

Revolutionising Pulmonary Medicine

Polarean Imaging plc.

AIM: POLX

March 2025

POLAREAN

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Polarean Senior Management Team



Successful, experienced healthcare professionals

Selected Prior Company Affiliations

 <p>Christopher von Jako, PhD CEO & Executive Director</p>	<ul style="list-style-type: none"> • Joined in 2023 • 30+ years of global executive leadership experience in MedTech with a primary focus on capital image guidance equipment • Led organisations in early-stage, expansion, and turnaround environments with five entities resulting in M&A 	
 <p>Charles Osborne CFO & Executive Director</p>	<ul style="list-style-type: none"> • Joined in 2019 • 30+ years of global life sciences experience, 20+ years as CFO • Extensive public company, corporate partnering, and M&A experience 	
 <p>Alex Dusek Chief Business Officer</p>	<ul style="list-style-type: none"> • Joined in 2019 • 25+ years of global executive commercial leadership in Pharma, Biotech, & MedTech • Led global pulmonary pharma product launches 	
 <p>Alan Huang, PhD VP of Sales</p>	<ul style="list-style-type: none"> • Joined in 2024 • 15+ years of global business leadership experience in MedTech with a primary focus on capital image guidance equipment • Experience in creating new markets and growing businesses with novel technologies. 	
 <p>Chase Hall, MD Chief Medical Advisor</p>	<ul style="list-style-type: none"> • Joined in 2024 • Associate Professor of Medicine at the University of Kansas Medical Center in the Division of Pulmonary and Critical Care & also serves as Associate Director at the University of Kansas Interstitial Lung Disease and Rare Lung Disease Clinic 	
 <p>Bastiaan Driehuys, PhD Chief Scientific Officer & Founder</p>	<ul style="list-style-type: none"> • Joined in 2012 • A Polarean founder and technology founder with over 100 peer-reviewed articles on hyperpolarised gases and holds over 30 patents in this area • Professor in the Department of Radiology at Duke University Health System 	

Revolutionising pulmonary medicine through direct visualisation of lung function

- > Commercial-stage functional lung imaging company with 22 customers
- > First and Only FDA-Approved Inhaled MRI Contrast Agent compatible with Philips, GEHC, and Siemens MRIs
- > Favourable reimbursement for the 10-second image strengthens hospital economics, fuelling adoption

> **20+**
Patents
Granted

Partnership with Philips



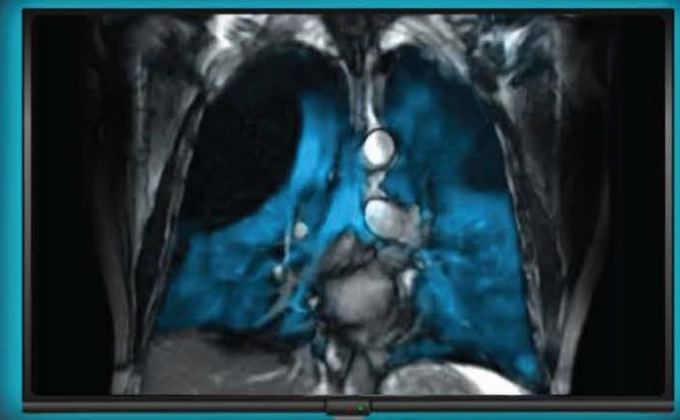
XENOVIEW[®]
(xenon Xe129 hyperpolarized) for oral inhalation

Changing
How We View
Lung Function

Modern
Respiratory
Imaging



Standard Proton MRI scan



Polarean Xenon MRI
(MRI scan after inhalation of XENOVIEW[®])

Investment Opportunity

Significant unmet clinical need in improved lung disease diagnosis

Pioneering Functional Imaging Platform with Reimbursement

Proprietary, non-invasive, radiation-free technology with a lucrative per-patient consumable revenue model

Massive Label Expansion U.S. Market

\$3B+*
interstitial lung and pulmonary vascular diseases

Large U.S. Market with Unmet Clinical Need

\$2B+*
obstructive lung disease and cancer

Industry Partnerships

Pharma and MedTech multifaceted growth avenues



POLAREAN

The Challenge

- Unexplained breathlessness is difficult to diagnose and manage and current lung functional testing cannot **SEE** the “Silent Zone”

The Solution

- Xenon MRI platform technology **illuminates hidden disease** in the “Silent Zone”


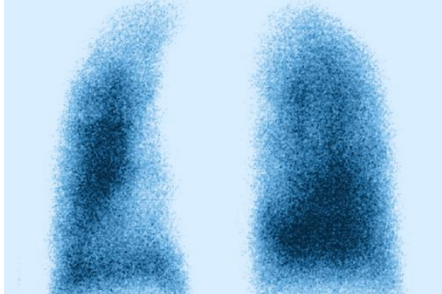
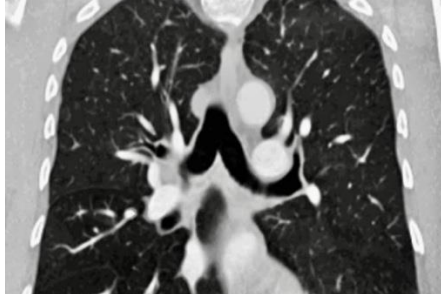
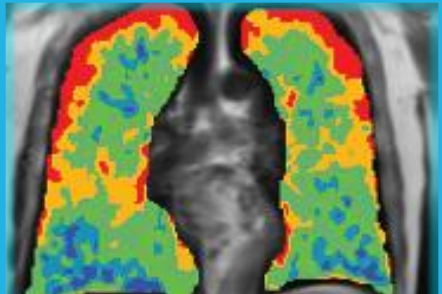
Multiple drivers fuel rising demand for innovative diagnostics including:

- Aging Population - [U.S. Census Bureau](#) projects older adults (65+) will outnumber children by 2035
- Obesity - [Centers for Disease Control and Prevention](#) say 41.9% of US population is obese
- Lung Cancer - [American Cancer Society](#) estimates lung cancer as the second most common cancer, causing the most cancer deaths annually
- Rising Respiratory Costs - [Respiratory diseases](#) are among the leading contributors to overall healthcare costs
- Strong Industry Tailwinds - [Respiratory Diagnostics Market & Respiratory Pharma Market](#) showing strong growth
- Rare & Orphan Lung Disease - [Challenging for patients, physicians, and researchers](#)



Decades Without Advancement

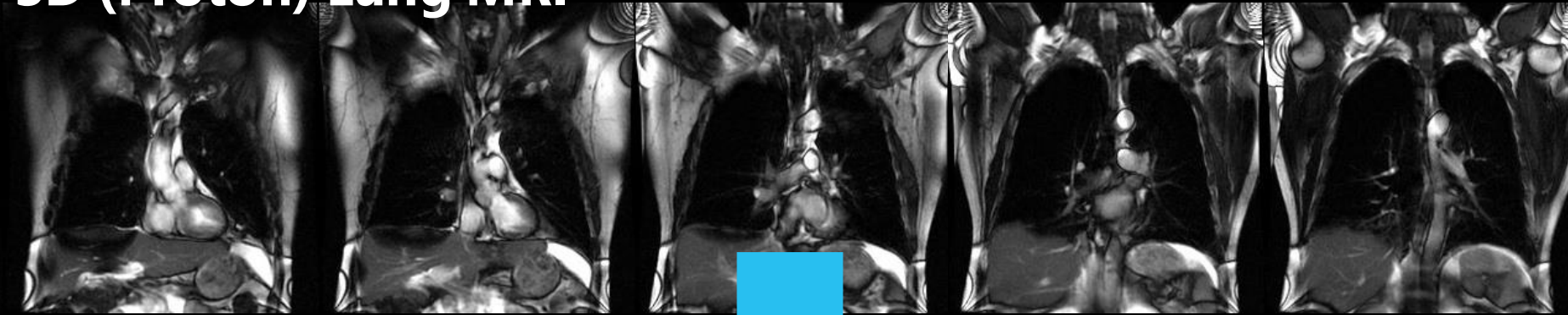
Standard lung function tests rely on blunt tools that fall short

	 <p>Spirometry Developed in 1846 15m US procedures/yr.</p>	 <p>Scintigraphy Developed in 1964 200k Total US procedures/yr.</p>	 <p>CT Scan Developed in 1971 10m Total US procedures/yr.</p>	 <p>Xenon MRI FDA Approval 2022</p>
Functional Measure?	YES, Global Only	YES	NO	YES
Without using Ref. Equations?	NO	YES	YES	YES
Visualisation?	NO	YES	YES	YES
Radiation-free?	YES	NO	NO	YES
Effort Independent?	NO (Variability)	YES	YES	YES

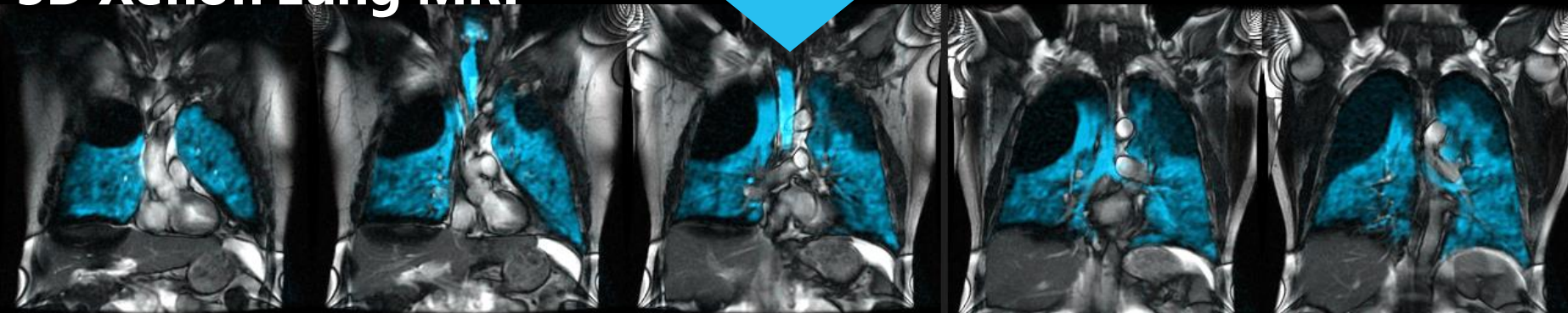
Underutilisation of MRI in lung imaging until **now**

- Limitations with traditional (proton) lung MRI
 - Low proton density (87% of lungs are air)
 - Multiple air/tissue interfaces
 - Long acquisition times and cardiac and lung motion
- Benefits of Xenon MRI
 - Utilises a **radiation-free** diagnostic pharmaceutical agent to **illuminate function**
 - **Visualises** and **quantifies** lung ventilation and gas exchange* in **the patient's own thoracic cavity**

3D (Proton) Lung MRI



3D Xenon Lung MRI



Inhaled hyperpolarised xenon gas, mimicking oxygen's path, uniquely visualises lung airways, tissue membrane*, and capillary networks* in a single 10-second breath hold

Xenon MRI Technology

Game-changing drug-device imaging product with per patient consumable

Hospital Hyperpolarisation Lab



Multi-dose Xenon Cylinder



Dose Production



Dose Measurement

XENOVIEW® Active Dose



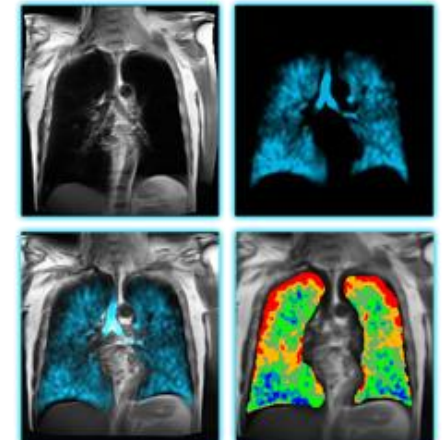
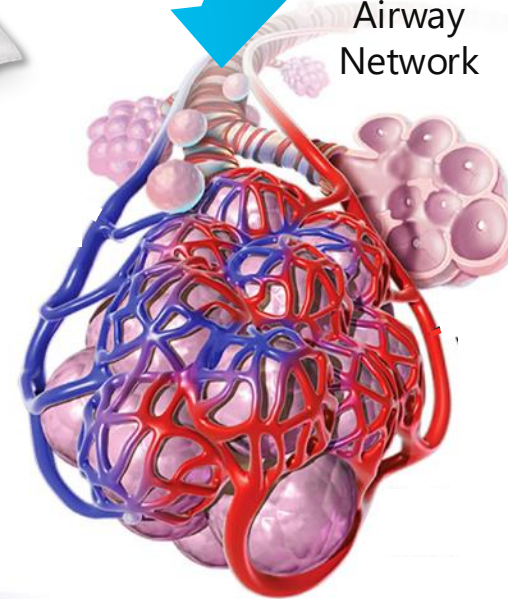
Hospital MRI Suite

Entering The "Silent Zone"



Lung Airway Network

XENOVIEW®
(xenon Xe 129 hyperpolarized) for oral inhalation



XENOVIEW® Indication

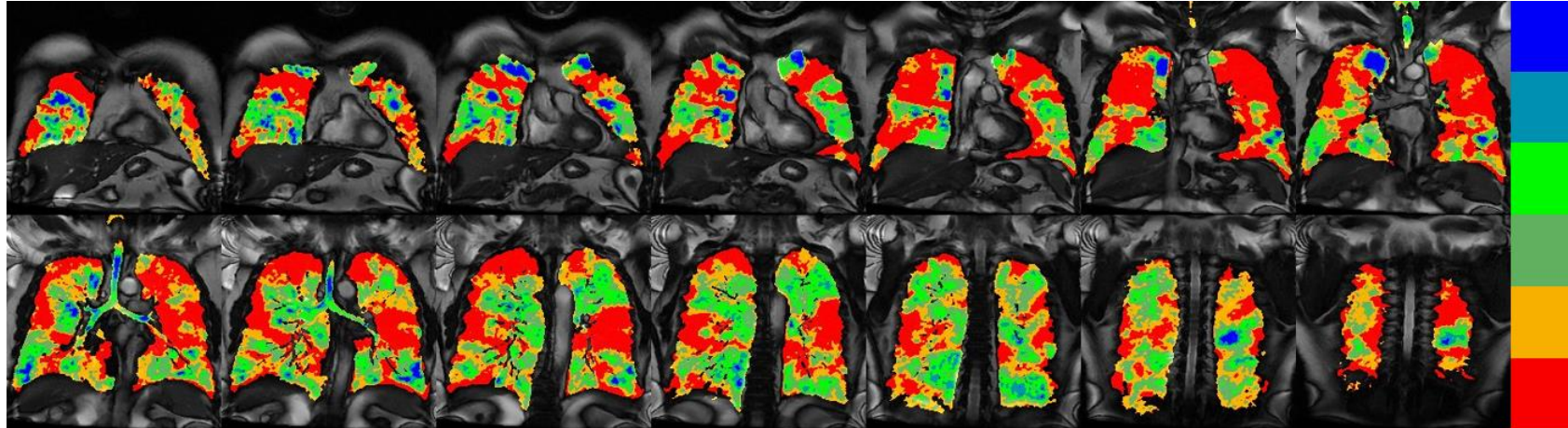
Prepared from the Xenon Xe 129 Gas Blend, is a hyperpolarised contrast agent indicated for use with MRI for evaluation of lung ventilation in adults and paediatric patients aged 12 years and older.

XENOVIEW has not been evaluated for use with lung perfusion imaging.

Our Solution: Xenon MRI Platform

Only pulmonary function test that provides regional visual and quantitative data

Pre-treatment



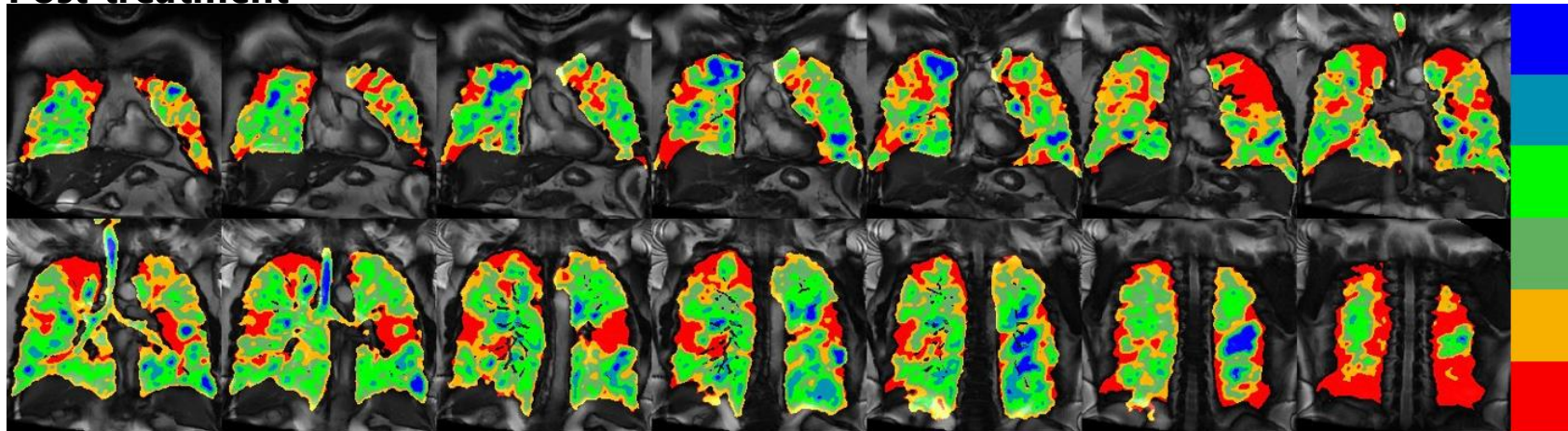
High

Ventilation Deficit Percentage (VDP)

Pre
34%

Low

Post-treatment



High

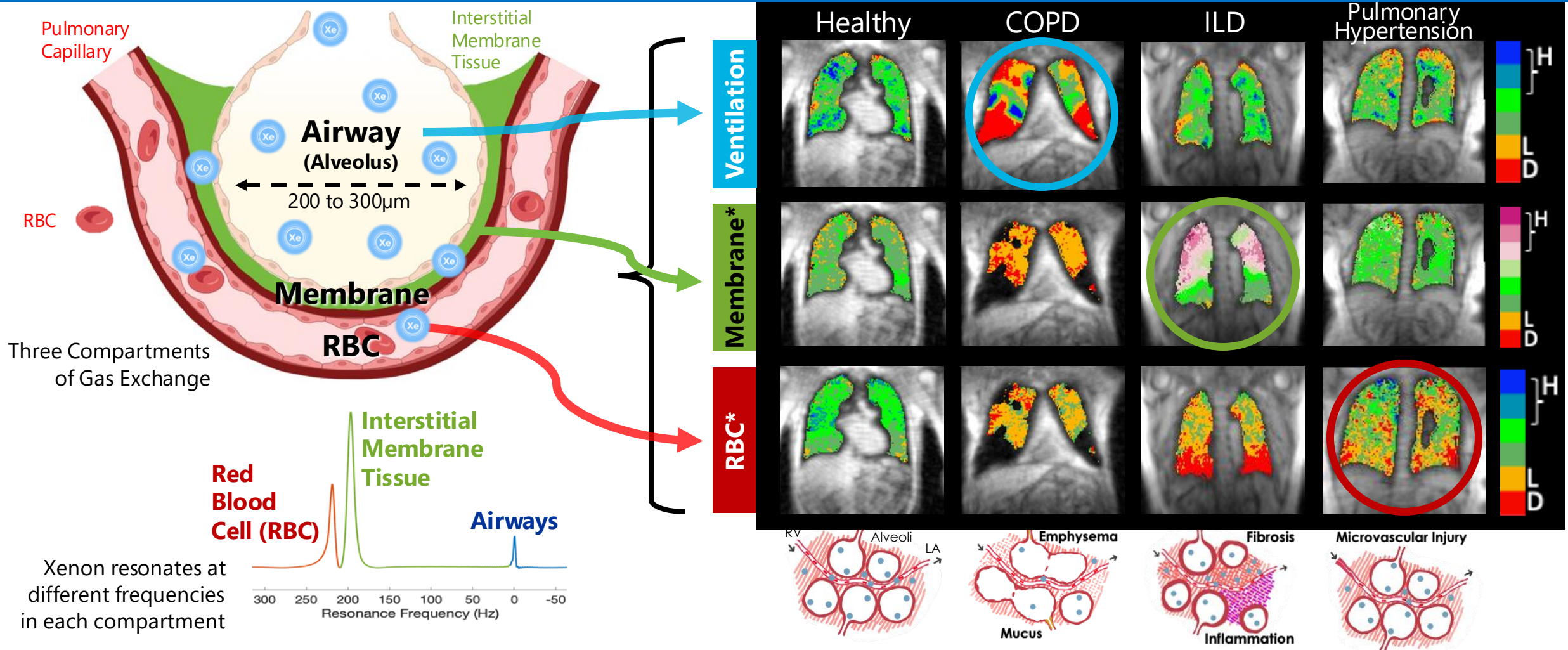
Ventilation Deficit Percentage (VDP)

Post
19%

Low

The Value – See More

Xenon MRI is uniquely suited to more precisely characterise multiple diseases



Xenon resonates at different frequencies in each compartment

Delayed Diagnosis: Losses Extend Beyond Time, Cost, and Health

The **ONLY** comprehensive solution providing a full picture in one 10-second exam

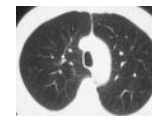
- Structure (Large Airways)
- Whole Lung Function
- Regional Small Airway Ventilation
- Gas Exchange*
- Pulmonary-Vascular Hemodynamics*
- Alveolar Microstructure*



Bronchoscopy



X-ray



CT



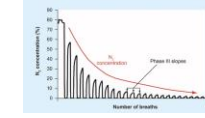
Stethoscope



Spirometry

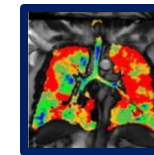


FeNO



N₂ Washout

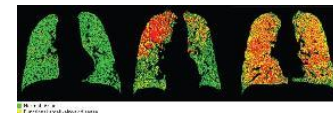
Xenon MRI



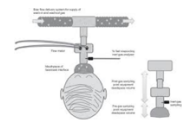
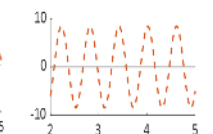
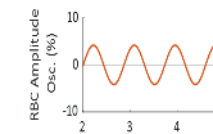
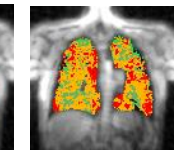
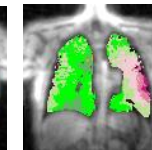
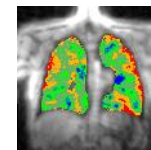
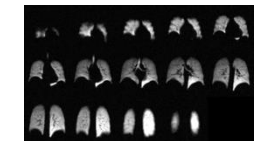
Defect	19%	2.6±1.8%
Low	25%	17.5±5.7%
High	10%	16.7±3.3%
CV	0.55	0.37±0.04



¹³³Xe Scintigraphy



CT Parametric Modeling



MIGET



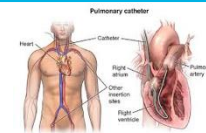
DLCO



CPET

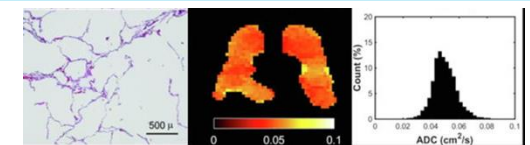


Echocardiogram



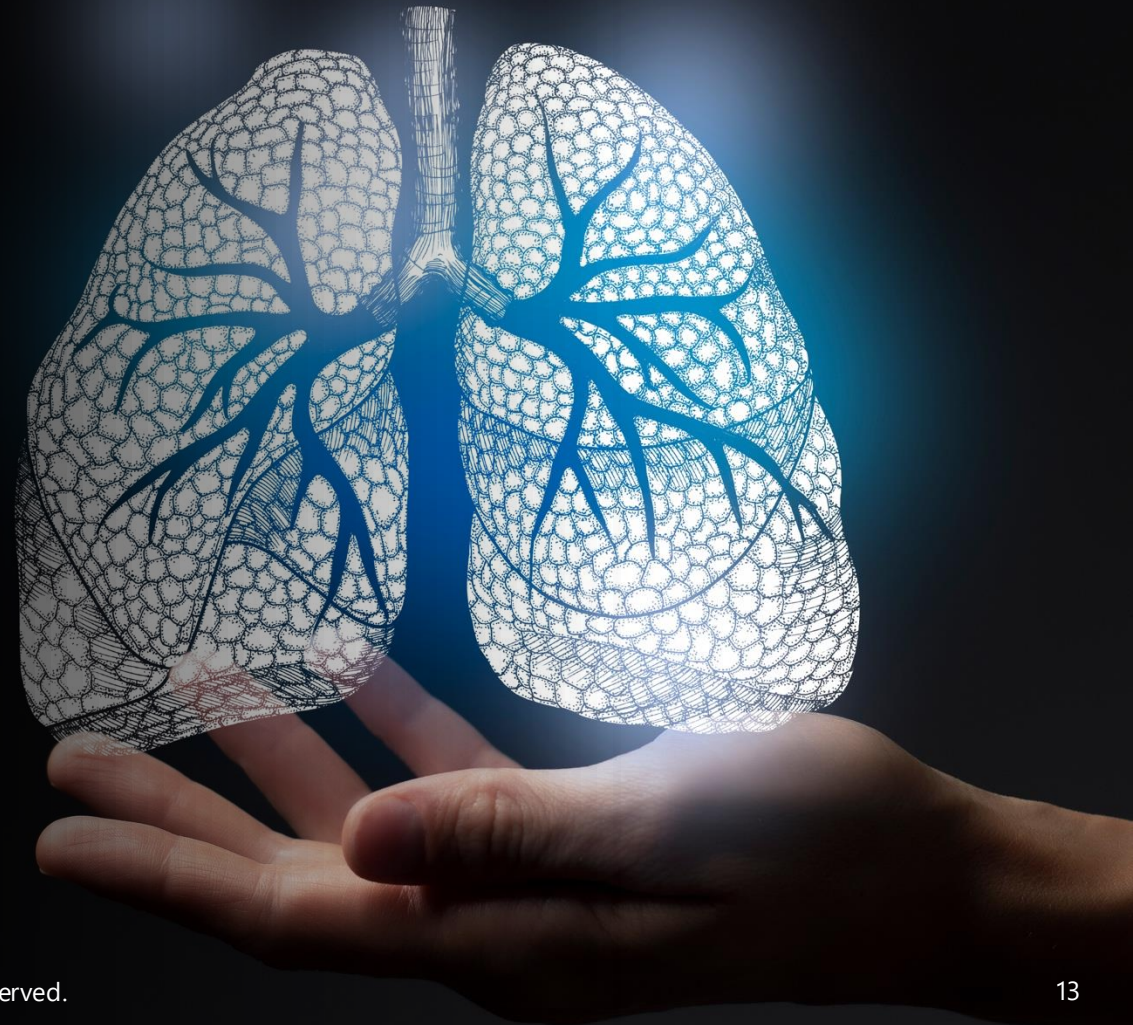
Right Heart Catheterization

Alveolar Microstructure*



Multiple entry points

- Pulmonology
- Cardiology
- Hematology
- Immunology
- Interventional Pulmonology
- Lung Transplant Surgery
- Radiation Oncology
- Radiology





Examples

- **Asthma**
- **Bone Marrow Transplant**
- **Lung Transplant**
- **Oncology (Surgical, Radiation, and Medical)**
- **COPD**

- **Unexplained Breathlessness**
- **Long-COVID**
- **Bronchopulmonary Dysplasia**
- **Cystic Fibrosis**
- **Deployment-Related Respiratory Disease**

- **Oncology**
 - ❖ **Surgical Planning**
 - ❖ **Radiation Planning**
- **COPD**
 - ❖ **Endobronchial valves**
- **Lung Transplant**
 - ❖ **Biopsy Guidance**

22 Xenon MRI Customers

Leading academic medical centers



5-fold Strategy

Generating value and paving the path for success in 2025 and beyond



**Drive
Utilisation**

1



**Grow
User-Base**

2



**Broaden
Reimbursement**

3



Expand TAM

4



**Develop
Partnerships**

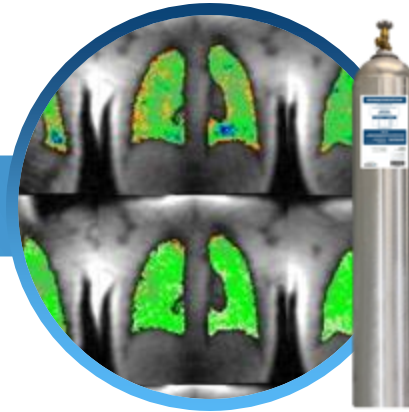
5

A three-pronged approach in market development phase



Convert Research Base

- Our Strongest Champions
- Enable handful of sites to begin utilising clinical gas



Drive Utilisation

- Target pulmonologists, surgeons, and radiologists
- Focus on multiple clinical applications, starting with ventilation imaging
- Future growth magnified through utilisation



Target Top-100 U.S. Lung Hospitals

- Build credibility with early influencers and publishers
- Leverage early success with research-base customers
- Pre-existing MRI compatibility
- Promote profitable ROI with reimbursement codes

Attractive reimbursement - 3 scans/week yields positive cash

- **US Healthcare Dynamics:**

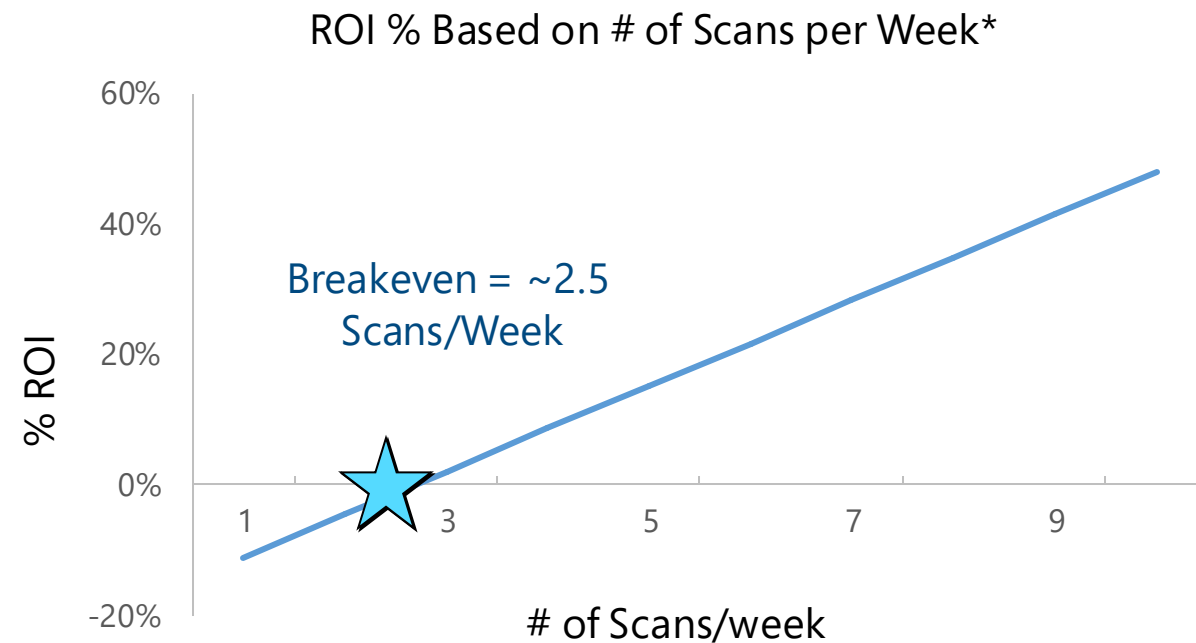
- Reimbursement drives technology adoption
- Payers include the US government (Medicare and Medicaid) and private insurers

- **Hospital Revenue Model:**

- Polarean reimbursement code offers incentive for additional hospital revenue while providing improved patient care
- Polarean reimbursement code enables return on investment (ROI) through covered scans and reduces financial risk

- **Polarean Opportunity:**

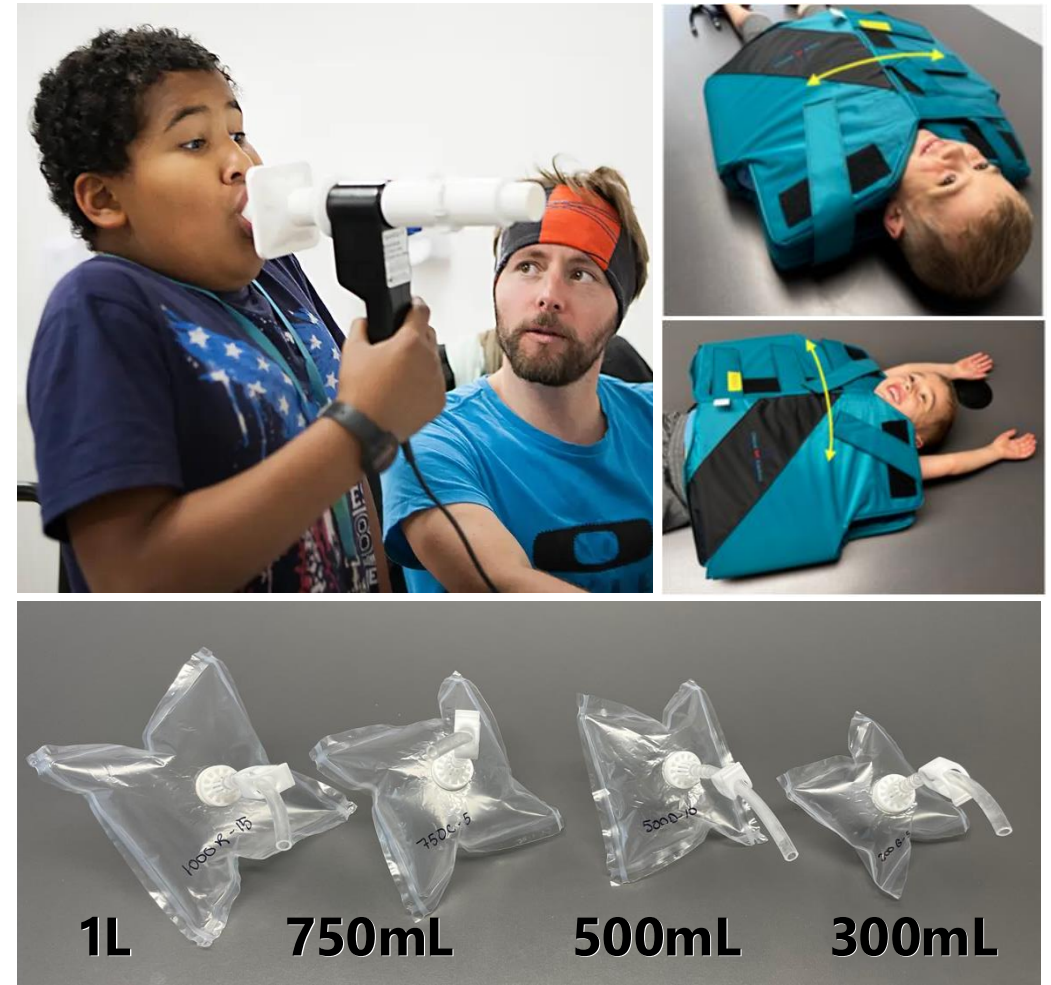
- Addresses a gap in functional lung imaging, enhancing diagnosis and care



Planned TAM Expansion*

Focused on high-value market expansion products

- Lowering On-Label Age (12 to 6 Years Old)
 - Submitted Supplement to FDA July 2024
 - Launch Controlled Market Release in H2 2025
 - Benefits both children and providers
 - ✓ No radiation, enabling safe longitudinal imaging
 - ✓ Simpler and less effort-dependent than spirometry
 - ✓ No reference equations required
 - ✓ Visualises lungs function to monitor progress and support compliance
 - ✓ Quantifies alveolar simplification in early childhood through adolescence
 - ✓ Gas exchange offers functional measurement of membrane conductance and RBC transfer



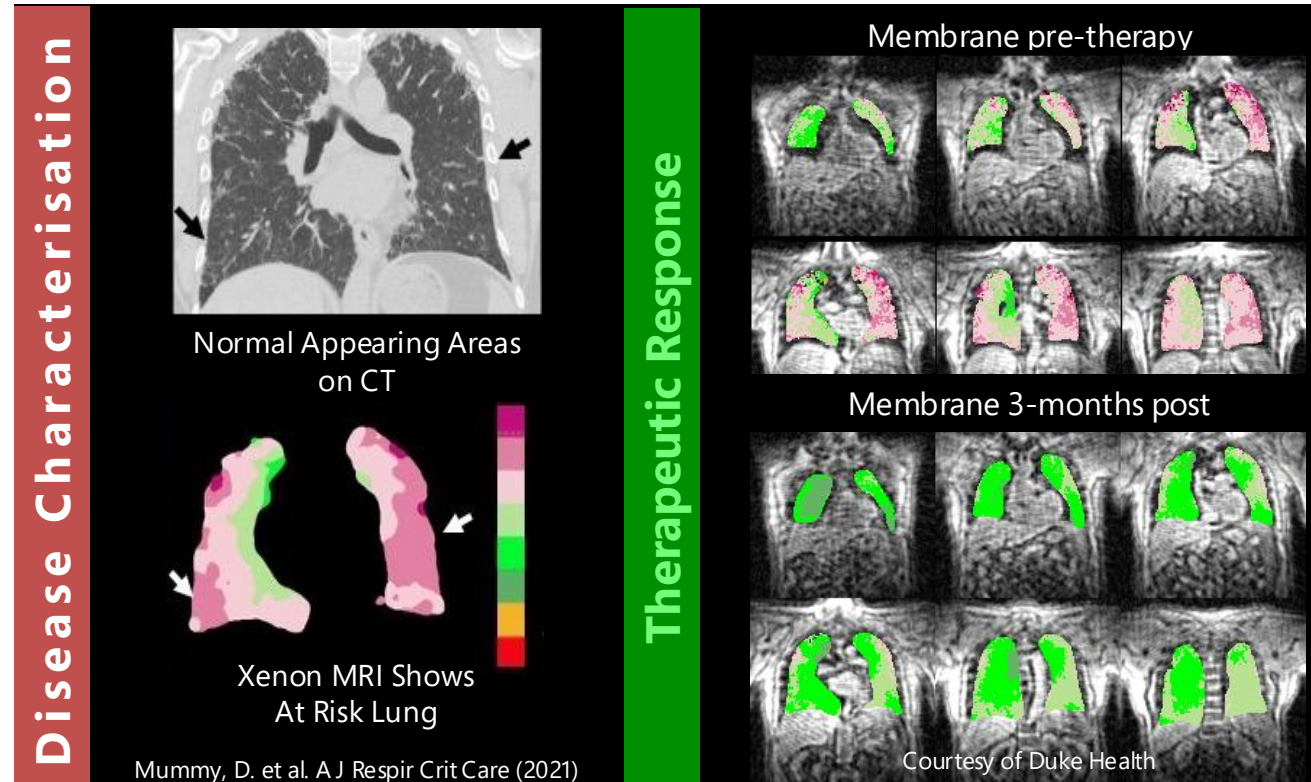
Planned TAM Expansion*

Focused on high-value market expansion products

- Gas Exchange
 - De-risked product label expansion by leveraging current product/research
 - ✓ Addresses a significant unmet clinical need
 - ✓ Strong product safety profile
 - ✓ Positive FDA Feedback from Type B meeting
 - ✓ Extensive regulatory process experience
 - ✓ Secured hospital reimbursement
 - ✓ Over 10 years of research in gas exchange science with numerous publications
 - ✓ Proof-of-concept study conducted with 142 subjects †

Allows disease characterisation and management of early active disease not explained by CT and/or Spirometry

Allows monitoring and optimisation of IPF antifibrotics



Polarean expansion into pharma-sponsored trials

- Strategic Partnership with VIDA
- Advancing Drug Development
 - Sensitive, non-invasive biomarkers potentially reduce sample sizes and accelerate time-to-market for new therapies
- Major Global Pharma Partner Selection
- Strengthening Market Position & Growth Strategy

Xenon MRI

Key Revenue Verticals



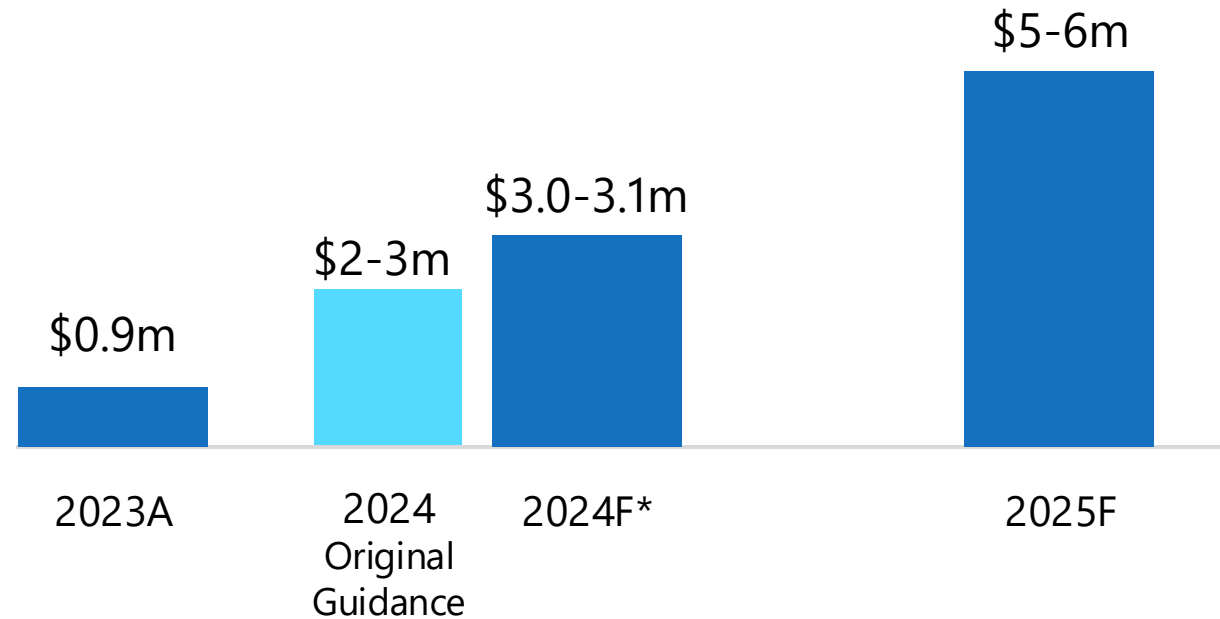
Pharma Companies Involved in Studies Using Xenon MRI Through Our Customers



Strong Finish to the Year

- Revenue
 - Updated 2024 Forecast to US \$3.0 - 3.1 m*
 - >50% growth in consumables, 2024 vs 2023
- Expenses
 - Investing in commercialisation efforts
 - Tight control of cash operating expenses
- Cash
 - \$12.1m* as of 31 December 2024, and no debt
 - Funds company until through Q1 2026
- Strong Strategic Investment
 - Bracco Imaging
 - NUKEM Isotopes

Revenue Growth



*Unaudited Financials

Why Invest in Polarean?

Revolutionising pulmonary medicine through direct visualisation of lung function

- ✓ Game changing drug device imaging product that addresses growing global health problem
- ✓ Pioneering functional lung imaging platform with large total addressable market
- ✓ Clear patient impact and attractive reimbursement programme
- ✓ Fostering additional partnerships with medical device and pharma companies with significant growth potential



Thank You!

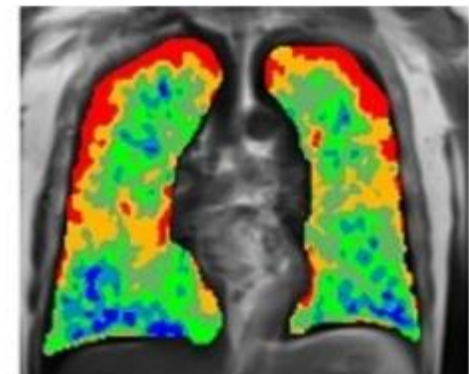
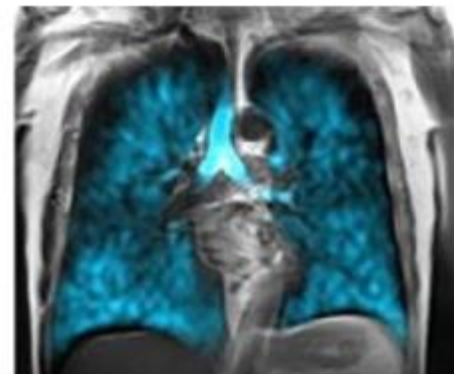
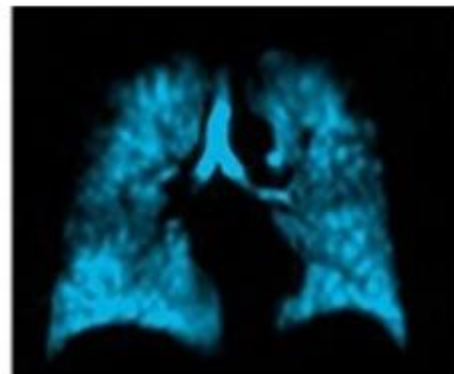
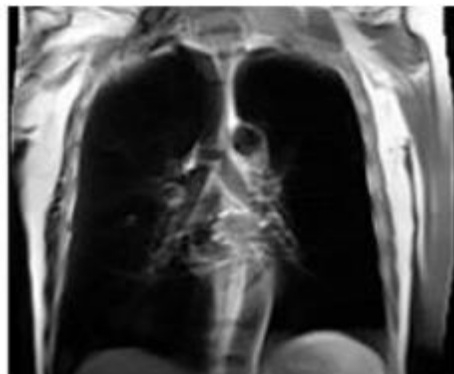
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Optimise lung health and prevent avoidable loss by illuminating hidden disease



Board of Directors

Industry leaders with extensive industry and leadership experience

			Selected Prior Affiliations
	Ken West	Non-Executive Chairman Former Polarean CEO, serial entrepreneur	 
	Dan Brague	Non-Executive Director Former CEO of Curium North America	 
	Jürgen Laucht	Non-Executive Director Former Managing Director of NUKEM Isotopes	
	Charles Osborne	CFO & Director	 
	Cyrille Petit	Non-Executive Director Chief Corporate Development Officer and Head of Strategic Initiatives, Bracco Group	  
	Frank Schulkes	Non-Executive Director Chief Financial Officer, Distalmotion	 
	Christopher von Jako, PhD	CEO & Director	