LASER SAFETY PLAN

I. General

A. In order to provide a safe workplace for our employees and to comply with OSHA Standards under the General Duty Clause [Sect (5)(a)(1)], UTMG - Ophthalmology is instituting a Laser Safety Plan. Your employer is committed to educating and training its employees to, in as much as possible, prevent injuries due to lasers in our workplace.

B. Employees shall be aware of the contents of this plan and abide by its regulations. Training will be a part of the Annual OSHA Training Session. Because the lasers were installed after the Annual Training Session in 2003, initial training of current employees will commence as soon as practical. New employees will be trained as they are hired.

II. Written Plan

A. This written Laser Safety Plan is located in the red-orange notebooks that contain the other OSHA plans in the Procedure Room. This written plan is available to the employee during regular working hours. Access to the written plans is also at http://uthsc.edu/eye/osha/

B. The OSHA Coordinator, William R. Morris, MD, is responsible for the overall implementation of the Laser Safety Plan. Questions or suggestions regarding the plan should be directed to your individual office OSHA deputy or to the OSHA Coordinator. Steve Moser has been designated the Deputy OSHA Coordinator for this office

C. The standards utilized in adopting the Laser Safety Plan include the following:

    ANSI Z-136.1
    ANSI Z-136.2
    ANSI Z-136.3
    21 CFR 1040.10
    21 CFR 1040.11
    OSHA Publication PUB 8 – 1.7 (August 5, 1991) Guideline for Laser Safety and Hazard Assessment (Department of Labor)

III. Hazard Prevention

A. Hazard Evaluation

With the instillation of the Nd:YAG laser in the Photography Room, employees now have the potential for eye or skin injury due to laser radiation.

Laser instruments also may constitute a fire hazard.

B. Laser Products in use:
Photography Room

<table>
<thead>
<tr>
<th>Make</th>
<th>Model</th>
<th>Serial #</th>
<th>Type</th>
<th>Class</th>
<th>Wavelength</th>
<th>Max Output</th>
<th>Pulse Duration</th>
<th>NOHD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zeiss</td>
<td>VISULAS YAG III</td>
<td></td>
<td>Nd:YAG</td>
<td>IV</td>
<td>1064 nm</td>
<td>35 mJ</td>
<td>4 ns</td>
<td></td>
</tr>
<tr>
<td>Zeiss</td>
<td>VISULAS YAG III</td>
<td></td>
<td>Diode</td>
<td>II</td>
<td>670 nm</td>
<td>150 µW</td>
<td>CW</td>
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</table>

The output of this laser falls into the “retinal hazard region” of between 400 and 1400 nm. Thus it is considered potentially hazardous to employees.

This laser instrument is used by UTMG employees. The training and supervision of UTMG employees are the responsibility of UTMG.

C. Operator qualifications

Only physicians adequately trained in the safe set-up and application of treatment burns are allowed to utilize the laser instrument. Technicians who are specially trained in the set-up and preparation of the laser for treatments may perform these duties at the discretion of the physician directing the treatment session. OTHER PERSONNEL ARE NOT PERMITTED TO USE THE LASER INSTRUMENT.

UTMG Physicians delivering treatment with the OcuLight SLx are required to present proof of proper training in laser treatment and safety. These credentials will be kept with the Laser Safety Plan.

D. Signage

Each room that houses the laser will be identified with an appropriate sign indicating the presence of the laser instrument. The “DANGER – LASER RADIATION” sign shall be placed on the door at eye level. This sign MUST NOT BE REMOVED unless the laser instrument is removed from the room.

Since these rooms are utilized for other procedures, an additional sign “DANGER - LASER IN USE” will be posted on ALL DOORS WHEN THE LASER IS IN OPERATION. Treatment may not begin until the warning sign(s) is (are) in place. Employees MUST NOT enter the room when this (these) sign(s) is (are) present. The sign(s) may be removed/turned over when the laser treatment is completed.
Examples of these signs are reproduced below.

Actual Signs are Reproduced in Color
E. Room Control

All doors to the room housing the laser instrument must be CLOSED and LOCKED FROM THE INSIDE (if possible) and the appropriate WARNING SIGNS POSTED before a treatment session can begin.

Reflective surfaces within the rooms will be covered to eliminate stray reflected beams.

F. Personnel

The treating physician shall be in control of the operation of the laser at all times. Appropriate observers or technicians should be limited to those essential for the performing of the procedure or the teaching of the procedure. All personnel in the room must wear proper Laser Safety Eyewear designed for the power and wavelengths being utilized during the treatment. Any other employees must move to an area outside the treatment room until the treatment is completed.

G. Eye Protection

All laser instruments have automatic shutters incorporated into the eyepieces to protect the physician using the device. Other personnel in the room must wear appropriate protective eye goggles/glasses (Laser Safety Eyewear – LSE) suitable for the power and wavelength of the laser instrument employed in the procedure. This eyewear must be inspected before use of the laser instrument to ensure that the appropriate eyewear is being used and that the eyewear is in good repair without cracks or defective fit.

LSEs should not be moved from room to room nor carried in lab coat pockets.

The appropriate LSE for this laser is listed below:

<table>
<thead>
<tr>
<th>Laser</th>
<th>Proper LSE</th>
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<tr>
<td>Iridex OcuLight SLx</td>
<td>Optical Density (OD) &gt;4.0 at 800-840 nm</td>
</tr>
</tbody>
</table>

The independent contractor/operator of the YAG laser shall supply his technicians with the appropriate LSE.

H. Laser Treatment Check-List

A Laser Treatment Check-List has been prepared (Appendix A) and is to be utilized on every treatment session. Treatment may not begin until items 1 through 8 are completed.

I. Laser log

A logbook will be kept recording the date, time, physician, MRN# of the patient, laser used, color of laser beam used, energy level (power setting), spot size, number of burns, duration of burns, and comments regarding treatment session. Any laser accident will be recorded under the “Comments” section of the logbook.
J. Accidents

Any laser accident **MUST BE REPORTED** to the OSHA Coordinator. It will be assumed that a laser accident has occurred if an employee notices a laser treatment beam (either direct or reflective) entering his or her eye. Investigation will be carried out to look for ways of preventing the repetition of the accident. Accidents involving injuries to patients or personnel must be reported to the manufacturer of the laser, who in turn is required to notify the FDA.

K. Training

**ALL PERSONNEL** in the office will be trained to know and abide by these regulations. Clerical as well as technicians and physicians must be aware of the hazards of the laser instrument. This training will be carried out initially and yearly thereafter during the regular annular OSHA Training Session.

L. Medical surveillance

Employees who utilize the laser instrument for treatment or employees who assist in treatment will have their central visual acuity tested with correction to document normal vision. Amsler grid testing will also be done. Records of these examinations will be kept in the Laser Safety Plan.

Employees who are involved in a laser accident will have their corrected visual acuity checked, an Amsler grid and dilated fundoscopic examination performed, and retinal photographs obtained. These records will be kept in the Laser Safety Plan.

M. Laser Inspection

Inspection of the laser instrument should be carried out by qualified manufacturer technicians on a regular schedule as specified by the manufacturer. Inspections should be documented by the manufacturer’s representative with the date and results of the inspection. These records are to be maintained with the laser instrument.

The independent contractor is responsible for the keeping of these records on his laser instrument.

N. Laser repair

Repair of the laser instrument should be carried out by qualified manufacturer technicians. The independent contractor is responsible for proper repair of his laser instrument.
APPENDIX A

Laser Treatment Checklist

1. “DANGER – LASER” sign in place
2. “DANGER – LASER IN USE” sign in place
3. Reflective surfaces covered
4. Door to treatment room secured
5. Appropriate Laser Eyewear available and being worn
6. Laser Log completed – pre-treatment
7. Laser energized
8. Laser in standby while patient being positioned
9. Treatment instituted
10. Laser off or in standby after treatment completed
11. Laser log completed – post-treatment
12. “LASER IN USE” sign removed
## Laser Log

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Physician</th>
<th>MRN</th>
<th>Laser</th>
<th>Color</th>
<th>Power</th>
<th>Spot Size</th>
<th>Number of Burns</th>
<th>Duration</th>
<th>Comments</th>
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MEDICAL SURVEILLANCE

LASER SAFETY PLAN

UTMG – OPHTHALMOLOGY

Employee Name: ________________________________

Employee Job Description:      Physician       Technician     (Circle One)

Date of Examination:  _____________________

Office Location:        Hamilton Eye Institute   Germantown    (Circle)

Visual Acuity with Correction:       OD: 20/________

                                 OS: 20/________

Amsler Grid Examination:   OD: Normal  Abnormal    (Circle One)

                             OS: Normal    Abnormal    (Circle One)

Attach copy of Amsler grid form to the back of this form.

Examiner ________________________________ MD