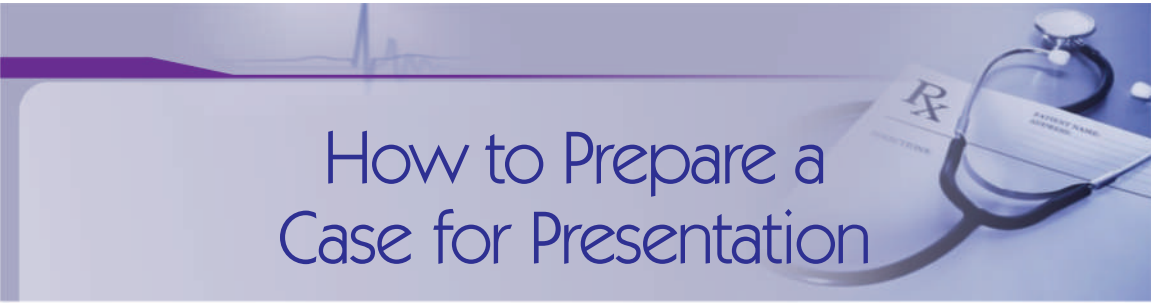




How to Prepare a Case for Presentation

FORMAT FOR CASE PREPARATION

- I. Demographic data
 - Name.....Age.....
 - Sex.....occupation.....
 - Address.....Date of admission.....
 - Date of examination.....
- II. Chief complaints
- III. History taking
 - History of present illness
 - Past history
 - Family history
 - Personal history
 - Drug history/treatment history
 - Obstetric history/menstrual history in females.
- IV. Examination
 - A. General physical examination
 - B. Systemic examinations
 - *For chest (respiratory and CVS) and abdomen*
 - Inspection
 - Palpation
 - Percussion
 - Auscultation
 - *Neurological examination*
 - *Locomotor system examination*
 - *Endocrinal system examination*
 - *Examination of unconscious patient*
- V. Summarise the case
- VI. Provisional diagnosis
- VII. Differential diagnosis/conditions
- VIII. Relevant investigations required for confirmation

RECORDING CASE HISTORY

Recording the Chief Complaints

Record the chief complaints of the patient in a chronological order in his/her own language.

History of Present Illness

- Detail the chief complaints of the patient with the mode of onset duration and progression. What happened to the patient during hospitalisation must be recorded.
- Stress on both important positive and negative points.
- Never use the medical terms while recording the history. Record whatever the patient say. In India, most of the patients explain the symptoms in their own way and language. Try to simplify the symptoms using easy and understandable English language.
- Do not put direct questions into the mouth of the patient.
- Keep the history flowing by asking what happened next.
- Identify those aspects of history which need further questioning
- Pick up the clues about patient's reaction to present illness.

Symptom—Analysis

Analyse the symptom/complaint as follows:

- Onset (acute/subacute/chronic)
- Duration and progressions
- Site and severity
- Radiation of any
- Precipitating and relieving factors
- Associated symptoms
- Effect of treatment

Past History

Ask about the diseases/conditions that happened in the past and is important in present case. Past history relevant to each system is presented in the **Box 1**.

Family History

- Position of the parents, brothers and sisters, cause of death if not surviving
- History of tuberculosis (affected by contact)

Box 1: Past history relevance to review of system

<i>System</i>	<i>Ask past history of</i>	<i>Relevance</i>
Cardiovascular system	- Joint pains, fever (rheumatic fever) during childhood and adolescence. Any streptococcal sore throat or skin infection - Maternal rubella infection during pregnancy - Hypertension, diabetes - Risk factors, e.g. obesity smoking, lack of exercise, alcoholism	Rheumatic heart disease Congenital heart disease Coronary artery disease Coronary artery disease
Respiratory system	- Viral exanthem, polio, influenza - Allergy or asthma/hay fever - Tuberculosis - Status of immunisation - Epilepsy/convulsion - Ear, nose, throat infection - Surgery over upper respiratory tract	Predispose to respiratory infection Respiratory allergic disorders Reactivation or reinfection or past tubercular complications Partial immunisation or unimmune status predispose to disease Aspiration of mouth secretion and predisposition to infection May complicate upper respiratory tract infection Inhalation of infected secretion and predisposition to infection
GI tract (abdomen case)	- Recurrent pain abdomen, vomiting, diarrhoea - Hematemesis and/or melena - Childhood diarrhoea/malabsorption - Prolonged diarrhoea - Expulsion of worms - Alcoholic intake - Hematemesis and/or melena - Jaundice - Recurrent biliary colic (colicky pain) - Recurrent loin pain (renal) or ureteric colic (pain and dysuria) - Recurrent fever, chills and rigors - Any change in frequency and colour of urine - Instrumentation/catheterisation - Menstrual history/menarche - Birth control (measures or medications) - Difficult labor - Alcoholism and smoking	Recurrent pancreatitis, recurrent cholecystitis, erosive gastritis, parasitic infection Peptic ulcer, erosive gastritis, cirrhotic portal hypertension, Mallory-Weiss syndrome Coeliac disease Chronic diarrhoea/malabsorption/steatorrhoea Roundworm infestation Alcohol related disorders (e.g. hepatitis, cirrhosis) Cirrhotic and noncirrhotic portal hypertension Hepatitis, cirrhosis Biliary duct stone Urinary tract infection, stone in urinary tract and kidneys, obstructive uropathy Urinary tract infection (UTI) UTI
Hepatobiliary (abdomen case)		
Genitourinary system		
Obstetrical and gynaecological		
Neurological	- Recurrent headache, visual disturbance, vertigo - Repeated convulsions - Head trauma - Muscular weakness - Chronic diarrhoea/malabsorption	Predisposition to infection Endocrinal disorders Oral contraceptive disorder, tampon infection Injury to urinary tract and predisposition to infection Delivery of low birth weight children Migraine—related disorder Epilepsy Head injury related disorder, subdural hematoma Subdural hematoma, myopathies Peripheral neuropathies, subacute combined degeneration

(Contd.)

Box 1: Past history relevance to review of system (Contd.)

System	Ask past history of	Relevance
Hematological	• Syphilis	Neurosyphilis
	• Alcohol use	Alcohol related neurological diseases
	• Any bleeding or recurrent bleeding	Bleeding disorders (thrombocytopeniae)
	• Chronic diarrhoea	Parasitic infestation, anaemia
Endocrinal and metabolism	• Blood transfusions	Haemophilia, aplastic anaemia leukaemia
	• Excessive bleeding following an injury	Hemophilia, coagulation disorder
	• Childhood diarrhoea, malabsorption	Coeliac disease, hypopituitarism
	• Candida infection (mouth, nails, GI tract)	Candida, endocrinopathy
	• Post-partum excessive bleeding	Sheehan's syndrome
	• Recurrent infection, delayed wound healing, CVS disease or hypertension	Diabetes mellitus

- History of asthma, diabetes, coronary artery disease, hypertension, stroke thyroid or renal disease (polycystic kidneys, hereditary nephritis), cancer, arthritis, seizure disorder, mental retardation, schizophrenia, muscle disorder (myopathies), haemophilia, thalassaemia, etc.
- History of consanguineous marriages (marriage within close relatives)
- History of contact with the patient in contagious skin disorders.

Personal, Social and Occupational History

- Married, unmarried, number of children.
- Occupation/education status (literate/illiterate)
- Income (exact nature of work)
- Habits (alcohol/smoking/drug abuse)
- Hobbies, e.g. lifestyle, exercise
- Dietary habits (vegetarians/nonvegetarians)
- History of contraception
- Home surroundings (keeping pets, condition of house, overcrowding)
- Social status

Treatment History (Drug History)

- Treatment received (drugs taken in the past or being taken)
- History of drug allergy/reaction (if any)
- Blood transfusions
- Prolonged use of antibiotics, steroids, anticancer drugs, anticoagulants, etc.
- History taking on the counter available medicines, e.g. NSAIDs

Menstrual and Obstetric History

- Age at menarche, duration of period, amount of blood loss

- Dysmenorrhoea, dyspareunia, amenorrhoea, etc.
- Date of last menstruation, menopause
- Obstetric history include number of pregnancies and their outcomes, history of abortions (spontaneous and induced), any difficult labor or complications of pregnancy: Mode of delivery (vaginal or caesarian section).

Psychological History

- Mood of the patient (anxious/depressed/euphoric)
- Reaction of the patient to present illness
- History of psychosomatic disorders, e.g. inflammatory bowel disease, irritable bowel syndrome, cardiac neurosis, peptic ulcer, etc.

GENERAL PHYSICAL EXAMINATION**General Observation**

Note the following

- The facial appearance, built, complexion, state of clothing
- Observe state of mental health, consciousness, gait, movements
- Identify any abnormal sound or odour
- State of hydration, nutrition and oedema
- Measure the height, weight and calculate BMI
- Fever/coldness of extremities.

Head, Scalp, Skin and Hair

Now examine the patient from head to toes as follows

Skull: Head size and contour

Skin: Colour and pigmentation, skin lesion (if present, describe in details in short case of skin disorder), pruritus (scratch marks), rash

Hair:	Too little or too much hair (hirsutism), temporal baldness, thinning of hairs, alopecia	
Face:	Puffiness (periorbital oedema), moon-like rounded facies, facial asymmetry, acne, plethoric face, expressionless or mask-like face.	Neck
Eyes:	Painful red eyes (conjunctivitis, episcleritis) exophthalmos, squint, ptosis, cornea and lens (cataract), jaundice, pupils (size, shape, reactions) fundus examination (if required) and nystagmus	Breast and axillae
Mouth and the oral mucosa:	Lips for any ulcer, nodules, bleeding, crack, cleft lip, pigmentation, aphthous ulceration, cyanosis, infection • <i>Angle of mouth</i> for fissuring, angular stomatitis. • <i>Teeth</i> for staining (<i>fluorosis</i>), notching of incisor, pig shaped teeth (Hutchinson's teeth) prognathism (acromegaly) • <i>Gums</i>, e.g. for bleeding, hypertrophy, ulceration, inflammation (gingivitis) • <i>Tongue</i>: Size, shape, moistness, colour, atrophy (bold) any deviation, fasciculations, furring (mouth thrush), coated (smoker), fissuring, glossitis. • <i>Oral mucosa</i>, e.g. ulceration, pigmentation Koplik's spots, hemorrhages	Extremities
Ear, nose and throat	• Deafness, ear discharge, mastoid tenderness, nasal septum deviation, deformities of the nose (saddle-shape nose), paranasal sinuses, condition of tonsils and pharynx.	

• Deformities (short/long), lymph nodes, salivary glands, thyroid gland, carotid vessels, JVP, neck movements, position of trachea (Trail's sign).

• Size, shape, atrophy, lump, pigmentation, position of nipple, symmetry, dimpling, gynaecomastia, galactorrhoea.

• Axilla for lymph nodes, freckling

• *Hands for size* (small/large), posture, wrist drop, deformities (rheumatoid arthritis), oedema, palmar erythema, sclerodactyly, arachnodactyly, syndactyly, polydactyly.

• *Nails*, e.g. koilonychia, platonychia, white nails, pitting, onycholysis, fungal infection, half and half of nails, red lunula (red-half moon nails), splinter hemorrhage, cyanosis

• *Fingers* (small/large), webbing, Osler's node, gangrene, ulceration, clubbing.

• *Feet* (large/small), oedema, ulceration (diabetic foot), scar/burn marks (neuropathy), gangrene.

Systemic Examination

It is discussed in each section in the beginning before case discussions.

1

Section

The Cardiovascular System (CVS)

Note: No case is long or short in CVS. Any case can be put as a long as well as short case depending on the availability

CARDIOVASCULAR EXAMINATION IN SHORT

LONG CASES

1. Mitral stenosis
2. Mitral regurgitation
3. Combined mitral valve disease (mitral stenosis with mitral regurgitation)
4. Aortic stenosis
5. Aortic regurgitation
6. Mixed aortic stenosis and aortic regurgitation
7. Chronic cor pulmonale
8. Congestive heart failure (CHF)
9. Infective endocarditis

SHORT CASES

10. Slow or irregular pulse and heart
11. Cardiomegaly (dilated cardiomyopathy)
12. Acute chest pain
13. Acute myocardial infarction
14. Systemic hypertension
15. Jugular venous pulse and jugular venous pressure (JVP)
16. Ventricular septal defect (VSD)
17. Thromboangiitis obliterans (Buerger's disease)
18. Pansystolic murmur (mitral valve prolapse)
19. Examination of pulse (absent radial pulse)
20. Acute pericarditis (pericardial rub)

CARDIOVASCULAR EXAMINATION IN SHORT

Read the format for CVS examination

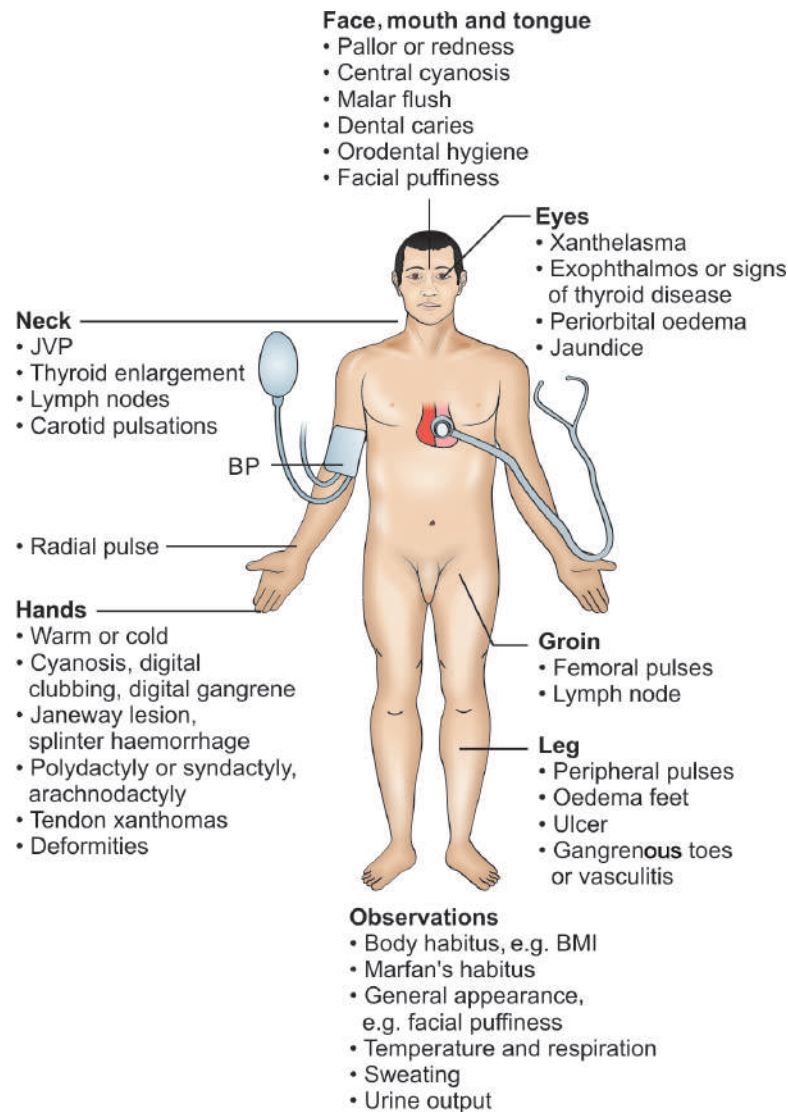


Fig. S1.1: Format for CVS examination

I. GENERAL PHYSICAL EXAMINATION

- **Head, scalp, hair**, e.g. deformity, loss of hair.
- **Face**, e.g. pallor, redness, puffiness, bluishness, malar flush, oedema.
- **Mouth**, oral mucosa, tongue, lips, e.g. dryness, cyanosis, oro-dental hygiene.
- **The skin**: Rash, purpura or bleeding spots.
- **The eyes**, e.g. xanthelasma exophthalmos, jaundice, oedema, fundus examination.

- **The ear, nose, paranasal sinus** and throat for discharge, infection and tenderness.
- **The neck**, e.g. JVP, thyroid enlargement, pulsations, lymph nodes, etc.
- **The axillae**, for lymph node
- **The hands** and upper extremity
- **The legs** and lower extremity
- **The genitalia** for oedema, hydrocoele

NB: Examine the above structure and record your finding

II. SYSTEMIC EXAMINATION



INSPECTION

Procedure. Inspect the precordium with patient resting 45° on the bed or couch with shoulders horizontal (Fig. S1.2). Look for *chest deformity* (scoliosis, kyphoscoliosis, pectum excavatum) any *scar* (sternotomy, coronary artery bypass), and *pulsations in the parasternal area, suprasternal notch and epigastrium* (aneurysm, ventricular hypertrophy).



Fig. S1.2: Inspection of the apex beat. The consultant is pointing the apex beat to the students with the help of index finger

Now look for the apex beat which is the lowest and outermost point of the cardiac pulsations seen. This can be confirmed on palpation. This is examined either in the supine or sitting position.

Normal apex beat lies in the 5th intercostal space (the space below the 5th rib) within 10 cm from the midsternal line or within the midclavicular line in an adult in the sitting or lying down position.

Normal apex beat may not be visible in a patient with asthma or COPD due to hyperinflation, obesity or thick chest or when it lies behind the rib or in pericardial effusion. It may sometimes be hidden behind the pendulous breasts in females.



PALPATION

It is just to confirm the findings seen on inspection.

Method: The best way of palpation of heart is put flat of right hand on the precordium to get a general impression of cardiac activity (Fig. S1.3).

Now localise the apex beat (Fig. S1.3) and if necessary ask the patient to roll on to the left side. Note any deviation,

whether palpable or not, character and for double apex beat (ventricular aneurysm)

Apex beat on palpation is the outermost and lowest point of cardiac impulse where the finger is lifted during systole (i.e. definite impulse or thrust is felt). It lies within 10 cm from the midline or just inner to midclavicular line.

Palpate for parasternal heave (Fig. S1.4), any palpable sound or thrill (Fig. S1.5) and pulsations.

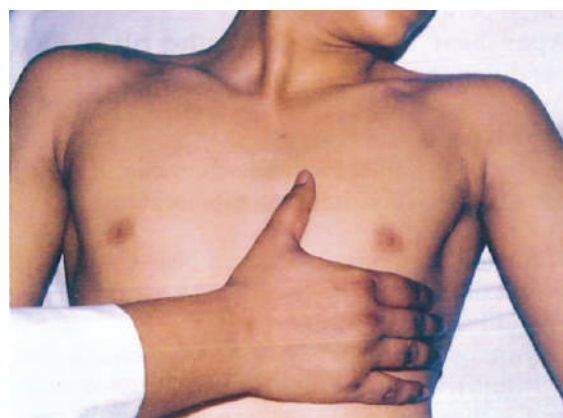


Fig. S1.3: Palpation of the apex beat



Fig. S1.4: Grading of parasternal heave. Put the ulnar border of right hand or hypothenar eminence over the left sternal border. It is graded into: *Grade I* (parasternal lift may just be palpable but not visible), *grade II* (parasternal lift palpable as well as visible) and *grade III* (parasternal lift is visible from a distance)



Fig. S1.5: Palpation for diastolic thrill in left lateral position. Roll the patient to left side and put flat of right hand over the mitral area

Note: This is the position for auscultation of mitral diastolic murmur (rumble).



PERCUSSION

In most cases, chest X-ray and echocardiogram have replaced percussion in the estimation of heart size. When you cannot feel the apical impulse, however, percussion may suggest where to search for it. Under these circumstances, cardiac dullness often occupies a large area. Starting from the left on the chest, percuss from resonant towards dull area in the 3rd, 4th and 5th and possible 6th space from the anterior axillary line towards sternum so as to define the left border of the heart. The left border of the heart normally correspond with the apex beat. The second space on the left as well as on the right may also be percussed for any dullness (normally they are resonant). To define the right border, percuss right 4th space from resonant to dull area (normally right border of the heart lies just right to right sternal border. Area of cardiac dullness is enlarged in pericardial effusion.



AUSCULTATION

Auscultation is done

1. To hear the heart sounds (first and second) and note any abnormality, metallic sound.
2. To hear extra heart sounds (3rd and 4th)
3. To hear click and snaps. Note any ejection click, opening snap.
4. To hear the rub (pericardial) and murmurs (systolic, i.e. pansystolic, ejection systolic and midsystolic; diastolic, i.e. early and mid diastolic)

Method: It is advisable to have a fixed pattern for auscultation (Fig. S1.6). Listen to the heart with your stethoscope placed first in the right 2nd intercostal space close to the sternum, then along the left sternal border in each interspace from 2nd through the fifth and lastly at the apex. This will form a 'Z' shape pattern (Fig. S1.6). Recall that upper margins of the heart are, sometimes, termed the base of the heart. Some clinicians begin auscultation at the apex and then proceed upwards in Z-shaped fashion. Either pattern is satisfactory. One should listen on an area where you detect a murmur and then listen in areas adjacent to murmur to determine its origin (loudest at the site of production).

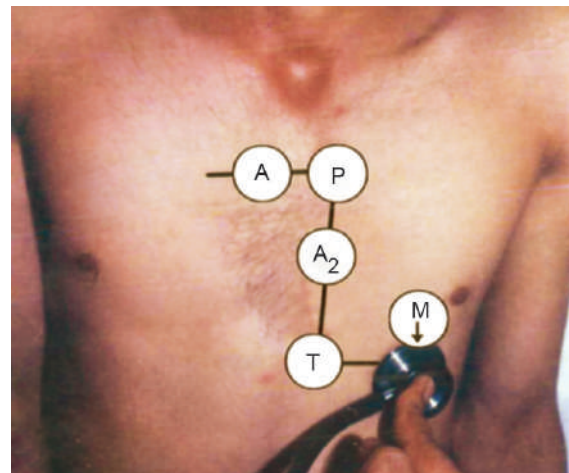


Fig. S1.6: Method of auscultation of precordium. Start either from aortic (A₁) area or mitral (M) area and proceed auscultation in Z-shape manner

Listen over the precordium first with the diaphragm with the patient supine. Use the bell at the apex, then move along the left sternal border to hear S₃ and S₄ and mid-diastolic murmur if present. Remember, the bell should be lightly placed on the chest because pressing the bell firmly on the chest makes it function like the diaphragm by stretching the underlying skin and with this technique the S₃ and S₄ (low-pitched sounds) may disappear, hence, may be missed.

Step of Examination

1. With the patient sitting semirecumbent, auscultate all the areas over precordium, listening in turn at the base of the heart, right and left sternal edges and apex with both bell and diaphragm. Also auscultate, over the carotids and where appropriate into the axilla.
2. At each site, identify the S₁ and S₂ and assess the intensity, character and splitting of these sounds

3. Then listen for added heart sounds and murmurs
4. Roll the patient to left lateral position and hear for the diastolic murmur of mitral stenosis.
5. Make the patient sit and lean forward and hear for the murmur of aortic stenosis or aortic incompetence in left 2nd interspace with diaphragm.
6. Note the features of the murmur if present.

Effect of Positions

1. *Left lateral decubitus position:* Ask the patient to roll partly onto the left side. The left lateral decubitus position brings the left ventricle close to the chest wall. Auscultate the heart with bell of stethoscope.

This position accentuates S_3 and S_4 and mid-diastolic murmur of mitral stenosis.

2. Ask the patient to sit up, lean forward, exhale completely (Fig. S1.7).

Auscultate the chest with diaphragm along the left sternal border and at the apex.

This position accentuates or brings out aortic murmurs (soft diastolic murmur of aortic regurgitation) which is likely to be missed unless you use this position.

EFFECTS OF MANOEUVRES ON MURMURS AND CLICK

1. **Valsalva manoeuvre:** This procedure helps to differentiate murmur of HOCM (hypertrophic obstructive cardiomyopathy) from aortic stenosis. It also helps to identify prolapsed mitral valve.

Most murmurs decrease in length and intensity with this manoeuvre. Two systolic murmurs, i.e. murmurs of HOCM and mitral valve prolapse (MVP) become prominent; while systolic murmur of AS decreases in intensity, thus differentiate it from HOCM.



Figs S1.7A and B: Auscultation of aortic areas (A_1 and A_2). Ask or make the patient to bend forward and hold her/his breath in expiration. Hear for the aortic murmurs at: (A) Aortic (A_1) area in 2nd right interspace and (B) aortic (A_2) area in 3rd left interspace

2. **Hand grip:** Isometric (hand grip) or isotonic exercise increase the murmur across the obstructed valve (AS). Murmurs due to rapid flow across the normal valve (flow murmur) also get accentuated with hand grip.
3. **Squatting:** With this manoeuvre, there is decrease in the intensity of murmur of HOCM and MVP. Murmur of AS increases in intensity.

EFFECT OF PHARMACOLOGICAL AGENTS

Amylnitrate inhalation (vasodilator response) decreases the murmur of MR, VSD and AR while murmur of AS increases. The murmur of MVP shows biphasic response (first softer than louder). The phenylepinephrine (vasoconstrictor response) tends to produce opposite effect.