Clinical Value of Cios Spin and Intuitive Ion

Interpretation of outcomes using robotic-assisted bronchoscopy with integrated cone beam CT

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Results from a high volume center

A recent prospective cohort study from the University Hospital Zürich (Universitätsspital Zürich) evaluated the impact of robotic-assisted bronchoscopy (RAB) using the Ion endoluminal system combined with integrated Cios Spin cone beam CT (CBCT) on the diagnostic yield and workflow in patients with peripheral pulmonary nodules (PPNs).

Key clinical outcomes[1]

89% diagnostic yield

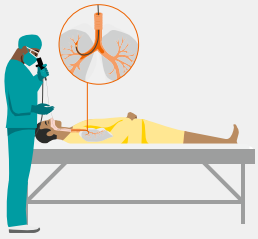
(ATS 2024 strict criteria): median lesion size 10 mm, 15% with positive bronchus sign

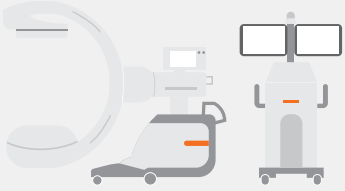
1.25 spins/lesion

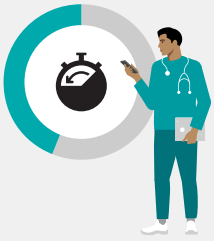
CBCT-integration into RAB allows for a low number of spins

37 min. procedure time[2]

CBCT+RAB procedure times are similar to conventional bronchoscopy with 2D fluoroscopy (34 Min)







The team's learning curve extended over a period of up to six months, during which a procedure time reduction (scope-in to scope-out) of 40–60 % can be expected. Regression analysis demonstrated significant improvements over this period, including a 26 % reduction in radiation dose (Gy), a 28 % decrease in fluoroscopy time, and 12 % fewer cone-beam CT spins (all $p < 0.01$), each correlating with the procedural learning curve. In contrast, key clinical parameters such as lesion size, complication rates, and diagnostic yield remained stable throughout the learning phase.

[1] *First 6 months of program with 141 patients and 213 PPLs*
[2] *44% reduction in procedure time, from initial 67 min to 37 min, defined by anesthesia (scope in to scope out).*

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"With the integration of cone-beam CT into robotic-assisted bronchoscopy, our team adapted quickly – procedure times now average 37 minutes, only slightly longer than the 34 minutes it takes us to perform conventional bronchoscopy under 2D fluoroscopy. Also, radiation exposure was lowered while increasing patient throughput, improving safety and access."

Thomas Gaisl, MD, PhD
Managing consultant, Department of Pulmonology University Hospital Zurich

The integration of robotic-assisted bronchoscopy (RAB) with cone beam CT (Cios Spin) from Siemens Healthineers at University Hospital Zürich transformed lung cancer detection.

69%
increase in overall lung cancer diagnoses

291%
increase in 1A detections compared to previous six years

Dr. Gaisl's research shows a remarkable surge in early-stage (1A) detections. This significant stage shift enables earlier intervention when treatments can be more cost-effective.[3]

[3] *Earlier detection also has substantial economic implications. According to current data, monthly excess expenditures for lung cancer treatment increase significantly with disease progression, ranging from approximately €3,115 for Stage IA cancer to €8,156 for Stage IVB cancer [de Nijs K, de Koning HJ, van der Aalst C, Ten Haaf K. Medical costs of lung cancer by stage, histology and first-line treatment modality in the Netherlands (2012-2021). Eur J Cancer. 2024;208:114231.].*

Publication: American Journal of Respiratory and Critical Care Medicine, Vol 211, Abstract A5512, DOI: 10.1164/ajrccm. 2025.211.Abstracts.A5512 Author: Dr. Thomas Gaisl, MD, MPH, PhD (thomas.gaisl@usz.ch) Disclaimer: This flyer summarizes data from one institution's clinical experience and interpretation of outcomes. Results may vary. Device performance and workflow outcomes depend on multiple factors, including operator experience and institutional protocols. This communication is intended for informational use only and does not constitute a claim of clinical performance. Refer to official labeling for intended use, contraindications, and safety information.

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Dr. Gaisl is employed by an institution that receives financial support from Siemens Healthineers for collaborations.

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