
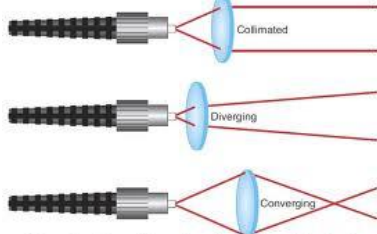


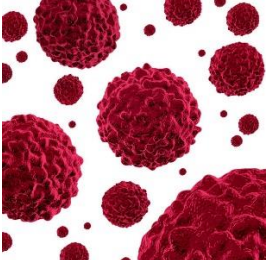


TECHNOLOGY MATRIX

LINEAR ACCELERATOR Matrix

| Technology | Device Purpose (What) | Function (How) Physics | Function (How) Physics | Function (How) Physics |
|---|---|---|--|--|
|  <p data-bbox="197 667 401 691">Linear Accelerator</p> | <p data-bbox="499 350 821 448">Uses high energy radiation beams to target and destroy malignant cells</p> |  <p data-bbox="848 565 1222 878">Collimator: is a device that narrows a beam of particles or waves. To "narrow" can mean either to cause the directions of motion to become more aligned in a specific direction or to cause the spatial cross section of the beam to become smaller (beam limiting device).</p> |  <p data-bbox="1251 573 1556 813">Steering coils: are simply copper windings, these coils are able to create magnetic fields inside the tube, and the electron beam responds to the field.</p> |  <p data-bbox="1583 573 2003 919">Wave Guide: A waveguide is a structure that guides waves, such as electromagnetic waves or sound waves. There are different types of waveguides for each type of wave. The original and most common meaning is a hollow conductive metal pipe used to carry high frequency radio waves, particularly microwaves.</p> |
| Human Application (Where and Why) | Physiology | Manufacturers | Related Occupations | Safety/ Recall |
| <p data-bbox="121 1032 464 1341">Radiation Therapy: Uses ionizing radiation, generally as part of cancer treatment to control or kill malignant cells. Radiation therapy may be curative in a number of types of cancer if they are localized to one area of the body.</p> | <p data-bbox="499 1032 821 1268">Tumor cells: An abnormal growth of tissue resulting from uncontrolled, progressive multiplication of cells and serving no physiological function; a neoplasm.</p>  | <p data-bbox="848 1032 1222 1382">Siemens http://www.oem-products.siemens.com/ Elekta, Inc. http://www.elekta.com/health-care-professionals/products/elekta-oncology.html AccSys Technology, Inc. http://www.accsys.com/linstar.html</p> | <p data-bbox="1251 1040 1556 1292">Radiation Therapist Radiation Medical Physicist Radiation Oncologist https://www.youtube.com/watch?feature=player_embedded&v=5E5ssMKEBHs</p> | <p data-bbox="1583 1040 2003 1382">http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfRes/res.cfm?ID=132027 An urgent field safety notice, dated December 2, 2014, was sent to end users advising them to use only Siemens' authorized components for patient treatments as described in the operator's manual.</p> |

| Safety Protocol | Testing and Calibration | Maintenance Schedule | Parts Vendors | Local ISOs |
|-----------------|-------------------------|----------------------|---------------|------------|
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