Auscultation Simulator

with site-specific heart and lung sounds

(S315.200)

Instructions

Choosing a set of heart and lung sounds

Five sets of heart and lung sounds are available. Switch between them using the color-coded selector switch on the back of the Virtual Stethoscope.

Listening to heart and lung sounds

Switch on the power of the Virtual Stethoscope®. Position the bell over the blue dots on the torso. The appropriate sound will be played through the earpieces.

Adjusting the earpiece volume

In the unlikely event that the earpiece volume requires adjustment, insert a small screwdriver into the hole in the back of the Virtual Stethoscope®, and gently turn the control.

Using external speakers

To play the sounds through external speakers, instead of through the earpieces, simply connect computer speakers to the jack on the Virtual Stethoscope®.

Performing CPR on the manikin

Before performing CPR, remove the rib cage that contains the white disks and replace it with the normal rib cage.

Cautions

Handle your simulator in the same manner as you would handle your patient, with care and consideration.

If the bell position required to hear the sounds does not exactly coincide with the blue dots on the torso, lift the skin and check to make sure that the rib cage is aligned correctly. The white disks affixed to the rib cage should be directly beneath the blue dots.

Do not open the virtual stethoscope box or bell, as this may damage the unit and will invalidate your warranty.

When replacing the battery, do not detach the connector by pulling on the wires.

Be sure to turn off the Virtual Stethoscope® when not in use, or else the battery will be expended.

Technical Support

Feel free to contact us if you experience any difficulties with the system.

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Appendix - available sounds

LOCATION	HEART SOUND	COMMENT
Base Right	Base Sound	Patient has a normal heart with mild anemia. The heart is hyperdynamic and has elevated cardiac output. S2 is accentuated at the base.
	Fixed Split S2	Patient has an atrial septal defect which increases flow through the right heart, prolongs RV systole and also produces a mid-systolic murmur (MSM) because of increased flow through the RV outflow tract.
Base Left	Physiological Split S2	The splitting of S2 is easily heard during inspiration and the second sound is single during expiration. The second component of the split sound (P2) is accentuated.
	Split S2	S2 is variably split during mid-inspiration, as three beats are repeated.
Left Side Sternal Border	Paradoxical Split S2	The splitting of S2 is heard during expiration, but the sound becomes single during inspiration. (The background noise is increased during inspiration.)
	Opening Snap	Patient has mitral stenosis, responsible for an early crisp diastolic sound heard at the base 0.08 seconds after S2. S1 is usually loud at the base, which reflects mitral stenosis.
	Friction Rub	Patient has uremic pericarditis, which leads to rubbing of roughened visceral and parietal pericardial surfaces against one another. The 3 component rub exists during deep inspiration.

LOCATION	HEART SOUND	COMMENT
Apex	Apex Sound	Patient has a normal heart with mild anemia. The heart is hyperdynamic and has elevated cardiac output.
	Mid-Systolic Click	Patient has mitral prolapse, which produces a mid-systolic click heard during inspiration.
	S3 Sound	Patient has a readily heard third heart sound. S3 occurs later in diastole than the opening snap.
	Intermittent S4	Patient has left ventricular hypertrophy, and has a fourth sound (S4) which is not heard on every cycle. The sound is presystolic, about 0.1 second before S1.
	Starr-Edwards Valve	This ball-in-cage mitral prosthesis has a mechanical closing sound (S1) and one or more diastolic sounds caused by the ball bouncing within the cage.

LOCATION	LUNG SOUND	COMMENT
Trachea	Tracheal Sounds	Expiration sounds are louder, have a higher pitch, and are of longer duration than during inspiration. The silent period or pause following expiration is longer than the one between expiration and inspiration.
	Stridor Sounds	Patient has marked respiratory distress, and a narrow aperture between the vocal cords that produces a high pitched tone during both inspiration and expiration. During the end of expiration, there is an abrupt drop in pitch.
Upper Anterior (Two Sites)	Bronchial Sounds	Breath sounds are similar to tracheal sounds in that the expiratory phase is louder and lasts longer than the inspiratory phase. The major distinguishing characteristic is the high pitched, hard quality of the expiratory phase.
	Wheezing Sounds	These musical wheezing sounds are often heard in asthma patients. During inspiration, the wheeze is slightly higher in pitch than during expiration. Wheezing in asthmatics is often present in either one or both phases of respiration.
Lower Anterior (Two Sites)	Bronchial Sounds	Breath sounds are similar to tracheal sounds in that the expiratory phase is louder and lasts longer than the inspiratory phase. The major distinguishing characteristic is the high pitched, harsh quality of the expiratory phase.

LOCATION	LUNG SOUND	COMMENT
Posterior (Four Sites)	Wheezing Sounds	These musical wheezing sounds are often heard in asthma patients. During inspiration, the wheeze is slightly higher in pitch than during expiration. Wheezing in asthmatics is often present in either one or both phases of respiration.
	Pleural Friction	This sound probably originates from the friction of inflamed pleural surfaces moving against one another. The sound is repetitive as long as the breathing pattern and position remain constant. Similar to but lower in pitch than crackles.
	Medium-Fine Crackles	These noises begin about mid-inspiration and progressively increase in intensity up to the end of expiration. Coarse crackles are also audible in the early expiratory phase of some of the breaths.
	Ronchi, Crackles	Coarse crackles are present during both inspiration and expiration. There are also some very low pitched repetitive sounds that are ronchi. High pitched squeaks are also audible against a background of bronchial breath sounds.
	Coarse Crackles	Coarse crackles begin at the onset of inspiration and diminish in intensity and prevalence toward the end of inspiration. Expiration is not audible.
	Pulmonary Edema	Coarse and medium crackles appear toward the end of inspiration and continue into expiration. The respiratory rate is rapid and expiratory phase is “bronchial” in character. These features exist during respiratory distress and congestion.