

# Introduction to Cardiac Auscultation the UTMB Self Teaching System (STS)

## Lesson 1 - Introduction to Cardiac Auscultation & Normal Heart Sounds

- Brief history of auscultation
- Generation, transmission & detection of physiologic sound
- Auscultatory anatomical sites
- Clinical characteristics of sound
- Nature and use of the stethoscope
- Clinical maneuvers to improve detection
- Identification, source & characteristics of cardiac sounds
- Generation of first & second heart sounds, S1 and S2
- Sound diagrams
- Positive identification of S1 and S2, systole & diastole, by synchronized palpation
- Characteristics of normal S1 and S2
- Practice sounds & pulse with questions & answers

## Lesson 2 - Normal Variants of Cardiac Sound

- Demographics of cardiac sound
- Normal variations in amplitude & pitch
- Inspiratory splitting of S1 & S2
- Close splitting of S1
- Normal third heart sounds, S3
- Innocent ejection murmurs
- Friction rubs
- Practice sounds & pulse with questions & answers

## Lesson 3 - Abnormal Heart Sounds

- Source & characteristics of each sound
- Abnormal variations in pitch & amplitude, S1 & S2
- Valve opening sounds (ejection sounds, opening snaps, systolic clicks)
- Third & fourth heart sounds, S3 & S4
- Practice sounds & pulse with questions/answers

## Lesson 4 - Abnormal Heart Sounds

- Clinical demographics of murmurs
- Origin of murmurs
- Classification of murmurs
  - Flow murmurs
  - Stenotic murmurs
  - Retrograde flow murmurs
  - Mitral valve prolapse
  - Septal defects
  - Friction rubs



The University of Texas Medical Branch (UTMB)  
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## Lesson 5 - Auscultation Evaluation

Review of lessons 1 through 4 with sound & pulse, questions & answers. Answers are scored for each sound as well as accumulatively. Questions and answers are discussed.

## Ordering Information

Cat. No.	Description
718-8500	STS Sound Reproducer
718-8510	STS Pulse Reproducer
718-0409	STS Student Headphones
014-8500	STS Student Text Work Book
717-8525	STS Network Software Lessons 1-4 and Auscultation Evaluation
<b>Other Products from Cardionics</b>	
718-9007	SAM, the Student Auscultation Manikin
718-7003	SimulScope® Bedside Auscultation System
718-2700	CardioSim® VII Digital Sound Simulator
718-0015	Classroom Infrared Emitter
718-4006	Auditorium Infrared Sound System
718-7040	Heartman® infrared headphones
718-7030	Pocket Monitor for PC Phono Display
718-7120	E-Scope® Electronic Stethoscope

## Cardionics, Inc.

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- Developed and Tested by UTMB & Manufactured and Distributed by Cardionics

- A Proven and Effective Teaching Program

- Little or No Instructor Time Required

- Sounds are Synchronized with Palpated Carotid Pulse

- Four Lessons and One Evaluation Program

- Includes Sound Reproducer, Pulse Reproducer, Student Text Workbook and Headphones

Teach and Test Cardiac  
Auscultation Skills



# Introduction to Cardiac Auscultation - the UTMB Self Teaching System (STS)



## Students Learn With Their Own Stethoscope

There are four lessons provided with the STS System as well as an Auscultation Evaluation Program. Students listen to didactic examples of the sounds with high-fidelity headphones. They practice with their own stethoscope on the Sound Reproducer while palpating a synchronized carotid pulse. After they diagram the sound, a phonocardiogram is displayed to further illustrate the sound.



## Students Learn Timing by Palpation of a Synchronized Carotid Pulse

When learning cardiac auscultation, it is essential to know where systole occurs. A major source of serious error is eliminated by proper recognition of systole. Students initially palpate the pulse for timing with each new sound. The STS Pulse Reproducer generates a carotid pulse synchronized with systole.



## Display of Sounds

While listening to the sound, a phonocardiogram is displayed for verification. This visualization further aids students' appreciation of the sound "signature".

## Student Text Work Book

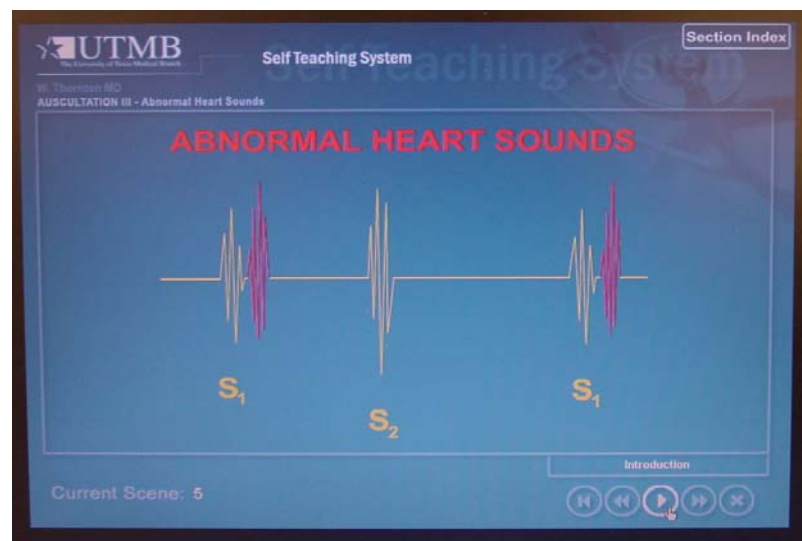
An integral part of the STS System, the Student Text Work Book is a well-illustrated 70 page booklet with key text and space for diagramming of each sound.

## Testing with STS

The Auscultation Evaluation Program (included with the STS) provides for pre- and post testing of students with detailed scoring of each question as well as an accumulative score.

## Student Acceptance

Students proceed at their own pace. Proficiency has shown significant improvement resulting in enthusiastic acceptance by students and faculty.



Auscultation - an Essential Key to Physical Diagnosis