
User Manual

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Chapter 1

1.1. Theory of 808 hair removal

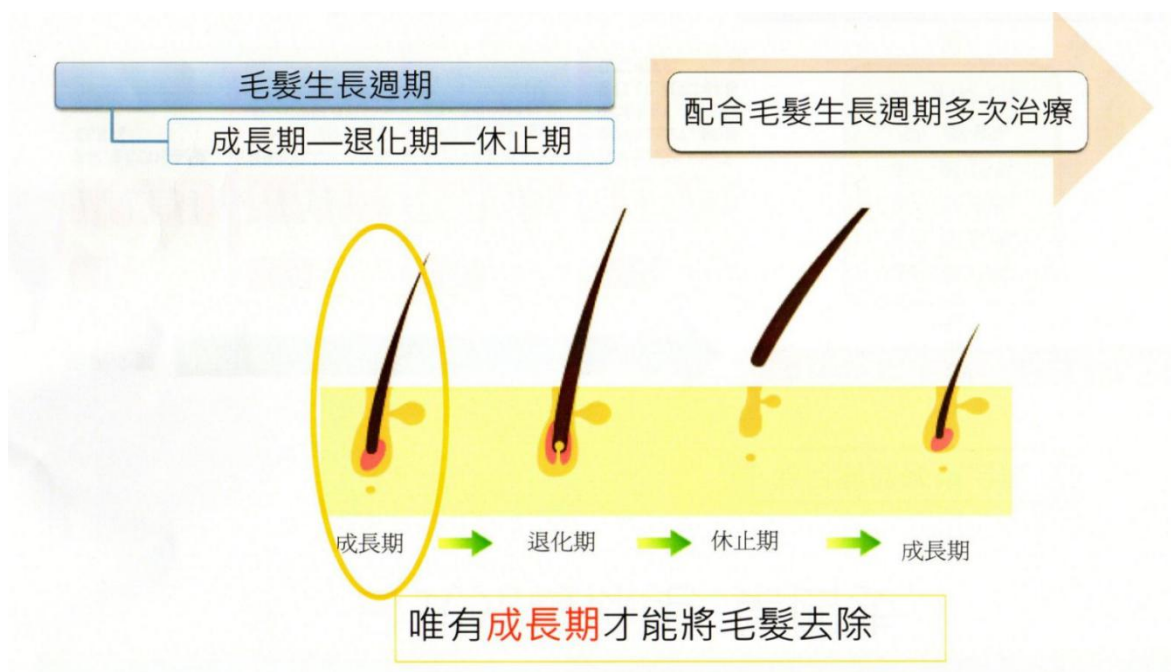
808 freezing point is based on selective solar-thermal dynamics, through adjusting the wavelength, energy and pulse width of the laser through the skin to the hair root hair follicles, the heat energy is absorbed and break down the follicle tissue, making hair regeneration. The system of quick freezing point hair removal apply for refrigeration protection, It can make the temperature up to -5°C , It solves a lot difficulties. At the same time , it is safe, quick and permanent technology.

1.2 The range of application

Lip, axilla, arm ministry, leg, bikini line etc.

1.3. The period of hair removal

Hair removal has 3 stages: growth, degradation, resting stage



It is best effect of treatment when the hair is growing. In the period of growth stage, The pigment in hair follicle will be absorbed completely. In that time, the follicle is weakest, the effect of hair removal is best. You will see the effect when you have 2 times

treatment. Not only can remove the extra hair, but also it is applied for changing the shape of beard.

1.4. The process of hair removal first time

1. consulting

Can visit to our company, the beautician will make plan for you according to your specific situation.

2. Confirming the skin

The beautician will make a confirmation for your skin, the density of hair.

3. Painting cooling gel

Clear the hair, and paint the cooling gel.

4. shining

Customer should wear goggle, whole treatment only use 3 minutes.

5. cooling

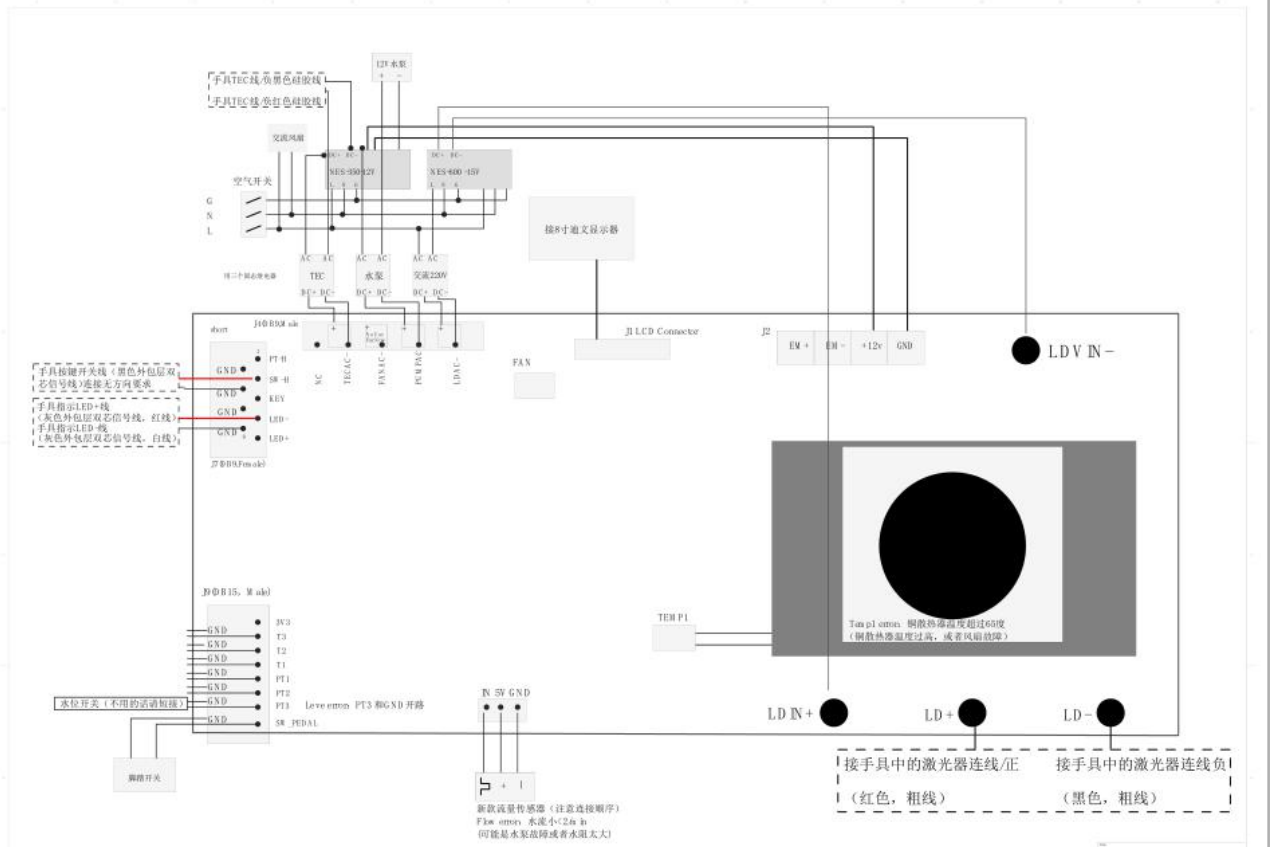
Clear away the cooling gel, using cooling bag.

6. Calming down

Paint the beauty fluid, and protect the skin.

Chapter 2

2.1. Theories of system



2.2 The parameter of 808nm hair removal

wavelength	808nm	OEM customized service
Working frequency	1~10hz	Maximum frequency 20 Hz
Energy density	1-120j/cm ²	1-150j/cm ² optional
Handle piece cooling	TEC+sapphire	Sapphire size customizable
TEC cooling	12V 6A	TEC power customizable
Spot size	15mm×15mm	Spot size and window of light customizable
Output power	600w 4piece	Laser power available
Laser bars	Germany laser Jenoptik, 150W/piece	
Pulse width	5ms~400ms	0~1000ms customizable
Output mode	Pulse output	Pulse output
Language	Standard English	customizable
display	15' color touch screen	
Protective temperature	55°C interface select	customizable
Water pump	DP-60 diaphragm rods 12V	imported pump optional
Flow sensor	At least 3.5L/min	
Water level switch	Test water level	
Cooling system	240×120cooling line(2pc), 18 pcs channel	Compressor plan, TEC plan
Cooling fan	4pcs fans, speed 3150r/min	12v fans
Case material	ABS shell/metal shell	customizable metal shell
Inter structure	White zinc hob/color zinc hob	customizable
Water tank volume	vertical3.6L/table type 2.5L	customizable
Environmental moisture	< 80%	< 80%
Environment temperature	Air conditioning room, temperature ≤35°C	
voltage	220V	110Vavailable

2.3. Handle piece of 808 :15*15 mm (same shell, white color)



2.4. Display of 808nm hair removal



Operation screen

← ENTER

I
II
III
IV
V
VI



FACE
ARMS
OXTERS
BIKINI LINE
BODY
LEGS

4 L/min 32 °C 32 °C 10000000



Fluence 10 J/cm²

Pulse Width 400 ms Frequency 10 Hz

Cooling   

← Ready Standby

Chapter3


3.1. Process of operation


①Firstly, add water to the machine fully, we recommend the water purify water. When the water flow out from the hole, the water is full.


②Turn on the power, then check input section, 220v or 110v is available.


③Turn on the air switch.


④Turn on the lock switch

⑤Click  the machine will enter into working condition, chose


the color type , gender and body parts, then press  to set the widen pulse ,press


 to set the frequency, after you have set the parameter, then


press , three seconds later ,It enter into ready condition;

⑥3 seconds later, Then press , press one to three times The TEC will cooling; . When press the forth time, the ETC system will shut.

⑦Finally press the switch on the handle piece, then you can do the treatment.

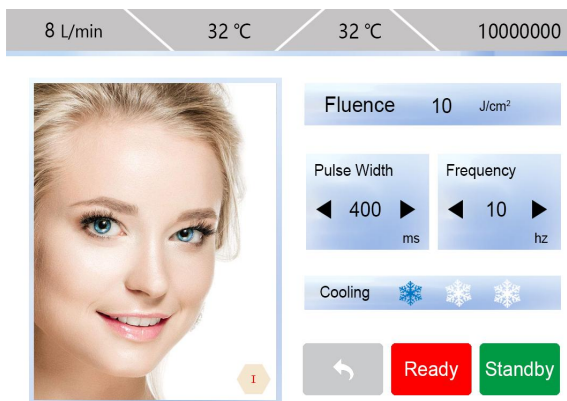
Press pause if necessary  button, Stop working, Enter standby mode; If you need

to return to the superior interface, Please click  Can be.

This machine also has the function of tender skin, click on the boot interface  Enter the depilation interface,



After selecting the body part at the depilation interface, the parameter adjustment interface was also entered.



There are default parameters in this interface, so we can directly point work can be tender skin!

3.2. Using cautions

- ①keep the water full and clear, We recommend you change water each month
- ②Room temperature should be 5 ~ 28 °C, if it works in an air-conditioned room in the summer, it prevent the water temperature too high; If winter, can prevent the water freeze
- ③It is recommended to use the handle thimble, prevent the handle fell off

Chapter 4

4. 1. **INTRODUCE**

This part uses the 808nm diode laser hair removal system of profession help. Attachment is operation manual for using in the introduction reduce the risk prevention and warning information added and emphasized. All operators should be in before reading this section and read through all the operation manual before operating system.

4. 2. **Training Request**

808nm Diode Laser Hair removal system design requirements for the operator through the aspects of training, and read the manual. Requirements including physicians, nurses, technicians or other professionals.

4. 3. **Use and Indications**

808nm Diode laser hair removal system used for hair removal and hair permanently reduce. This system can be used for all types of skin (Expected I-VI skin), including sunburn skin.

Hair removal process based on the selective principle of field. The method including destroy hair regeneration mechanism, by moving the hair follicle temperature rise to a high enough to destroy the germainal cells, but will not damage skin and surrounding tissue. Refers to the division, germinal cell differentiation of the cells that make up the hair follicles. After the laser effect, consumed by phagocytes out these cells in vitro.

808nm Diode laser hair removal system unique cooling technology, so that you can directly into the hair roots, laser cooling at the same time protect the skin surrounding tissue, improve the patient's comfort.

Diode laser uses 808nm wavelength is applicable to remove unwanted hair, and the effect is stable, long-term or permanent.

4. 4. **Contraindication**

- Cancer, especially for skin cancer
- Gestation (Include IVF)
- Use photosensitive drugs and traditional Chinese medicine(TCM)
- Under 808nm wavelength vulnerable to stimulate the condition
- Before treatment 3 to 4 exposure or artificial tanning on Sunday
- Treatment area with active inflammation or herpes simplex infection
- Scar history
- Diabetes (Depend on insulin injections)
- Dry and Sensitive skin
- Endocrine disorders can produce stimulation(Light)
- Dicumarol use
- Epilepsy
- Coagulation history
-

4. 5. **Side-effect**

808nm Diode laser hair removal system is similar to other laser technology products, and often such systems in use will cause the damage to the organization of controlled or uncontrolled .Embody:

- 2-24 hours after severe erythema and edema, may last for several weeks。
- In 48 hours in the treatment area appears allergic, itching , mild burns or pain symptoms
- Appear blisters , postoperative skin necrosis or surrounding skin pigmentation, and last a few days to weeks, symptoms

- Due to the strong light of long unprotected or laser eye damage, therefore in the process of the whole treatment should wear proper protective glasses to protect his eyes.。
- Treatment to observe the skin reaction is very important. Improper patient selection or energy mostly may cause thermal damage, leading to the occurrence of side effects

4. 6. Treatment can cause side effects

- **uncomfortable**—When the laser pulse, some patients have different degree of discomfort. Some people feel like being bitten, others compared to rubber band to play to the feeling, or for a hour after burning sensation. Most patients can be tolerated treatment, others require prior surface anesthesia.
- **Damage of skin texture**---Some cases, patients with postoperative will produce induration or blisters on the skin surface, must be the wounds of the conventional protection.
- **Pigment changes**---Skin pigmentation of treated areas may be changed. Pigmentation or hypopigmentation mostly occurs between skin types IV and VI, or the skin exposed to the sun before or after being treated.
However, some patients still encounter dark pigmentation, which will gradually
fade after three to six months. Only a very few cases the pigment will be permanently left.
- **Scarring**---Minimal scarring appears, such as the proliferation of hypertrophic scars or keloids and etc. It may be effective in reducing scarring to follow the preoperative and postoperative guidelines.
- **Excessive edema** --- Temporary edema will immediately arise in the nose and cheeks after surgery, which usually fades away within a few hours, but with a possibility to last for several days.
- **Delicate skin**---After the operation, treated areas and surrounding skin becomes vulnerable. Avoid making up and massage when this happens (they

may cause skin damage).

- **Bruising**---Purple bruise may occur a few days to several weeks after being treated. When it fades ,significant rust red may appear, and then disappear within 1~3 months.

4. 7. **Eyes protection**

- It is necessary for all people to wear protective glasses (patients and doctors)
- The optical density of the glasses is 5(OD> 5)
- Keep eyes closed even though wearing glasses.
- Eye patch may replace glasses to protect eyes from laser.
- A corneal plate can be used for eyes protection when the treatment area is near to eyes (like eyelid).

4. 8. **Visual security**

- Avoid laser into the eyes
- Even wearing eye goggles, don't stare at directly on laser or its reflective surfaces of the handpiece.
- When surgery operation pauses, immediately set the system to standby mode in case the laser emit because of negligence.
- Press the foot switch or button of the handpiece only when the laser aim at treated areas.

4. 9. **Fire safety**

- Move away the hair around to be treated areas. Place only in the treated area near the disinfectant-soaked gauze if necessary.
- Ensure that fire extinguishers can be got at any time.
- Avoid using flammable paper items.

Do not use the system in the presence of flammable or anesthetic.

4. 10. Definition

4. 10. 1. Pulse Width

The duration of each pulse width (from the preheating section to the treatment) is several milliseconds. The pulse width of 810nm diode laser system is set by the operator according to the pulse type through software control.

4. 10. 2. Energy Density

Output energy density (J/cm²) at each treatment is set by the operator. Energy density: the total energy at a selected pulse type (J) Output / spot area(cm²)

In a small spot (12X10mm), the scattering is minimal, so the result is a sustained energy output and deeper penetration. The greater the energy density, the higher the temperature of the target tissue of hair, the surrounding tissue and the epidermis.

4. 10. 3. Before Treatment

Parameter depends on the type of treatment of skin, hair color, type, density and depth. Once treatment parameters chosen, shave, clean treatment areas, and remove hair and any debris of the skin that may affect treatment.

4. 10. 4. Skin Cooling

Skin cooling system before, during and after treatment provide skin cooling to protect the skin and reduce the initial temperature of the skin. This can reduce the discomfort of the patient. The most important is that without increase of side effects and pain, the treatment energy can be adjusted to higher, and the treatment will be faster and better.

Dense hairs (30-40 hairs per cm²) will produce a higher temperature because

there is more melanin in them. Excessive heat of surrounding tissue is likely to cause tissue damage. Therefore, the greater the density of hair is, the lower the energy should be.

4. 11. **Photograph**

We recommend you take some photos to record the change before and after the surgery. Photographs provide an objective basis to prove efficacy, because some patients can't objectively judge the effect of treatment.

Pictures between different patients should be taken by the same camera conditions, the same camera exposure, focus. This consistency allows different time photographs are comparable.

4. 12. **Topical anesthesia**

With TEC and Sapphire cooling tip, hair removal treatment can be done without anesthesia. However, some sensitive patients still try anesthesia(like EMLA) to prevent any uncomfortable feeling. Anesthetic is usually applied in the preoperative period of time (1 hour). Note that all anesthesia should be removed before surgery.

4. 13. **Preoperative instructions**

4. 13. 1. **Basic Information**

First Consulting:

- Carry detailed medical record, including previous treatment, and check if the skin condition is fit to accept 810nm laser treatment
- These patients, who have been prolonged exposure to sunlight before or artificial tanning within 48 hours, cant accept treatment.
- Patients are not fit for the treatment who will be exposed to the sun for a long

time in the near future.

- Areas to be treated with a history of herpes simplex require to undergo preoperative prophylactic drug treatment (such as Zovirax).
- Determine the surgical intent and expectations of the patient.
- Discuss treatment goals with patients

When patients first consult, physicians should inform the following:

- Try to know why patients seek treatment and clearly know his her expectations
- Tell patients the following:
 - How many sessions and months to do the treatment
 - The treatment will bring some discomfort or pain.
 - Transient erythema and edema may appear after treatment.
 - Recovery of the skin may take several months.
 - There is a little possibility of temporary side effects, such as changes in skin color.

4.13.3. Skin Test

Energy is the key parameters for the best result and minimal side effects.

Generally, test skin by the following parameters:

Skin type	Hair type	Sliding numbers	energy (max 120J/cm ²)	area (cm)
I	thick	6	10	10X10
	thin		9	
II	thick	6	10	10X10
	thin		9	
III	thick	6	10	10X10
	thin		9	
IV	thick	6	9	10X10

	thin		8	
V	thick	6	8	10X10
	thin		7	
VI	thick	6	8	10X10
	thin		7	

Advice: I-III take treatment for 30 minutes, IV - VI for 45 minutes.

Purpose of testing:

1. To make sure the operator has gotten familiar with the machine.
2. To let the patients adapt to the treatment.
3. Treatment effect depends on the operating method, the spotsize, the setting frequency and the energy of laser device.

4. 14. Treatment

Set parameters and then start the treatment.



Attention:

Too much energy transfer will cause skin thermal injury, such as hypertrophy, atrophy or abnormal pigment and other symptoms.

1. Ensure patient comfort lying on the operating table and put on goggles, all person in the treatment room are required to wear glasses. The operator can easily come into contact with the treatment area, and 810 diode laser system.
2. Clear perfume, makeup residues and sunscreen on the skin.
3. Keep record of the current pulse frequency for the treatment energy calculation.
4. Select the appropriate settings, and then save the selected parameters. This allows the operator to use the same parameters to treat patients with similar

situation.

5. Check the handpiece. Make sure it is cool.
6. Make sure the handpiece is perpendicular to and closely in contact with skin.
Push gently on the skin.

Warning:

It should be noted the handle piece tip need to contact skin before the laser fires.

7. At any time after the start of surgery, a skin test is required to observe the reaction.
8. Carefully diagnose test results.
9. If you know the desired effect, continue treatment with the same parameters.
10. Press the foot switch and handpiece, and begin treatment.
11. From time to time, to see the treatment area morphological changes of skin color and hair follicles (erythema and edema). Even suitable parameter settings may also smell the smell of burning hair.
12. If there are some side effects (such as excessive redness) before a good response in the hair follicle, adjust treatment parameters to reduce the damage, by reducing or 5-10% of the energy or adjust the pulse type to a large value to reduce such damage.
13. If there is neither adverse reaction on the skin, nor any morphological changes, the energy can be increased by 5-10% until it reaches the desired effect.

Note:

810nm laser can cause serious eye damage or blindness. To improve the safety, patients during laser facial treatment should wear goggles.

4.15. Treatment parameters:

The following pre-set conclusions are gained based on experienced users. In addition, the user can select and set the parameter values by themselves.

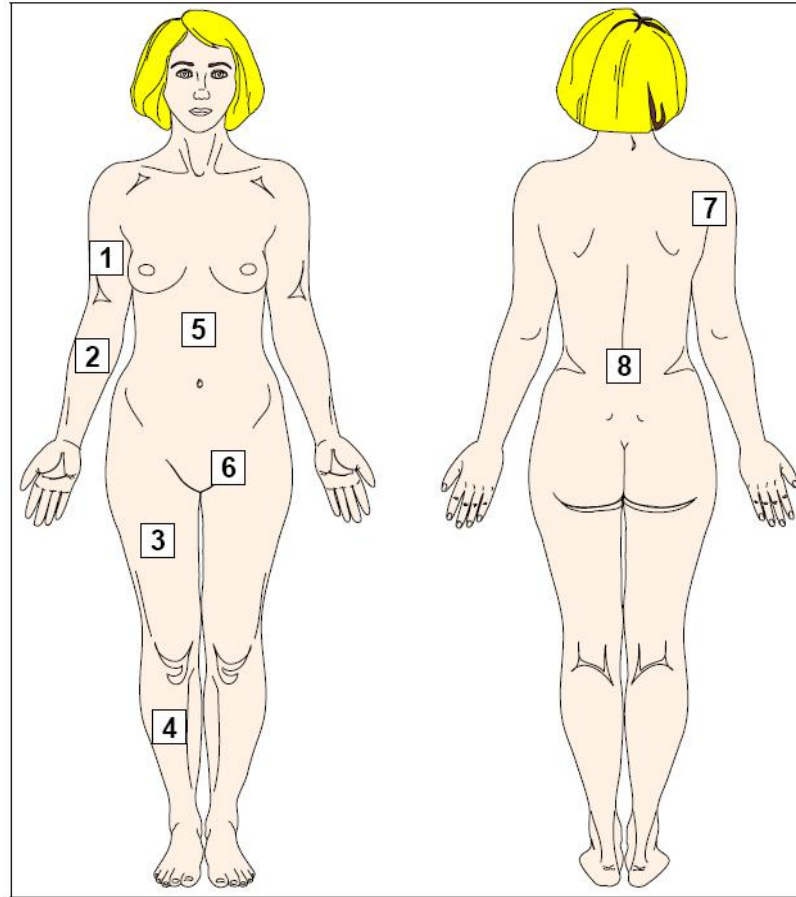
Treatment parameters include the type of skin, the laser energy density, repetition frequency.

4.16. Recommended treatment parameters

recommended parameter (1 rule =10x10cm²)

Skin type	Energy density (J/cm ²)	frequency (Hz)	Cumulative energy (J)
I	10	5-10	6000-8000
II	10	5-10	6000-8000
III	10	5-10	6000-8000
IV	8	5-10	6000-8000
V	7	5-10	5000-7000
VI	5	5-10	5000-7000

4.17. Energy parameter total per treatment



Picture A-2: The cumulative total energy per square centimeters (KJ)

Part of body	Area name	Treatment area	energy (J)
1	Upper arm	8-10	50000-80000
2	forearm	6-8	40000-60000
3	thigh	11-13	650000-100000
4	calf	0-12	60000-90000
5	Front chest	12-14	75000-110000
6	Bikini line	1	6000-8000
7	armpit	1	6000-8000
8	Back pack	12-14	75000-110000

A. 18. **Post-operative care**

Patients should immediately adopt a cold (but not frozen) ice pack to cool the treated area to reduce swelling and discomfort. The cooled gauze can be used.

For the prevention of trauma, In four hours to five days after surgery, avoid the following activities: hot bath, aerobics, massage, etc.

- Sunlight --- patients need high index smear sunscreen (SPF> 30), and treated areas must be avoided to direct sunlight at least 1 month after the treatment. After exposure can cause melanoma regeneration, resulting in pigmentation.
- Make up --- without blisters or induration, it is ok to make up during the day. Due to sensitive skin, during remover, avoid skin damage and infection.
- Other suggestions --- if the treated areas were exposed to dirt, do external care 10 days. It is better to avoid strenuous exercise, or similar events in the past few days, until it returned to normal.

A. 19. **Follow-up**---The following are suggestions of follow-up, the patient may be determined according to the status of their own.

- Under normal circumstances, the patient can check and accept more after 6-8 weeks after the treatment. The period of treatment, depends on the results of individual hair growth cycles of varying lengths.
- Even without further treatment plan, the patient should accept checks within the 3-4 months or earlier if the reproduction of hair, again.

If only some hair was removed, patients should take treatment