

Breath Hold

Quick Reference Guide



Figure 1

Physician's remote display Patient's remote display



Figure 2



Figure 3A



Figure 3B



Figure 3C




Figure 4

Education Video

Prior to setup and use of the Breath Hold System, ALL physicians, technicians and patients should view the short Medspira Breath Hold System Physician and Patient Education Video.

Set up Breath Hold system before the patient enters the CT suite

1. Turn on the docking station/base power unit (left side of base) and all remote displays (right side of displays).
2. Press the reference button  located on the top of the docking station/base unit to start the LED light movement that corresponds with the movement of the bellows belt.
3. Place docking station/base power unit (with bellows belt and tubing attached) at the head of the CT table.
4. Place remote displays where best visualized by physician, patient and technicians. ALL remote displays are interchangeable.
 - ✓ Radiologist remote display: Place on CT gantry or CT fluoroscopy in-room display monitor (if available). [Figure 1A](#)
 - ✓ Patient remote display: Connect to gooseneck arm and place base of gooseneck under the CT table pad on the bed in the region of the patient's head and pillow. Make sure the patient can easily view the remote display and that it clears the CT gantry. [Figure 1B](#)
 - ✓ CT technologist remote display: Place by CT operating console. [Figure 2](#)

Belt Placement

1. Determine if patient is a chest or abdominal breather. Once determined, place belt (with blue thermal insulators wrapped in place around rubber bellows) on patient's BARE SKIN over lower chest or upper abdomen (near diaphragm) depending on which area expands and contracts the most during respiration. Confirm with bellows belt will not interfere with planned needle entry site. [Figures 3A, 3B, 3C](#)
2. The belt should be pulled tight enough (but not so tight that the bellows cannot expand and contract while breathing) around the patient so that the belt DOES NOT MOVE during the procedure. [Figure 4](#)
3. Have the CT nurses and/or procedure assistants place all equipment (blood pressure cuff, IV fluids, pulse oximeter, etc) on patient prior to referencing the patient's breath-hold level. It is important not to have any patient movement once the reference breath-hold level has been established.
4. Make sure the bellows belt and rubber tubing are not pinched or lying underneath the patient. DO NOT place the patient's gown or blanket over the belt. Covering may cause system to function improperly. We suggest place the excess rubber tubing on the CT table at the head or foot of the patient so it is not obstructed in any way. [Figure 5 \(SEE REVERSE SIDE\)](#)



Figure 5

Breath Hold System Use

1. Have patient watch the remote display while he or she breathes in and out (show the patient how the lights move to the right as the patient breathes in and to the left as the patient breathes out).
2. Instruct patient to take in desired breath that you want to be reproduced during the procedure and tell the patient to “hold it”. Press the reference button on the remote display to capture the breath-hold on the center red light. Wait until only the center red light is lit before instructing the patient to breathe again. **Figure 6**



Figure 6

Performing CT Scan

1. Take the automatic voice off the CT system.
2. Manually instruct the patient to take in the same breath-hold and the light the center red light. When the patient lights up the center red light, tell the patient to hold his or her breath. Begin scanning.
3. Perform all localization markings and needle manipulations at the SAME breath-hold when the patient is lighting the center red light. **Figure 7**
4. Repeat each of these steps anytime pictures are being taken.



Figure 7

Patient is lighting the center red light (see arrow above)

Disassemble and store the Breath Hold System on completion of procedure

1. Clean and disinfect the bellows belt prior to storage or use on another patient.
2. Turn off the docking station/base power unit and all remote displays. Store all remote displays in the docking station/base power unit.
3. At the end of the day, the Breath Hold system remote displays and docking station/base power unit should be in the OFF position and plugged in and charging.

Key Points:

- ✓ Confirm patient has watched the Breath Hold video and the Breath Hold System is set up prior to bringing the patient to the CT suite.
- ✓ The position of the bellows belt cannot move on the patient once the reference breath-hold has been established.
- ✓ During the procedure, make sure the patient lies as still as possible and the bellows belt and rubber tubing are not covered or obstructed in any way.
- ✓ Take off the automatic voice during scanning. Manually instruct the patient to light the center red light. Start scanning only when the patient has done so.
- ✓ Perform all localization markings and needle manipulations at the SAME breath-hold when the patient is lighting the center red light.
- ✓ During setup, confirm that the gooseneck holding the patient remote display clears the CT gantry.
- ✓ Clean and disinfect the bellows belt after every use.
- ✓ At the end of the day, make sure the Breath Hold system remote displays and docking station/base power unit are in the OFF position and plugged in and charging.