



# VS105

## CHILD VIRTUAL STETHOSCOPE

### USER GUIDE



VS100 Virtual Stethoscope is an interactive educational system developed to assist a certified instructor. It is not a substitute for a comprehensive understanding of the subject matter and not intended for clinical decision making

# INITIAL SETUP

## PACKAGE CONTENTS

1. Eartube with eartips
2. Tubing
3. Sound Card with retractable badge reel
4. (8) Replacement CR2032 batteries



## ASSEMBLY

1. Unscrew the stethoscope bell.
2. Gently pull on the removal strip to remove the plastic protector. Once it's removed, screw the bell back on.



**CAUTION: Do not pull removal strip around the diaphragm as this will damage the part.**



**NOTE: Do not discard the plastic protector as this will aid in conservation of the battery while in storage.**

## POWERING ON

- Push and hold the power button to turn on and off. The green light will appear when it is on.
- When the battery is low, the power light blinks red.



**NOTE: The stethoscope automatically powers off after 6 minutes of inactivity or after 40 seconds of listening for a sound without success.**

## SOUND SELECTION

- Press the sound button to select the desired sound set as shown in the VS Sound Table on the back of this guide.
- Once the sound set is chosen, press and hold the sound button for 2 seconds to hide the selected color.



## PLAYING A SOUND

- Gently place the stethoscope against the auscultation areas to listen for sounds.
- If the stethoscope is pressed against non - auscultation areas, the indicator lights stop blinking



**NOTE:** Sound may also be heard through a sound speaker by connecting the chest-piece to an audio jack.

## CHANGING THE BATTERY

1. Unscrew the stethoscope bell.
2. Gently pull the removal strip outward. The old batteries will be released.

**CAUTION:** Do not pull removal strip around the diaphragm as this will damage the part.

3. Insert the new batteries, positive (+) side facing down.
4. Return the removal strip to its original position before screwing the bell back on.
5. Screw on the stethoscope bell. Green power light should flash on at this point.



## VS105 SOUND DETAILS

SOUND	DESCRIPTION
Venous Hum	This continuous murmur may be found in children aged 3 to 6 years. It occurs as a result of the turbulence in the jugular venous system and it only heard when the child is in the upright position. The rate is about 96 beats per minute.
Aortic Stenosis	This systolic murmur is loudest over the ascending aorta. Duration and intensity vary with the severity of stenosis. An ejection click may be heard.

SOUND	DESCRIPTION
Split S2	Sounds are rather normal. Degree of splitting increases with the inspiration and decreases with the expiration. Wide split suggests prolonged RV ejection or shortened LV ejection; narrow split suggests early closure of pulmonary valve.
Pulmonary Stenosis	This systolic murmur is normally loudest over the main pulmonary artery. Duration and intensity vary with the severity of stenosis.
Systolic Fixed S2	Fixed S2 does not change width during respiration. The absence of split S2 usually indicates a condition that prolongs RV ejection time or shortens LV ejection. Conditions include volume/pressure overload and RBBB.
1 Year Heart	Normal heart sounds heard in a 1 y/o infant. The rate is 120 bpm.
6 Year Heart	Normal heart sounds heard in a 6 y/o child. The rate is 84 bpm.
Stills Murmur	The vibratory murmur may be found in children between ages 3 to 6 years and sounds like “twanging string”, or squeaking/ buzzing at a low frequency. During inspiration, murmurs increase on the right side and decrease in the left.
Mitral Valve Regurgitation	This systolic murmur is produced by lesions, more often rheumatic than congenital in origin. Chest films may show pulmonary vein congestion, pulmonary edema, or an enlargement of the left atrium/ventricle.
Split S1	S1 relates to closure of mitral and tricuspid valves. Not common in normal children, and may indicate RBBB or other anomalies. Sound can be confused with an ejection click S4.
Normal Infant	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.
Normal Child	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.
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.
Rhonchi Sounds	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.