Active Breathing Control (ABC) Device

Overview
When radiation treatment is given to the chest or abdomen, the normal movement made by breathing air in and out of your lungs may cause the targeted area to move. Usually your doctors have to make up for this movement by radiating a slightly larger area. With the use of a special device called an Active Breathing Control (ABC) device, we can treat you while your breath is held, and the target area is still. This means you are given a more precise dose of radiation to the target area, and less to your normal tissues.

Learning to use the ABC device
You will have time to practice holding your breath to see what it feels like. It is normal to feel some anxiety about being able to hold your breath and use this device. We will work with you during this process, and at any point you can open your mouth from around the device to breathe normally. The use of the ABC device gets easier throughout treatment, and the length of time you are able to hold your breath often increases as well. You can practice at home by taking long slow deep breaths in, and exhaling slowly out of your mouth. This helps your lungs to expand. During your simulation you will be asked to hold your breath for as long as you can. This will help us determine how long your breath can be held during treatment. After this initial practice and lesson your instructions will be the same for both simulation and treatment.

Breathing Instructions –
1. You will be told to breathe normally.
2. When the therapist is ready to start, you will be told to take two deep breaths. This is to prepare you for a breath hold.
3. As you exhale your second breath, the breathing device will measure the air and will prevent you from exhaling any further once you reach the desired lung volume. Do not try to force your breath out at this point.

4. When the CT scan is complete, you will be told to breathe normally.

**Desired Lung Volume**

If the target area is your chest, then the desired lung volume is reached after you exhale a little, at about 75% of your lung volume. If your abdomen is being treated, the desired lung volume after you exhale a bit more, and your lung volume is low (about 25%).

**Using the ABC device during treatment**

The number of breath holds for treatment will vary depending on the dose the doctor prescribes and the amount of time you can hold your breath. The treatment beam is turned on and the radiation is given, only during the time when your breath is being held. For example, the longer you can hold your breath, the fewer breaks there will be between breath holds, and the treatment time will be shorter. The length of your breath hold can be changed. If you feel like you can hold your breath longer, or need the breath hold to be shorter, let your radiation therapists know. It is important that you are comfortable with this process, and the length of time you are asked to hold your breath.

**Who to Call with Questions**

- **On weekdays (8am to 4pm; Monday-Friday)** contact Radiation Oncology Department at (734) 936-4300.

- **On weekends, holidays or after 4pm on weekdays**, contact the page operator at (734) 936-6267. Ask to have the On-Call Radiation Oncology Resident paged.

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This document is not intended to take the place of the care and attention of your personal physician or other professional medical services. Our aim is to promote active participation in your care and treatment by providing information and education. Questions about individual health concerns or specific treatment options should be discussed with your physician.

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