

# VETERINARY MEDICINE TODAY

## Laser Therapy – Part II

In Part I, we were introduced to a new and exciting technology, laser therapy. In the next few articles I hope to be able to explain the science behind it, but first a little history lesson.

The knowledge that light is not only beneficial, but actually a necessity for good health has been known for centuries. In fact, as early as the 6<sup>th</sup> century B.C., light was used in the treatment of diseases, known as heliotherapy. It was at this time that Herodotus determined that sunlight was required for normal bone growth. Once Sir Isaac Newton discovered the visible spectrum with the separation of light using a prism in the 1660's, a new age in the understanding of light began; but up until 1903, sunlight was still the only available source for therapeutic applications. This changed when a Danish medical doctor was awarded the Nobel Prize for successfully treating surgical tuberculosis, rickets and lupus vulgaris with ultraviolet light. Thirteen years later, the theory of lasers was postulated by Albert Einstein in an assumption necessary to support the Theory of Relativity, when he correctly proposed, "when a photon of the correct energy level collides with an atom that has been energized under the right conditions, two photons of precisely the same energy would be emitted." This theory would require another forty-four years of research before the technology could be developed to prove Einstein correct, when in 1960; the first Ruby laser was developed. The Uranium laser and Helium Neon laser followed soon after.

In 1967, a breakthrough in the application of the use of the laser in medical therapy occurred when Dr. Endre Mester, a researcher from the Budapest University in Hungary, discovered the biostimulating effects of the laser. He was trying to determine whether laser irradiation could cause cancer with an experiment

using two groups of mice. After shaving the hair off the backs of the mice in both groups, and subsequently exposing one group to energy from a low powered Ruby laser, he was surprised to find the laser exposed group grew the hair back much faster than the unexposed group. More importantly, none of the mice developed cancer. Unfortunately, this medical research never made its way to the West during this era of the Iron Curtain; however, these new discoveries in the benefits of laser therapy was quickly spreading through Eastern Europe, China and the Soviet Union during the 1970's and early 1980's. After the collapse of the Soviet Union, research documents regarding laser therapy became available to Western Europe and eventually made their way to the U.S. with a flurry of interest by researchers. In 1993, the first Independent Research Board for Laser Acupuncture Research was established in Boston, Massachusetts; and finally in 1998, the North American Association for Laser Therapy was established with the mission to improve the understanding of the photobiological mechanisms, basic laser physics, treatment parameters and protocols, techniques and regulatory issues.

To be continued next month....

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