

# coolglide™

## Hair Removal Treatment Guidelines



**CUTERA®**

Lasers and Light™

Cutera Inc. World Headquarters  
3240 Bayshore Boulevard, Brisbane, CA 94005 USA  
Tel: +1 415 657 5500  
Fax: +1 415 330 2444  
[www.cutera.com](http://www.cutera.com)

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**CUTERA®**

The Cutera, Inc. CoolGlide Nd:YAG 1064nm Lasers are FDA-cleared for:

- Hair removal
- Permanent hair reduction
- Treatment of all skin types, including tanned skin
- Treatment of pseudofolliculitis barbae (PFB)

**PREREQUISITE**

Review Operator Manual and Clinical CD with Laser Physics, Safety and Maintenance presentations prior to operating the laser.

**LASER HAIR REMOVAL PROCESS:**

- The purpose of the treatment is to selectively treat the hair follicle without causing thermal damage to the surrounding tissue.
- Laser light is absorbed by melanin, which is the target (chromophore) in hair. The light is converted to heat. Heat damages the bulge and bulb, disabling the hair structure.
  - Do not pluck or wax during the treatment session as this removes the target
- Hair must be brown or black. Laser light is not absorbed by white, gray, red or light-blond hair.
- Hair has three growing cycles which are all present at the same time. The length of hair growth cycles vary for different body parts.
  - Anagen Phase
    - “Active” phase of hair growth when laser hair removal is effective.
    - Hair contains an abundance of melanin and cells are rapidly dividing.
    - Length of this stage is variable according to body part.
  - Catagen
    - Transitional phase last about 2-3 weeks. 3% of all hairs are in this phase.
  - Telogen
    - Resting phase - hair falls out in preparation for the development of new hair.
    - Length of this stage is variable according to body part.

Location	Resting Hairs, %		Growth Time	
	Telogen	Anagen	Telogen	Anagen
<b>Head</b>				
Scalp	13	85	3-4 mo	2-6 yr
Eyebrows	90	10	3 mo	4-8 wk
Ear	85	15	3 mo	4-8 wk
Cheeks	30-50	50-70	N/A	N/A
Beard or chin	30	70	10 wk	1yr
Mustache or upper lip	35	65	6wk	16wk
<b>Body</b>				
Axillae	70	30	3 mo	4mo
Trunk	N/A	N/A	N/A	N/A
Pubic area	70	30	3mo	4 mo
Arms	80	20	18 wk	13 wk
Thighs	80	20	24 wk	16 wk
Breasts	70	30	N/A	N/A

## **PATIENT ASSESSMENT**

### ***Contraindications: Pregnancy and Skin Cancer***

Obtain a medical history and signed consent.

Determine ethnicity and skin type by using the attached Fitzpatrick Skin Type scale

Patient Considerations including but not limited to are below.

- Current Medications (both routine and occasional use)
  - Accutane – do not treat if taken in the last 6 months
  - Gold Therapy – may cause blue-gray discoloration
  - Photosensitizing drugs (Tetracyclines, etc) – may have to adjust treatment parameters according to clinical response from the test are(s)
  - Anticoagulants – may increase risk of purpura or bruising
- Vitiligo – heat from the treatment could induce a flare-up
- Herpes – pre-treatment with an antiviral may be indicated
- Wound infections
- Hormonal influence – may require continual maintenance
  - PCOS, male torso, etc
- History of coagulopathies
- History of keloid or hypertrophic scarring
- Diabetes – may impede wound healing
- Do not treat dysplastic nevi or questionable pigmented lesions.
  - Online Melanoma resources include ([www.aad.org](http://www.aad.org)), ([www.cancer.org](http://www.cancer.org))

Avoiding Complications:

- Always treat outside the orbital rim of the eye aiming the beam away from the orbit
- Do not treat over or close to tattoos or permanent make-up
- No self-tanners for at least 2-4 weeks prior to treatment
- All traces of make-up must be removed
- The Nd:YAG can crack a tooth if teeth are exposed.
  - Moist gauze may be placed between the lips and teeth.
- Implants
  - Avoid metal implants in thin skinned areas; clavicle, jaw, orbit
  - Ask about surgical implants and threads
  - Do not treat over Pacemaker implant
  - Reaction to fillers unknown
- Ensure the copper tip is in full contact with the skin during the entire treatment.
- Ice should NEVER be applied to a suspected burn as it may cause unwanted side effects. Frozen gel packs or cool compresses can be used.

## TREATMENT PARAMETERS

The following parameters are provided as a guide and are based on practitioner feedback.

**Fluence** is the energy measured in J/cm<sup>2</sup>.

**Pulse Width or Duration** is the length of each laser pulse measured in milliseconds (ms).

**Repetition Rate** is the number of pulses per second measured in Hz.

### Selecting Parameters

- Start with conservative settings for early treatments
- Observe laser-tissue interaction and clinical response to determine appropriate settings for each patient
- Re-evaluate patient prior to each treatment to determine sun exposure
  - Parameters may need to be decreased as sun exposure increases melanin content

Fitzpatrick Skin Type	Fluence	Pulse Duration	Spot Size
I-II	50-65 J/cm <sup>2</sup>	10-20 ms	10 mm
III	45-60 J/cm <sup>2</sup>	15-25 ms	10 mm
IV	40-55 J/cm <sup>2</sup>	15-30 ms	10 mm
V	35-50 J/cm <sup>2</sup>	25-35 ms	10 mm
VI	20-45 J/cm <sup>2</sup>	30-60 ms	10 mm

*Fluence and Pulse Duration are determined by skin type, hair color, hair thickness and hair density.*

#### 1. Determine Skin Type

- a. Use Fitzpatrick Skin typing chart provided to determine appropriate settings
- b. *Caution* - when treating darker skin types, additional pre-cooling and slow repetition rate (Hz) are required to protect the epidermis.

#### 2. Determine Hair Color

- a. Darker Hair Color = Lower Fluence, Longer Pulse Duration
- b. Lighter Hair Color = Higher Fluence, Shorter Pulse Duration

#### 3. Determine Hair Thickness

- a. Coarse Hair = Lower Fluence, Longer Pulse Duration
- b. Finer Hair = Higher Fluence, Shorter Pulse Duration

#### 4. Determine Hair Density

- a. Dense Hair = Lower Fluence, Longer Pulse Duration.
  - i. Dense hair requires longer pre-cooling and slower repetition rate
  - ii. Hair density should decrease with subsequent treatments
    1. Parameters may need to be adjusted as density decreases, skin type permitting

## OPERATING THE SYSTEM

The laser system should only be operated by qualified practitioners who have received appropriate training and have thoroughly read the operator manual.

Select the 10 mm spot size by rotating the ring on the handpiece

- Select appropriate parameters.
  - The last used parameters will be displayed when restarting the laser.
  - Navigation only provides the *range* of treatment parameters on the screen. The operator is required to choose the correct parameters. Consult operator manual for Navigation information.
- Laser should be placed in standby when not actively in use



Display Screen for CoolGlide

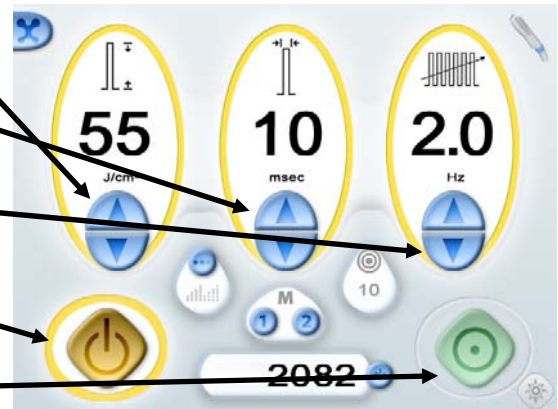
Fluence

Pulse Width

Repetition Rate

Standby Mode

Ready Mode



Display Screen for Xeo

## PREPPING THE PATIENT

- Clean skin removing all make-up and/or topical anesthetic.
- Pre-treatment photographs should be taken prior to the initial treatment for future reference.
- Shave the treatment area prior to each treatment.
- A white eyeliner pencil can be used to divide the treatment area into smaller grids.
- Dark skin and/or areas with dense hair may be pre-cooled with frozen gel packs for epidermal cooling and to increase patient comfort.
- Safety eyewear must be worn by ALL people in the treatment room.
  - Check the wavelength and optical density ( $\geq 6.1$  @ 1064 nm) marked on all operator goggles



Operator Goggles



Patient Goggles

## TREATMENT TECHNIQUE

- Treatment of a test area is recommended observing tissue reaction. Potential adverse reactions may take 24-48 hours to appear.
- Apply a thin layer of clear gel (such as ultrasound gel) for increased epidermal protection and easy gliding of the handpiece to determine placement of adjacent rows.
- Place the copper cooling portion of handpiece on the treatment area to pre-cool the skin. The epidermis must be pre-cooled with the back of the handpiece to prevent epidermal damage
  - Pull the handpiece back at least 1 full spot size to deliver the laser pulse.
  - Glide the handpiece in the same direction to deliver subsequent laser pulses.
  - Ensure that the cooling portion of the handpiece remains in contact with the skin at all times, especially over curves.
    - Laser pulses should only be delivered to areas that have been pre-cooled.
  - Darker skin or areas of dense hair will require longer pre-cooling.
- Pulses should be spaced with a 10-20% overlap between adjacent pulses.
  - Avoid overlap on darker skin
  - Do not stack pulses or retreat an area within a single visit.
- Repetition Rate should be adjusted according to patient comfort, skin type, hair density and user experience.
  - Low or no Repetition Rate is recommended for dark skin and on curved areas (jaw).
- Watch for signs of damage (blanching or gray coloration). If damage is seen, stop the treatment and apply a cool compress. Evaluate area for possible complications and wound care.

## POST-OPERATIVE CARE

- Erythema and perifollicular edema are common but not required for a successful treatment.
- Hair may take up to 2 weeks to fall out.
- Avoid heat for 24 hours – hot tubs, saunas, etc.
- If a blister or crusting develops, treat as a wound.
  - Do not ice a suspected burn
- Do not wax or pluck between treatments.
- Hair removal requires a series of treatments. The number of treatments depends on body location and type of hair. Average number of treatments is 5-8.
- Average treatment interval is 6-12 weeks depending on the body part.
  - The laser will only target hair in the “active” growth phase and there is no advantage to scheduling visits closer together
  - Back, Torso, Legs may have better outcome with longer treatment intervals

## **LASER CARE**

- Turn the unit off or place in standby.
- Disinfect the entire handpiece and cord between patients with a germicidal disposable wipe, such as Sani-Cloth®.
- The laser window must be cleaned after each treatment to avoid damage.
  - Use a small amount of optical grade acetone and a wooden cotton tipped applicator to clean the window.
  - Do not use Q-Tips as they contain an adhesive that dissolves when in contact with acetone.
  - The window will need to be cleaned periodically during the treatment if hair is ejected.
  - If the window is damaged, a replacement must be purchased.
- Clean the bottom of the laser (air intake)
- See the operator manual or the System Maintenance Presentation for additional information on care of the laser.

## Fitzpatrick Classification Questionnaire

SCORE		0	1	2	3	4
	What is the natural color of your hair?	Sandy red	Blond	Chestnut, dark blond	Dark brown	Black
	What is the eye color?	Light blue, Gray, Green	Blue, Gray, Green	Blue	Dark Brown	Brownish Black
	What is the color of sun unexposed skin areas?	Reddish	Very pale	Pale with beige tint	Light brown	Dark brown
	How many freckles on unexposed skin areas?	Many	Several	Few	Incidental	None
	What happens when you are in the sun TOO long without sunblock?	Painful redness, blistering, peeling	Blistering followed by peeling	Burns, sometimes followed by peeling	Rarely burns	Never had a problem
	How well do you turn brown?	Hardly or not at all	Light color tan	Reasonable tan	Tan very easily	Turn dark very quickly
	Do you turn brown within one day of sun exposure?	Never	Seldom	Sometimes	Often	Always
	How does your face respond to the sun?	Very sensitive	Sensitive	Normal	Very resistant	Never had a problem
	When did you last expose yourself to the sun or artificial sun treatments?	More than 3 months ago	2-3 month ago	1-2 months ago	Less than 1 month ago	Less than 2 weeks ago
	Do you expose the area to be treated to the sun?	Never	Hardly ever	Sometimes	Often	Always
	<b>TOTAL</b>					

- 00-07 points = Skin type I
- 08-16 points = Skin type II
- 17-25 points = Skin type III
- 25-30 points = Skin type IV
- 30-40 points = Skin type V & VI