tyto care™

Tyto Insights™: AI-Powered Respiratory Suite

An unparalleled foundation for home diagnostic AI

At TytoCare, we're using AI to make virtual care more powerful, more accurate, and easier to scale. Our AI technology is built to detect key respiratory sounds like wheeze, crackles, and rhonchi during remote exams, helping providers catch issues early and make better decisions, faster.

Our AI is set apart by the data behind it. With over seven million recorded exams, we've built a one-of-a-kind dataset made up of real-world clinical exams that is constantly expanding and improving.

We follow a clear, structured process to build each algorithm, which has led to our multiple clearances from the FDA and CE. That means partners can trust our technology to deliver results that are not just smart but safe, accurate, and ready for clinical use.

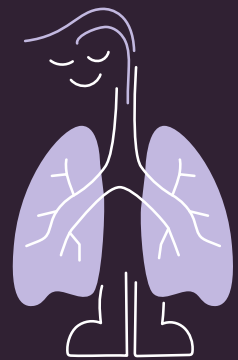## TytoCare's AI: Under the hood

TytoCare's AI is built with clinical quality in mind, every step of the way. Our framework combines real-world data, medical expertise, and rigorous development to ensure each algorithm is safe, accurate, and ready for use in real care settings.

It starts with data. Using the over seven million remote exams captured through the TytoCare platform, we collect large volumes of anonymous clinical data - including sounds, symptoms, and exam context - that reflect how patients present in real life.

Next, this data is reviewed by clinical specialists across relevant fields, such as pulmonology, allergy, cardiology, and ENT. These experts help identify and label patterns like wheeze, crackles, and rhonchi, laying the groundwork for accurate AI detection.

Our algorithm teams then use this expert-reviewed data to train and refine the Tyto Insights™ engine for each specific condition. The result: powerful AI tools that support earlier detection, faster triage, and better clinical decision

Finally, every algorithm is submitted for FDA 510(k) or De Novo clearance, so partners and providers can trust that it meets the highest standards for safety, accuracy, and regulatory oversight.

7M+
total exam data

1.8M
lung sounds

1.2M
ear images

800K
heart sounds

600K
throat images

Tyto Insights™ Respiratory Suite

Our Respiratory Suite is designed to support earlier, smarter decision-making for some of the most common and high-impact respiratory conditions. It includes three FDA-cleared algorithms that automatically detect:

Wheeze

Crackles

Rhonchi

These sounds are key indicators in diagnosing and managing conditions like asthma, COPD, and bronchitis. By identifying them early during a remote exam, TytoCare's Respiratory Suite helps frontline clinicians catch issues that might otherwise be missed, especially when a patient isn't physically present.

When wheezes, crackles, or rhonchi are detected in a patient's exam, clinicians receive an indication within the clinician platform. Clinicians can listen to the lung sounds and review insights simultaneously, with any sounds detected highlighted in the recording. For clinicians, this means greater confidence in remote respiratory assessments, better triage decisions, and support for treatment planning without needing to wait for in-person follow-up or specialist input.

For health systems and payers, it means scaling high-quality virtual care, while reducing unnecessary visits, improving clinical workflows, and expanding access to timely care, especially for patients with chronic conditions.

By combining real-world data, clinical expertise, and proven technology, our Respiratory Suite brings a new level of precision to virtual exams and makes every remote visit more actionable.

AI Accuracy, Backed by Clinical Evidence

The algorithms in our Respiratory Suite don't just detect key lung sounds - they do it with a level of accuracy that measures up to experts. In clinical testing, our AI achieved an AUC (area under the curve) of 95.85% for identifying wheeze, crackles, and rhonchi. That's significantly higher than the performance of both general practitioners (79.45%) and medical specialists (83.03%*).

AUC is a gold-standard measure that reflects how well the AI can distinguish between different sounds - not just spotting what's there, but knowing what's not. It's a strong signal of how much clinicians can trust the results, helping them move forward with confidence in remote respiratory assessments.

Sign	GPs	Specialists**	Tyto
Wheeze	48% / 96% / **0.82**	80% / 96% / **0.88**	54% / 98% / **0.97**
Crackles	57% / 90% / **0.76**	75% / 97% / **0.86**	71% / 98% / 0.97
Ronchi	56% / 93% / **0.79**	61% / 92% / **0.83**	60% / 99% / **0.95**

Sensitivity/Specificity/AUC

* The FDA's clearance was supported by evidence demonstrating that the algorithm is as good as primary care clinicians at identifying wheezes, crackles, and rhonchi.
** Not submitted to the FDA. In an analysis of internal retrospective real-world data, Tyto Insight algorithms demonstrated better performance compared to PCPs and pulmonologists.

Learn more

TytoCare's AI is already transforming how respiratory care is delivered - making it smarter, faster, and more accessible. Want to dive deeper?

Let's talk

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