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*The Effect of Class IV Lasers on Methicillin-Resistant Staphylococcus aureus and Pseudomonas aeriginosa*

In this study of the effects of class IV lasers on bacterial growth, methicillin-resistant Staphylococcus aureus and Pseudomonas aeriginosa were exposed to 120 joules, 195 joules, or 900 joules of laser therapy. One- half of the plates were exposed to laser on day 1 and day 2. The other half of the plates were exposed after 24 hours of growth and compared to the control plates. Three different canine samples of bacteria were obtained from Colorado State University Diagnostic Laboratory. Using a lawning technique,0.5 McFarlands of bacteria was plated on a Columbia plate. Fourteen plates of each bacteria were set up including 2 control plates. Each set is divided into 2 sets and three subsets – 195J, 120J and 900J of laser exposure. On day 2, each plate was then swabbed and re-plated to look for changes in growth of the bacteria 24 hours after last laser treatment. On day 3, all the plates had equal growth to the control group proving that my hypothesis was incorrect. Class IV lasers do not kill MRSA or Pseudomonas. However, laser therapy is likely safe for use in post-op patients and other veterinary cases as it will not kill the beneficial bacteria on the skin or in the digestive tract while undergoing laser treatments. Laser is likely beneficial in the healing process by increasing blood flow to the area resulting in more macrophages in the area. The laser may kill bacteria in a secondary manner by increasing the macrophages that eat the bacteria.