

Conclusion

At Lilavati Hospital with a team of experienced Cardiologists, Cardiothoracic Surgeons, and Support Staff, we offer Comprehensive Services that cater to the uniqueness of each patient. From prevention and diagnosis to treatment and rehabilitation, we strive to deliver personalized, compassionate, and cutting-edge care. Our commitment to innovation, quality, and patient-centered care makes us a trusted partner in promoting heart health and improving outcomes for our patients.

**For appointment call:
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Lilavati Hospital and Research Centre
More than Healthcare, Human Care
NABH Accredited Healthcare Provider

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ADVANCED CARDIAC SERVICES

**Department of
Cardiac Sciences**



Lilavati Hospital and Research Centre
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Lilavati Hospital and Research Centre in Mumbai has state-of-the-art Cardiology Department, which offers a range of services that includes Diagnostics, Advance Medical Therapy, The rapеutic Interventional procedures for both Coronary Heart Disease and Structural Heart Disease, and treatment for Advanced Heart Failure.

The Department of Cardiac Science is a Comprehensive Centre for Cardiovascular Care, integrating Cardiology, Cardiothoracic Surgery, and Advanced Diagnostics. Our team of specialists ensures total care for heart conditions, from preventive cardiology to complex surgeries. With state-of-the-art facilities and cutting-edge technology, we offer personalized treatment plans tailored to each patient's needs. Our Invasive Interventional Cardiology Department has 24x7 well equipped Cath Lab, to handle all kind of Cardiac Emergencies and complex cases.

Over Mission to deliver

- o Evidence Based Exceptional Care
- o Streamlined & Quickest Treatment
- o Improved Patient Outcome



Key Features of the Cardiology Department:

- 1. Expert Care Team:** Experienced Cardiologists, Cardiac Surgeons, and Support Staff
- 2. Advanced Diagnostic Services:** Echocardiography, Stress Testing, MRI, CT Scans, and more
- 3. State-of-the-Art Facilities:** Modern Equipment and Technology for Diagnosis and Treatment. Latest advancements in Cardiac Care, including Minimally Invasive Procedures
- 4. Comprehensive Care:** Preventive cardiology, interventional procedures, cardiac surgery, and rehabilitation
- 5. Personalized Treatment Plans:** Tailored care for each patient's unique needs
- 6. 24x7 Emergency Services:** Immediate care for life-threatening cardiac conditions
- 7. Multidisciplinary Approach:** Collaboration with other specialties for Comprehensive Patient Care
- 8. Patient Education and Support:** Empowering patients with knowledge and resources for heart health
- 9. Quality and Safety:** Commitment to High-Quality Care and Patient Safety

Congenital Cardiac Surgeries

- o Atrial Septal Defect (ASD) and Ventricular Septal Defect (VSD) repairs
- o Patent Ductus Arteriosus (PDA) Closures
- o Surgical Treatment of Coarctation of the Aorta

Collaborative Surgical Support

- o We also provide surgical assistance and expertise in:
- o Complex Vascular Surgeries
- o Vascular Anastomoses in various procedures
- o Kidney and Liver Transplant surgeries
- o Onco-surgical procedures, including Complex Vascular Reconstructions

Infrastructure & Equipment

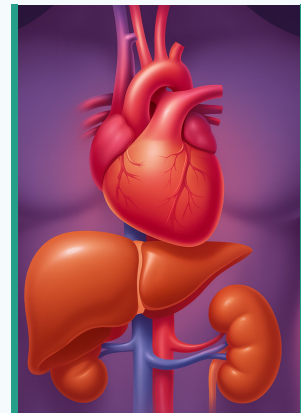
- o Two dedicated Cardiac Operation Theaters (OT)
- o 13-bed dedicated Cardiac Surgical Intensive Care Unit (ICU)

Advanced support systems, including:

- o 3 Heart-Lung Machines
- o ECMO (Extracorporeal Membrane Oxygenation) Machines
- o IABP (Intra-aortic Balloon Pump) Machines
- o Dedicated Transesophageal Echocardiography Units

Our other operating theatres are also fully equipped to handle cardiac surgeries as needed

We have highly equipped ICU beds with advanced technologies dedicated for Cardiac Surgery (postoperative and critical patients) (adult/pediatric) patients)



Cardiac Surgical Procedures Offered



Myocardial Revascularization for Coronary Artery Disease

- o Beating Heart Total Arterial Myocardial Revascularization
- o On Pump Coronary Artery Bypass Grafting (CABG)
- o Minimally Invasive CABG
- o Hybrid Myocardial Revascularization

Valve Surgeries

- o Valve Replacements: Aortic, Mitral, Pulmonary, and Tricuspid
- o Valve Replacements
- o Valve Repairs: Mitral and Tricuspid

Aortic Surgeries

- o Aortic Aneurysm & Aortic Dissection Repairs
- o Aortic Root Replacements
- o David's Procedure
- o Ascending Aortic Replacements
- o Hemiarch & Total Arch Reconstructions

Complex & Redo Surgeries

- o Redo Cardiac Surgeries
- o Pericardiectomies
- o Resection of Mediastinal & Cardiac Tumors
- o CoxMaze Procedures (for Atrial Fibrillation)
- o Pulmonary Endarterectomy (for Chronic Thromboembolism)
- o Repair of LV Aneurysms

Emergency Cardiac Surgery

- o Cardiac Tamponade and Rupture
- o Ruptured Sinus of Valsalva
- o Stuck Mechanical Valves
- o Cardiac and Lung Trauma
- o Gunshot Injuries
- o Pericardiectomies
- o Resection of Mediastinal & Cardiac Tumors
- o CoxMaze Procedures (for Atrial Fibrillation)
- o Pulmonary Endarterectomy (for Chronic Thromboembolism)
- o Repair of LV Aneurysms

Our Services:

- o Preventive Cardiology and Risk Assessment
- o Diagnostic Testing (ECG, Echocardiography, Stress Test)
- o Advanced Imaging (Cardiac MRI, CT scans)
- o Nuclear Medicine (Myocardial Perfusion Imaging (MPI), PET Cardiac Scans, MUGA Scans (Ejection Fraction Studies), Cardiac Viability Assessments)
- o Cardiac Rhythm Management (Pacemakers, ICDs)
- o Heart Failure Management
- o Vascular Care (Peripheral Artery Disease Treatment)
- o Electrophysiology Studies and Ablation
- o Cardiac Rehabilitation
- o Pediatric Cardiology Services
- o Video consultations

We also offer SPECIALISED CLINICS for:

- o Heart Failure Clinic
- o Atrial Fibrillation
- o Structural Heart Disease



24x7 Emergency Services

- Our 24x7 Cardiac Emergency for Cardiac patients provide:
- o Immediate and specialized care for life-threatening conditions
 - o Experienced Cardiologists and Emergency Medicine specialists available round-the-clock
 - o Advanced Life-Support Systems for timely interventions
 - o Evidence-based treatments for optimal patient outcomes
 - o Comprehensive Care for Cardiac Emergencies, including:
 - ◇ Myocardial Infarctions
 - ◇ Arrhythmias
 - ◇ Cardiac Arrests
 - ◇ Emergency Angioplasty
 - ◇ Critical Care Management

24x7 Lab Medicine Services & Blood Bank

We are NABL ISO 15189, 2022 accredited Lab Medicine & Blood Centre which supports Cardiac Sciences with highly specialized Diagnostic Services, which includes:

- o Cardiac Biomarkers (Troponin, CK-MB)
- o Lipid Profile (Cholesterol, Triglycerides)
- o Coagulation Studies (PT, INR, aPTT)
- o Electrolyte and Acid-Base Balance
- o Cardiac Risk Assessment Panels
- o Cardiac Injury Profile (SGOT, Creatinine Kinase, CK MB State, Troponin T, NT pro BNP, Heart Type FABP, Lipoprotein Associate Phospholipase A2)

Our laboratory utilizes advanced technology and strict quality control measures to ensure accurate and timely test results, supporting cardiologists in Diagnosis, Treatment, and Management of Cardiovascular conditions.

Cardiology Services:

Non-Invasive Cardiology Lab State-of-the-Art Non-Invasive Lab at Lilavati Hospital offers Advanced Cardia Diagnostic Services, including:

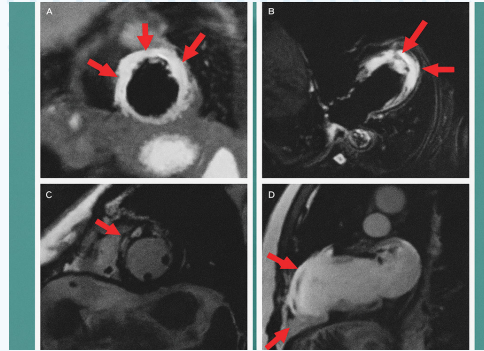
- o ECG
- o 2D, 3D, and 4D Transthoracic Echocardiography (TTE)
- o Dobutamine Stress Echocardiography for coronary artery disease detection
- o Saline Contrast Echo and Contrast Echo with enhancing agents
- o Exercise Stress Echo and Stress Test with 2D Echo
- o 7-day Holter studies and 24-hour Ambulatory BP Monitoring
- o Evaluated and reported by experienced cardiologists



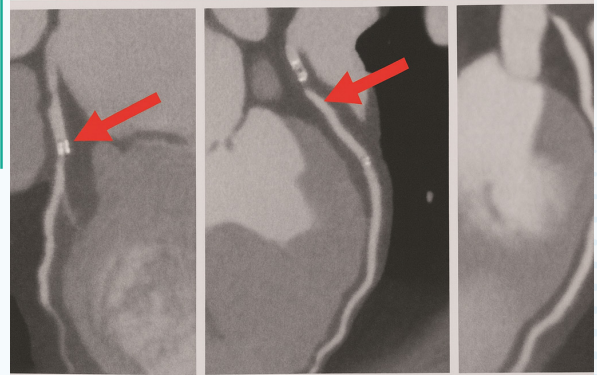
Specialized Services:

- o TEE in Cath Lab for Mitra Valve Clip and TMVR procedures
- o TEE during valve surgeries in OTs
- o 3D Echocardiography for heart failure, valve disease, and pre-post cardiovascular surgeries
- o New indices of heart function, such as LVGLS, LA strain, and RVGL
- o Structural Heart Studies

Cardiac MRI in a case of acute myocardial infarction (AMI):



Coronary Artery Disease



Imaging plays an excellent role in:

- o Detecting and characterizing heart conditions
- o Evaluate Heart Function / identify Ischemia / assess Vascular and Valvular function
- o Identifying the cause of symptoms like Chest Pain, Tightness and Palpitation
- o Assessing the Extent of Damage
- o Monitoring Disease Progression
- o Planning Invasive Procedures like TAVI / TMVR
- o Monitoring Treatment Effectiveness
- o Risk Stratification

Role of Imaging in Cardiovascular Diseases

Imaging plays a crucial role in studying Anatomy, Diagnosis, Assessment, and Management of Cardiovascular Diseases by providing detailed insights into the heart's structure, function, and blood flow. These images help detect, characterize, and monitor various heart conditions, aiding in the development of effective treatment plans and risk stratification.

Advanced Imaging Machines

SOMATOM Drive – 256 Slice Dual Source CT Scanner

High temporal resolution is a critical requirement for cardiac imaging. The rotation speed of 0.28s, together with the two X-ray tubes and detectors, allows for an unmatched native temporal resolution. It reliably freezes cardiac motion so that even patients with high and irregular heart rates can have a reliable diagnosis at lowest possible X-ray dose. This technology allows visualization of patients with high and irregular heart rates or Atrial Fibrillation.



3 Tesla MRI scan

Cardiovascular Magnetic Resonance Imaging (CMR) used in the diagnostic and prognostic evaluation of multiple cardiovascular pathologies; it also provides the most accurate functional information regarding Heart Physiology (i.e., Cardiac volumes and Ejection fraction) and allows high resolution anatomical assessment without the drawback of ionising radiation. CMR is also able to study blood flow dynamics, looking for Valvular Stenosis and insufficiency, turbulence and shunts.



Invasive Interventional Cardiology

- o Dedicated and specialized unit offers a wide range of procedures for Interventional Coronary Artery Disease, and Structural Heart Disease and Coronary Heart Disease & TAVI

Non-Invasive Interventional Cardiology

- o Advanced Heart Care without surgery using Minimally Invasive techniques
- o Catheter-based procedures under trained Interventional Cardiologists

Cath Lab

Lilavati Hospital and Research Centre is equipped with state-of-the-art Cath Lab. All Interventional Cardiology procedures including Coronary Angiography and Angioplasty, Transcatheter Aortic and Mitral Valve replacement, Pacemaker and AICD, CRT Implantation, Balloon Valvuloplasty, Transcatheter Device closure of ASD, VSD and PDA, Transcatheter Mitraclip for Mitral valve Regurgitation Etc. are performed in the Cath Lab. Electrophysiology Study and Radiofrequency Ablation of various Arrhythmias are also done in the lab. All high end hardwares including Rotablator and imaging modalities like Transesophageal Echo, IVUS imaging, OCT imaging etc. are available for the accurate precise results of the procedures and better patient outcome. This way Lilavati hospital deal with all cardiac conditions including Acute Heart Attack, Arrhythmias Congenital Heart Disease, Degenerative Heart Disease and Rheumatic Heart Disease with utmost accuracy. These procedures help diagnose and treat various cardiovascular conditions, often minimizing the need for open-heart surgery.



Our Services:

- **Coronary Angiography:** Imaging test to visualize coronary arteries and diagnose blockages.
- **Percutaneous Coronary Intervention (PCI):** Minimally invasive procedure to open blocked coronary arteries using angioplasty and stenting.
- **Angioplasty:** Procedure to widen narrowed or blocked arteries using a balloon.
- **Stenting:** Placement of a small mesh device (stent) to keep arteries open.
- **Diagnostic Angiography:** Imaging test to visualize blood vessels and diagnose vascular conditions.
- **Peripheral Angioplasty:** Procedure to treat blocked or narrowed peripheral arteries.
- **Cardiac Catheterization:** Procedure to diagnose and treat heart conditions, such as heart valve problems or congenital heart defects.
- **Electrophysiology Studies:** Tests to diagnose and treat Abnormal Heart Rhythms (Arrhythmias).
- **Pacemaker and ICD Implantation:** Procedures to implant devices that regulate heart rhythm.
- **Rotational Atherectomy:** Procedure to remove plaque buildup in arteries.
- **Thrombectomy:** Procedure to remove blood clots from arteries.
- **IVUS (Intravascular Ultrasound):** Imaging test to visualize plaque buildup and artery walls.
- **FFR (Fractional Flow Reserve):** Test to measure blood flow through coronary arteries.
- **OCT (Optical Coherence Tomography):** High-resolution imaging test to visualize coronary arteries.
- **Balloon Valvuloplasty:** Procedure to widen narrowed heart valves.
- **Structural Heart Interventions:** Procedures to treat conditions like atrial septal defects (ASD) and patent foramen ovale (PFO).
- **Transcatheter Aortic Valve Replacement (TAVR):** Minimally invasive procedure to replace aortic valve.

Role of Nuclear Medicine in Cardiology

In Nuclear Medicine, Cardiac tests are used to assess the function and structure of the heart using small amounts of Radioactive materials (Radiotracers) and Imaging Technology. The most common Cardiac Test in Nuclear Medicine is the Myocardial Perfusion Imaging (MPI), often performed with a SPECT (Single Photon Emission Computed Tomography) or PET (Positron Emission Tomography) camera.

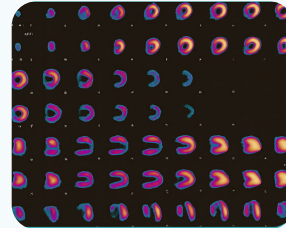


1) Myocardial Perfusion Imaging (MPI)

- **Purpose:** Evaluates blood flow to the heart muscle both at rest and during stress (Exercise or Pharmacologic)
- **Radiotracers:** Technetium-99m (Tc-99m) agents (e.g., Sestamibi or Tetrofosmin) - commonly used in SPECT
- **Procedure:**
 - Two sets of images are taken: one after stress and one at rest
 - Helps identify areas with reduced blood flow, viable but underperfused myocardium (Ischemia), and scar tissue from previous infarcts

Clinical Indications:

- Chest Pain Evaluation
- Coronary Artery Disease (CAD) Diagnosis
- Risk Stratification Post-myocardial Infarction
- Monitoring response to Cardiac Treatments



2. Cardiac Amyloidosis ATTR type 99Tc pyrophosphate imaging: help in diagnosing ATTR type Amyloidosis

- **Cardiac 18F-FDG-PET Scan:** It is done in two parts:
 - REST scan with Sestamibi and PET scan with 18F-FDG Tracer
- Cardiac Perfusion and Viability in Post Infarct Cases
- Cardiac Sarcoidosis
- Prosthetic Valve Infection
- Infective Endocarditis

Unlocking Heart Health with Nuclear Medicine

Our Services (Safe, Painless, and Accurate) include:

- Myocardial Perfusion Imaging (MPI)
- PET Cardiac Scans
- MUGA Scans (Ejection Fraction Studies)
- Cardiac Viability Assessments

With a small dose of radioactive tracer, we capture detailed images of your heart's function—helping doctors act quickly and effectively.