



Ref ETOP025

**Prevention of Laser Hazards through Curricular Interventions and Standard Protocols for Safety in Educational Environments**

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**Abstract**

The use of lasers continues to grow in education, prompting widespread and well-founded concerns about the risks involved, and how they may best be used in a manner that is both safe and effective for instruction. Two methods are supported for first-line prevention of laser hazards in educational environments that would reduce injuries and risks both to the educational institution and student, but also for employers and workers when students become employed. The first intervention includes proper awareness of hazards, including biological effects of lasers and other non-ionizing radiation. Discussion regarding appropriate methods and content for varying age-levels is presented with an emphasis on technician education. The Scientific and Technological Education in Photonics (STEP) project funded by the National Science Foundation provides quantitative evidence that students can and do learn the source for hazards and how to avoid them. Second, standard protocols such as the ANSI Z-136.5 Standard for Laser Safety in Educational Institutions are provided and discussed in this paper. Laser safety concise protocols for student behavior and practice can be implemented with a great deal of success to reduce hazards and risks in the educational environment.