

Hear the finding. Explain it.

Your companion to the physical exam and vital-signs lessons

Use only the examples assigned in your lesson. Start with the normal sound, compare the selected finding, and record timing, pitch and texture before naming a possible explanation. This is a reference, not an extra assignment.

DOWNLOAD ALL 25 HEART, LUNG AND BP SOUNDS (ZIP)

All clips are computer-generated teaching simulations. They illustrate textbook patterns. They are not patient recordings, have not had clinician listening validation, and cannot diagnose a person. Sources describe real examination findings; they do not certify these clips.

Friday, October 16: for Listen and Test Box 1, compare HEART 01 with HEART 06. For Box 2, use LUNG 01, 04 and 06. LUNG 08 and 09 extend the breathing-sound table. Keep the existing organizer and turn-in directions.

How to listen: use headphones at a comfortable volume. Play once for the pattern, then again for its timing. Keep volume fixed during comparisons. If classroom equipment is faint, record that honestly and use the simulations for comparison.

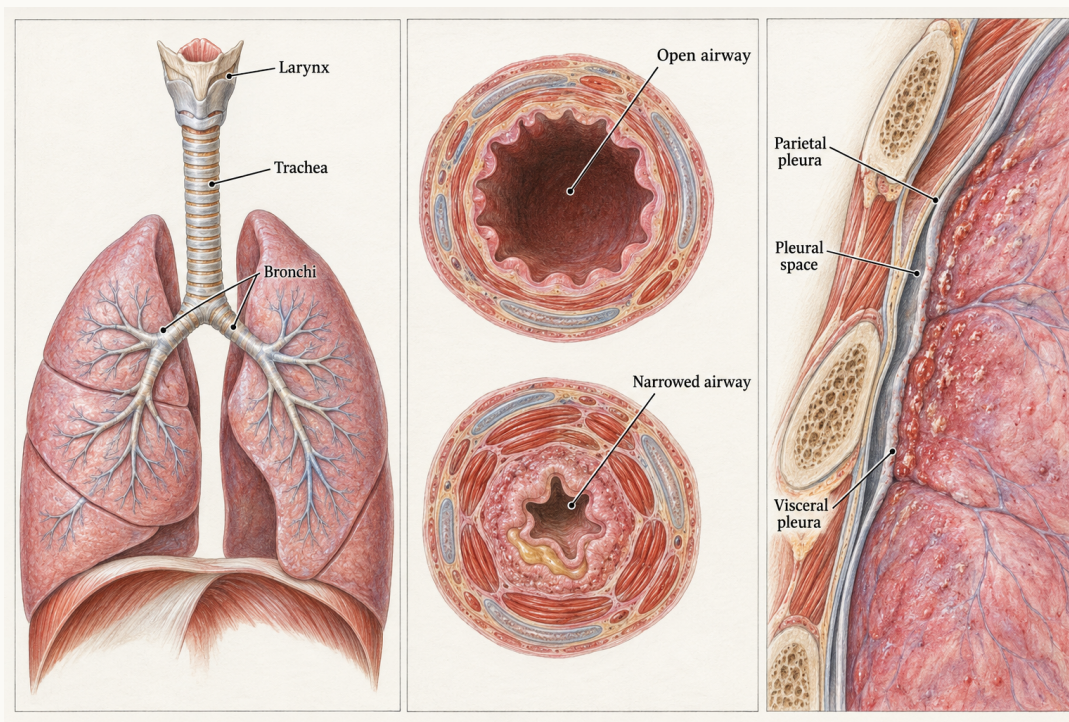


Figure 1. Central airways conduct air; narrowing can produce musical sounds. Pleura covers the lung and lines the chest wall. Its inflamed surfaces can produce a rub. Enlargements are schematic and not to scale. Airway wall detail is illustrative.

Find it: normal breathing p. 2; extra lung sounds pp. 3-4; heart anatomy p. 5; heart sounds pp. 6-8; blood-pressure sounds pp. 9-10; sources p. 11.

Normal breathing and wheeze

Compare the normal sound first. Location is part of the finding.

LUNG 01 Normal vesicular breathing

Listen: Soft, breezy rustling. Breathing in is longer and louder than breathing out. Compare both sides at matching sites.

What creates it: Airflow sounds are filtered by air-filled lung before reaching the chest wall.

Physician implications: Expected over peripheral lung fields. A normal sound alone cannot rule out disease.

[Listen to Normal vesicular breathing \(simulated MP3\)](#) | [Download MP3](#) | Sources 1,2

LUNG 02 Normal bronchovesicular breathing

Listen: Medium-pitched airflow with similar lengths of breathing in and out. Listen centrally, near the main bronchi.

What creates it: Large-airway sounds are heard through a smaller amount of surrounding lung.

Physician implications: Expected near main bronchi, including between the shoulder blades. Site matters when deciding whether a sound is normal.

[Listen to Normal bronchovesicular breathing \(simulated MP3\)](#) | [Download MP3](#) | Sources 1,2

LUNG 03 Normal bronchial / tracheal breathing

Listen: Loud, hollow airflow near the neck. Breathing out may be longer, with a pause between phases.

What creates it: Air moving through large central airways produces a relatively unfiltered sound.

Physician implications: Expected over the trachea. A bronchial quality over peripheral lung can prompt assessment for consolidation, such as pneumonia.

[Listen to Normal bronchial / tracheal breathing \(simulated MP3\)](#) | [Download MP3](#) | Sources 1,2

Listening method: clinicians use the diaphragm on bare skin in a quiet room, listen through a full breath, and compare matching sites from side to side over the front, sides and back. Avoid listening directly over bone. Classroom partner practice follows teacher instructions and consent. [1]

Musical sounds and fine crackles

Continuous whistles differ from short, separate pops.

LUNG 04 Expiratory wheeze

Listen: A continuous musical whistle, mainly while breathing out. Compare with normal vesicular breathing.

What creates it: Airflow through narrowed airways can cause airway-wall flutter and musical sound.

Physician implications: May occur with asthma or other airway narrowing. The physician assesses breathing effort, oxygenation and the history.

[Listen to Expiratory wheeze \(simulated MP3\)](#) | [Download MP3](#) | Sources 2,3

LUNG 05 Biphasic wheeze

Listen: Musical whistling during both breathing in and breathing out. Biphasic means both phases.

What creates it: Narrowed airways vibrate as air moves in both directions.

Physician implications: Prompts assessment of airway obstruction. Timing alone does not establish its cause or severity. A quieter chest can still be dangerous.

[Listen to Biphasic wheeze \(simulated MP3\)](#) | [Download MP3](#) | Sources 2,3

LUNG 06 Fine late-inspiratory crackles

Listen: Brief, fine, high-pitched pops near the end of breathing in. These are separate events, unlike a continuous wheeze.

What creates it: Sudden reopening of small airways is a major proposed mechanism.

Physician implications: May accompany interstitial disease or pulmonary edema, and can occur with infection. Crackles alone do not diagnose pneumonia.

[Listen to Fine late-inspiratory crackles \(simulated MP3\)](#) | [Download MP3](#) | Sources 2,4

Write what you hear: “The sound is continuous / interrupted. It is higher / lower in pitch than the reference. It occurs during breathing in / out / both.” Then state a possible mechanism and one thing the sound cannot prove.

Other lung findings

A sound is evidence to investigate, not a diagnosis by itself.

LUNG 07 Coarse inspiratory crackles

Listen: Louder, lower-pitched popping or bubbling sounds while breathing in. Compare their texture with fine crackles.

What creates it: Abrupt airway opening and secretions can contribute to these discontinuous sounds.

Physician implications: Can accompany secretions, edema or infection. The physician checks distribution, symptoms and other findings.

[Listen to Coarse inspiratory crackles \(simulated MP3\)](#) | [Download MP3](#) | Sources 2,4

LUNG 08 Rhonchi

Listen: A low, continuous snoring or rumbling sound. In a real examination it may change after coughing.

What creates it: Larger narrowed airways and secretions can generate low-pitched vibrations.

Physician implications: Prompts assessment for secretions or airway narrowing. Improvement after coughing is a clue, not a diagnosis.

[Listen to Rhonchi \(simulated MP3\)](#) | [Download MP3](#) | Sources 2,5

LUNG 09 Inspiratory stridor

Listen: A harsh, high-pitched sound while breathing in, often loudest over the neck. Compare its harshness with wheeze.

What creates it: Airflow is disturbed by narrowing in the upper airway.

Physician implications: Can indicate upper-airway obstruction. Stridor with breathing difficulty needs urgent professional assessment.

[Listen to Inspiratory stridor \(simulated MP3\)](#) | [Download MP3](#) | Sources 1,5

LUNG 10 Pleural friction rub

Listen: A localized grating or creaking sound that follows breathing. Listen for a rough surface quality.

What creates it: Inflamed pleural surfaces rub as the lung moves against the chest wall.

Physician implications: Suggests pleural inflammation; the physician investigates the cause, such as infection, in clinical context.

[Listen to Pleural friction rub \(simulated MP3\)](#) | [Download MP3](#) | Sources 6

LUNG 11 Normal versus reduced air entry

Listen: The second part is deliberately quieter. Keep the volume unchanged while comparing the two parts.

What creates it: Less airflow or impaired transmission to the chest wall can reduce the sound heard.

Physician implications: May occur with obstruction, pleural fluid or pneumothorax. First check equipment and technique; sudden one-sided reduction with distress is urgent.

[Listen to Normal versus reduced air entry \(simulated MP3\)](#) | [Download MP3](#) | Sources 2,5

Heart valves and sound timing

S1 and S2 mark the boundaries. Find them before naming an extra sound.

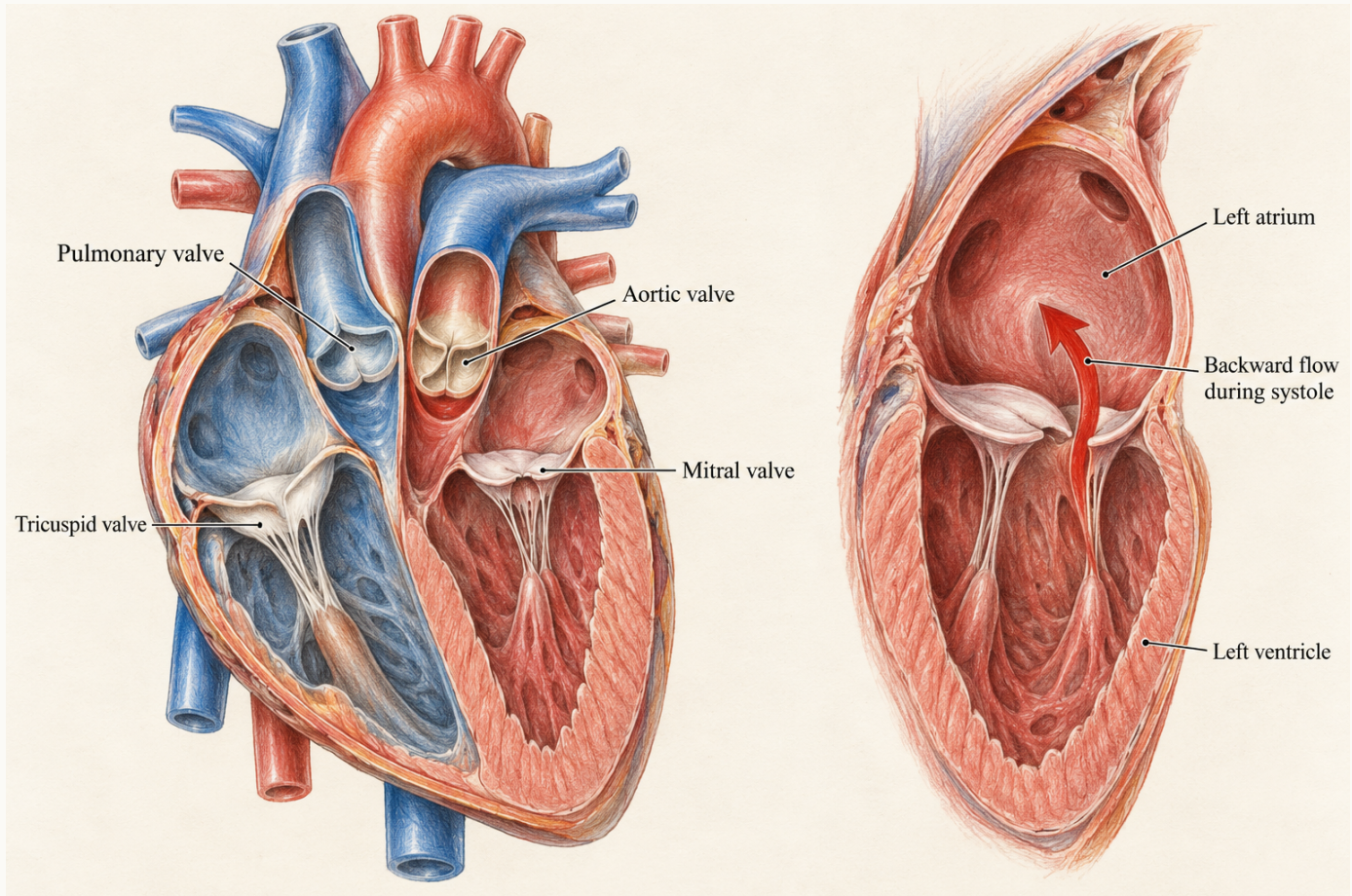


Figure 2. Anatomical cutaway, not a stethoscope placement map. S1 mainly reflects mitral and tricuspid closure; S2 mainly reflects aortic and pulmonary closure. The enlarged mitral example shows backward flow into the left atrium during ventricular contraction. [7,12]



Systole is the ventricular contraction/ejection part of the cycle. **Diastole** is the ventricular relaxation/filling part. A **murmur** is a longer flow sound. A **click** is a brief extra sound; the terms are not interchangeable.

Where physicians listen: aortic area, second right intercostal space; pulmonary area, second left; tricuspid area, lower left sternal border; mitral area, apex near the fifth left intercostal space at the midclavicular line. Right and left mean the patient's sides. Listening areas differ from actual valve positions. [8]

Normal and added heart sounds

Low-pitched sounds can be difficult to hear on laptop speakers.

HEART 01 Normal S1 and S2 at 75 beats/min

Listen: Find the repeating lub-dub pair. S1 to S2 is ventricular systole; S2 to the next S1 is diastole.

What creates it: S1 accompanies mitral/tricuspid closure; S2 accompanies aortic/pulmonary closure and the associated vibrations.

Physician implications: A reference pattern for comparison. A normal pair alone does not prove the heart is healthy.

[Listen to Normal S1 and S2 at 75 beats/min \(simulated MP3\)](#) | [Download MP3](#) | Sources 7,8

HEART 02 Physiological respiratory split S2

Listen: Listen for the second sound dividing into two close components during the simulated breathing-in portion.

What creates it: Inspiration normally delays pulmonary valve closure relative to aortic closure.

Physician implications: A split that varies normally with breathing can be physiological. Persistent or unusual splitting needs clinical interpretation.

[Listen to Physiological respiratory split S2 \(simulated MP3\)](#) | [Download MP3](#) | Sources 8

HEART 03 Additional S3

Listen: A soft, low extra sound just after S2: lub-dub-uh. A clinician uses the bell lightly near the apex.

What creates it: Vibrations occur during rapid early ventricular filling; the detailed sound-generating mechanism is complex.

Physician implications: May be normal in children and young adults. In other settings it may prompt assessment for volume overload or ventricular dysfunction.

[Listen to Additional S3 \(simulated MP3\)](#) | [Download MP3](#) | Sources 9

HEART 04 Additional S4

Listen: A low extra sound just before S1: uh-lub-dub. Focus on its position before the next lub.

What creates it: An effective atrial contraction produces vibrations during late ventricular filling, often when the ventricle resists filling. S4 is absent in atrial fibrillation.

Physician implications: Often suggests reduced ventricular compliance, such as with hypertrophy or ischemia. It does not by itself establish heart failure.

[Listen to Additional S4 \(simulated MP3\)](#) | [Download MP3](#) | Sources 10

Systolic murmurs

Describe when the sound occurs, its shape and where it is loudest.

HEART 05 Systolic ejection murmur

Listen: Between S1 and S2, a swish grows and then fades. Crescendo means grows; decrescendo means fades.

What creates it: Turbulent ejection flow can occur through an outflow tract or semilunar valve.

Physician implications: The physician considers flow murmurs and outflow obstruction, such as aortic stenosis. Location and other findings help distinguish them.

[Listen to Systolic ejection murmur \(simulated MP3\)](#) | [Download MP3](#) | Sources 11

HEART 06 Holosystolic murmur

Listen: A sustained blowing swish spans S1 to S2. Holosystolic means throughout ventricular systole.

What creates it: Backward flow through a leaking atrioventricular valve, or flow through a ventricular septal defect, can cause this pattern.

Physician implications: Mitral regurgitation is one possibility, especially at the apex with radiation toward the left armpit. Sound alone cannot identify the valve.

[Listen to Holosystolic murmur \(simulated MP3\)](#) | [Download MP3](#) | Sources 11,12

How a physician follows up: the sound is interpreted alongside symptoms, pulses, blood pressure and the rest of the examination. Echocardiography can show valve structure and blood-flow direction. A sound clip cannot show either directly.

Worked process, separate from your cases: "I hear a swish after S1 and before S2. I would describe this as systolic. Turbulent flow is a possible mechanism. I would need its location and further examination to judge its cause." Use this sequence with your own observations, not copied answers.

Diastolic murmurs and a rub

Keep the cardiac cycle separate from the breathing cycle.

HEART 07 Early diastolic decrescendo murmur

Listen: A blowing sound begins just after S2 and fades during diastole. Establish S1 and S2 first.

What creates it: Backward flow through an incompetent semilunar valve can occur after ventricular ejection.

Physician implications: Aortic regurgitation is a classic possibility. A physician evaluates a diastolic murmur for underlying disease, often using echocardiography.

[Listen to Early diastolic decrescendo murmur \(simulated MP3\)](#) | [Download MP3](#) | Sources 13

HEART 08 Mid-diastolic low rumble

Listen: A low rumbling sound occurs after S2 during filling. A clinician listens lightly with the bell near the apex.

What creates it: Restricted atrioventricular flow, or increased flow across that valve, can create a diastolic rumble.

Physician implications: Mitral stenosis is one possibility at the apex. Timing and pitch require confirmation with the rest of the examination.

[Listen to Mid-diastolic low rumble \(simulated MP3\)](#) | [Download MP3](#) | Sources 13

HEART 09 Pericardial friction rub

Listen: A scratchy, scraping sound linked to the cardiac cycle. Compare it with the breathing-linked pleural rub.

What creates it: Inflamed pericardial surfaces can generate friction as the heart moves.

Physician implications: Supports consideration of pericarditis. The physician combines it with symptoms and other tests; this sound is different from a murmur.

[Listen to Pericardial friction rub \(simulated MP3\)](#) | [Download MP3](#) | Sources 8,14

Distinguish the terms: an S3 or S4 is a brief added heart sound. A diastolic murmur lasts longer during filling. A pericardial rub is a friction sound. Their mechanisms differ even when they occur close together.

Blood pressure: listen at the artery

The cuff pressure and the sound must be read together.

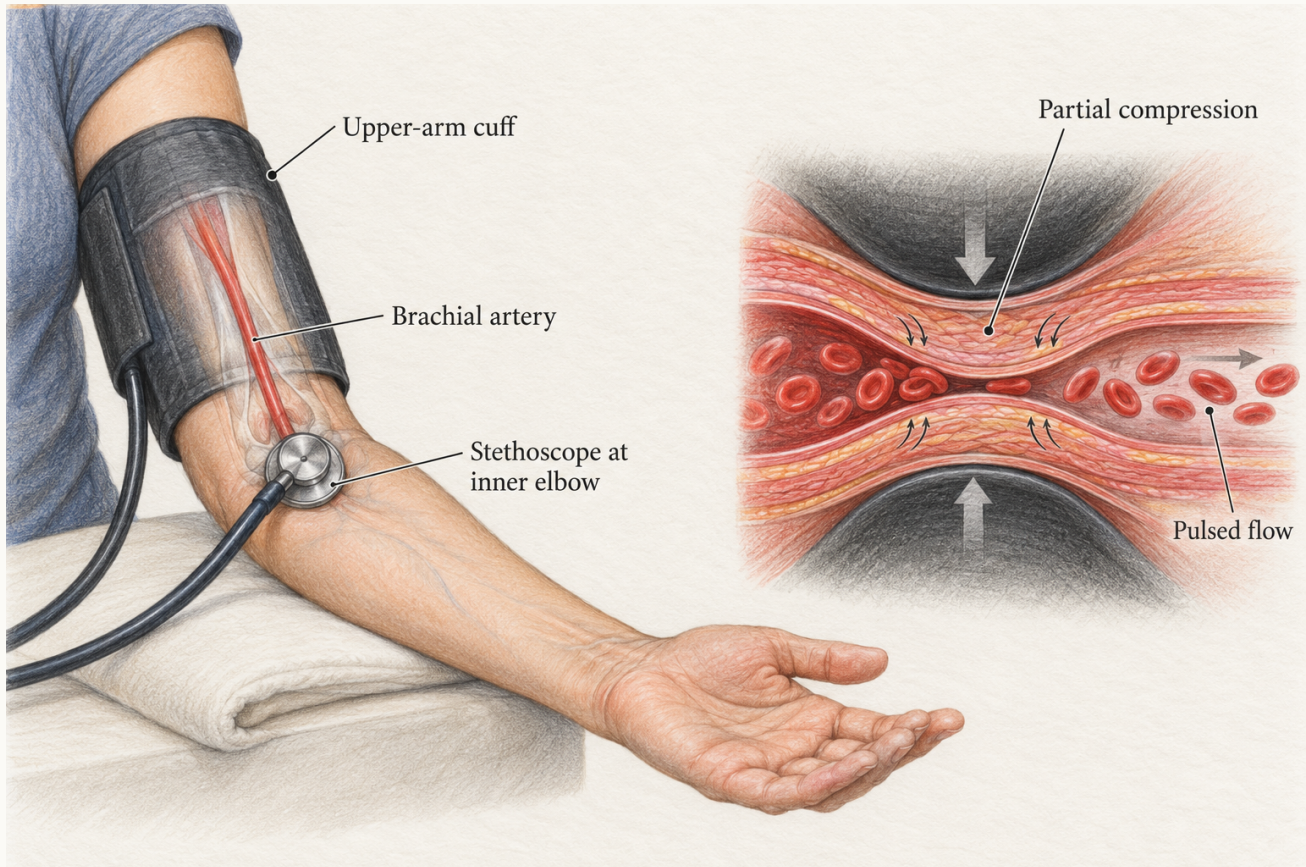


Figure 3. The cuff compresses the upper-arm artery. The cuff ends 2 to 3 cm above the elbow crease. The stethoscope rests lightly over the brachial artery pulse at the inner elbow, clear of the cuff. The magnified artery shows partial compression and pulsed flow, not a blocked artery or a blood clot. [15,16]

What to listen for: as cuff pressure slowly falls, first repetitive taps indicate systolic pressure. Complete disappearance usually indicates diastolic pressure in adults. Phase V is silence, so there is no separate phase V sound file. [15,16]

Measurement method: a trained examiner uses the right cuff size on bare skin, supports the arm at heart level, and deflates at about 2 mmHg per second. The pressure gauge supplies the number. These clips supply sound only. Classroom practice must be supervised. [15]

For this library: the full “120/80” file is a staged demonstration. Its numbers are assigned labels. Do not infer a measured blood pressure from audio alone, and do not diagnose a classmate.

Korotkoff sounds, phases I to V

Use the full example once. Individual phase examples may repeat.

BP 01 Korotkoff phase I: first repetitive taps

Listen: Hear the first repeated clear taps during cuff deflation. Isolated phase clips do not include a pressure scale.

What creates it: Pulses pass through a partly compressed brachial artery, producing wall motion and disturbed flow.

Physician implications: The cuff pressure at the onset of repetitive taps estimates systolic pressure. Audio without a simultaneous pressure reading cannot measure it.

[Listen to Korotkoff phase I: first repetitive taps \(simulated MP3\)](#) | [Download MP3](#) | Sources 15,16

BP 02 Korotkoff phase II: swishing

Listen: The taps soften and gain a swishing or blowing quality. Compare with phases I and III.

What creates it: Arterial compression and flow change as cuff pressure falls.

Physician implications: An intermediate phase, not the usual systolic or diastolic endpoint. A temporary silent gap can occur during a real measurement.

[Listen to Korotkoff phase II: swishing \(simulated MP3\)](#) | [Download MP3](#) | Sources 15,16

BP 03 Korotkoff phase III: clearer taps

Listen: Crisper, stronger tapping returns as deflation continues. Identify the change in quality.

What creates it: Pulsatile flow continues through an artery that is progressively less compressed.

Physician implications: Another intermediate phase. Its loudness is not a separate blood-pressure value or a measure of disease severity.

[Listen to Korotkoff phase III: clearer taps \(simulated MP3\)](#) | [Download MP3](#) | Sources 15,16

BP 04 Korotkoff phase IV: muffling

Listen: Taps become softer and muffled. Do not confuse muffling with complete disappearance.

What creates it: Pressure falls and the artery is less compressed, changing the vibrations heard.

Physician implications: Muffling precedes phase V. In most adults, disappearance is the usual diastolic endpoint; special circumstances need clinical judgment.

[Listen to Korotkoff phase IV: muffling \(simulated MP3\)](#) | [Download MP3](#) | Sources 15,16

BP 05 Complete staged 120/80 demonstration

Listen: Play once from the start. Hear initial silence, taps, changing phases, then final silence. This file is not looped.

What creates it: The generated sequence represents one cuff deflation. The stated 120/80 values are assigned teaching labels, not measurements extracted from audio.

Physician implications: In a real examination, first repeated taps mark systolic and disappearance marks diastolic pressure. One reading alone does not diagnose hypertension.

[Listen to Complete staged 120/80 demonstration \(simulated MP3\)](#) | [Download MP3](#) | Sources 15,16

Sources and a listening record

References support the explanations. They do not validate the generated clips.

1. [Montgomery College, Health Assessment Guide: respiratory assessment](#)
2. [Lung Sounds, StatPearls](#)
3. [The Airway and Lungs: wheeze and quiet-chest limits](#)
4. [Vyshedskiy et al., Mechanism of inspiratory and expiratory crackles](#)
5. [Open RN, Nursing Skills: respiratory assessment](#)
6. [Pleural Friction Rub, StatPearls](#)
7. [OpenStax, Anatomy and Physiology: cardiac cycle](#)
8. [Merck Manual Professional, Cardiac Auscultation](#)
9. [Clinical Methods, The Third Heart Sound](#)
10. [Clinical Methods, The Fourth Heart Sound](#)
11. [Clinical Methods, Systolic Murmurs](#)
12. [Mitral Regurgitation, StatPearls](#)
13. [Clinical Methods, Diastolic Murmurs](#)
14. [MSD Manual Professional, Pericarditis](#)
15. [AHA, Measurement of Blood Pressure in Humans: scientific statement](#)
16. [Blood Pressure Measurement, StatPearls](#)

Record: file name; site or body system; timing; pitch/texture; what creates it; one possible clinical implication; one limit. For BP, add that the pressure gauge is required. Follow your assignment's required boxes and submission directions.

If sound is inaccessible: use the written Listen description, mechanism and labeled drawings to explain the pattern. Tell Mr. Mendoza whether you used audio or the text equivalent. Do not invent a listening observation.

Illustration provenance: three original AI-generated color-pencil-style plates, created for John Hay Biomedical with OpenAI image generation on October 16, 2026. Labels and intended mechanisms were checked against the listed references. The art is an educational model, not a patient image or independent anatomical authority. No external recording samples were imported into the simulations. Source recordings were generated October 14, 2026.

Clinical limit: this guide supports classroom description and reasoning. Real patient findings require qualified clinical assessment. Chest pain, severe breathing difficulty or stridor with distress should be brought to an adult or medical professional immediately.