



DESTINATION STARTUP

RespirAI Medical

One-Sentence Summary of What You Do: RespirAI Medical developed wearable technology that tracks the progression of Chronic Obstructive Pulmonary Disorder (COPD) and can predict incoming disease exacerbations.

Affiliated Institution: University of Nebraska Medical Center

Have you formed a company yet? Yes

Funding/Financing: Grant Funding, Direct/Indirect University Support, Angel Funding (including Self or Friends/Family)

Please describe your company and the problem you are trying to solve: Chronic Obstructive Pulmonary Disorder (COPD) is the fourth leading cause of death worldwide but has no ongoing means of treatment and no cure. It is the only chronic disease that is on the rise in the US. RespirAI uses a revolutionary biomechanics-based wearable device combined with cloud based algorithms to track the progression of the disease. Prototype devices, in a clinical study, were able to predict the onset of exacerbations. Like asthma attacks, these acute episodes often land patients in the ICU for days. COPD is complex, difficult to manage and expensive: costing the US healthcare system 50 billion dollars a year.

RespirAI's inexpensive wearable device uses off the shelf components that track the wearers' walking and breathing. Invented at the University of Nebraska Omaha, home to the largest free standing Biomechanics laboratory in the world, RespirAI uses a cutting edge algorithm to use this simple data to stage, diagnose and monitor the disease. By avoiding a single exacerbation, RespirAI's system saves \$10,000 in medical costs.

RespirAI's technology has undergone extensive clinical study. From a multisite, multi-state US study to a soon-to be launched advanced study in Israel, and countless laboratory studies in between, the RespirAI technology has undergone rigorous field testing and achieved substantial improvement. The latest generation technology is more durable, more readily exports data, is far more comfortable for patients and much less expensive to produce.

What is/was your go-to-market strategy? RespirAI has a two phase go to market strategy. Upon the completion of the ongoing study in Israel, the team will use that data to advance ongoing discussions with pharmaceutical companies. RespirAI's products show promise for monitoring the efficacy of drugs trying to treat COPD as well as monitoring progression of the disease as well. Those contracts will help to develop further data that is curated for COPD stage, phenotype and history which will help the team in Omaha further tune and automate the algorithm.



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As the team continues to develop the device and algorithm from the pharmaceutical clinical studies projects, RespirAI will begin to assemble the needed data for its first regulated product -- COPD patient monitoring. With that data in hand, RespirAI can start phase II.

With the data from the pharmaceutical clinical studies in hand, RespirAI will assemble a 510K application directed towards patient monitoring. Focusing on the simplest claims for which to prove equivalency, RespirAI will start with patient monitoring claims and work up to the largest value inflection: prediction of COPD exacerbation. Once established with an FDA-cleared product that can predict the onset of COPD exacerbations, RespirAI will have a strong patent position, a vetted, FDA cleared product, and first mover advantage for a product that will revolutionize an enormous and growing global health threat. With its low cost technology, RespirAI is poised to expand globally to improve the lives of every COPD patient.

How will/do you generate revenue? Using RespirAI's two phase approach, initial revenue will come from pharmaceutical clients. With major pharmaceutical companies already expressing tangible interest, RespirAI designed the current clinical study in Israel to produce the data needed to land pharmaceutical contracts. The business model for clinical research is durable and sustainable. The NIH alone spends over 100 million dollars on COPD research. Moreover, the data that the research studies will generate will prove invaluable for developing RespirAI's algorithms and AI.

That data will further fund the development of RespirAI's medical products. In 15 years it will be the leading cause of death worldwide. RespirAI's products will help to manage and treat the disease, allowing patients to live longer lives with milder symptoms. Because it is a patient tracking service, there are multiple models by which RespirAI can be paid. Based on preliminary customer discovery the model that best fits developed countries, like the US and Israel, is a clinical subscription amongst pulmonology clinics.

With its remote monitoring devices and analysis-as-a-subscription service, RespirAI has flexibility in its business model which can adapt the varied healthcare systems throughout the world. As the technology improves, lower fidelity sensors will feed a more advanced algorithm, making the wearable device simpler and the cloud based software smarter -- shifting the economic value away from the device and more towards the analysis.

How will this showcase benefit your company or technology? RespirAI will seek equity investments shortly. With a generous grant from the Israeli Innovation Authority and ongoing support from the University of Nebraska's Omaha Medical Technology Pipeline EDA i6, the company has done substantial development with non-dilutive funds. At the conclusion of the upcoming Israeli clinical study, RespirAI will have a production prototype, an advanced algorithm and a thick stack of data. It is the perfect time to pursue investors for a seed round.



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RespirAI also looks forward to a more rigorous customer discovery program. With the benefit of its presence in both the United States and in Israel, the company has a golden opportunity to integrate a diverse range of opinions into its product designs. The first such program the company has considered, destination startup is a great opportunity to step back and really challenge the assumptions of RespirAI's underlying business before the big push when the study is completed.

COPD is an enormous opportunity and RespirAI will need robust partnerships. The chance to lean into the amazing community of destination startup is a great chance to find the partners that RespirAI is looking for and, more importantly, the ones that RespirAI is not looking for. There is so much left to do in order to bring life changing COPD products to market, beyond business fundamentals and smart money RespirAI will need the connections that Destination Startup will bring to realize its potential!

Who are the members of your team and why is this the right team to get the job done?

- Nimrod Bin Nun, Co-Founder and CEO: Mr. Bin-Nun has over 16 years of extensive experience in global Pharma, Medical Devices and Diagnostics companies in Finance, Business Development and top managerial positions.
- Assaf Gur, Co-Founder and CTO: Mr. Gur is a Medical Devices professional with more than 20 years' experience in senior management positions in medical device companies. Assaf specialized in leading multidisciplinary teams in the development and registration of medical devices.
- Nicholas Stergiou, Inventor: Founder of the University of Nebraska Omaha department of biomechanics, Nick is world renowned for his application of non-linear analysis to find hallmarks of disease in biorhythms. Nick assembled the teams of pulmonologists and biomechanists that produced the original invention that produced RespirAI
- Jenna Yentes PhD Inventor: Jenna established the approach that coupled walking and breathing into a single analysis. Jenna's commitment to finding improved ways to treat COPD come from her own family's experience with COPD and inspired her to lead a multi-site clinical study using an early prototype for the device. Jenna founded the Omaha laboratory that is working to automate her original algorithms.
- Aaron Likens, PhD researcher: Dr. Lickens is a data scientist and biomechanist that is currently working with RespirAI to develop next generation automation to better scale RespirAI's data analysis. He leads the analysis team at the University of Nebraska Omaha.
- The international team is ideal to bring RespirAI's analysis as a service product to market: a combination of business leaders, medical device engineers, biomechanists and data scientists.