**Introduction**

Aesthetic laser treatments involve the use of high-energy that can pose a risk to the eyes of both patients and practitioners. Proper safety eyewear, for both the practitioner and the patient, is crucial to protect against potential eye damage. This protocol outlines the steps for selecting, caring for, and using safety eyewear during aesthetic laser treatments.

This booklet contains information regarding the selection, care, and documentation of your safety wear within a clinic setting.

**Protocol for Selecting, Caring, and Using Safety Eyewear for Aesthetic Treatments**

Use this template as your in-office protocol for selecting, caring and using safety eyewear for all aesthetic treatments in your facility. Your LSO will require this protocol as part of their clinic standard protocols and procedures for laser / energy-based device safety.

**Laser / Light Based Device Safety Survey**

Use this template to evaluate your clinic for laser and light-based treatment safety preparedness. Your LSO may use this routinely (every six months) to evaluate, and correct all safety procedures as new device, treatments and environment evolve. This checklist should be used immediately if renovations occur or if the clinic moves into a new location.

**Laser Eyewear Audit and Inventory Form**

Use this form to record the inventory of your safety wear and condition. Your safety eyewear should be evaluated every six months and documentation should be kept on file with your LSO.

By following these protocols, you can minimize the risk of eye damage during aesthetic laser treatments and ensure the safety of both practitioners and patients. Always consult with your facility's Laser Safety Officer and refer to relevant safety standards for additional guidance.

**Protocol for Selecting, Caring, and Using Safety Eyewear for Aesthetic Treatments**

1. Selection of Safety Eyewear

1.1. Determine Wavelength Parameters:

 - Identify the specific wavelength and type of energy the device uses. Ex (IPL, Laser, RF)

 - Determine the nature of the treatment and what safety requirements will be needed.

* Treatment on face, neck or body excluding eyelids, requires patients to wear patient goggles or external eye shields.
* Treatment on the globe of the eyelid and adjacent to the eye on soft tissue, requires the patient to have intraocular shields.
* All Laser and light-based treatments require the operator to wear protective eyewear which covers the wavelength being used and has the correct optical density (OD).

1.2. Site Laser Safety Officer (LSO):

 - All sites require the nomination and training of a laser safety officer who will have oversight and responsibility in the facility for all laser and light-based treatments.

1.3. Select Appropriate Laser Safety Eyewear:

 - Purchase laser safety eyewear that is certified and labeled for each specific wavelength and OD required.

2. Caring for Laser Safety Eyewear

2.1. Regular Inspection:

 - Inspect the eyewear before every use for any signs of damage or wear. Ensure the lenses are free from scratches, cracks, or defects.

 - The site LSO will perform a formal documented inspection for all eyewear every six months.

2.2. Cleaning:

 - Clean the lenses using a recommended eyewear cleaning solution and a soft, lint-free cloth.

 - Do not use abrasive materials, alcohol, or harsh chemicals that could damage the lenses.

 - Intraocular shields are required to be sterilized in an autoclave. Follow local health guidelines for documenting each sterilization session.

2.3. Storage:

 - Store safety eyewear in the protective case when not in use to prevent damage, lens degradation and exposure to potential contaminants.

 - If the eyewear becomes damaged or the OD rating is compromised, replace it immediately.

3. Using Safety Eyewear

3.1. Fitting:

 - Ensure that the safety eyewear fits securely and comfortably on the practitioner's face, providing adequate coverage.

3.2. Proper Labeling:

 - Confirm that the eyewear is correctly labeled with the OD rating for the specific laser wavelengths in use. Discard if the eyewear is not labelled.

3.3. Patient Education:

 - Educate patients about the need to wear safety eyewear during treatments to protect their eyes.

3.4. Wear During Treatment:

 - Both the practitioner and the patient must wear safety eyewear throughout the entire treatment. Patients must wear patient goggles / external eye shields and those who are undergoing treatment near or on the ocular area must wear intraocular shields. Patients should never wear the operator glasses which are for the treatment provider only.

4. Compliance and Documentation

4.1. Maintain Records:

 - Keep records of all safety eyewear purchases, inspections, and replacements.

 - Document any incidents or accidents related to safety eyewear.

4.2. Regular Training:

 - Ensure that all staff involved in treatments receive training on the proper use of safety eyewear and the potential risks associated with energy exposure.

Commonly used lasers, Wavelength, energy-based treatments, and OD

|  |  |  |  |
| --- | --- | --- | --- |
| Laser name | Wavelength | OD | Intraocular when used over the globe or soft tissue around the eye area |
| Alexandrite | 755 | 5+ | metal |
| Nd:YAG | 1064 | 5+ | metal |
| KTP | 532 | 5+ | metal |
| Er:YAG | 2940 | 5+ | metal |
| CO2 | 10600 | 6+ | metal |
| PDL | 577-585 | 5+ | metal |
| IPL | 300-800 | 5+ | metal |
| Ruby | 694 | 5+ | metal |
| Er:GLASS | 1540-1550 | 5+ | metal |
| Fiber diode | 1470 | 5+ | metal |
| Diode LHR | 800-850 | 5+ | metal |
| Thulium | 1927 | 5+ | metal |
| IR | 850-1800 | 5+ | metal |
| Radio Frequency | varies | n/a | plastic |

**Laser / Light Based Device Safety Survey**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item** | **Yes** | **No** | **N/A** | **Comments on Deficiencies Noted and Action Taken** |
| **Part 1: To be assessed by Discussion or Physical Inspection** |
| **ADMINISTRATIVE CONTROLS** |
| a) Current privileges for all medical staff |  |  |  |  |
| b) In-service given and documented for staff on the safe use of each laser |  |  |  |  |
| c) Copy of ANSI Z136.3, and facility Policies / Procedures located on site |  |  |  |  |
| d) Laser Safety Officer properly trained and identified (renewal course recommended every 5 years) |  |  |  |  |
| e) All users read and have knowledge of the facility policies and procedures |  |  |  |  |
| f) Laser log forms either electronic or paper is completed and accurate |  |  |  |  |
| g) Site Supervisor communicated current laser related issues to staff  |  |  |  |  |
| h) Laser use scheduled properly |  |  |  |  |
| **General Safety****1. Signs** |
| a) Legible and standards compliant |  |  |  |  |
| b) Appropriate to the laser in use. Each sign should only list wavelengths that can be covered by a single pair of safety glasses / goggles. |  |  |  |  |
| c) Stored properly after use |  |  |  |  |
| **2. Laser and Accessories** |
| a) Keys or access code accessible only by authorized persons  |  |  |  |  |
| b) Footswitches have guard / covers to prevent accidental activation |  |  |  |  |
| c) No unauthorized modifications to equipment |  |  |  |  |
| d) Proper cleaning and storage of laser and accessories |  |  |  |  |
| e) Laser keys in proper storage location |  |  |  |  |
| **3. Safety glasses** |
| a) Appropriate to the laser in use |  |  |  |  |
| b) Available with the warning signs posted on all doors entering the NHZ |  |  |  |  |
| c) Adequate supplies of eyewear available for everyone in the NHZ |  |  |  |  |
| d) Labels intact and clearly readable |  |  |  |  |
| e) Lenses clean and free of defects |  |  |  |  |
| f) Stored properly after use |  |  |  |  |
| **4. Electrical Safety** |  |  |  |  |
| a) Electrical cords, footswitches, connectors etc in good repair |  |  |  |  |
| b) Scheduled electrical testing and maintenance up to date and stickers present on all equipment |  |  |  |  |

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| --- | --- | --- | --- | --- |
| **Item** | **Yes** | **No** | **N/A** | **Comments on Deficiencies Noted and Action Taken** |
| **5. Fire Safety** |  |  |  |  |
| a) Extinguisher available to every room where laser procedures performed |  |  |  |  |
| b) All staff aware of specific airway management protocols for patients undergoing shared airway laser surgery |  |  |  |  |
| **6. Airborne Contaminants** |  |  |  |  |
| a) An appropriate filtering device (0.1 micron filtration) to remove the plume during ablative laser procedures. |  |  |  |  |
| b) Filters changed according to manufacturer’s recommendations |  |  |  |  |
| **Part 2: To be assessed by Procedure Observation** |
| a) Signs posted on all doors leading into the NHZ |  |  |  |  |
| b) Laser tested prior to use (many self calibrate upon start up, test ablative on wet tongue blade) |  |  |  |  |
| c) Safety glasses worn properly by all staff in the room |  |  |  |  |
| d) Only non flammable / flame retardant materials used in the operative site |  |  |  |  |
| e) Water is readily available during laser use |  |  |  |  |
| f) Non reflective instruments are used in direct beam path |  |  |  |  |
| g) Specific laser endotracheal tubes and / or appropriate alternative methods of anesthesia are used during airway surgery |  |  |  |  |
| h) Laser kept in standby mode when not in use |  |  |  |  |
| i) Delivery system controlled at all times (i.e. hand piece / fiber) |  |  |  |  |
| j) Proper staff handling and positioning of laser and accessory equipment |  |  |  |  |
| k) Doors to NHZ are closed during laser use |  |  |  |  |
| l) Window barriers in place where appropriate |  |  |  |  |
| m) Infection control procedures followed when handling contaminated supplies from plume evacuator |  |  |  |  |
| n) Signs removed when laser use is discontinued |  |  |  |  |
| o) Laser keys removed from laser after use |  |  |  |  |
| p) All relevant employees in the room had laser safety continuing education within the past year |  |  |  |  |
| **Comments:** |

Laser Inventory:

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| Manufacturer | Model # | Description | Location | Serial # | Class | Po / E | Wavelength |
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| Additional Comments and Concerns: |

Facility: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Auditor: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_/\_\_/\_\_

LSO \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Record Date: \_\_/\_\_/\_\_

Laser Eyewear Audit and Inventory Form

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| --- | --- | --- |
| Date:  | PI:  | Clinic Location:  |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Laser(Associated with) | Room NumberIf applicable  | Glasses / Goggles | Eyewear Manufacturer | Wavelength(s)(nm) | OD | Quantity | Integrity of frame, straps, and lenses\* | Passed Inspection? (Y/N) |
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| Comments:  |

|  |
| --- |
| Name of person completing this form: Submit completed form to LSO:  |

\*Attenuation material must be clean and free of scratches, cracks, pits, discoloration, and coating damage. Frames on glasses shall have good mechanical integrity and goggles shall be free of weak elastic bands.