopulated by fibroblast activity and epidermal keratinocytes reproduction. Fractional CO₂ lasers can penetrate deeper than the mid-infrared (2,500-25,000 nm) lasers and therefore can result in better clinical results.

CO₂RE laser utilizes a combination of conventional and fractional ablative CO₂ laser energy delivery methods, to enable surgeons to perform eyelid surgery and periocular rejuvenation of wrinkles, fine lines and improve skin texture in a safe, effective and fast manner.

**Eyelid Surgery for Removal of Fat Pads Under the Eyes**

In cases of transconjunctival lower blepharoplasty, the conventional surgical setting was used 7-10 W, 2 mm spot size of focused and defocused mode, which is a bloodless incision of soft tissue to achieve conjunctival incision and fat pad excision. A fractional deep mode of 5% density, 40-60 mJ is used for cases requiring eyelid skin tightening. The clinical endpoint is immediate skin tightening. This procedure is simple, safe and effective with fast recovery for intermediate to severe cases of under eye bags. The main advantage of this procedure is quick healing with no scarring.

**Step 1. Bloodless incision**
**Step 2. Exposure of fat pad**
**Step 3. Removal of fat pad**
**Step 4. Skin tightening**
**Step 5. Removed fat pads**
Non Surgical Periocular Rejuvenation with Fractional CO₂ Laser

For patients who are not ready to undergo surgical treatment, fractional CO₂ laser is a non-surgical alternative, with minimal downtime and satisfactory results in reducing fine lines, improving skin texture and tightening of the skin. A fractional deep mode of 5% density, 40-60 mJ is a mere 10 minutes procedure recommended for patients with skin color types III to IV.

<table>
<thead>
<tr>
<th>Step 1. Nerve block</th>
<th>Step 2. Eye protection</th>
<th>Step 3. Laser treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Step 1" /></td>
<td><img src="image2" alt="Step 2" /></td>
<td><img src="image3" alt="Step 3" /></td>
</tr>
</tbody>
</table>

Recovery

Day 1

Day 2

Before & After Periocular Rejuvenation

Before

After

Before

After

Before

After

Before

After

SYNERON | CANDELA®
Complications
Lower blepharoplasty procedures are often associated with severe complications such as bleeding and eyelid malposition and scarring. The laser assisted transconjunctival approach combined with fractional laser skin tightening minimizes severe complications, and limits them to occasionally occurring mild side effects resulting in charcoal formation around wound, prolonged skin erythema and inadequate skin tightening. However, development of post inflammatory pigmentation for patients with skin types III to IV using the above suggested laser parameters is uncommon.

Conclusion
For transconjunctival lower blepharoplasty, using the versatile CO2RE fractional CO2 laser, a single device with combined surgical and fractional laser properties, offers superior advantages in terms of treatment results, downtime and unwanted side effects and patients satisfaction. For patients that prefer non-surgical solutions, the CO2RE laser is a safe, non-invasive alternative for the treatment of periorbital fine lines, improving skin texture and tightening.