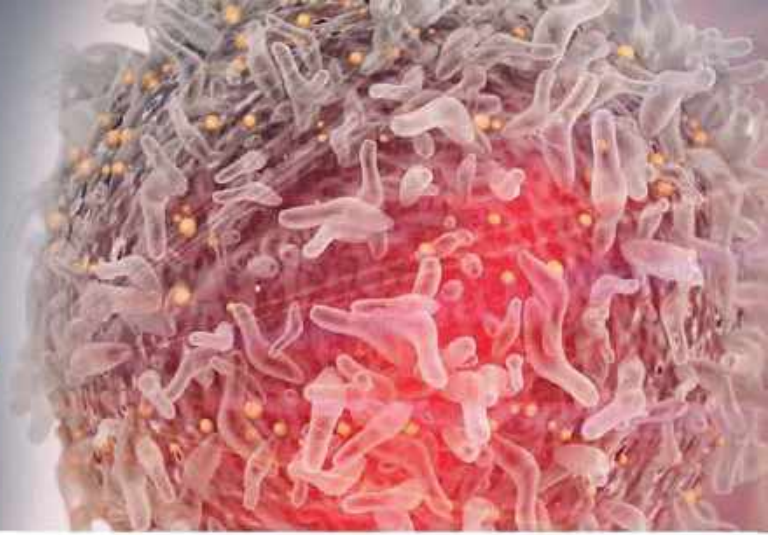


WHAT STUDIES SAY ABOUT CLASS IV LASERS & SPECIFICALLY, THEIR IMPACT ON CANCER CELLS.



The National Cancer Institute (NCI) reports that 39.6 percent of all Americans will receive a cancer diagnosis at some point in their lives. The NCI goes on to explain that cancer is one of the top causes of death across the globe, with new diagnoses expected to increase twofold—from 14 million to 22 million—within the next twenty years.

Because of statistics like these, many researchers are working diligently to learn more about cancer cells, as well as to discover what makes them form and grow. One area of study they've spent some time in recently involves the use of medical lasers. Class IV lasers, specifically.

Lasers and cancer cell research

One such study was published in the American Academy of Physical Medicine and Rehabilitation's PM&R Journal in November of 2017. This particular piece of research involved the use of two different types of cells: saos-2 osteoblast-like osteosarcoma cells and A549 human lung carcinoma cells.

After preparing the culture plates, each one was subjected to laser irradiation either one, two, or three times with Nd:YAG lasers, the power output ranging from 0.5 to 3 watts. Approximately 24 hours after receiving the last laser application, the plates were analyzed to see what change, if any, existed to the cells.

It was during this analysis that researchers discovered that, the more laser applications a specific culture plate received, the higher the proliferation rate, or the more these cancerous cells increased in number, when compared to control plates. Thus, they concluded that this type of laser therapy "could activate precancerous cells or increase existing cancerous tissue."

Other studies have found similar results. For instance, in November of 2009, BMC Cancer published a study involving mice with melanoma cells. For purposes of this particular study, some of the mice served as the control, some were exposed to three sessions of irradiation lasting 60 seconds each (dose 150 J/cm²), at the rate of one per day for three days, and the rest were exposed to three sessions of irradiation lasting 420 seconds (dose 1050 J/cm²).

Upon conclusion of the final session, each mouse was analyzed to see if there were changes in the melanoma cells. The group that was exposed to 60 seconds of lower level laser therapy (150 J/cm²) showed results "not significantly different from the controls."

However, the same could not be said for the other mice, the ones exposed to the more powerful laser doses (1050 J/cm²), as the researchers reported that they experienced "significant increases in tumor volume, blood vessels and cell abnormalities compared to other groups.

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So, are medical lasers safe?

Findings like these underline the importance of using lasers with the appropriate strength and within the appropriate class to obtain the desired medical result without risking the patient's health and safety.

This involves using lasers within the lower classifications (Class I, II, or III) as many of these have been found safe for enhancing health and wellness without impacting a person's risk of cancer or increasing their cancerous cell activity. It also means using lasers from an FDA approved company, thus protecting yourself as well as your patients.

Class IV medical lasers defined

The U.S. Food and Drug Administration (FDA) adds to the topic by sharing that lasers can be placed in one of four hazard classes, ranging from Class I to Class IV, with some of these classes containing subclasses within them. However, for simplicity's sake, the FDA says that the best way to understand the differences is, "the higher the class, the more powerful the laser is and the greater the potential to pose serious injury if used improperly." Because these are the highest level of lasers, this causes many to question what impact they may have on the human body. Specifically, some researchers have set out to discover what effect they may have on cancerous and precancerous cells.