

BRONCHSHIELD™



RADIATION SAFETY FOR ADVANCED BRONCHOSCOPY

The evolution of bronchoscopy demands better protection.

Advanced imaging is transforming procedural precision. Occupational radiation protection should evolve alongside it.

Designed to complement—not replace—lead aprons, thyroid shields, leaded eyewear, optimized imaging practices, and other ALARA measures.

Seeing the target can mean missing the exposure.

Digital tomosynthesis, cone-beam CT, fluoroscopy, and robotic navigation help physicians reach and confirm increasingly difficult targets. But greater imaging capability also introduces greater opportunity for occupational exposure.

For the proceduralist and staff, the concern is not simply one case. It is being in the room procedure after procedure, year after year.

What current evidence tells us: Early bronchoscopy data are encouraging, but interventional pulmonology is still a young and rapidly changing specialty. Its long-term occupational implications remain largely unknown.

R

Robotic bronchoscopy

Advanced navigation and confirmation imaging are expanding procedural capability.

3D

Cone-beam CT

Volumetric imaging helps account for CT-to-body divergence in real time.

F

Fluoroscopy

Real-time imaging supports localization, positioning, and procedural decision-making.

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Growing complexity

As capabilities expand, radiation fluency and consistent protection become more important.

Protect the physician by reducing scatter at its source.

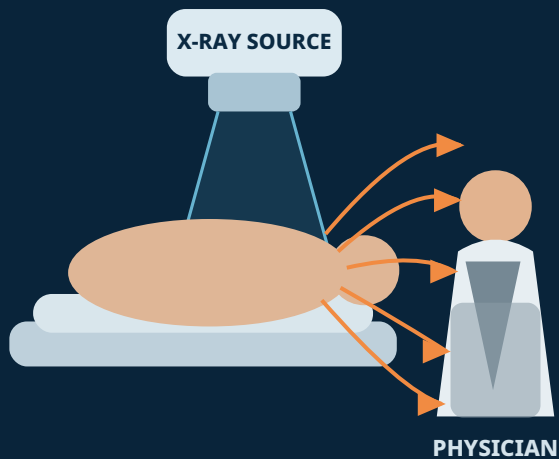
During fluoroscopically guided procedures, radiation interacting with the patient produces scatter that can travel toward the procedural team. BranchShield is positioned over the patient's head and neck—outside the chest imaging field—to add attenuation before scatter reaches the physician standing behind the patient's head.

Scatter radiation comparison

Without BranchShield compared with BranchShield in place.

WITHOUT BRONCHSHIELD

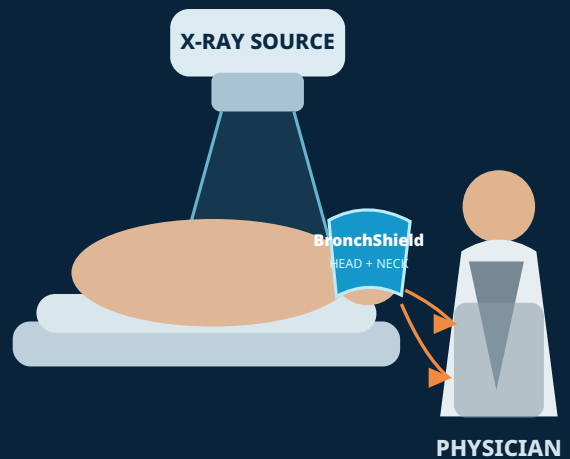
Scatter travels toward the operator



NO ADDED PATIENT-MOUNTED ATTENUATION

WITH BRONCHSHIELD

Added attenuation at the patient



CHEST REMAINS CLEAR FOR CT IMAGING
Shield positioned over the head and neck

Conceptual illustration for education; not a quantitative representation of dose distribution or a substitute for site-specific radiation safety assessment.

Current protection is essential—but radiation safety is layered.

BronchShield is not intended to replace established personal protective equipment or good imaging practices. It adds another layer designed specifically to address scatter in the shielded field.



Lead apron

Protects covered areas of the torso from occupational exposure.



Thyroid shield

Provides focused protection for radiosensitive thyroid tissue.



Leaded eyewear

Helps reduce dose to the eye lens during image-guided procedures.



BronchShield™

Adds patient-mounted attenuation intended to help reduce scatter before it reaches the proceduralist.

EVERY PROCEDURE BECOMES A CAREER

Radiation exposure is a long-term conversation.

A low dose in one procedure can feel insignificant. The occupational question is what happens **procedure after procedure, year after year.**

One procedure	One exposure event
One week	Repeated imaging
One year	Accumulated occupational dose
One career	Thousands of opportunities to protect

Upper-torso protection deserves greater attention.

Published experience from other image-guided specialties has reported elevated breast cancer rates among female proceduralists, including at doses below recommended thresholds. The CHEST Physician article also notes that proper upper-torso shielding for women is often neglected.

This does not establish a specific breast-cancer risk level for interventional pulmonologists; long-term occupational implications in this developing specialty remain uncertain. It does support sustained vigilance, properly fitted PPE, radiation education, and a comprehensive protection strategy for an increasingly diverse workforce.

Protection should fit the proceduralist.

- ✓ **Properly fitted PPE**
Coverage and fit matter, particularly across the upper torso.
- ✓ **Consistent use**
Protection only works when it becomes part of every-case practice.
- ✓ **Added source attenuation**
BronchShield complements wearable protection by addressing scatter near the patient.

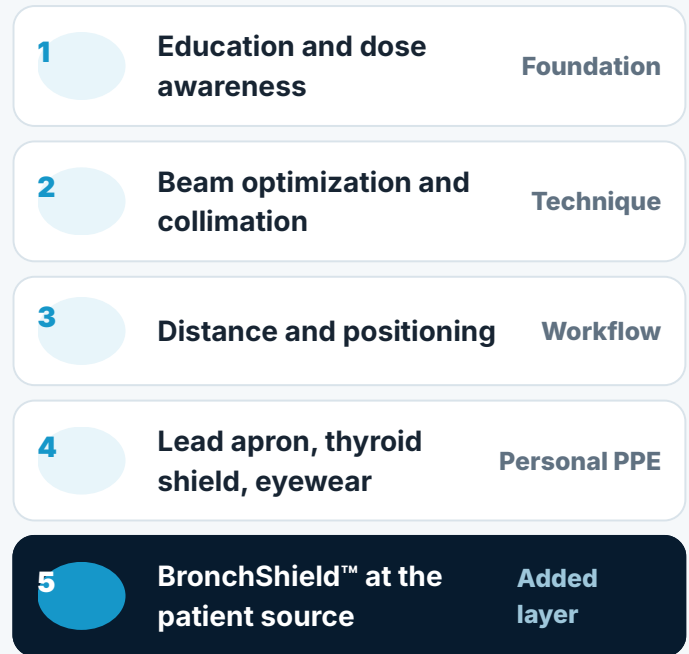
MEET BRONCHSHIELD

A practical additional layer for the modern bronchoscopy suite.

BronchShield is designed for flexible placement across common procedural positions and supports an ALARA-minded approach without changing the essential role of established PPE.

- ✓ **Three-layer construction**
Engineered with a proprietary heavy-metal attenuation blend.
- ✓ **Flexible positioning**
Designed to accommodate various physician and equipment positions.
- ✓ **Complements existing protection**
Adds to lead aprons, thyroid collars, eyewear, distance, collimation, and dose optimization.
- ✓ **Purpose-built messaging**
Radiation protection developed specifically with interventional pulmonology in mind.

A layered ALARA strategy



PROTECTING WHAT MATTERS

Advanced bronchoscopy is moving forward. Radiation protection should move with it.

Learn how BronchShield can become part of your program's comprehensive radiation safety strategy.

SELECTED REFERENCE

Evidence informing the discussion

1. Yong SS, Kalchiem-Dekel O, Niroula A. "Seeing the target, missing the risk? Radiation safety in advanced bronchoscopy." *CHEST Physician*. July 15, 2026.
2. Wijma IN, Casal RF, Cheng GZ, et al. Radiation principles, protection, and reporting for interventional pulmonology: a World Association for Bronchology and Interventional Pulmonology white paper. *Respiration*. 2024;103(11):707-721.
3. Kim DW, Jeon H, Joo JH, et al. Tungsten-bismuth shielding sheets for radiation safety in fluoroscopy-guided bronchoscopy: a phantom study. *J Thorac Dis*. 2026;18(2).

BronchShield is intended to complement, not replace, institutional radiation safety protocols, properly fitted personal protective equipment, imaging optimization, staff education, and radiation monitoring. Product claims, indications, regulatory status, and test conditions should be reviewed and approved before public launch. The conceptual illustrations on this page do not quantify individual dose reduction.