How do I approach the laser consult?

- Today’s patient is better educated
  - Review the entire procedure
  - Manage their expectations
  - Counsel on possible outcomes

What are the alternatives?

- Waxing
- Plucking/tweezing
- Chemical depilatories
- Shaving
- Threading
- Electrolysis
  - Permanent hair removal
- Doing Nothing

Describing the procedure.

- Hair anywhere on the body can be treated.
- The laser targets color (melanin), and black and brown hairs respond best.
- Coarser hairs respond better.
- Finer hair, even if dark, respond less.
- White, gray, blonde, and light red hairs do not respond very well.
- With each treatment, hairs become fewer, lighter and thinner
Stages of Hair Growth

- Hair best treated in the ANAGEN Phase.
- Not all hair follicles contain hair growing at the same time.
- Laser hair removal can only treat follicles that have hair in them.
- Expect 70%-90% reduction in hair after 6 treatments (4 weeks apart).

Permanent Hair Reduction

“long-term stable reduction in the number of hairs re-growing after a treatment regime”

The FDA allows this definition

Does it hurt?

- Should not be painful.
- Most people say it feels like a “snap” of a rubber band.
- Any pain more than level 4/10 requires re-evaluation.

Do results vary? Yes.

- 3 main reasons
  - Skin Color - Light skin vs dark skin
  - Hair Color - Black hair vs blonde hair
  - Hair Type - Coarse hair vs fine hair
- Other factors - age, sex, genetics, heredity, hormonal changes

Therefore

- RESULTS CANNOT BE GUARANTEED
What are the risks?

• Burns or blisters
• Dyspigmentation
• Scars
• Paradoxical hypertrichosis

Preventing Complications

2 things you can tell your patients
1. **Recommend no tanning** - Avoid tanning 2 weeks before and 2 weeks after the treatment
2. BE sensitive to **pain level** during the treatment.

Preparing for Treatment

• **Shave** the areas to be treated on the day of or 1 day prior to treatment
• Avoid sun at least 2 weeks before
• No waxing, plucking, threading or tweezing 4 weeks before
• **Chemical depilatory** – one week before

Preparing for Treatment

• **Laser Hair Removal** -
  - Targets the pigment in the hair follicle.
  - Heat is absorbed and destroys the cells lining the hair follicle specifically around the bulb, bulge, and vascular supply.
Hair Anatomy

- Follicle
- Vascular Supply (matrix)
- Epidermis
- Sebaceous Gland
- Bulge
- Bulb

Bulb / bulge are critical structures responsible for hair re-growth

Patient Consult

- What are the 3 cycles of hair growth?
  - Anagen: Hair is actively growing
  - Catagen: Hair is dormant
  - Telagen: Hair is falling out

Hair Biology

- Anagen
- Catagen
- Telogen
Laser Hair Removal

Unwanted hair  →  With laser treatment  →  Hair shaft and follicles are disabled

Hair Growth Information

<table>
<thead>
<tr>
<th>Body Area</th>
<th>% Anagen Hair</th>
<th>% Telogen Hair</th>
<th>Treatment Duration</th>
<th>Follicles deactivated</th>
<th>Depth of follicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Axillae</td>
<td>30%</td>
<td>70%</td>
<td>3 months</td>
<td>50</td>
<td>2-2.5 mm</td>
</tr>
<tr>
<td>Brow and Ears</td>
<td>10-15%</td>
<td>85-90%</td>
<td>3 months</td>
<td>50</td>
<td>2-2.5 mm</td>
</tr>
<tr>
<td>Beard</td>
<td>70%</td>
<td>30%</td>
<td>10 weeks</td>
<td>500</td>
<td>2-4 mm</td>
</tr>
<tr>
<td>Upper Lip</td>
<td>65%</td>
<td>35%</td>
<td>6 weeks</td>
<td>588</td>
<td>1-2.5 mm</td>
</tr>
<tr>
<td>Scalp</td>
<td>80-90%</td>
<td>13%</td>
<td>3-4 months</td>
<td>200</td>
<td>2-3 mm</td>
</tr>
<tr>
<td>Trunk</td>
<td>10-20%</td>
<td>80-90%</td>
<td>4 months</td>
<td>70</td>
<td>2-4.5 mm</td>
</tr>
<tr>
<td>Pubic Area</td>
<td>20-30%</td>
<td>70%</td>
<td>3 months</td>
<td>55</td>
<td>3-4.5 mm</td>
</tr>
<tr>
<td>Arms</td>
<td>20%</td>
<td>80%</td>
<td>18 weeks</td>
<td>80</td>
<td>2-4.5 mm</td>
</tr>
<tr>
<td>Legs &amp; Thighs</td>
<td>20%</td>
<td>80%</td>
<td>6 months</td>
<td>60</td>
<td>2-4.5 mm</td>
</tr>
<tr>
<td>Breast</td>
<td>30%</td>
<td>70%</td>
<td>3 months</td>
<td>55</td>
<td>3-4.5 mm</td>
</tr>
</tbody>
</table>

Which lasers can be used?

- Long pulse Ruby (694 nm)
- Long pulse Alexandrite (755 nm)
- Long pulse Diode (810 nm)
- Long pulse ND-Yag (1064 nm)*
- Intense pulsed light (515-1200 nm)

*Best for darker skin types

- Over 1300 nm penetration decreases due to absorption of light by water
- Most penetrating is red and near IR at 650-1200 nm
- Longer wavelengths minimize absorption by epidermal melanin
DCD

- Cryogen spray milliseconds before laser pulse
- Cools / protects epidermis from thermal damage
- Protects darker skin types
- Good visibility / does not slow treatment
- No messy gels

Treatment Protocol For Hair Removal

- Post Treatment
  - Aloe vera
  - Topical steroids
  - Topical antibiotics for folliculitis prone areas
  - Sunblock of SPF 30 if treated area is exposed to the sun
  - Efominthine cream
  - Avoid sun for AT LEAST two weeks

Dynamic Cooling

- Short spray of cryogen onto skin milliseconds before laser pulse
- Rapid, efficient cooling of epidermal layers only
- Does not cool subsurface targeted structures
- Does not impede visibility or treatment speed

Fitzpatrick Skin Types

<table>
<thead>
<tr>
<th>Skin Type</th>
<th>Typical Skin Type Definition</th>
<th>Skin Reaction on over exposure to UV light</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Red-blonde Hair, Blue-green Eyes, Very Light Skin</td>
<td>Always Burns, Never Tans</td>
</tr>
<tr>
<td>2</td>
<td>Light to Medium Hair, Light to Medium Eyes, Light to Medium Skin</td>
<td>Usually Burns, Seldom Tans</td>
</tr>
<tr>
<td>3</td>
<td>Medium Hair, Medium to Dark Eyes, Medium to Olive Skin</td>
<td>Moderate Burns, Usually Tans</td>
</tr>
<tr>
<td>4</td>
<td>Dark Hair, Dark Eyes, Dark Olive to Brown Skin</td>
<td>Burns Mildly, Moderate Browning</td>
</tr>
<tr>
<td>5</td>
<td>Dark Hair, Dark Eyes, Dark Skin</td>
<td>Seldom Burns, Deep Browning</td>
</tr>
<tr>
<td>6</td>
<td>Dark Hair, Dark Eyes, Very Dark Skin</td>
<td>Does Not Burn, No Change in Color</td>
</tr>
</tbody>
</table>
Treatment of dark skin types

• Long wavelengths or wavelength ranges
• Long pulse durations
• Large spot sizes (lower fluences)
• Cooling

Treatment Pearls

• Start at minimum fluence needed to see clinical endpoint: peri-follicular erythema/edema
• With each treatment, 4 to 6 weeks apart, hairs become lighter and thinner
• Gradually increase fluence and decrease pulse duration
• Dark, coarse hairs (lower fluences, longer pulse duration)
• Lighter, fine hairs (higher fluences, shorter pulse durations)

Treatment Pearls

• Fluence - relates to hair color
• Pulse duration - relates to hair width/texture
• Frequency - Higher the frequency, the less time to cool between pulses
• Cooling (DCD)
  - Cooling intervals must be adjusted based on skin type
  - Excessive cryogen can cause hypopigmentation

Treatment Pearls

• Holding the laser handpiece
  - FLUSH
  - PERPENDICULAR
  - NO MORE THAN 30% OVERLAP
Treatment Pearls

- Cooling
  - Ice packs
  - Dynamic cooling
  - Cold roller
  - Cold gel
  - Chilled laser tips
    - Diode
    - Nd-YAG
    - IPL (sapphire window)
  - Zimmer cooling

Comparative study of 4 lasers

- 10 subjects underwent laser hair removal on back & thighs
- Skin types I - III
- Ages 18 - 55 years
- Treated twice with:
  - Intense pulsed light with red filter (650-1200 nm)
  - Intense pulsed light with yellow filter (525–1200 nm)
  - 810 nm diode
  - 755 nm alexandrite laser

Recent innovations...

- Home laser devices
- Pneumatic compression handpieces
  - Suctions skin into contact with treatment tip
  - Blanches out blood vessels
  - Minimizes pain

Comparative study of 4 lasers

- 4 treatment areas
- Non-treated areas compared to marked treated areas
- Hair count camera used @ 1, 3, & 6 months, after second treatment

Results:

- Photographs revealed significant decrease in hair counts (-50%)
- No statistical difference in efficacy between the four different light devices
- Side effects minimal
- Cryogen spray-based alexandrite laser showed highest pain scores


Contraindications

- History of gold intake - chrysiasis
- Pregnancy
  - No clear contra-indication
  - Consider the following
    - Liability
    - Hormonal changes

Contraindications

- Accutane
  - Most physicians recommend that patients should cease usage for at least 6 months.
- Sun exposure
  - Tanning is an absolute contraindication
  - AVOID the Sun for at least 2 weeks prior to a treatment and 2 weeks after. The chances of pigment changes and other "minor" skin irritations are high.
  - This included tanning sprays and lotions.
  - Remember “pigment is pigment”

Contraindications

- What about tattoos?
  - Tattoos and permanent make-up should be avoided
  - Can be source of liability
  - Areas with permanent make-up should be covered or avoided
F.A.Q.

• Can patients use “sunless” tanning products?
  - No.

Patient Consult

• Photo-Document
  - It is important to take pictures of the area to be treated.
  - Patients will sometimes forget what they looked like at the starting point.

F.A.Q.

• What about braces or other dental work?
  - Yes. Frequently gauze is placed between the cheek and gum for those patients who experience a “tingling” sensation on their teeth.

Complications

• There are risks and complications that can occur from laser treatment.
• Use of conservative DCD settings are important.
• Complications are rare!

• Heat rash
• Bruising
• Scarring
• Infection
• Hyper-pigmentation
• Hypo-pigmentation
• Swelling
• Welting/Hives
• Hypehidrosis
  - 1064 nm ND:YAG
Paradoxical hypertrichosis

- More common in women of Mediterranean descent
- Fitzpatrick type 3-4
- Associated with history of PCOS (polycystic ovarian syndrome)
- Rx solutions
  - Increase fluence
  - Cold packs
  - Two passes at lower fluence (Alexandrite)
  - Spironolactone

Test Spots

- When skin reaction is a concern, always perform a test spot at a couple of different, lower fluences in an inconspicuous site.
- Untoward skin responses may occur if there is sun exposure within 1-2 days of treatment.
Laser Hair Removal

Before Treatment

After Treatment

Six Months Post 4 Treatments

Used by Permission of Syneron, Courtesy of James Shaoul, M.D.
Post 2 Treatments
Laser Hair Removal

References


Thank You!