



Newsletter

CANCER CONSULTANTS OF AMERICA

BRIDGING THE GAP BETWEEN CANCER AND UNDERSTANDING®

Cancer Answers

Radiation Therapy for Cancer Treatment

Radiation therapy as a cancer treatment has unique benefits that are not associated with chemotherapy. Among these benefits include guided radiation treatments which focuses only on the tumor and minimizes any collateral damage to healthy cells. The focused treatment is unlike chemotherapy which is usually systemic and circulates throughout the body. Neoadjuvant radiation therapy (treatment before the main therapy) is intended to shrink the tumor before surgery. Radiation treatment can also be used following surgery to ensure the removal of any remaining cancer cells and prohibiting their return. In addition to these forms of radiation therapy, brachytherapy (a short form of radiation therapy) involves the insertion of small radioactive seeds in the area of interest to irradiate cancer cells and the surrounding tissue in an effort to prevent cancer proliferation. The radioactivity of the seeds dissipates over time to insignificant levels. In most cases, the seeds are left in the body and not removed.

Radiation is a form of energy that we encounter every day of our lives. A prominent source of this energy comes from the Sun which provides light and heat to our planet. Furthermore, this sunlight is an important source of energy for our food chain because it is captured by plants and converted to cellular energy. These plants serve as sources of energy and nourishment for plant-eating animals. While radiation provides life, it can also have an opposite effect due to its ability to cause DNA damage resulting in death at the cellular level. This latter feature is of significant interest because it can be used as a cancer treatment to eliminate cancer cells within tumors.

Prolonged exposure to radiation (sunlight) can cause mutations within the DNA leading to cancer development. However, intense bursts of focused radiation can also be used as a cancer treatment to induce large-scale DNA damage within cancer cells.

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The premise for this form of cancer therapy leverages the fact that widespread DNA damage can occur within the cancer cell and overwhelm the cell's ability to repair the damage. The targeted radiation directly damages the DNA causing breaks in the genetic material which inhibits DNA replication that is necessary for tumor proliferation. Having significant damage to the DNA because of the radiation therapy, cancer cells can no longer function properly and they eventually die. Taken together, not only does radiation halt the ability of cancer cells to proliferate to increase the mass of the tumor but it also reduces the number of cancer cells due to cellular death as a result of radiation.

Medical advancements have contributed to our ability of harnessing the power of radiation and develop it into a useful tool for therapeutic purposes in the fight against cancer. Novel cancer treatments will continue to be developed and made available for cancer patients. Some of these new therapies will be used along with other effective treatments such as focused radiation therapy.

Submit your **Cancer Answers** topics to info@CancerConsultantsOfAmerica.com

We Are Available to You

Please contact us today if you would like more information about how our services can benefit you and your family.

Services:

- Individual and Family Cancer Education
- Medical Appointment Liaison Services
- Information Seminars and Public Speaking Events

Fun Facts – December

Cancer Awareness Month:

- Hope 🙏

December 1 – Antarctica Day 🌎

December 4 – Moon apogee (251,249 miles from Earth) 🌞 🌎

December 14 – Geminids meteor shower 🌩️

December 16 – Moon perigee (228,603 miles from Earth) 🌞 🌎

December 26 – National Thank You Note Day 📝

December 30 – National Bacon Day 🍖

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