

**OLIVE VIEW-UCLA MEDICAL CENTER
POLICY & PROCEDURE**

**NUMBER: 6120
VERSION: 2**

SUBJECT/TITLE: LASER SAFETY

POLICY: Laser Safety Policy

PURPOSE: The purpose of this policy is to outline the general safety requirement associated with the use of a Laser device and Laser light generating equipment at Olive View Medical Center. Additional information and safety guidance can be found in the Laser Safety Manual.

DEPARTMENTS: ALL

DEFINITIONS: These guidelines apply to all physicians at Olive View Medical Center who will be using a therapeutic laser in patient treatments.
LASER is an acronym that describes a process in which light energy is produced-*Light Amplification by Stimulated Emission of Radiation.*

PROCEDURE: Lasers produce non-ionizing radiation in the ultraviolet, visible, or infrared region of the electromagnetic spectrum. They are classified by the American National Standards Institute (ANSI) according to their power output as; Class I, Class II, Class II or Class IV. Most medical uses of lasers involve Class II and Class IV lasers.

Although laser devices are designed to operate safely, special precautions are required when working with/around them.

- The higher the class, the greater the potential for producing damage to biological tissue, particularly the skin and the eye.
- High-voltage power supplies used with medical lasers can emit energy or pose an electrical shock or fire hazard if improperly maintained or misused.
- Even when the laser equipment is operated properly, a fire can result from the enriched oxygen environment of the operating room.
- The effluents generated from the medical procedure itself may present a health hazard.

SAFEY PRECAUTIONS

As with any equipment, improper maintenance, lack of proper training or use can lead to an unsafe condition(s). The amount and types of safety precaution needed are predicated on the class of laser being used:

Class I: Lasers in this class are considered to be safe. No user or safety precautions are required.

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Class II: Lasers in this class are considered to be safe because the blink response will normally protect the eye from damage. However, DO NOT stare into the laser beam or point the laser into or at someone's eye (except by or under the direction of a physician for medical purposes).

Use the laser in a safe manner. For example, a physician wishing to use the laser to perform surgery on humans must have been granted privileges by or work under the direct supervision of another physician who has been granted privileges by the Department of Surgery or the Medical Director's Office. This info can be found in the OVMC website under Privileges and Competencies.

Class III: The same safety precautions as for Class II lasers apply. In addition, only trained personnel should operate the laser. All other individuals should be excluded from the area or remain at a safe distance from the laser. Appropriate protective goggles with side shields should be worn if the potential for inadvertent exposure exists. Care should be taken to eliminate reflecting and light-scattering surfaces from the path of the laser beam.

Class IV: The same safety precautions as for Class III lasers apply. Protective goggles must be worn if the potential for inadvertent exposure exists.

Class III and IV lasers are designed with certain safety features built-in. For example, a shutter or other collimation device is used to enclose as much of the beam as possible. Also, these lasers have warning lights or buzzers to indicate when the beam is on. Further, they require key access to operate. Depending on the laser, it may be recommended that the laser be only operated in a well-ventilated area. It is also recommended that users and /or personnel working around a Class III or Class IV laser be familiar with Olive View Medical Center Laser Safety Manual.

In addition, the laser beam must not be viewed directly by optical instruments unless special protective filters are used. If eye damage is suspected, an eye examination should be carried out by an ophthalmologist.

From a personnel safety standpoint, personnel working with/around a Class III or Class IV laser, in surgery for example, should be trained to:

1. Identify and correct, as applicable, unsafe conditions associated with the laser equipment or that present in the laser use area;
2. Identify and use the emergency off switch for the laser to quickly shut down the laser if need be.
3. Turn on the laser and monitor the internal self-calibration and self-check and ensure that everything is in proper working condition prior to beginning a surgical procedure.
4. Choose appropriate laser settings for the desired treatment effect.

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5. Use the laser in a safe manner consistent with the manufacturer recommendations and standard of care.
6. A sign should be placed on the door indicating that a laser is being used and appropriate eye protection should be used before entering room.

References: Rothrock, J. C.& McEwen, D.R. (2019); <u>Alexander's care of the patient in surgery</u> . (16 th ed.). St. Louis, Missouri: Elsevier. Previous OVMC Policy # 6120; <u>Laser safety</u> 2/10/22015	
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