Breath Hold

A user-friendly, stand alone system for sensitive and reliable breath-hold monitoring.

Respiratory motion poses a considerable problem during procedures involving the lungs and upper abdomen as structures can vary 1 to 6 centimeters during normal breathing. Invented by Mayo Clinic physicians and scientists, Breath Hold allows patients to easily and consistently reproduce the same breath-hold reference point.

Breath Hold or Interactive Breath Hold Control Monitor is an expandable bellows system that works by giving feedback to the patient about their respiration via an LED monitor. Changes in abdominal girth during breathing causes pressure changes within the tubing, which is measured with a pressure-sensitive transducer. Patients see a line of lights with the center light being their reference point and additional lights illustrating how far from that reference they are. The patient exhales or inhales in order to have only the center LED lit.

Breath Hold has significant advantages over the traditional procedure. These include:

- Increase patient care and comfort
- The ability to conduct a more rapid and safe procedure in less time
- Reduce the need for more invasive surgical biopsy
- Perform biopsies on smaller and more difficult to access nodules
- Easily adapt Breath Hold to any commercial CT scanner

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- Study shows significant decrease in needle puncture attempts when using Breath Hold

CT Fluoroscopy-guided biopsy study results

	Without Breath Hold	Breath Hold	
Median patient radiation dose	41.3 mGy	**29.5 mGy**	29% decrease in radiation dose
Lesions accessed in one needle attempt	53%	**77%**	45% increase in accuracy
Pneumothorax developed	32%	**22%**	31% decrease in complications
Median CT fluoroscopy exposure time	18.0 seconds	**12.6 seconds**	30% decrease in exposure

Medspira
Clinically inspired medical devices

Medspira's mission is to make clinically inspired medical devices available to more health care professionals and their patients. The products of top researchers and inventors, these devices have heretofore been used mainly within large research oriented clinics and have the potential to provide valuable new tools for diagnosis and treatment of a large variety of medical conditions

Reference

1 Carlson, Stephanie K.,MD et al, CT Fluoroscopy-guided Biopsy of the Lung or Upper Abdomen with Breath-hold Monitoring and Feedback System: A Prospective Randomized Controlled Clinical Trial, Radiology, 237:701-708: 2005