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# UNIT 1 THE HISTORY AND SYMPTOMS IN CARDIOVASCULAR DISEASE

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## Structure

- 1.0 Objectives
- 1.1 Introduction
- 1.2 History of Dyspnea
- 1.3 History of Chest Pain
- 1.4 History of Associated Symptoms
- 1.5 Let Us Sum Up
- 1.6 Answers to Check Your Progress

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## 1.0 OBJECTIVES

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After going through this unit, you should be able to:

- learn how to take history of dyspnea;
- describe natural history of chest pain and classification of angina; and
- learn how to take history of associated symptoms of cardiovascular systems.

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## 1.1 INTRODUCTION

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"Ah, there are signs which are more subtle than speech."

### Sir Arthur Conan Doyle (Physiologist's Wife)

A carefully taken history, in a relaxed atmosphere can often give the clinical diagnosis. The body language of the patient and his accompanying relative also gives valuable information. During the first interview the patient may not reveal everything. A compassionate doctor will find that the rapport is established during the follow-up and revealing facts may emerge regarding alcohol, tobacco and sex habits. Always be a patient listener.

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## 1.2 HISTORY OF DYSPNEA

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Dyspnea is difficulty in breathing (respiration) and the patient is unpleasantly aware of this. Dyspnea on effort is a common problem. Ask the patient if he is breathless when climbing stairs, going up a gradient or walking on a flat surface at a normal pace. Can the patient keep up with colleagues or is there a need to slow down. Assess the number of stairs he can climb or the distance walked before breathlessness occurs. Dyspnea is usually due to congestion from heart failure or chronic pulmonary disease. Anxiety may contribute to it. Acute dyspnea may occur as in flash pulmonary edema, pulmonary embolism, acute pneumothorax, airway obstruction or asthma.

Many dyspneic patients are comfortable only on sitting up (orthopnea). Some may find that they are particularly breathless when lying on one side (trepopnea). In heart failure the central blood volume is increased on lying supine. This stimulates the receptors in the atrium and the lungs, producing breathlessness.

Paroxysmal Nocturnal Dyspnea (PND) starts during sleep, commonly 2-3 hours after retiring. Patient gets breathless and needs to sit up or even walk about or open a window. It can progress from mild breathlessness to frank pulmonary edema.

Cough with or without wheezing may accompany dyspnea. The sputum may be watery with a little froth and pink blood. On the other hand, a dry irritative cough suggests the side effect of ACE inhibitors.

Hemoptysis may be present with raised pulmonary venous pressure as in mitral stenosis or LV failure.

Cheyne-Stokes breathing is a form of periodic respiration with shallow respiration slowing increasing in depth to hyperpnea and returning to shallow breathing again. It occurs during sleep.

Sleep-apnea syndrome is due to obstruction of the naso-pharyngeal region and may be associated with high blood pressure. Strictly speaking Cheyne-Stokes respiration and sleep-apnea is not dyspnea, as there is no subjective sensation. Wheezing associated with dyspnea is called cardiac asthma.

Rarely, the patient may be worse off when sitting or standing as in atrial myxoma or the ball of a prosthetic valve may block the mitral valve orifice due to gravity in the vertical position. The grading dyspnea is given in Table 1.1 and its causes in Table 1.2.

Description	Grade	Degree
Not troubled by shortness of breath when hurrying on the level or walking up an elevation	0	None
Troubled by shortness of breath when hurrying on the level or walking up an elevation	1	Mild
Walks more slowly than people of the same age because of breathlessness	2	Moderate
Stops for breath after walking for 100 yards or after a few minutes on the level*	3	Severe
Too breathless to leave the house. Breathless when undressing	4	Very severe

\*This can be checked in the hospital or office corridor, with a watch in the hand.

Acute	Chronic
<ul style="list-style-type: none"> <li>• Left ventricular failure, pulmonary adema</li> <li>• Asthma</li> <li>• Spontaneous pneumothorax</li> <li>• Pulmonary embolism</li> <li>• Pneumonia</li> <li>• Pleural effusion</li> <li>• Chest wall injury</li> <li>• Pulmonary haemorrhage</li> </ul>	<ul style="list-style-type: none"> <li>• Left ventricular failure</li> <li>• "Stiff" left ventricles as in hypertension, hypertrophic cardiomyopathy</li> <li>• Chronic obstructive pulmonary disease (COPD)</li> <li>• Diffuse interstitial lung fibrosis</li> <li>• Asthma</li> <li>• Pulmonary thrombo-embolic disease</li> <li>• Anxiety</li> <li>• Severe anaemia</li> <li>• Pulmonary hypertension</li> <li>• Tracheal stenosis</li> </ul>

## Check Your Progress 1

1) How does a patient describe paroxysmal nocturnal dyspnea?

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2) How do you grade dyspnea?

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3) Mention three common causes of acute dyspnea?

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## 1.3 HISTORY OF CHEST PAIN

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Good history taking is particularly important in the evaluation of chest pain. It is a cardinal sign of cardiac distress, listen to its voice.

Angina pectoris is retrosternal in position and the pain, pressure or discomfort may radiate to the left or right arm, epigastrium, either shoulder, neck or the jaw. Samuel Levine often remarked that the patient describes anginal pain by placing his closed fist on the sternum (Levine sign). The duration of the pain is less than 2-10 min and it is usually precipitated by exertion, emotional stress, a heavy meal, cold weather, walking up a slope or a hilly area or by a sudden rise in blood pressure. Anginal pain is relieved by rest or sublingual nitroglycerine. Mandibular or jaw pain though rare can be misleading as jaw pain might suggest a dental problem. During angina, the BP may shoot up and a systolic murmur of papillary muscle dysfunction may be heard at the apex or right lower sternal region of the heart.

The variant form, Prinzmetal's angina is unrelated to activity and may occur at a fixed time, often early in the morning (vasospastic angina).

Angina at rest resembles effort angina in character but the symptoms may be pronounced and signs of heart failure may be present.

The first attack of angina or changes in severity of angina with varying symptoms occurring in quick succession is called unstable angina. It may have a crescendo character.

**Classification of Angina**

There are many classifications of the Angina Pectoris but Canadian Cardiovascular Societies classification is widely accepted.

Table 1.3: Functional Classification of Angina Pectoris (Canadian Cardiovascular Society)	
Grade	Symptoms
I	Ordinary physical activity such as walking and climbing stairs, does not cause angina. Angina results from strenuous or rapid or prolonged exertion at work or recreation.
II	Slight limitation of ordinary activity. Walking or climbing stairs rapidly, walking uphill, walking or stair climbing after meals, in cold, in wind, or when under emotional stress or only during the few hours after awakening. Walking more than 2 blocks on the level and climbing more than one flight of ordinary stairs at a normal pace and under normal conditions.
III	Marked limitations of ordinary physical activity. Walking one or two blocks on the level and climbing more than one flight under normal condition.
IV	Inability to carry on any physical activity without discomfort—anginal syndrome may be present at rest.

**Myocardial Infarction**

The location and radiation of the pain is as in angina but the duration is more than 20 minutes. The pain is unrelieved by rest or nitroglycerine. It may manifest with a sense of oppression or a knife-like thrust sensation, shortness of breath, sweating, weakness and sometimes nausea and vomiting may accompany the pain. The heart rate is usually raised. It is worthy of note that myocardial infarction may be silent episode in diabetics.

**Conditions Mimicking Anginal Pain or Myocardial Infarction**

These include pericarditis where the pain lasts for a long period and is aggravated by deep breathing and the supine position. It is relieved on sitting up and leaning forward. Aortic dissection is accompanied by a 'tearing' pain of sudden origin radiating backward. Pulmonary embolism gives a sharp pain (pleuritic in type) and Pulmonary hypertension produces a heavy pressure like pain. A pricking chest pain is seen in mitral valve prolapse (MVP). This type of pain may be accompanied by costo-chondral pain in the third left intercostal space (Tietze's syndrome). Post operatively, pleuro-pericardial pain may be present due to pericarditis (Dressler's syndrome).

Peptic ulceration in the esophagus or stomach quite often mimics angina. Many elderly patients have a hiatus hernia with reflux esophagitis-this too may mimic coronary pain.

Local pain over the nipple can be due to spironolactone therapy. Look for gynecomastia. Before herpes zoster appears there can be excruciating intercostal pain.

**Check Your Progress 2**

1) What is a typical description of exertional angina?

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2) How would you describe the grades of angina?

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## **1.4 HISTORY OF ASSOCIATED SYMPTOMS**

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There are many associated symptoms with cardiovascular diseases and they are discussed in this section.

### **1) Cough**

A dry non-productive cough, at rest or on exertion, suggests pulmonary venous congestion as in congestive cardiac failure or mitral stenosis. The sputum may be blood tinged. Chronic bronchitis on the other hand causes a white and mucoid expectoration. A dry irritating cough is a not uncommon side effect of ACE inhibitor therapy. Structures like an aneurysm of the aorta pressing on the trachea can also produce a distinct type of cough.

### **2) Oliguria**

A history of passing "less urine than before" is a symptom of congestive cardiac failure.

### **3) Fatigue**

Heart failure, anemia, thyrotoxicosis and anxiety/depression may be associated with fatigue. Following an acute MI the patient may experience great weakness. Chronic severe fatigue should be interpreted as an angina equivalent. Statins are known to cause muscle pain and fatigue.

### **4) Palpitation**

The patient may complain of the heart pounding, skipping a beat or jumping in the chest. It may be a benign symptom but it needs evaluation. Occasionally, the patient may have a slight pounding sensation in the neck (cannon 'a' waves). A sudden or instantaneous origin of palpitation with an equally abrupt cessation indicates paroxysmal supraventricular tachycardia. One of the varieties is the Wolff-Parkinson-White syndrome. Syncope can occur during such tachycardias without any awareness of the rhythm disturbance.

### **5) Syncope**

Transient loss of consciousness can occur (Cardiac Syncope) in patients with heart disease. It may be postural with a drop in blood pressure, or due to low cardiac output, hypovolemia, or due to a rhythm disturbance (either tachy or bradyarrhythmia).

Common fainting is vaso-vagal in origin. A needle prick, witnessing a surgical operation, sight of blood, standing on the feet for long hours etc. can precipitate such an attack in those who are predisposed to these episodes.

A hypersensitive carotid sinus may be present in some patients with syncope.

Left ventricular outflow obstruction due to aortic valve stenosis or hypertrophic subaortic stenosis may cause syncope.

Syncope needs to be carefully distinguished from epileptic seizures or cerebral embolization.

6) **Headache**

Headache particularly in the occipital region can be due to hypertension. In patients with a central R-L shunt in the heart, with fever exclude a cerebral abscess. In patients with HIV induced myocarditis it may be due to cryptococcal meningitis of the CNS.

7) **Fever, Rigors and Sweats**

In rheumatic heart disease there can be fever with associated tachycardia and joint pains. Chills and fever should make one suspect infective endocarditis. Fever with pleuritic pain suggests acute pericarditis. Sweating is often found with acute myocardial infarction.

8) **Hoarseness of Voice**

Patients with an enlarged left atrium as in mitral stenosis can develop a hoarse voice due to pressure on the left recurrent laryngeal nerve (Ortner's Syndrome). A hoarse voice may also suggest an aortic aneurysm.

Patients with myxedema and heart disease can have a hoarse voice (old gramophone record at low speed).

Following cardiac surgery, hoarseness may be present due to vocal cord damage produced by the endotracheal tube.

9) **Hiccups**

Hiccups may be rare initial presentation of myocardial infarction. Amoebic abscess can irritate the diaphragm and even invade the pericardium with hiccups and chest pain as its presentation.

10) **Dysphagia**

Heartburn, oesophageal reflux, oesophageal spasm can co-exist with angina in many elderly patients with heart disease.

11) **Anorexia, Nausea, Vomiting**

Right heart failure with an enlarged liver can present with these symptoms. Digitalis toxicity is another important cause.

12) **Skin Colour**

Pallor is often present in myocardial infarction. The patient may point out that his nails are blue (cyanosis). If the cyanosis is central the patient may note that his mucous membranes are bluish.

Jaundice may be due to hepatic congestion in chronic right heart failure, pulmonary infarction or red cell hemolysis by a prosthetic valve. Sudden flushing of the skin occurs during menopause or more uncommonly if carcinoid heart disease is present.

With amiodarone toxicity the skin takes on a patchy slate-like discoloration.

13) **Insomnia, Anxiety and Depression**

These symptoms are often due to underlying chronic ischaemic heart disease. Depression is not uncommon especially after heart surgery.

14) **Impotence**

Often the patient returns to the consulting room alone to talk about his embarrassing problem of impotence. It may be indication of severe coronary artery disease or the side effect of one or more of the anti-hypertensive drugs and other medications.

15) **Nocturnal Cramps, Intermittent Claudication**

These signify peripheral vascular disease in the legs or a side effect of beta-blocker therapy. Cramps, by itself, may be due to isolated potassium deficiency caused by enthusiastic diuretic therapy.

16) **Embolism**

An embolism may be the first indication of heart disease. This typically occurs in the context of atrial fibrillation, dilated cardiomyopathy, left ventricular aneurysm and infective endocarditis.

A well-taken history, in a congenial atmosphere is the beginning of the healing process. A wise clinician always pays a great deal of attention to the patient's history.

**1.5 LET US SUM UP**

In this unit, you have learnt the importance of history taking how to take history of a patient. You have learnt how to take history of dyspnea, natural history of chest pain and classification of angina. You have also learnt how to take history of associated symptoms of cardiovascular system.

**1.6 , ANSWERS TO CHECK YOUR PROGRESS**

**Check Your Progress 1**

- 1) Paroxysmal nocturnal dyspnea (PND) starts during sleep, commonly 2-3 hours after retiring. Patient gets breathless and needs to sit up or even walk about or open a window. It can progress from mild breathlessness to frank pulmonary edema.
- 2) The American Thoracic Society Scale of Dyspnea

Description	Grade	Degree
Not troubled by shortness of breath when hurrying on the level or walking up an elevation.	0	None
Troubled by shortness of breath when hurrying on the level or walking up an elevation.	1	Mild
Walks more slowly than people of the same age because of breathlessness.	2	Moderate
Stops for breath after walking for 100 yards or after a few minutes on the level.	3	Severe
Too breathless to leave the house. Breathless when undressing.	4	Very Severe

- 3) Left ventricular failure, pulmonary edema, asthma, spontaneous pneumothorax.

**Check Your Progress 2**

- 1) Angina pectoris is retrosternal in position and the pain, pressure or discomfort may radiate to the left or right arm, epigastrium, either shoulder, neck or the jaw. Samuel Levine often remarked that the patient describes anginal pain by placing his closed fist on the sternum (Levine sign). The duration of the pain is less than 2-10 min. It is precipitated by exertion, and is relieved by rest or sublingual nitroglycerine.

**Clinical Evaluation**

- 2) Functional Classification of Angina Pectoris (Canadian Cardiovascular Society)**
- i) Ordinary physical activity such as walking and climbing stairs, does not cause angina. Angina results from strenuous or rapid or prolonged exertion at work or recreation.
  - ii) Slight limitation of ordinary activity. Walking or climbing stairs rapidly, walking uphill, walking or stair climbing after meals, in cold, in wind, or when under emotional stress or only during the few hours after awakening. Walking more than 2 blocks on the level and climbing more than one flight of ordinary stairs at a normal pace and under normal conditions.
  - iii) Marked limitations of ordinary physical activity. Walking one or two blocks on the level and climbing more than one flight under normal condition.
  - iv) Inability to carry on any physical activity without discomfort—anginal syndrome may be present at rest.

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# UNIT 2 EVALUATION OF PATIENT: CLINICAL EXAMINATION

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## Structure

- 2.0 Objectives
- 2.1 Introduction
- 2.2 General Examination
- 2.3 Pulse
- 2.4 Jugular Venous Pressure
- 2.5 Cardiac Examination
- 2.6 Cardiac Examination Auscultation
  - 2.6.1 Heart Sound
  - 2.6.2 Systolic Murmurs
  - 2.6.3 Diastolic Murmurs
  - 2.6.4 Continuous Murmurs
  - 2.6.5 Dynamic Auscultation
- 2.7 Examination of Chest and Abdominal
- 2.8 Let Us Sum Up
- 2.9 Answers to Check Your Progress

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## 2.0 OBJECTIVES

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After going through this unit, you should be able to:

- ξ carried out the general physical examination;
- ξ recognize the various types of pulse;
- ξ examine juglar venous pressure and identified the raised juglar venous pressure and associated signs;
- ξ identified the normal heart sound all types systolic and diastolic murmur; and
- ξ carried out the examination of chest and abdomen.

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## 2.1 INTRODUCTION

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A careful physical examinations is a very important for assessing the cardiovascular system and after provides important information for the appropriate investigations and diagnosis. The general physical examination should be properly evaluated. The respiratory rate central cyanosis and peripheral cyanosis should be observe carefully. Palpation of the peripheral arterial pulses in the upper and lower extremities also provide many valuable information cardiac auscultation should performed in a quiet room and for optimal auscultations attention must be focused on the phase of the cardiac cycle. The timing of the heart sound or murmur can be determined from its relation to other events in the cardiac cycle like carotid arterial pulse. The aptical impulse and the juglar venous pressure.