

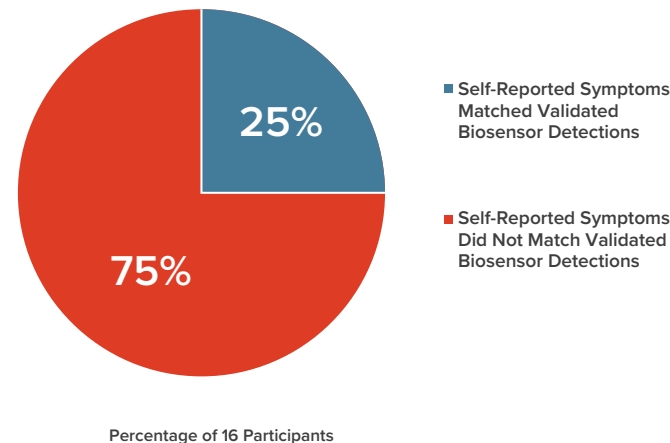
Background

- Patient self-reported symptoms are commonly used to track patient health trajectories in clinician trials and in clinical practice.
- The DETECT (Digital Engagement and Tracking for Early Control and Treatment) Health Study is a mobile application-based nationwide study by researchers at Scripps Research to evaluate whether remotely tracking individualized changes in physiology can detect early viral infections.¹
- In this sub-study of DETECT, it was hypothesized that objective cough tracking would detect more patients with coughs than cough tracking via self-reported symptoms.

Methods:

- The DETECT Health Study recruited adults in the United States who had joined the DETECT study by downloading a smartphone app.¹ This sub-study enrolled 30 adults within the DETECT study population between December 2021 through February 2022.
- Participants were instructed to self-report respiratory symptoms via digital surveys. Concurrently, participants underwent 16 hours of baseline continuous lung sound monitoring using the RESP™ Biosensor (Strados Labs, Philadelphia, PA), an FDA-cleared wearable device.
- If participants developed symptoms of respiratory infection, including fever, chills, coughs, body aches, headache, or sore throat, they underwent further cough monitoring by self-applying the RESP Biosensor.
- The RESP Biosensor collected digital stethoscope readings that were validated by clinicians trained in auscultation. Self-reported symptoms were compared to coughs captured by the RESP Biosensor.

A Comparison of Self-Reported Cough Symptoms vs Validated RESP™ Biosensor Cough Detections



Strados™ Respiratory Care Platform and the RESP Biosensor

Results

- All 30 participants provided baseline RESP Biosensor readings but only 16 participants self-reported presence or absence of symptoms during the study.
- Of these 16 participants, 11 had coughs captured by the RESP Biosensor but did not self-report cough. One patient self-reported cough at baseline but no coughs were detected during the 16 hours of baseline continuous monitoring.
- Six participants developed respiratory symptoms during the study and additional cough monitoring via the RESP Biosensor was performed. All six participants had coughs captured by the RESP Biosensor, but only two patients reported coughs as one of their symptoms.

Conclusions

- Objective cough monitoring using the RESP Biosensor is more reliable than patient self-reporting. Self-reporting by 75% (12/16) of participants did not match objective cough monitoring.
- More participants (30 vs 16) provided cough data using the RESP Biosensor than using a digital survey.
- 67% (4/6) of participants who developed respiratory symptoms did not self-report coughs despite having coughs captured by the RESP Biosensor.
- Strados Labs' RESP Biosensor provides clinically useful data that could be used in addition to or in replacement of patient-self reporting. Objective cough monitoring may be more reliable than patient self-reporting in detecting early symptoms for disease surveillance.

References:

1. Jennifer M Radin et al, The Lancet Digital Health, 2022, Volume 4, Issue 11, e777-e786. [https://doi.org/10.1016/S2589-7500\(22\)00156-X](https://doi.org/10.1016/S2589-7500(22)00156-X).