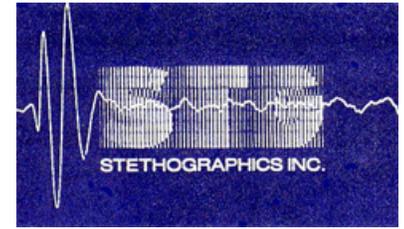


Stethographics

Learning Lung Sounds

An interactive multimedia course for PCs



Overview

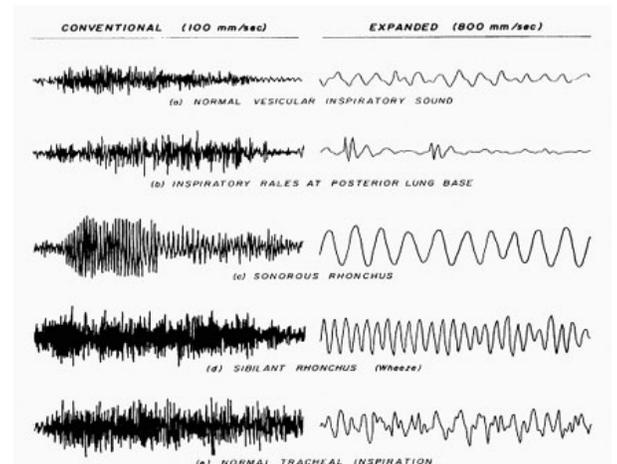
Lung sounds provide important information in the diagnosis and monitoring of the clinical course of patients with lung disorders. The purpose of this course is to review the most important lung sounds, their mechanism of production, the locations where they are commonly heard and their clinical associations. After completing this course, users will be able to:

- Diagnosis normal and abnormal lung sounds more accurately
- Complete examinations faster and more efficiently.
- Learn about the latest advances in computer-based analysis of lung sounds.

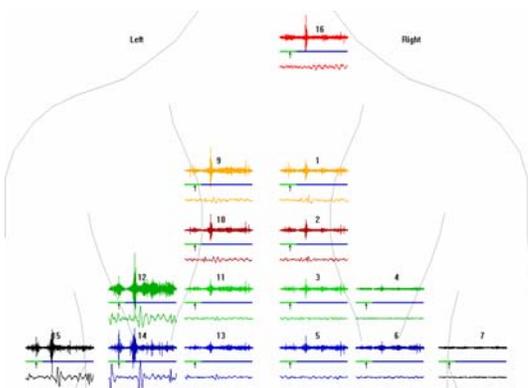
Learning Lung Sounds is available for PCs running Windows or Mac OS with Internet Explorer or Netscape browsers. The course is available from stethoscope dealers and manufacturers. Recommended audience includes medical students and residents, nurses, respiratory care therapists, physician assistants and emergency care workers.

Section I: Learning Lung Sounds

In this section the most commonly encountered lung sounds are presented. They are first described. Then each sound can be played from within the textual materials. The time amplitude plots of the sounds are also displayed as shown in the illustration. Time amplitude plots of lung sounds are generally made in two ways: expanded or unexpanded. The unexpanded method is similar to a phonocardiographic time amplitude display. This allows an overall view of the acoustic characteristics in real time. In the time expanded analysis the time or x-axis is stretched out so that details of the acoustic phenomena can be examined more carefully. Time domain plots are illustrated in both the time unexpanded and time expanded mode.



Section II. Sound Patterns

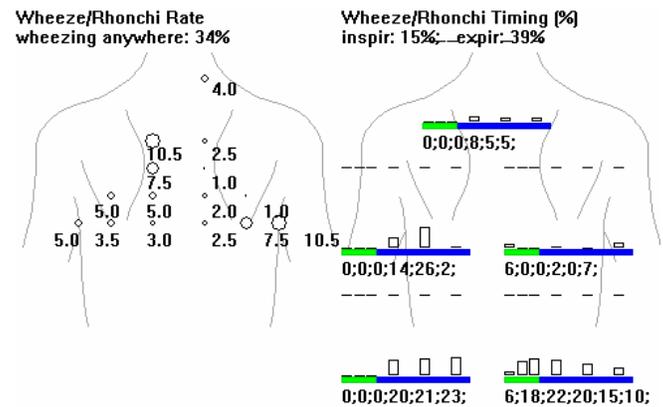


The subject of this section is patterns of lung sounds. These sounds are taken from actual tracings of patients with lung diseases who have been recorded in sixteen locations. Recorded lung sounds are displayed as a set of waveforms positioned according to chest cavity locations. This display allows visual examination of waveforms and time-expanded waveforms as well as audio playback of the data.

The display of the traces, similar to an EKG, allows direct visual detection of the abnormalities. Users can also listen to any of the recorded sounds, using a 'virtual auscultation' feature.

Each location can be examined for crackles, wheezes, and irregular patterns of inspiration and expiration. Contrast between abnormal data and data recorded for healthy individuals is pronounced.

Computed crackles and wheezes are displayed by their location on the chest. Timing information related to the respiratory cycle can also be reviewed.



Section III. Case Studies

STETHOGRAPHICS

START COMMON LUNG SOUNDS SOUND PATTERNS CASES CITATIONS

Case 1

- Clinical Summary
- Sound Patterns
- Sound Analysis
- X-RAY
- Diagnosis

Case 2

Case 3

Case 4

Case 5

Case 6

Case 7

CASE 1 - Clinical Summary

- 30 year old male presents for a routine physical exam.
- Review of systems - generally negative except for some insomnia he relates to stress at work
- Past Medical History- appendectomy age 19, tonsillectomy as child.
- Physical Exam, Laboratory studies , Chest X-ray-within normal limits.

Pulmonary Function Test

- FVC: 4.12 l (97% predicted)
- FEV1: 3.58 l (99% predicted)
- FEV1/FVC: actual 87% (102% predicted)
- PEFF: 6.42 l (92% predicted)

Seven case studies are presented in this section. For each patient, a clinical history and pulmonary function tests are summarized. Users can playback lung sounds from each of the sixteen locations. For each patient, wheeze and crackle rates at multiple locations are displayed. X-Ray images are also available.

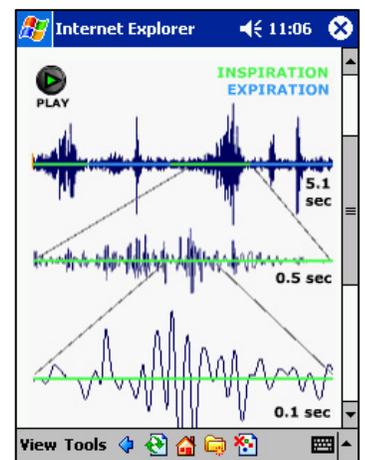
Users have the option of using an interactive testing feature to compare their diagnosis with the case finding.

Written by a Leading Specialist in Lung Sounds

The Learning Lung Sounds Pocket Edition includes explanations by leading specialist on lung sounds R.L.H. Murphy, MD, DSc, Chairman and Founder, Stethographics, Inc., Professor of Medicine, Tufts University School of Medicine, Pulmonologist Faulkner and Brigham & Women Hospitals, Boston, MA, and M.A. Murphy, Ph.D., R.N.C.S., A.N.P., Associate Professor of Nursing, Boston College School of Nursing, Chestnut Hill, MA. Previous audio tape courses from the authors have been used for over 20 years by medical students worldwide.

Related Product: Lung Sounds Pocket Guide

The lung sounds pocket guide is an abridged version of Learning Lung Sounds. Running of Pocket PCs, is provides users with a quick reference to essential lung sounds. After using the Learning Lung Sounds CD-ROM, many users find this pocket guide to be an ideal reference guide. This product is available from Stethographics and Handango web sites.



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