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Cyclopharm to Sponsor Silicosis Study Using Technegas®

Functional Lung Imaging Targets Earlier Detection of an Incurable Occupational Disease

Cyclopharm (ASX: CYC) today announced that its subsidiary Cyclomedica will sponsor VISTA (**V**entilation **I**maging of **S**ilicosis using **T**echnegas **A**erosol), a pilot study of Technegas® ventilation/perfusion (V/P) SPECT/CT imaging in up to 30 patients with silicosis across a range of disease stages. The study will be led by Professor Deborah Yates, a respiratory physician also qualified in occupational medicine, with more than two decades of experience in dust-related lung disease. The study will be conducted during 2027-2028.

Highlights

- Cyclopharm will sponsor VISTA, a clinical study using Technegas® functional lung imaging in patients with silicosis.
- VISTA will be led by Professor Deborah Yates and coordinated by the Asbestos and Dust Diseases Research Institute (**ADDRI**), a WHO Collaborating Centre for Elimination of Asbestos and Dust Related Disease.
- Silicosis is incurable and has resurged among engineered stone workers and miners both in Australia and internationally, with an estimated 600,000 Australians[1] and 2.3 million US[2] workers exposed to silica dust.
- Workers will be screened for silicosis with lung function testing and separate imaging with Technegas®, to measure lung function directly, without the need for algorithmic manipulation. This could potentially detect disease earlier than chest X-ray, spirometry or CT.
- The study will leverage AI-based quantitative analysis that supports a precision medicine approach to care, with a relatively low radiation dose.
- Technegas® is an Australian invention, manufactured in Sydney and exported to 67 countries. Success in occupational lung disease could expand demand for this Australian-made medical technology and support the health of workers in Australia and overseas resources sector.
- VISTA builds on Technegas® being named the preferred ventilation agent in the July 2026 international Guidelines[3] and the October 2026 Chinese expert consensus,[4] and extends the Company's Beyond PE strategy, a market the Company estimates at more than US$1 billion

Coordinated by ADDRI

VISTA will be coordinated by ADDRI, an independent, not-for-profit research institute located at the Concord Repatriation Hospital precinct in Sydney and a World Health Organization Collaborating Centre. ADDRI has implemented significant projects in silicosis research and is host to NSW's specialist statewide occupational respiratory disease multidisciplinary team,[5] which will confirm each participant's diagnosis and exclude other pathologies. For shareholders, this matters: independent coordination strengthens the credibility of the results and ensures optimal quality control.

Kim Brislane, CEO, ADDRI, said: "Early detection is one of the greatest unmet needs for people exposed to silica dust. A worker diagnosed early can be managed and monitored appropriately and, most importantly, before the disease advances. Too often, the tools we rely on will find silicosis only after the damage is done. ADDRI is pleased

to coordinate VISTA and to bring our multidisciplinary expertise to a study that could give clinicians a safer, more sensitive way to detect and monitor this disease."

Silicosis - a resurgent, incurable disease

Silicosis is a disease characterised by irreversible scarring of the lungs. It is caused by breathing in crystalline silica dust. There is no cure. Lung transplantation is the only definitive treatment for advanced disease. Mining is one of the largest sources of silica exposure. Black lung was re-identified in Queensland in 2015, decades after it was thought eliminated,[6] and in the USA it has resurged, with severe disease now appearing in younger miners, significantly earlier than in previous generations.[7] US research has identified silica from modern mechanised mining as a major driver of coal mine lung dust diseases. [8]

Silicosis has also surged among engineered stone workers in Australia. Engineered stone can contain up to 95% respirable crystalline silica as well as other toxins. Screening studies in two Australian states found silicosis in around one in four kitchen benchtop workers. [9] Australia implemented a world-first ban on engineered stone in July 2024. The ban prevents new exposure, but tens of thousands of previously exposed workers will need monitoring for decades.

Function comes before structure

Early detection is critical. Removal from exposure is the best way to slow the disease, yet many affected workers will have significant disease with few symptoms. Lung function often stays normal until disease is moderate to severe and chest X-rays show low sensitivity for disease detection. High-resolution CT (HRCT) scanning is now widely used as the primary imaging tool, revealing damage that has already become established.

A CT scan shows what a lung looks like; Technegas® shows how it is working by directly imaging where inhaled particles reach the lungs, rather than inferring function by algorithm. Technegas® has already detected early small-airway disease in smokers and early COPD while spirometry was still normal.[10] VISTA will test whether the same holds true for silicosis.

AI, precision medicine and radiation dose

Every scan will be measured by AI-based and quantitative software as well as read by physicians, mapping ventilation and perfusion to each lobe and segment of the lung to produce an objective, reproducible score that can stage disease and track change.[11] Because Technegas® captures function directly, AI is used to measure it, not to reconstruct it. This supports precision medicine: specific, measurable features of each patient's disease can be assessed that can be targeted and tracked.[12] Ventilation heterogeneity, which Technegas® measures directly, has already been identified as a potential treatable trait in severe asthma.[13]

Radiation dose matters for workers monitored over decades. In diagnosing pulmonary embolism (PE), the July 2026 Guidelines report that a Technegas® lung scan delivers a breast dose around 70 times lower than CT pulmonary angiography. Silicosis can be monitored with lower-dose HRCT, at around 3.2 mSv.[14] The full VISTA scan delivers an estimated 2–2.5 mSv and, if Technegas® ventilation imaging alone proves sufficient, around 0.6 mSv, about one-fifth of an HRCT.

A bigger market than Pulmonary Embolism

In July 2026, four leading nuclear medicine societies across the US, Europe and ANZ named Technegas® the preferred ventilation agent and recognised uses well beyond PE, within the scope of its FDA-approved indication for the visualization of pulmonary ventilation.[15] In October 2026, a Chinese expert consensus led by respiratory physicians, the specialists who treat occupational lung disease, made the same recommendation.

VISTA advances the Beyond PE strategy, a market the Company estimates at more than US$1 billion. Exposed workers are monitored over many years, creating potential for recurring scans. Health surveillance is already mandated in Australia and, above the action level, in the US. The opportunity is global: China reports around 450,000 people living with pneumoconiosis,[16] and Technegas® is already used clinically across most Chinese provinces.

Australian innovation and sovereign capability

Technegas® was invented at the Australian National University and is manufactured by Cyclopharm at its US FDA-licensed manufacturing facility in Kingsgrove, Sydney, from where it is supplied to 67 countries. VISTA is Australian led from beginning to end: sponsored by an Australian medical technology manufacturer, led by Australian

clinicians and coordinated by an Australian research institute. New indications such as occupational lung disease can increase demand for Technegas® generators and consumables made in Australia, supporting advanced medical manufacturing, skilled local jobs and sovereign capability in medical science.

The study also aims to protect the health of the workforce who are crucial to Australia's resources sector. Mining is one of the largest sources of silica exposure, and a safer, more sensitive way to detect and monitor silica-related disease supports the long-term productivity and safety of the workers on whom Australia's mining, tunnelling and construction industries depend.

Professor Deborah Yates said: "The tragedy of silicosis is that this disease is irreversible. A test that measures physiological changes in their early stages could allow us to pick up disease earlier, enabling workers to be removed from dust exposure and protected against further disease progression. It also opens the doors to finding new treatments."

Cyclopharm's Managing Director and CEO, James McBrayer, said: "Silicosis has re-emerged at a devastating scale among miners and engineered stone workers in Australia and the United States. We are proud to be working with Professor Yates and ADDRI on an Australian-led study of an Australian-made technology. This year, the clinical leadership of the US, Europe, ANZ and China named Technegas® the preferred ventilation agent. What sets Technegas® apart is that it shows how the lung is actually working, and precision medicine depends on measuring exactly that. VISTA puts it to work in a large workforce that already undergoes routine health surveillance."

This ASX announcement was authorised for release by James McBrayer, Managing Director, CEO and Company Secretary

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Professor Deborah Yates

Professor Deborah Yates is an occupational lung disease specialist, Senior Staff Specialist in Thoracic Medicine at St Vincent's Hospital Sydney and a Conjoint Professor at UNSW Sydney. She has co-chaired the Coal Mine Dust Lung Disease Collaborative Group and co-authored some of the earliest Australian reports of engineered stone silicosis.

Asbestos and Dust Diseases Research Institute (ADDRI)

ADDRI is an independent, not-for-profit medical research institute based at Concord Hospital, Sydney, and a World Health Organization Collaborating Centre. It is committed to reducing and ultimately eliminating the impact of asbestos and dust-related diseases, including mesothelioma and silicosis.

Cyclopharm Limited

Cyclopharm is an ASX-listed radiopharmaceutical company servicing the global medical community. The Company's mission is to provide nuclear medicine and other clinicians with the ability to improve patient care outcomes. Technegas® is manufactured in Sydney, Australia, and approved in 67 countries. Cyclopharm achieves this objective primarily through the provision of its core radiopharmaceutical product, Technegas, used in functional lung ventilation imaging.

Technegas

The Technegas technology is a structured ultra-fine dispersion of radioactive labelled carbon, produced by using dried Technetium-99m in a carbon crucible, micro-furnaced for a few seconds at around 2,700 °C. The resultant gas-like substance is inhaled by the patient (lung ventilation) via a breathing apparatus, which then allows multiple views and tomography imaging under a gamma or single photon emission computed tomography (SPECT) camera for evaluating functional lung ventilation. Historically used in the diagnosis of pulmonary embolism, Technegas, together with advancements in complementary technology, multimodality imaging, and analytical software, is being investigated and applied in other disease states, including COPD, asthma, pulmonary hypertension, and certain interventional applications, such as lobectomies in lung cancer and lung volume reduction surgery.

In the United States, Technegas® is indicated for the visualization of pulmonary ventilation and for the evaluation of pulmonary embolism when paired with perfusion imaging, in adults and paediatric patients aged 6 years and older. Please refer to the full US Prescribing Information for approved uses, important safety information and radiation dosimetry.

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