Conventional Two Dimensional (2D) Radiation Therapy

Conventional, or 2D radiation therapy, uses x-ray films to guide and position radiation beams and was widely used in the 1960s-70s. CT scans that provide 3-dimensional imaging are not used to plan this type of treatment.

How is conventional 2D radiation treatment planned?

Treatment planning for conventional 2D radiation does not take a long time. Patients can usually start treatment quickly compared to other types of radiation therapy that need more in-depth (and time-consuming) planning.

A machine called a fluoroscopic simulator is often used to plan your treatment. The fluoroscopic simulator does so by using x-rays to see bones. The bones are used as landmarks to see where the tumor is. This helps find out where to put the radiation beams to treat the tumor.

The tumor volume and critical structures are drawn on 2D x-ray films and used for treatment planning.

When is conventional 2D radiation used?

This type of treatment is often used for urgent treatments. Often, treatment can start the same day.

How is the beam shaped?

Shaping one beam in conventional 2D radiation therapy can be hard. Instead, a few (2-4) simple square or rectangular beams are often used. An example of a standard beam arrangement is opposed lateral beams or a four-field box. Often, this leads to a higher dose being given to the normal tissue causing more treatment side effects.

What are the disadvantages of conventional 2D radiation?

The disadvantages of 2D therapy are:

- 2D planning for a 3D tumor.
- Large treatment fields with higher radiation doses to normal tissue.
- More side effects.
- Custom blocks that can be used for some beam shaping need a lot of work and take more time.

What are the advantages of conventional 2D radiation?

The advantages of 2D therapy are:

- Treatment planning is quick.
- Patients can start treatment fast, sometimes on the same day.

Is conventional 2D radiation right for me?

There are many types of radiation therapy. Conventional 2D radiation is not used as often as it was many years ago due to newer treatment technology being used. But, it does provide a treatment option when radiation is needed quickly. Talk with your radiation care team about any questions or concerns you might have.
