Procedure: SKIN NEEDLING

3 areas of the same size 4×3 cm where delimitated on the skin surface and treated by skin needling.

- The first area was treated with a common skin needling pen with **12 needles cartridge** at 1 mm depth **8,000 RPM** during 40 seconds.

- The second area was treated with Fusion Meso Pen Platinum with **9 needles cartridge** at 1 mm depth **8,000 RPM** during 40 seconds.

- The third area was treated with dermaroller with **192 needles** at 1 mm depth during 40 seconds. We observed and compare the efficiency of the skin needling after treatment and at 24 hours.
AFTER SKIN NEEDLING MACRO OBSERVATION

OTHER PEN: The treated area show a certain Hyperaemia without bleeding.

FUSION MESO PEN: The treated show a similar Hyperaemia with slight bleeding, but an important plasma quantity is observed over the skin.

DERMAROLLER: The treated show a similar Hyperaemia with high bleeding, and a similar plasma quantity is observed over the skin compared to FUSION MESO PEN.
AFTER SKIN NEEDLING MICRO OBSERVATION micro camera (500x)

OTHER PEN

We can observe an average of 30 perforations. The shapes of the perforations are circular and small, which is the correct shape for an efficient skin needling. We cannot appreciate the depth of the perforations but the absence of plasma indicated that the micro wounds are very superficial. We can observe that 24 hours after treatment the skin has totally recovered its integrity.

In conclusion: the skin needling is not reaching the desired depth of 1 mm, we have a low density of micro perforations, but the wounds have a correct shape. The skin is recovering its integrity 24 hours post treatment.

After skin needling

24 hours after skin needling
AFTER SKIN NEEDLING MICRO OBSERVATION micro camera (500x)

FUSION MESO PEN

We can observe an average of 110 perforations. The shapes of the perforations are circular and small, which is the correct shape for an efficient skin needling. We cannot appreciate the depth of the perforations but the presence of plasma indicated that the micro wounds are as required. We can observe that 24 hours after treatment the skin has totally recovered its integrity.

In conclusion: the skin needling is intense reaching the desired depth of 1 mm, we have a high density of micro perforations and the wounds have a correct shape. The skin is recovering its integrity 24 hours post treatment. With the Fusion Meso Pen the needles are entering properly the skin.

![After skin needling](image1)

![After skin needling](image2)

![24 hours after skin needling](image3)

![24 hours after skin needling](image4)
DERMAROLLER

We can observe an average of 50 perforations. The shapes of the perforations are linear and important, which is not the correct shape for an efficient skin needling. We cannot appreciate the depth of the perforations but the presence of plasma and blood indicate that the micro wounds are deep. We can observe that 24 hours after treatment the skin has not totally recovered its integrity due to the bad quality of the perforations and the important trauma.

In conclusion: the skin needling is slightly more intense in terms of density of micro perforations compared to other pen but much reduced compare to Fusion Meso Pen. It is reaching the desired depth of 1 mm as we have blood and plasma leak. The skin is not recovering its integrity 24 hours post treatment. The skin needling is creating high trauma to the skin, important bleeding.
COMPARATIVE STUDY

OTHER PEN

FUSION MESO PEN

DERMAROLLER
### CONCLUSIONS

<table>
<thead>
<tr>
<th></th>
<th>OTHER PEN</th>
<th>FUSION MESO PEN</th>
<th>DERMAROLLER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of micro perforations</td>
<td>+</td>
<td>++++</td>
<td>++</td>
</tr>
<tr>
<td>Quality of micro perforations</td>
<td>+++</td>
<td>++++</td>
<td>-</td>
</tr>
<tr>
<td>Depth of micro perforations</td>
<td>+</td>
<td>++++</td>
<td>+++</td>
</tr>
<tr>
<td>Plasma release</td>
<td>+</td>
<td>++++</td>
<td>+++</td>
</tr>
<tr>
<td>Bleedings</td>
<td>None</td>
<td>Limited</td>
<td>High</td>
</tr>
<tr>
<td>Hyperaemia</td>
<td>Good</td>
<td>Excellent</td>
<td>High</td>
</tr>
<tr>
<td>Skin recovery at 24 hours</td>
<td>++++</td>
<td>+++</td>
<td>+</td>
</tr>
<tr>
<td>Skin texture at 24 hours</td>
<td>Improved</td>
<td>Highly improved</td>
<td>Damaged</td>
</tr>
</tbody>
</table>

This study clearly demonstrated the effectiveness and skin needling quality of FUSION MESO PEN compare to other pen and to dermaroller. The Fusion Meso Pen produces the highest quantity of perforations, with the best shape and at the right depth. This is reflected by the low bleeding, the high plasma release on the skin, the quick recovery at 24 hours and the skin texture that is highly improved on pictures. It’s easy to appreciate the skin quality.

We will remind as fact that other pen produce a limited skin needling and limited result but are not damaging the skin whereas dermarollers. In the case of dermarollers we will remind that we produce high bleeding, high skin damages and that the skin does not recover at 24 hours and that the appearance of the skin is clearly damaged after the treatment.