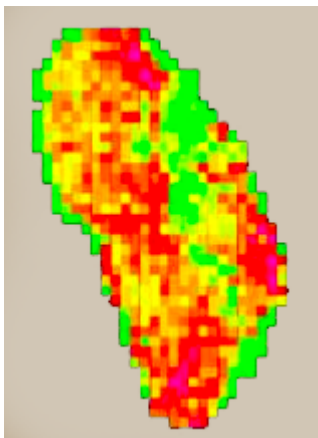


## Intensity-modulated radiation therapy (IMRT)

Intensity modulated radiation therapy (IMRT) is an advanced radiation technique employing recent innovations in imaging and computer technology. Physicians at UCSF have used IMRT to treat cancer patients since 1997, giving us more experience with IMRT than most other centers in the United States and the rest of the world. IMRT planning starts with tumor target and normal tissue definition, followed by inverse planning. Using computer optimization, multiple small fields are designed to give a complex and conformal radiation dose distribution, which provides the prescription dose to the tumor target and minimizes dose to regional normal tissues.



Modulation of IMRT  
computed beams

Because of improved target volume coverage and reduced dose to critical structures, IMRT has been widely accepted as an excellent treatment modality for many different tumor types. Clinical results suggest that use of IMRT may improve cancer control rates and decrease toxicity rates in certain tumor types, such as head and neck cancer, prostate cancer, and some brain tumors. At UCSF, all of our external beam radiotherapy linear accelerator machines are capable of delivering IMRT plans. We routinely use IMRT for treatment of prostate and head and neck cancer, and we frequently use IMRT to treat other tumors in

challenging locations.

IMRT machines at UCSF:

- ARTISTE <sup>[1]</sup> (Siemens)
- TomoTherapy <sup>[2]</sup> (Accuray)
- TrueBeam <sup>[3]</sup> (Varian)
- Versa HD <sup>[4]</sup> (Elekta)

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**Source URL:** <http://radonc.ucsf.edu/intensity-modulated-radiation-therapy-imrt>

**Links**

[1] <http://radonc.ucsf.edu/artiste>

[2] <http://radonc.ucsf.edu/tomotherapy>

[3] <http://radonc.ucsf.edu/truebeam>

[4] <http://radonc.ucsf.edu/versa-hd>