



# Healthy Heart

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**Honorary Editor :**  
Dr. Dhiren Shah



## From the Desk of Hon. Editor:

Dear Friends,

Greetings from CIMS Hospital CVTS department.

You all are very well aware that till date we have done 5 Successful Heart Transplants at CIMS Hospital.

I got lot of inquiries as to what are the indication, contraindication for heart transplant. Even what is the process if someone has to refer the patient for Heart Transplant. In this brief article I have tried to give you quick summary of which patients are candidates for heart transplant & once they are considered for transplant then what is further process of enrolling them in waiting list for heart transplant.

Hope this helps you in finding out right patient for transplant & you can guide them for the same.

## Advanced Chronic Heart Failure and Heart Transplantation

**A Guide to Clinical Decision-Making and the process for reference for Heart Transplant**

### Diagnosis of Advanced Chronic Heart Failure

Advanced chronic heart failure is defined as Stage D heart failure according to the latest ACC/AHA heart failure guidelines. It designates patients with refractory heart failure who might be eligible for specialized, advanced treatment strategies or cardiac transplantation, or for end-of-life care, such as hospice.

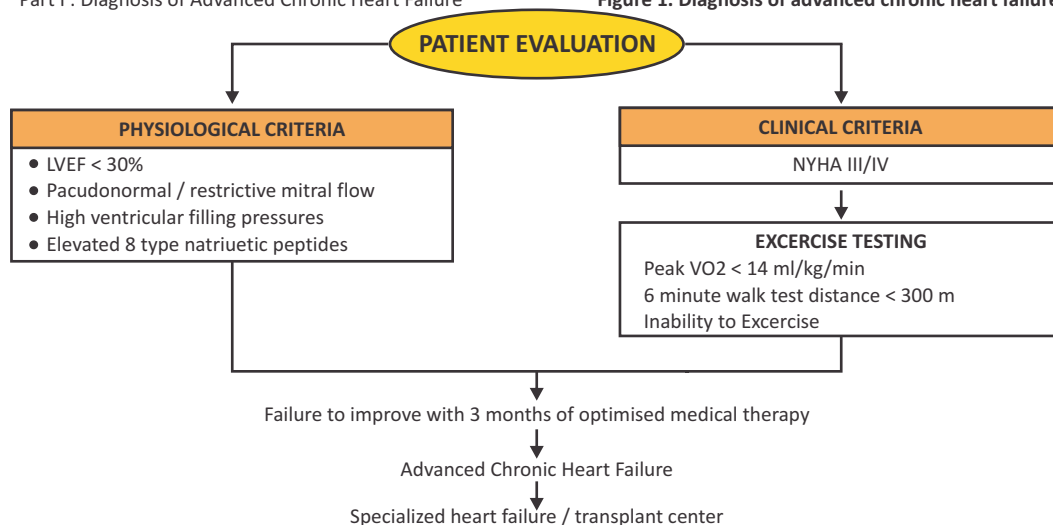
The clinical definition of advanced chronic heart failure is based on NYHA class 3 or 4 symptoms, severely impaired exercise capacity, and a history of at least 1 hospitalization due to heart failure in the

past 6 months despite optimal medical therapy. Even advanced heart failure is punctuated by periods of more severe signs and symptoms followed by periods of compensation. Often, patients with a history of functional class 4 will respond to augmented therapy with significant lessening of symptoms. Therefore, a 3-month persistence of at least NYHA III symptoms seems to be a justifiable requirement for the diagnosis of advanced chronic heart failure.

A cardiopulmonary exercise testing in the form of VO<sub>2</sub> max--peak oxygen consumption of <14 ml/kg/min would

Part I : Diagnosis of Advanced Chronic Heart Failure

Figure 1. Diagnosis of advanced chronic heart failure



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appear to be a reasonable diagnostic criterion for advanced heart failure, and a diagnosis of advanced heart failure would be unreasonable if peak VO<sub>2</sub> was >18 ml/kg/min. A simple 6 minute walk distance test of less than 300 meters is again diagnostic of Advanced Heart Failure.

## Evaluation of Indications for Heart Transplantation

In a specialized centre, the evaluation of patients with advanced chronic heart failure patient is based on an integrated approach that includes the assessment of candidacy for heart transplantation and alternate treatment modalities, such as Cardiac Resynchronization Therapy (CRT) or mechanical circulatory support (LVAD).

## Table 1. Indications for Heart Transplantation in Advanced Chronic Heart Failure

### ABSOLUTE

- Refractory cardiogenic shock
- Documented dependence on IV inotropic support to maintain adequate organ perfusion
- Peak VO<sub>2</sub> less than 10 ml/kg/min with achievement of anaerobic metabolism
- Recurrent life-threatening ventricular arrhythmias refractory to all therapeutic modalities

### RELATIVE

- Peak VO<sub>2</sub> 11 to 14 ml/kg/min (or 55% of predicted) and major limitation of the patient's daily activities

After screening for absolute indication for Heart Transplant, assessment and screening for contraindications is done for which a battery of investigations are done.

## Table 5. Traditional Contraindications for Heart Transplantation

### Age

- Obesity
- Insulin-dependent diabetes with end-organ damage
- Irreversible renal dysfunction
- Irreversible hepatic dysfunction
- Coexistent systemic illness with a poor prognosis
- Irreversible pulmonary arterial hypertension
- Irreversible pulmonary parenchymal disease
- Acute pulmonary parenchymal disease
- Severe peripheral and/or cerebro-vascular disease
- Irreversible renal dysfunction
- Active peptic ulcer disease
- Active diverticulosis or diverticulitis
- Active infection
- Coexisting neoplasm

This battery of investigations are as follows and estimated cost for this pre transplant evaluation will be around Rs1,75,000/-.

## Table 3. Required Pre-Transplant Studies in All Patients

<b>History and Physical, Body weight</b>	Baseline + Q3 Months
<b>Assessment of Heart Failure Severity</b>	
● Cardiopulmonary exercise test	Baseline+Q1 Year
● Echocardiogram	Baseline+Q1 Year
● Right heart catheter	Baseline+Q6 Months
● Coronary angiography	Baseline
● ECG	Baseline+Q1 Year
<b>Evaluation of multi-organ function</b>	
● Routine lab work (BMP, CBC, LFT)	Baseline+Q3 Months
● PT/INR	Baseline+Q3 Months
● Urinalysis	Baseline+Q3 Months
● GFR (MDRD quadratic equation)	Baseline+Q3 Months
● Urine sample for protein excretion	Baseline+Q3 Months
● PFT with Arterial blood gasses	Baseline
● CXR (PA and lateral)	Baseline+Q1 Year

● Abdominal ultrasound	Baseline
● Stool for occult blood 3x	Baseline+Q1 Year
● Immunocompatibility	
● ABO, Repeat ABO	Baseline
● HLA tissue typing	Baseline
● PRA and flow cytometry	Baseline+Q2 Months

(PRA>10%, VAD, transfusion

## Infectious serology and vaccination

● Hepatitis B surface Ag	Baseline
● Hepatitis B surface Ab	Baseline
● Hepatitis B core Ab	Baseline
● Hepatitis C Ab	Baseline
● HIV	Baseline
● Rapid Plasma Reagin	Baseline
● HSV IgG	Baseline
● CMV IgG	Baseline
● Toxoplasmosis IgG	Baseline
● EBV IgG	Baseline
● Varicella IgG	Baseline
● PPD	Baseline

## General consultation

● Social work, Psychology	Baseline
● Financial	Baseline

## Evaluation of multi-organ function

● Carotid Doppler and lower extremity arterial ultrasounds (history or coronary artery disease, smoking, or >50 y)	Baseline
● Pulmonary Function Testing (smoking, amiodarone use)	Baseline
● DEXA scan (>50 y)	Baseline
● Dental examination (poor oral hygiene)	Baseline+Q1 Year
● Ophthalmologic examination (diabetic)	Baseline+Q1 Year

## Preventive and malignancy

● Colonoscopy (men > 50 y)	Baseline
● Mammography (> 40 y)	Baseline+Q1 Year
● Gyn/Pap (>18 y sexually active)	Baseline+Q1 Year
● PSA and digital rectal exam (men>50y)	Baseline+Q1 Year

After this clearance from all above contra-indications, patient is enrolled on waiting list for Heart Transplant. Estimate for the Heart Transplant is given based on the reports and risk factors

Once Patient is enrolled, then patient is advised to stay within the periphery of 100 km of Ahmedabad , so that he/she can reach hospital in time once we get a call for organ donation .

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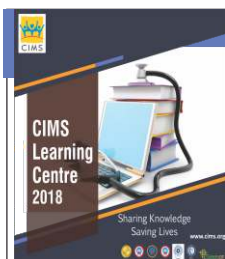
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## Basic Clinical Epilepsy Learning Course

**Course Directors** : Dr. Shalin Shah / Dr. Pranav Joshi / Dr. Sagar Betai  
**Date** : April 22, 2018 (Sunday)  
**Duration** : Half day  
**Number of Seats** : 50  
**Venue** : CIMS Auditorium

### Programme Overview:

In this country of approximately 1 crore people with epilepsy, there is an estimated treatment gap of 22% in urban and 90% in rural population. The burden of epilepsy can be reduced in as many as 80% of the patients by appropriate management. To make the best use of resources, it is necessary to update and upgrade our knowledge and establish priorities. This has led us to develop the "EPILEPSY" learning module.

### Programme Highlights:

- Approach to first seizure
- Seizure semiology
- EEG and MRI in epilepsy
- How to choose antiepileptic drugs
- Refractory seizures
- Status epilepticus
- Special situations: women and elderly
- AEDs in systemic and neurological diseases

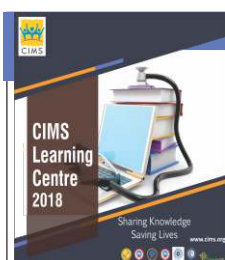
**Online registration & payment on [www.cims.org /clc](http://www.cims.org/clc)**

**Registration Fees: ₹ 500/- | Spot Registration Fees: ₹ 1,000/-**

**Non-refundable**

**For any query, please email on : [clc@cimshospital.org](mailto:clc@cimshospital.org)**

> Certificate of attendance will be given at the end of the course.



## Music of Heart & Lung-Enhance Your Skills

**Course Directors** : Dr. Satya Gupta / Dr. Vineet Sankhla / Dr. Vipul Kapoor / Dr. Tejas V. Patel  
 Dr. Keyur Parikh / Dr. Milan Chag / Dr. Urmil Shah / Dr. Hemang Baxi  
 Dr. Anish Chandarana / Dr. Ajay Naik  
**Pulmonologists** : Dr. Nitesh Shah / Dr. Amit Patel / Dr. Kalpesh Panchal  
**Date** : April 29, 2018 (Sunday)  
**Duration** : 1 day  
**Number of Seats** : 50  
**Venue** : CIMS Auditorium

### Programme Overview:

Our newest auscultation course is designed to help physicians, interns, MBBS & MD students to learn different types of heart sound, murmurs and respiratory sounds. This programme will have theoretical lectures on basic concepts of heart sounds & murmurs followed by practical teaching using audio clips of various normal and abnormal heart sound, murmur and lung sound. A dedicated 2-hour session on basic aspects of various respiratory sounds and practical demonstration by audio clips.

### Programme Highlights:

- Heart sounds
- Normal heart sound
- First heart sound
- Second heart sound
- Extra heart sounds (S3 & S4)
- Systolic murmurs
- Diastolic murmurs
- Mitral valve click sound (MVP)
- Pulmonary arterial hypertension
- Mitral stenosis and regurgitation
- Aortic stenosis
- Regurgitation
- Carotid bruit

### Lung Sounds

- Vesicular - normal
- Crackles - fine & coarse
- Wheeze
- Rhonchi
- Bronchial
- Pleural rubs

**Online registration & payment on [www.cims.org /clc](http://www.cims.org/clc)**

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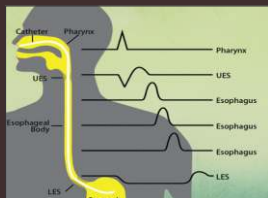
## CIMS GASTROENTROLOGY

State-of-the-art G.I. Physiology lab at CIMS

### Esophageal Manometry

Indications:

- Difficulty in swallowing
- Regurgitation
- Reflux disease/ heartburn
- Before reflux surgery
- Chest pain (non-cardiac)



### Colon Transit Study



Indication: Constipation

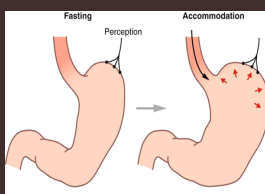
### Anorectal Manometry

Indications:

- Constipation
- Incomplete evacuation
- Incontinence
- Before stoma closure
- Anal disorders in children

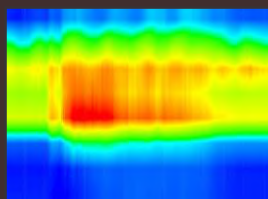


### Gastric Accommodation Testing

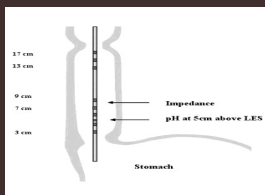


Indication: Abdominal bloating or fullness

### Biofeedback Therapy



### 24 hour pH Recording



Indication:  
Refractory esophageal reflux  
Extra esophageal GERD  
Before fundoplication surgery

## CONSTIPATION CLINIC

### Complications of Constipation

- Hemorrhoids (piles)
- Rectal bleeding
- Anal fissures (tears in skin around the anus)
- Rectal prolapse (the large intestine detaches inside the body and pushes out of the rectum)
- Fecal impaction (hard, dry stool is stuck in the body and unable to be expelled naturally)

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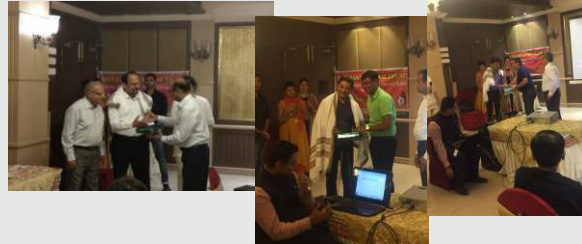
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