

Stereotactic Body Radiation Therapy (SBRT) involves the administration of high radiation doses to discrete tumor in the lungs, liver, and elsewhere in the body with the express intention of killing all the cancer cells targeted—or, at least, killing as many as possible while respecting patient safety. A fundamental question arises immediately: just how much radiation do we need to administer for a typical tumor treated with SBRT? Another question soon follows: as we attempt to deliver high doses to the tumor, how do we reasonably set constraints for SBRT doses to the surrounding normal tissues? What are the expected normal tissue responses to SBRT? How does the treatment technique itself influence the therapeutic ratio, ie the balance between favorable effects upon tumor control and adverse effects upon normal tissues? In this third section of the SBRT refresher course, these questions will be addressed from both a theoretical and—where possible—practical perspective.