BioSpectrum
the business of Bio & Health Sciences
ASIA EDITION

Researchers in Korea explore use of smartphones to help detect lung problems in children

October 19, 2026 | News

Researchers have developed a domain-adaptive deep learning framework for smartphone-based detection of abnormal lung sounds



Respiratory disease in children is a major global concern. Although stethoscopes help clinicians detect abnormal lung sounds, access to auscultation may be limited by the need for in-person visits.

Smartphones could enable home-based respiratory screening, but applying AI models trained on electronic stethoscope recordings to smartphone audio remains challenging due to differences in sound capture.

A research team from the Department of Applied Artificial Intelligence (AI), Seoul National University of Science and Technology in South Korea, has developed a domain-adaptive deep learning framework specifically designed for smartphone deployment.

The researchers collected paired stethoscope-smartphone recordings from 611 children aged 0–6 years, including 147 with paired smartphone recordings. Lung sounds were recorded at the same four anatomical sites. Such paired datasets are rare. Additionally, an independent external dataset of smartphone-only recordings from 48 children was collected for validation.

"Our framework provides a proof-of-concept for scalable and cost-effective pediatric respiratory screening," said the researchers. "It could help parents home screen children between visits while keeping clinicians in the loop. Moreover, such technology could improve remote clinic consultations and aid community healthcare workers in frontline triage in remote areas."