

INVESTING IN INHALATION INNOVATION: A FUNDING GUIDE FOR RESPIRATORY START-UPS

DDL2026
DRUG DELIVERY TO THE LUNGS

Here, the **DDL Incubator Committee** reviews the challenges, considerations and opportunities associated with the funding routes available to early-stage and start-up respiratory companies, ahead of the conference's novel DDL Incubator Hub titled "Investing in Inhalation Innovation".

THE CURRENT FUNDING CLIMATE

At a time of geopolitical unrest, market unease and investment uncertainty, understanding and sourcing the right finance to move a novel respiratory technology from bench to market can be a daunting task. Whether developing a novel inhaled therapy, a smarter dry powder inhaler or a connected nebuliser, the question for respiratory start-ups is the same: "Which money, when, and at what cost?"

The good news is that respiratory innovators can still raise capital. However, the particular challenge the sector faces today is that the funding environment is more selective, more concentrated and more politically uncertain than it was a few years ago, and that makes access uneven, especially for earlier-stage projects or start-ups.

Macro Headwinds

Economic volatility and higher interest rates throughout 2025 made investors more cautious about long-duration, high-risk assets such as life science R&D. Fundraising cycles have lengthened and some planned funding rounds were derailed. Even though overall biotech financing was relatively strong in dollar terms, capital has not flowed evenly – indeed commentators often refer to tightened financing and liquidity traps.

A Narrowing IPO Window

US biotech initial public offering (IPO) activity dropped sharply in 2025, with only

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a handful of companies raising more than US$50 million (£37 million). In the UK and Europe, public markets are an even clearer weak spot, with reports of three consecutive years without a UK biotech IPO. That means, specifically for UK respiratory start-ups, companies cannot count on a public listing to refinance their pipelines; instead, they will need to stretch private capital further and think creatively about structure. Meanwhile biotech IPO activity across the Asia-Pacific region has experienced a notable rebound, driven heavily by Hong Kong's market leadership. This rebound has been characterised by a strong first half of fiscal year 2026–27, followed by an environment where investors have been increasingly selective.

The Rising Gap Between Haves and Have-Nots

Capital is concentrating into fewer, larger mega-rounds for later stage, clinically validated assets, which is resulting in a widening gap between those and early- and mid-stage companies. Companies or projects with strong validation still attract oversubscribed rounds while less proven platforms can struggle to secure any institutional funding at all.

Policy Uncertainty and Competition for Capital

Proposed cuts to the US FDA's budget, and therefore staff, and contentious drug-pricing initiatives have been cited as major obstacles to financing confidence. Meanwhile, the industry is also competing with artificial intelligence, which recently absorbed an estimated 80% of global venture capital in just a single quarter. Add to that the reductions in public research funding, and fundraising is becoming a full-time job for biotech founders, with investors wanting more third-party validation before they commit.

FUNDING OPTIONS AT A GLANCE

Table 1 provides a practical overview of the funding options available to early-stage respiratory companies and start-ups. Of those, the five options highlighted here are most often the key ones to focus on.

Bootstrapping: Buy Time and Keep Control

Bootstrapping means growing a business with personal savings, consulting income and early revenue. It keeps the founders in full control, but capital is limited and scaling is slow. Many companies bootstrap in a broader sense, stitching together grants, small contracts, and shared lab or incubator space to delay dilution. This works best when capital burn is low, such as a virtual model using contract research organisations, or when working on a narrow device or diagnostic proof-of-concept.

Funding route	What it is	Positives	Negatives
Bootstrapping	Self-funding through personal resources or early revenue	Full control; no dilution; fast decisions	Limited capital; personal financial risk; slower scaling
Friends & family	Early money from personal contacts	Quick access; flexible terms; early validation	Relationship risk; limited strategic input
Grants & public funding	Non-dilutive funding from public or institutional bodies	Non-dilutive; credibility; supports R&D	Slow processes; reporting and admin burden
Angel investors	Individuals backing early-stage companies with capital and advice	Mentorship; networks; early-stage expertise	Equity dilution; investor quality varies
Seed funds & venture capital	Professional investors funding high-growth start-ups for equity	Large capital; scale quickly; strong signalling	Significant dilution; growth pressure; reduced control
Accelerators & incubators	Structured programmes offering mentorship and small funding for equity	Mentorship; investor access; credibility	Equity for small capital; time-intensive
Revenue-based financing	Non-equity funding repaid as a percentage of revenue	No dilution; repayments scale with revenue	Requires revenue; cash-flow impact
Debt/loans	Borrowed capital repaid with interest	No equity loss; predictable cost	Repayment risk; personal guarantees often required
Corporate/strategic investment	Investment from established companies seeking strategic alignment	Market access; industry knowledge; partnerships	Strategic constraints; slower decisions
Crowdfunding	Raising from many individuals via online platforms	Validation; marketing exposure; community	Admin complexity; disclosure risk; investor management

Table 1: Funding options for respiratory start-ups, kindly provided by DDL speaker Chris Hall of Shallcross Partners (Norfolk, UK). Routes highlighted in bold will be discussed in detail during the DDL Incubator Hub.

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Grants: De-Risk the Science Without Giving Away Equity

Grants do not need repaying and usually do not cost equity. The trade-off is slow processes, deliverables, audits and reporting, so companies need clear workplans and endpoints. Used well, grants can validate the science and de-risk early milestones before a larger equity round.

Angel Investors: Smart Money at the Early Stage

Angels and family offices, often experienced entrepreneurs or industry executives, bring capital plus networks and domain expertise. For respiratory start-ups, an angel investor with inhalation, device or regulatory experience can be worth far more than the cheque. The caveat is that bringing investors onboard requires giving away equity. Also note that investor quality varies, so it is critical to choose angel investors carefully.

Seed and Venture Capital: Fuel to Scale

Venture capital is typically the main source of scale capital once initial technical risk is mitigated, and the company needs to fund preclinical packages, clinical trials and manufacturing. It offers large sums and strong market signalling, but it is expensive – significant equity dilution, board oversight, milestone pressure and an expectation of a high-value exit all come with venture capital investment. Furthermore, the timing really matters, as raising capital after grants and early data have cleared key inflection points regularly results in a higher valuation and stronger negotiating position.

Corporate and Strategic Investment: Capital Plus Muscle

In standard industry practice, pharma and device companies invest in smaller biotech firms through corporate venture arms, option-to-license and co-development deals, sponsored research and early distribution agreements. For inhalation innovators, a strategic partner can bring formulation, device, regulatory and manufacturing capability that would be costly to build alone. The downside is strategic constraint, slower decision-making and careful management of intellectual property (IP) and exclusivity.

Stage	Main Investor Type	Typical Raise
Idea/prototype	Bootstrapping	£0–30k
MVP and traction	Friends and family	£30–100k
Early growth	Grants and angel investors	£100–250k
Scale-up	Seed funding and series A venture capital	£250k–1m
Expansion	Series B+ venture capital and strategic investors	£1m+

Table 2: A typical funding journey.

THE TYPICAL FUNDING JOURNEY

Funding routes are rarely chosen once – they stack up over time. A typical path is shown in Table 2. As a start-up progresses through its journey, founder ownership can fall from 100% to as little as 10%. Therefore, two questions matter at every stage – first, "How can development and scale-up costs be minimised while maximising income, thereby reducing the need for external funding?", and second, "What is needed to be credible to investors when moving to the next step?"

WHAT "INVESTOR READY" REALLY MEANS

Investor readiness is not just having a presentation deck and a good idea. It means that a company can withstand professional scrutiny and justify the capital it is asking for, which, in practice, means fulfilling the following criteria:

- **Science and IP De-Risking:** Robust data, not just hypotheses, plus a clear IP and freedom-to-operate position.
- **A Value Inflection Map:** Milestones such as proof-of-concept, safety packages, device verification and clinical readouts, with each injection of capital tied to a point where risk drops and value rises.
- **A Coherent Narrative:** Connecting an unmet respiratory need, a novel solution, the competitive landscape, the regulatory path and commercial potential.
- **Structured Operations and Governance:** A functioning team with defined roles, ready for board oversight and reporting.
- **Financial Clarity:** A realistic capital burn rate, use of funds, timelines and valuation logic, including dilution and capitalisation table.
- **External Validation:** Grants won, accelerator places, key opinion leader support and early partnerships (i.e. evidence that others have already tested the company's claims).

THE BOTTOM LINE

The funding environment is tougher than it has been for a while, but it is not closed. Respiratory start-ups that combine the right routes in the right order – bootstrapping and grants to prove the science, angel investors to build momentum, venture capital to scale and strategic partners to reach patients – will be best placed to secure the capital they need. To achieve success, companies should start with credibility, protect their equity for as long as they can and make every funding round count.

ABOUT THE CONFERENCE

The Drug Delivery to the Lungs Conference (DDL) is a not-for-profit conference dedicated to advancing the science and technology of pulmonary and nasal drug delivery. Held annually in Edinburgh, DDL brings together scientists, researchers, clinicians and industry professionals from across the world to share the latest research, exchange knowledge and explore developments in inhaled and nasal drug delivery. Established as a leading international meeting in the field, the conference provides a valuable forum for scientific discussion, collaboration and networking across academia and industry.

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