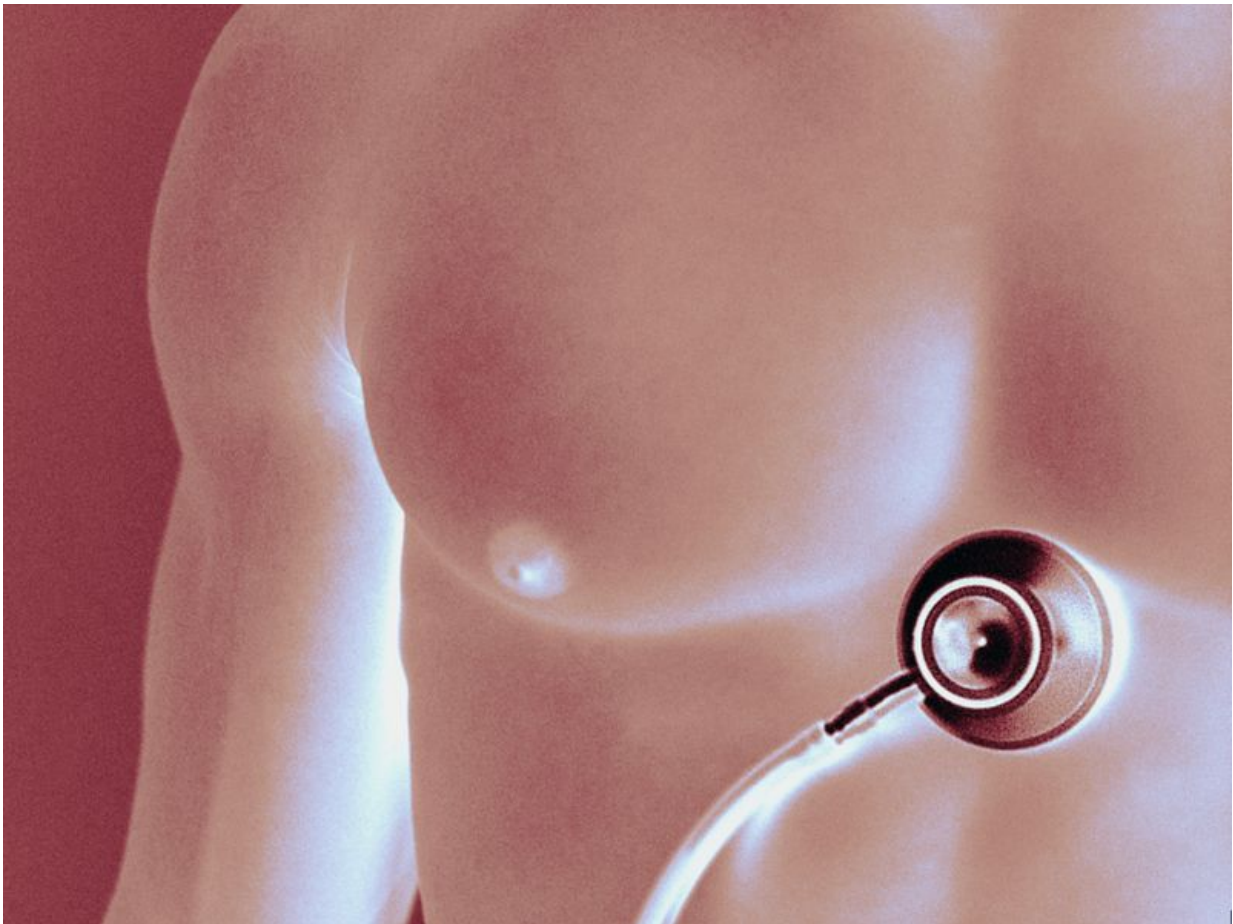# Computer-assisted stethoscope can ID respiratory sounds

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(HealthDay)—A computer-assisted stethoscope can quickly and

accurately identify respiratory sounds, according to a research letter published online Feb. 16 in the *Annals of Internal Medicine*.

Shinichiro Ohshimo, M.D., Ph.D., from Hiroshima University in Japan, and colleagues developed a computer-assisted stethoscope to record respiratory sounds and identify how much of the overall respiratory sound belongs to each of five respiratory sounds. The algorithm physically and mathematically separates the overall sound into groups based on the blind-source separation method, and is fast enough to enable real-time analysis of respiratory sounds.

The researchers recorded respiratory sounds from 878 individuals to create the sound templates. These sounds were independently classified by three experienced respiratory physicians; templates used respiratory sounds that were classified identically by all three physicians. A pentagon chart was created to display the results, with each vertex representing one of five sounds; a line from the center to a vertex measured how much of that sound was present. The measurement was displayed on the chart by plotting a point on each line, connecting each point to adjacent points with new lines, and coloring the area between the center and new lines.

"Most electronic stethoscopes focus on digitally recording respiratory sounds and less on classifying them," the authors write. "In contrast, we have developed a computer-assisted telescope that has novel ways of analyzing and displaying information and works in real time, classifies respiratory sounds into generally accepted categories, and classifies sounds when different sounds are present at the same time."

Two authors disclosed patents related to computer-assisted electronic stethoscopes.

 More information: Full Text (subscription or payment may be

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