

[연수강좌]

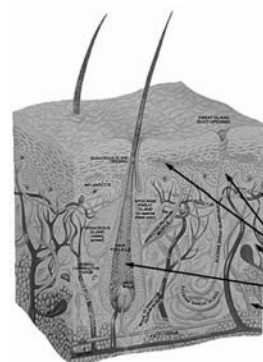
SKIN REJUVENATION and ACNE SCAR TREATMENT : MATTISE FRACTIONAL LASER

김민정

미하나클리닉

Skin Aging

- 자외선이 콜라겐과 탄력 섬유를 분해하여 피부 구성요소를 파괴하여 피부 노화가 진행됨
- 피부 탄력이 없어지고, 혈관이 확장 (telangiectasia)되며, 검은색 반점 (hyperpigmentations, lentigo)과 주름이 생겨 남
- 더 많은 노력이 지속될수록 이런 징후는 더욱 악화됨



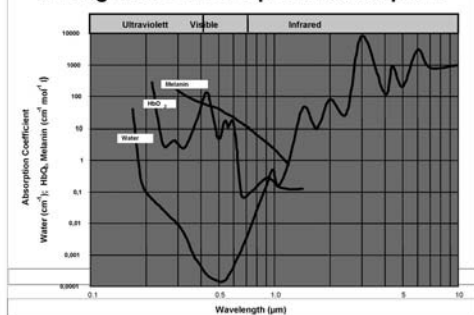
Skin's structures
Objective/Chromophores

Objectives:

- hemoglobin (vascular)
- Melanin (hairs, pigments)
- Water (skin)

STRUCTURE OF HUMAN SKIN
MAGNIFIED 35 TIMES

Endogenous Chromophors: Absorption



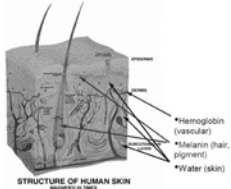
Er:YAG 2,940nm CO₂ 10,600nm RDL 510nm Argon 514nm KTP 532nm Krypton 568nm CV/CR 578nm FUDL 585-600nm Ruby 694nm Alex 755nm Nd:YAG 1060nm



Penetration
in base to
wavelength

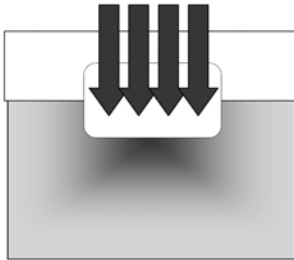
선택적 Photothermolysis를 위한 기본사항

- Wavelength
파장은 원하는 층에 도달하기 위해서 지정 Wavelength가 목표 층에 산란이 없이 목표 층에 흡수되거나 도달해야 한다.
- Fluence
Fluence 에너지 양은 thermal damage, 응고, 탄화, 분열 작용을 얻기 위해 적절한 에너지 양 요구 된다.
- Pulse width
pulse width는 주변 조직 손상 보호 뿐만 아니라 보다 효과적인 치료를 위해 중요, 목표 TRT(Thermal Relaxation Time) 보다 더 짧거나 같아야 한다.



Ablative ?
Non-Ablative ?

Ablative technologies for collagen remodeling



- CO₂ and Er:Yag lasers
- Ablation of epidermis results long healing time and risk of dyschromia
- Dramatic wrinkle smoothing

Non Ablative Rejuvenation

Infrared Lasers

- Cool Touch 1320 YAG
- Smooth Beam 1450 nm Diode
- 1540 nm Er:Glass

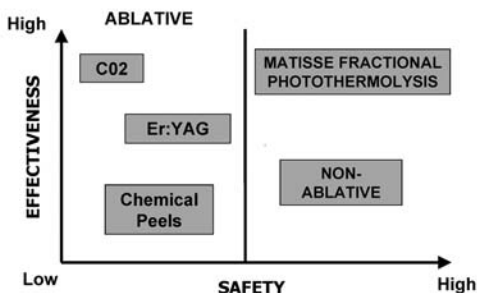
Visible Light Lasers

- Pulsed Dye
- Pulsed 532 nm
- Q-Switched Nd:YAG and Alex

Broad Band Light Sources

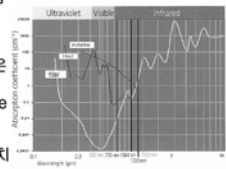
- Intense Pulsed Light

Skin Rejuvenation



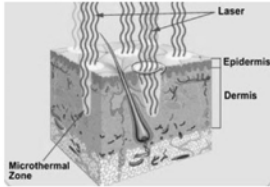
Fractional Skin Rejuvenation

- 1540nm 파장의 Multispot FSR 레이저 시스템은 피부 수분에 의해 흡수되며 coagulation temperature를 위해 온도를 상승시킨다.
- micro thermal zone안에서만 조직 응고를 만들어 내며, micro thermal zone 사이의 공간은 열이 전달되지 않는다.
- short pulse duration으로 micro thermal zone에 매우 작은 크기로 에너지를 전달하기 때문에 healing process가 매우 빠르다.
- 환자의 상태에 따라 3~4주 간격으로 4~6번 치료한다.
- Spot size는 8mm, 모든 micro thermal zone 사이 250 μ m 거리, micro thermal zone으로 불리는 120 μ m자름의 500micro subspots로 구성된다.



Fractional Skin Rejuvenation

- FSR은 섬유아 세포를 가열함으로 새로운 콜라겐 생성을 촉진시킨다.
- 또한, 표피에 착색된 반점 제거를 위해 자연스럽게 표피 재편성을 가속화시킨다.
- 높은 에너지를 micro thermal zone안에 매우 짧은 시간(ms)동안 전달하기 때문에 부작용이 없이 조직 응고를 유도한다.
- FSR은 피부 노화를 점진적으로 감소시키는 비 외상적 치료이다.
- 피부 rejuvenation을 위한 선택적 광열 분해 시스템이다.



MATTISE Fractional Photothermolysis

The special micro-lens array of Matisse produce an intense concentration of laser energy into the micro-thermal areas (fractional spots or MTa) and an evenly low level heating of all the treated skin.

The skin will be coagulated inside the micro-thermal areas and deeply stimulated by the diffuse thermal effect.

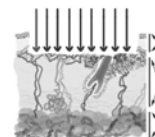
The new generation of fractional laser

The Matisse Er:Glass 1540 nm laser is made to combine the advantages of fractional skin resurfacing and the non ablative skin rejuvenation

- Variable pulse duration from 4 to 14 ms
- Integrated skin cooler for safer and painless treatments
- Micro-lenses array of 1000 microspot/cm²
- Sliding or stamping technique
- Can be combined with other lasers or IPL

The system for Fractional Skin Resurfacing that can be combined with other laser sources or IPL . Expand your practice with no worries!

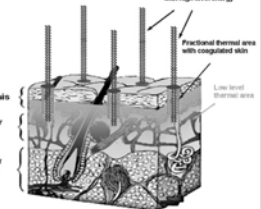
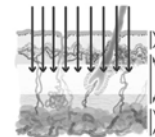
MATTISE Fractional Resurfacing



- Non-ablative**
- Low reproducibility of the results
 - High number of treatments
 - Difficult to achieve benefits of resurfacing

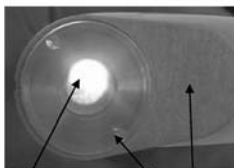
Ablative resurfacing

- High risks of side effects
- Intense pain
- Long down-time
- Common PIH
- Possible infections and risks of scarring



- Combined effects of resurfacing and non-ablative rejuv.
- Superior results
- More flexibility of use
- No down-time
- Safer and painless treatments

Matisse Handpiece



Laser beam delivered through Matisse Micro-lens array



No gel or dye or anesthesia are requested. The advanced Matisse skin cooler make the treatments safer and virtually pain free

Active controlled skin cooler with true temperature monitoring.

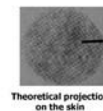
MATTISE Fractional Photothermolysis

The special lens array produce for each pass 1000 MTa/Cm².

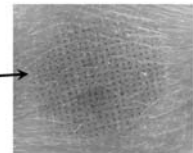
Every "microspot" is ~120µm large and the depth of coagulation of the dermis is proportional with the energy selected.

Due to the different water absorption, the epidermis remains intact and the collagen in the dermis is coagulated from 300µm to 800µm.

The evenly heated areas with reversible damage is proportional with the selectable pulse duration of Matisse



Theoretical projection on the skin



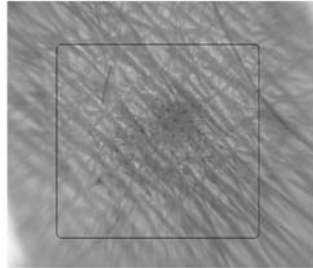
Matisse effect on the skin

MATISSE Fractional Photothermolysis

2-3 days after the treatment, the epidermis shows necrotic debris over the micro-thermal areas.

This can produce a transitory pigmentary effect similar to a mild bronzing.

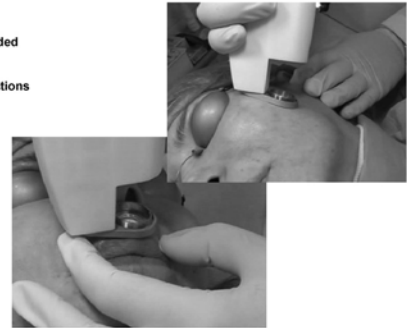
The skin come back to normal pigmentation in 14-21 days.



MATISSE Fractional Photothermolysis

Application notes:

- No anesthesia required
- From 2 to 4 passages needed
- Full face in max 30 min.
- No oozing or risks of infections
- No colored gel needed
- No disposables
- NO PAIN



Indications

- Superficial wrinkles
- Resurfacing
- Lentigos and Dyschromia
- Operation or trauma scar
- Melasma
- Acne scar; permanent scar
- Facial and neck lifting
- Redness of face, neck, chest

Advantage of Matisse laser

- Less painful
- Cooling device
- No consuming supplies

*Thank You For
Your Attention !!!*