Intensity-modulated radiation therapy and stereotactic body radiation are two approaches that can reduce damage to normal tissue being treated for liver metastases:

- intensity-modulated radiation therapy (IMRT) uses radiation beams of varying intensity that mold to the shape of the tumor. Sophisticated software and 3-D images from CT scans enable your doctor to focus radiation on cancerous tissue more precisely.
- stereotactic body radiation therapy uses a highly focused radiation field to deliver larger doses of radiation in fewer treatments. It combines IMRT and image-guided radiotherapy. Your doctor implants tiny markers into the tumor. A CT scan picks up the location of those markers, guiding radiation to the tumor.

Respiratory Gating

Because tumors and organs in the abdomen shift when you breathe, precisely delivering radiation to cancerous tissue can be challenging. Your treatment team may recommend motion-management techniques so they can more accurately target liver metastases while sparing healthy tissue.

Respiratory gating is a commonly used motion-management technique. It delivers radiation only at certain points during your breathing cycle. Abdominal compression can also help with motion management. In this technique, you wear a compression belt that applies abdominal pressure to minimize tumor movement. Researchers at MSK are also evaluating anesthesia to minimize tumor movement during radiation treatment.