The Effect of Different Wavelengths of Amplified Light on the Corneas of Cow Eyes

Moore, Makenzie (School: Syracuse High School)

Lasers are becoming more prevalent in online marketplaces. There are multiple reports of lasers being pointed into the cockpits of aircraft in America. Lasers are also used in classrooms to point certain things out and in construction sites for leveling objects. When directly looked at, lasers damage not only the cornea but also the retina of an eye. Eyes are an important organ that cannot be regenerated or replaced. A series of tests were conducted to identify which wavelength of amplified light caused the largest amount of damage to the corneas of cow eyes. A cow eyes was placed one meter away from the output coupler of a laser. The laser was directed towards the center of the cornea and turned on for three seconds before being turned off again. The cornea was then observed with the naked eye and underneath a microscope for any damage caused by exposure to the laser. The process was repeated four times per laser using four different wavelengths of lasers for a total of sixteen eyes. The violet laser (405 nm wavelength), resulted in more damage to the eyes than the red lasers (650 nm wavelength). These findings suggest that there should be more strict regulation when purchasing lasers, especially lasers of a shorter wavelength.