MIOT International

Celebrating the *Language* of *Care*

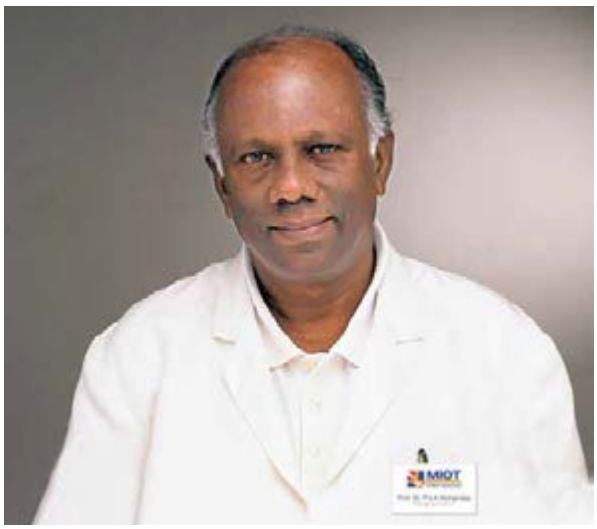
PUTTING PATIENTS FIRST

Care

A language.
That needs no words
A force.
Strong, gentle and unwavering
In its quest to comfort and
heal the suffering
A constant search.
To bring the global best.
A standard.
That raises the bar at every step,
without compromises,
without excuses.
A calling from within.
Where no effort is too much,
no hours too long.
A touch.
That spells skill, confidence,
hope, "I Care".
Where our reward is that
very special smile,
which speaks of pain left behind,
of Life calling once again.

We at MIOT International understand it only too well.
It is our life's work.


Where it all began



1999. 14 acres of barren land and a crystal clear vision.

An extraordinary physician of our times,
Prof. Dr. P.V.A. Mohandas watched thoughtfully as the first bricks for his dream hospital were laid. His vision for creating a world-class healing environment which would attract the best medical minds was taking shape. Men and women who would work together, driven by the sole desire to heal the suffering to the best of their ability.

He dreamt of creating an institution which would serve as a beacon of hope to patients from across the world, offering them the highest standards of excellence in medical care, delivered with compassion.

And so began a journey that started with a 70 bed hospital for Orthopaedics and Trauma. There were no compromises and no looking back at MIOT Hospitals.

"Medicine is not a trade;
it is a calling where the physician thinks
not only with his head but also with his heart."

Prof. Dr. P.V.A. Mohandas
Founder & Mentor

His vision had no boundaries. It was a vision of healthcare for the world.

Fast forward to 2020

MIOT is now

MIOT International

Our motto
'Putting Patients First'
encapsulates the
MIOT mission


MIOT
International


MIOT

World-class... Wholistic ... Compassionate

A 1000 bed institution that offers 63 specialties and welcomes patients from over 130 countries.
With a team of world-class physicians, surgeons, nurses and support personnel, Institutes for research and higher learning, and an unquenchable thirst to do more, offer more, help more, be more.

MIOT International is first and foremost a Doctor's hospital. Ingrained in its DNA is a unique culture that places our patient at the centre of all activity. We are committed to caring for him as a Team which values his cure, comfort and dignity, above all else.

That's why from the minute you walk in through our doors, you move into a world of care that works seamlessly. You'll find our spaces calm and relaxing, our people competent and helpful, our processes simple and transparent, and our facilities state-of-the-art.

Our patients who come to MIOT International from far and near are on different, but similar journeys. Hidden among all their fears and pain is the unspoken belief in a safe recovery with us. We are committed to keeping that trust, at all costs.

It all happens under one roof

When you are ill and in pain, you want solutions that will address the immediate discomfort as well as the underlying cause, so that it does not disrupt your life again. All in the shortest possible time and without stress!

At MIOT, we understand your concerns. In fact treatment is most effective when it is delivered cohesively, accurately and in time.

That's why at MIOT International, we offer **end to end care** - diagnosis to treatment to rehabilitation, including emergency and critical care - **under one roof**. Under expert and caring hands, using the latest advances medical science has to offer.

We offer our patients and their caregivers facilities and amenities that are on par with the best, globally. All co-ordinated and managed by teams that have been carefully created based on their expertise, to ensure your successful treatment and comfortable stay with us.

- *Accredited by the Indian Health Organisation*
- *One of the most comprehensive and advanced imaging & laboratory set-ups in the country, accredited by National Accreditation Board for Hospitals and Healthcare Providers (NABH)*
- *21 state-of-the-art operating theatres equipped to handle the most complicated procedures*
- *ICUs that match stringent global standards*
- *Full time specialists*
- *MIOT College of Nursing for high nursing standards*
- *Spacious treatment areas & Well appointed patient rooms*
- *24 hour blood bank & pharmacies on campus*
- *Deluxe nursing facility for caregivers & patients, post treatment*
- *4 multi-cuisine restaurants*
- *Open green spaces & constant circulation of fresh air*

Because in our world,
your well being comes first. Always.

Our commitment to deliver world class healthcare. And the recognition that we have achieved.

The Times Healthcare Achievers Awards

- *Best Multi Speciality Hospital, Chennai*
- *Best Speciality in a Multi Speciality Hospital,*
  - *Orthopaedics*
  - *Nephrology*
  - *Gastro and Gastro Surgery*

MIOT International is accredited by the National Accreditation Board for Testing and Calibration Laboratories (NABL), an autonomous body under the aegis of Department of Science & Technology, Government of India.

MIOT International is accredited by the National Accreditation Board for Hospitals & Healthcare Providers (NABH), established by the Quality Council of India.

Staying focused and not resting, MIOT International has continuously proved its excellence by winning Federation of Indian Export Organization (FIEO) awards for 6 times in various categories.

FIEO Niryat Shree Gold Award 2002 – 2003
Generating Highest Foreign Exchange in the Health Sector.

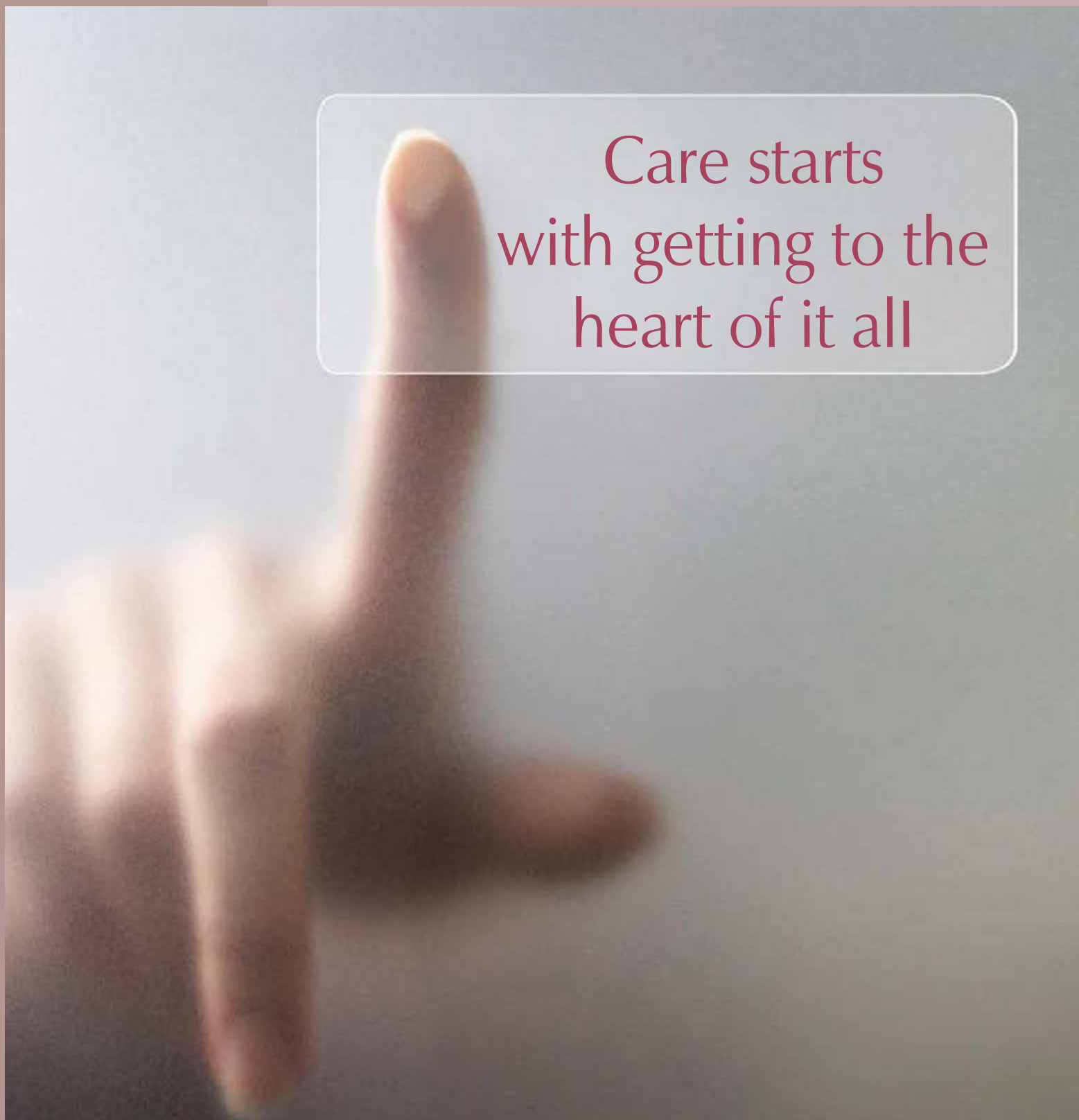
FIEO Niryat Shree Bronze Trophy 2008 – 2009
Generating Highest Foreign Exchange.

FIEO Niryat Shree Gold Award 2009 – 2010
Highest Foreign Exchange Earner in the Country among All Service Providers.

FIEO Southern Region Export Excellence Award 2012 - 2013
Best Service Provider, Southern Region.

FIEO Southern Region Export Excellence Award 2013 - 2014
Best Service Provider, Southern Region.

FIEO Southern Region Export Excellence Award 2015 – 2016
Top Service Provider, Southern Region – GOLD AWARD



An accurate diagnosis is the first step to effective treatment. Critical details are often found in the most unlikely of places and in snippets of information shared by patients.

At MIOT, we treat the disease, not just the symptoms.

Our doctors start by carefully listening to you. They follow up with detailed physical examinations to make their observations and to hear what your body is saying. Sometimes they need to investigate further for a definite diagnosis.

Scans on state-of-the-art imaging systems allow radiologists to pick up the smallest anomalies and note obstacles in treatment at the very beginning.

Doctors are aided by our sophisticated laboratory, **ranked 8th** in the world. Cutting-edge studies by our pathologists at the lab tell the story of a disease at a cellular level.

Listening to both man and machine

This depth of information makes diagnosis foolproof and the treatment that follows more targeted, more effective. It can stop the disease at an early stage or even as it develops.

But information is useful only as long as it is shared and shared in time.

Our advanced information systems connect physicians and surgeons to updated patient data from labs and scanning rooms. Online consultations with technicians and pathologists help them fine-tune decisions and treatments, without delay.

This gives patients at MIOT an immediate headstart.

Collaborative Caring

The more we discover the complex masterpiece that is the human body, the more we realize how interlinked the different organ systems are. And as care for each system gets specialized, we understand how much more effective it is to have specialists treat wholistically.

At MIOT we have the best minds working on your case, together, on the same campus.

Our doctors, with extensive training and experience around the world, treat patients across **63 specialities** - from Emergency and Trauma to Organ Transplants. They work in tandem, drawing upon each other's expertise and experience to give patients the best possible outcomes.

For instance, it would not be uncommon to see our Maxillofacial surgeon working alongside the Oncology team. Or the Interventional Radiologist joining a Neurosurgery for the insertion of a much needed stent.

This pooling of resources for your care is best demonstrated by our **Tumour Board**, which is comprised of experienced oncologists, surgeons and specialists in key areas. Together they discuss each case at length and arrive at a Treatment Plan that will work best for your condition.

They are supported in the implementation of your plan by a Team, which includes skilled and dedicated nurses, experienced physiotherapists, counsellors and nutritionists. Briefed on the plan's details and sensitive to your slightest discomfort, they will help you complete your treatment, giving you the best chance for a successful recovery.

"When tiny, asymmetric crystals of ice stick together, they create snowflakes - one of Nature's most beautiful creations, something that brings joy to one and all. At MIOT we have an amazing team of men and women who are joined together by their search for excellence, by their courage to say 'I care'. Reaching out day in and day out, to put smiles back on faces racked with pain. It is an invisible tie that binds us ... "

Dr. Prithvi Mohandas,
Managing Director, MIOT International

At MIOT International, the focus has always been to get our patients back to normal and productive lives, quickly. With this in mind, we are constantly looking to integrate newer ways of treatment which are safer, help you heal faster, and most importantly, solve your problems completely.

Our patients, who come in for surgeries across specialties, are pleasantly surprised to find the entire experience faster and more comfortable than anticipated.

MIOT Keyhole SURGERIES

Surgeons perform **Keyhole surgeries** wherever possible. Even complex surgeries for conditions like the aortic aneurysm can be done at MIOT through incisions as small as 3 mm. With minimal tissue invasion, less bleeding, less pain and hardly any chance of infection, patients recover quickly with tiny scars.

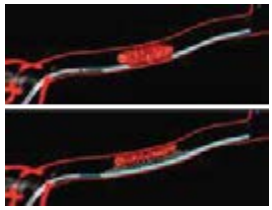
MIOT Pinhole SURGERY

Interventional Radiology gives patients at MIOT a safer alternative to complex open surgery. Specialists enter the natural highway of veins and arteries through a tiny hole to reach diseased organs like the heart or liver to deliver treatment. They even make surgery possible for large inoperable tumours by shrinking them through direct drug delivery.

Our globally renowned center of excellence in Orthopaedics has performed over **40,000** joint replacement surgeries. We leverage our extensive experience to offer patients customized **joints that will last a lifetime.** Our specialists share real-time experience with implant manufacturers, fine-tuning designs and incorporating new age materials for better implants that are in line with the more demanding lifestyles of patients today.

Adoption of a unique transplant methodology has made it possible for MIOT to offer **Kidney transplants across blood groups**. This has reduced waiting time for patients who come to our center of excellence for Nephrology.

The first ever **Haplo-identical bone marrow transplant** in the country, done at MIOT International, is yet another path breaking alternative in a life saving procedure. As this method requires only a 50% matching donor, it has given hope to thousands of patients who have been waiting endlessly for the perfect bone marrow match.

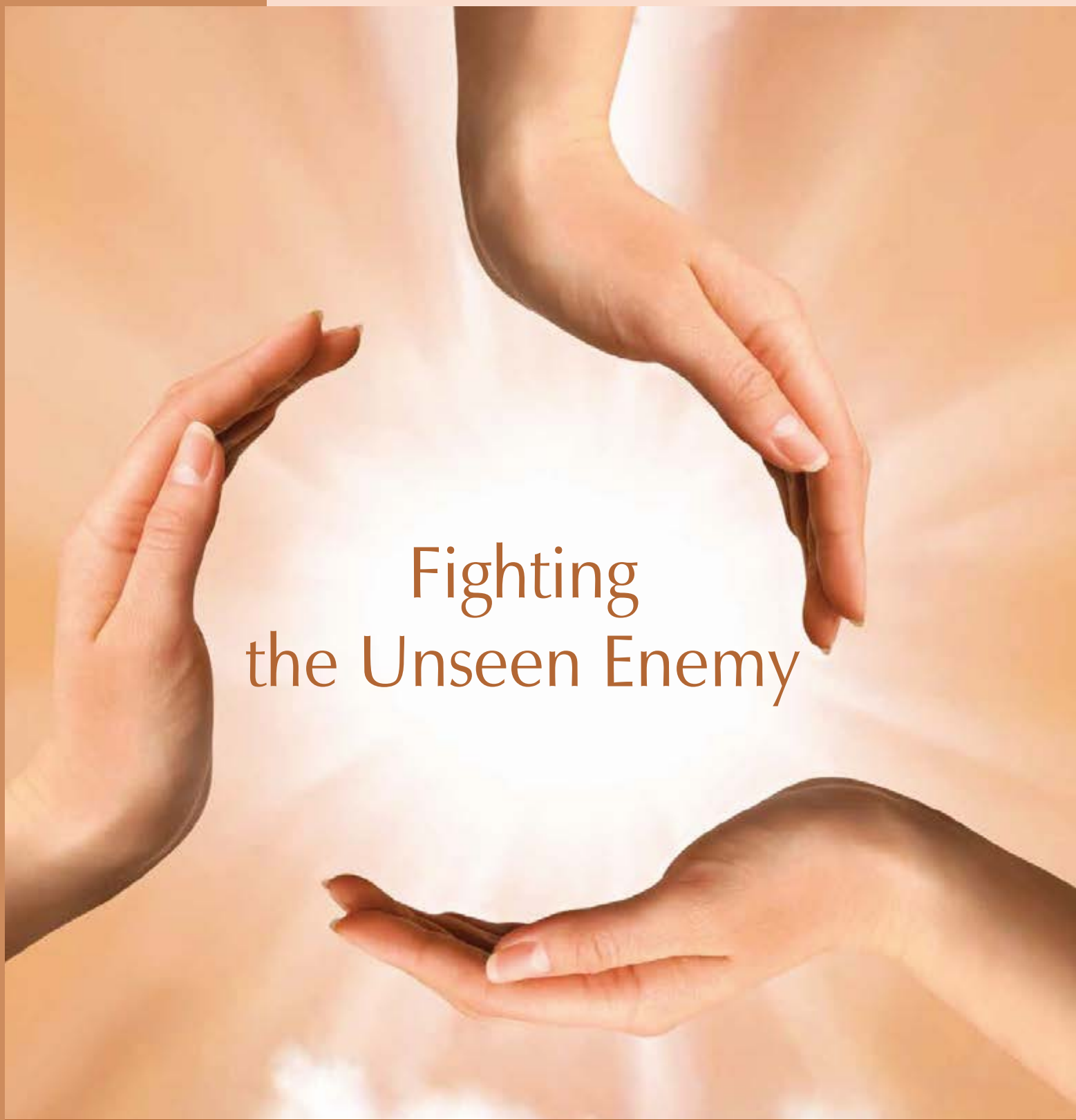


The MIOT Stroke Restore Centre is the first centre in India to offer **Mechanical Thrombectomy**, the globally preferred treatment for stroke. During the procedure, our specialists use a 'Stent retriever' to completely restore blood flow and reverse stroke damage effectively, without open surgery.

Our continuous investment in the latest medical technologies makes treatment more targeted and the entire process more comfortable and pain free for patients.

Radiotherapy with the revolutionary **TrueBeam STx** has reduced dreaded treatment time from hours to minutes and minimized side effects. It targets tumours the size of a pinhead with sub-millimeter accuracy, even in moving organs.

Capsule endoscopy is yet another amazing tool for patients needing an examination of the small intestine. Completely painless and convenient, we have patients walking around the hospital even as a tiny camera inside their body clicks almost 50,000 pictures over 8 hours!



Fighting the Unseen Enemy

Every member of the MIOT team, from ambulance drivers to surgeons, are well aware of the critical role that infection control plays in the early recovery of our patients. At MIOT it is central to our patient management plans.

Visitors to MIOT would notice that our house keeping staff are constantly on their feet - cleaning, dusting, wiping every visible surface. They are part of the war that we wage every day as we match international standards in providing infection free environments for our patients. It is a war that starts at our gates through a strict protocol for visitors.

The **laminar airflow systems** ensure that there is a steady supply of fresh air across the hospital, while sophisticated air conditioning keeps closed spaces infection free.

The unique hospital design provides for separate corridors to move patients to and from operation theatres, away from inpatients and outsiders. This priority on infection control is evident in all the facilities and amenities provided across the campus.

In our effort to make treatment safer for patients, we provide leucodepleted blood components to all patients requiring blood transfusions.

When patients come to MIOT, ensuring their safety is our priority. Today, MIOT has the lowest infection rate in the country **(0.02%)**.

And there is no effort too big or too small in this ongoing war we wage to keep our patients safe.

*Bone marrow transplant patients who have zero immunity after a transplant are kept isolated until their immune systems start functioning in **100% infection free**, pressure regulated **HEPA-filtered wards**.*

*The **Automated Central Sterile Supply** unit ensures that there is zero manual handling of the instruments used in OTs, ICUs and treatment rooms.*

*Intelligent sensor-based technology maintains a **99.9%** bacteria free environment in 10 state-of-the-art modular operating suites and adjoining surgical ICUs.*

Care that never gives up

"It has been said that a gentle word, a warm hand, a willing ear and small acts of kindness, often taken for granted, can change a life. We believe that to be true. Because we have seen first hand the power of caring with compassion."

Mrs. Mallika Mohandas
Chairman, MIOT International

Illness takes its toll, affecting both body and mind - making patients and caregivers tense and despondent. We have long known that patients heal faster in positive environments, surrounded by people who are confident in their recovery.

When our architects, specialized in hospital design, sat down to plan the MIOT campus, they consciously created environments that are spacious and restful.

Wide windows that bring the greenery in, comfortable alcoves where one can sit awhile, long corridors which take care of restless feet, the wealth of colour on walls and paintings that lift your spirits - you slowly unwind and let the healing begin.

You will soon come to trust our team of specialists, nurses and other support staff who will together ease your fears, build your spirits and help you heal. As they ceaselessly work, restoring you to good health with utmost care.

SPECIALITIES

CENTERS OF EXCELLENCE

MIOT INSTITUTE OF ORTHOPAEDICS

MIOT INSTITUTE OF CANCER CURE

MIOT INSTITUTE OF CARDIAC CARE

MIOT ADVANCED CENTER FOR GASTROINTESTINAL AND LIVER DISEASES

MIOT INSTITUTE OF NEPHROLOGY

SPECIALITIES

- Orthopaedics
  - Hip, Knee, Shoulder Replacements & Revisions ● Elbow, Wrist, Hand & Finger Surgery ● Spine Surgery
  - Sports Medicine
  - Congenital Deformity
- Accident & Trauma care (Emergency & Surgery)
- Cardiology
  - Cardiac Emergency (Heart Revive)
  - Interventional Cardiology
  - Thoracic & Cardio Vascular Care
  - Children's Cardiac Care
  - Interventional Paediatric Cardiology
- Gastroenterology
  - Medical Gastroenterology
  - Surgical Gastroenterology (Upper & Lower GI)
  - Hepatobiliary Pancreatic Surgery & Transplant
  - Bariatric Surgery
- Nephrology
- Oncology
  - Medical Oncology ● Surgical Oncology ● Radiation Oncology
- Haematology, Haemato-oncology & Bone Marrow Transplant
- Transfusion Medicine
- Neurology & Neurosciences
- Neurosurgery
- Neuro Stroke Emergency
- Urology
- Interventional Radiology
- Rheumatology
- Endocrinology
- Diabetology
- Pulmonology & Sleep Medicine
- Dermatology, Cosmetic Surgery & Hair Transplant
- Internal Medicine & Infectious Diseases
- Anaesthesiology
- Gynaecology & Obstetrics
- General Paediatrics
- Paediatric Surgery
- ENT - Head & Neck and Skull Base Surgery
- Plastic & Reconstructive Surgery
- Craniofacial & Aesthetic Surgery
- Oral & Maxillo-facial Surgery
- Ophthalmology
- Orthodontics & Dental Surgery

RESOURCES

- Radiology and Imaging Sciences
- Nuclear Medicine & PET Scan
- Laboratory Services
- Critical Care & Intensive Care
- Physiotherapy
- International Patient Care

PROGRAMMES

- Master Health Check
- Nutrition & Weight Loss Clinic
- Organ Transplant (Heart, Liver, Kidney & Bone Marrow)
- MIOT Organ Drive (MODE)
- Medical Education Programmes
- CHIME
- Museum of Arthroplasty

ORTHOPAEDICS

JOINT REPLACEMENT

Knee Arthroplasty

Revision Surgery of the Knee

Hip Arthroplasty

Revision Surgery of the Hip

UPPER LIMB SURGERY

Shoulder Arthroplasty

Elbow Arthroplasty

Wrist Arthroplasty

Hand and Finger
Joint Replacement

SPORTS MEDICINE

SPINE SURGERY

CONGENITAL DEFORMITIES

ACCIDENTS & TRAUMA CARE

MIOT INSTITUTE OF
ORTHOPAEDICS

ORTHOPAEDICS

The MIOT story began in 1999, as a hospital that specialised in Orthopaedics and Trauma care. Today, MIOT International is a premier multi-speciality hospital offering integrated care across 63 specialities. However, it remains a leading centre for Orthopaedics and Orthopaedic research, offering advanced, end-to-end care for all orthopaedic conditions. Thousands of people from all over the world with fractures, arthritis, failed surgeries, back pain, congenital deformities and spinal deformities have benefitted from MIOT's skill and experience.

JOINT REPLACEMENT & REVISION SURGERY

A person could need a joint replacement for a number of reasons: injury, bone disease, reduced blood supply, wearing out of the joint due to age and more. MIOT's **Joint for Life programme**, which is backed by over **40** years of experience and **40,000** successful hip and knee replacement surgeries, uses the latest techniques and materials to offer patients joints that are suited to their anatomies and lifestyles. In fact, MIOT International pioneered Joint Replacement surgery in India.

MIOT Joint for Life

All surgeries are done in **modular operating theatres** with laminar air flow systems, which ensure **99.9%** infection free environments. Total body exhaust suits used by the operating team and sophisticated ICU wards keep infection levels much below global standards. The chances for infection are further reduced as most surgeries are performed using minimally invasive techniques, where the procedures are performed through incisions as small as 8-10 cms.

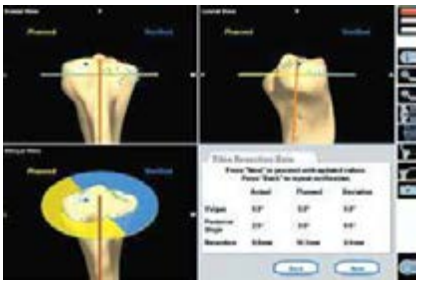
Surgeries are performed by dedicated surgical teams, trained in these specialized procedures. They are led by highly skilled surgeons who employ the latest medical techniques and have extensive training and experience in hospitals dedicated to joint arthroplasty in the USA, Germany, Switzerland, UK, Italy and Australia.

All of this ensures that patients recover faster, need a shorter stay at the hospital and go back to their normal routines comfortably.

Knee Anthroplasty

Arthritis of the knees is extremely common in India. A knee replacement offers patients a permanent solution to this painful and often debilitating condition. MIOT pioneered **Total Knee Replacement surgery** three decades ago and remains a leader in the field even today, with over **13,000** replacements to date.

At MIOT International, surgeons correct every kind of knee deformity, from the mild to the most severe, using a variety of knee prostheses, including the **hi-flex knee** which offers 150° flexion. Special anaesthetic techniques, with combined spinal epidural anaesthesia and nerve blocks, enable the department to offer knee replacement to the elderly with coexisting multiple medical disease conditions.



MIOT introduced **Computer Navigated Total Knee Replacement**, which helps surgeons balance the ligaments and place the prosthesis with zero error, thereby improving the longevity of the joint. Post surgery, patients are put on a CPM (Continuous Passive Motion) machine; they are encouraged to walk the day after surgery, climb staircases in 5 days and are discharged within 7 days. Most patients recover completely in 3 weeks.

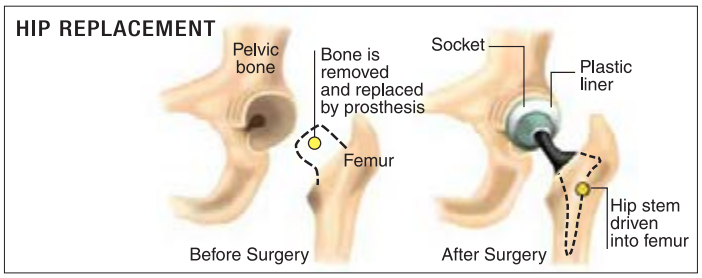
Revision Surgery of the Knee

Failure of Total Knee Replacement done elsewhere, due to failure of the implant, wear and tear and loosening, is rectified at MIOT with a special **Revision Knee Prosthesis**. Patients with knee replacements, who have accidents and periprosthetic fractures, can also be internally fixed with special implants. The results are excellent and tailored to suit each individual patient.

ORTHOPAEDICS

Hip Arthroplasty

A hip replacement is performed to replace a worn out or damaged hip with an artificial joint, often for patients with arthritis or those who have fractured the joint.
Our founder, **Prof. Dr. P.V.A. Mohandas** performed India's first **Total Hip Replacement** in the early 70s. Today, few healthcare providers can rival MIOT's rich experience in this field.



MIOT's dedicated team of internationally trained surgeons, led by **Dr. Prithvi Mohandas**, performs both the straight forward primary joint replacement surgery as well as the complicated acetabular reconstruction, correction of congenital deformities and lengthening of the limb in the diseased hip. Patients are encouraged to walk within hours after their surgeries.

Revision Surgery of the Hip

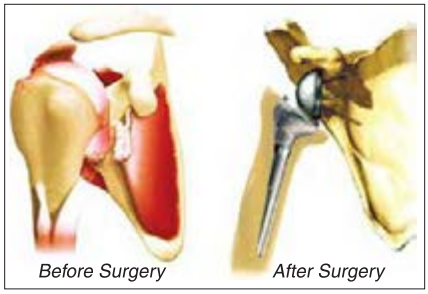
MIOT International is today a global referral centre for revision surgeries of the hip. A much more complex procedure than a regular replacement, it requires special training, skilled hands, experience, equipment and highly sterile facilities, all of which combine towards the high success rate at MIOT.

UPPER LIMB

MIOT's Upper Limb Unit offers a wide range of procedures, including Arthroscopy (keyhole surgery), Joint Replacement and Trauma Reconstruction for the shoulder, elbow, wrist, hand and finger, through trained and experienced surgeons.

Shoulder Arthroplasty

Shoulder Arthroplasty or Replacement is done to repair a shoulder joint that has been damaged by arthritis, accidents and



tumours. It is done to relieve pain that cannot be controlled with other treatments. During the procedure, the damaged joint surfaces are replaced with a prosthesis.

A shoulder replacement is a complicated procedure and requires experienced hands, specialised facilities and infection free environments for surgery, post operative care and rehabilitation.

At MIOT, surgeons perform the Anatomical Shoulder Arthroplasty, including **Stemless Shoulder Replacement** and **Reverse Shoulder Arthroplasty**. The latter is a more complex procedure and performed in only a few centres in India. Here, the implant is attached to a different set of muscles and patients recover a full range of painless movements within a short time. It is usually done for patients with previously unsuccessful shoulder replacements, failed or neglected fracture management, very bad fractures, dislocations and bone tumours.

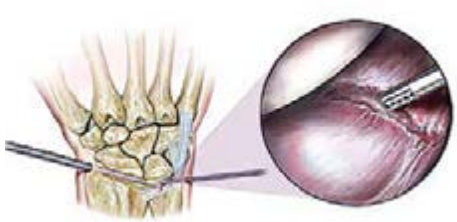
Elbow Arthoplasty & Arthroscopy

Elbow arthritis occurs when the cartilage is damaged or worn, causing pain, a grating sensation, locking and stiffness. MIOT's surgeons opt for **Arthroscopic surgery** - to explore and repair the damage - when there is stiffness in the elbow. During the procedure, loose bodies, inflammatory and dead tissue are removed, irregular surfaces are smoothed out and the locked area is released.

Total Elbow Arthroplasty is performed if the joint is severely worn out or the elbow is fractured beyond repair. The damaged joint is replaced with a prosthesis.

Wrist Arthroplasty

Wrist and Distal Radio Ulnar Joint (DRUJ) Arthritis can occur as a result of wear and tear, injury or Rheumatoid disease. When this causes severe pain and dysfunction, a **Wrist Replacement surgery** is often the best solution for the patient.



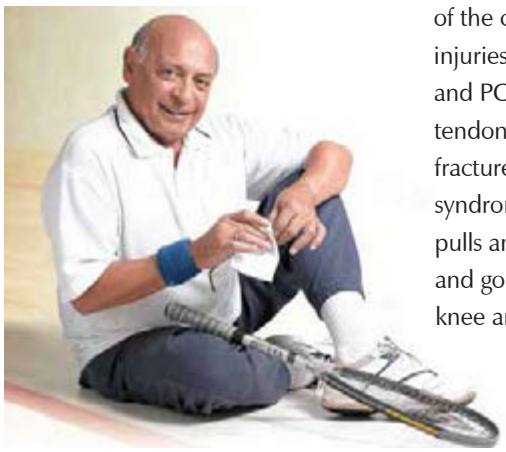
Hand and Finger Joint Replacement

Finger arthritis is common in patients with Rheumatoid Arthritis. When the knuckle joints are affected, patients experience severe pain and limitation of hand function. This can be helped by joint replacement, which restores mobility and relieves pain.

ORTHOPAEDICS

SPORTS MEDICINE

At MIOT International, our specialists provide expert treatment for all kinds of injuries sustained during professional, amateur and recreational sports. Patients have access to **complete care** as specially designed procedures are combined with **rehabilitative regimes**, to return them to normal, competitive fitness. Emphasis is placed on prevention of further injury during rehabilitation. Some of the commonly treated injuries include knee ACL and PCL, Achilles tendonitis, sprains, fractures, carpal tunnel syndrome, hamstring pulls and tears, tennis and golf elbow, runner's knee and much more.



SPINE SURGERY

The MIOT Centre for Spine Surgery brings together a multidisciplinary team of highly trained medical and surgical specialists, who provide the **entire spectrum of care** for spine patients, across age groups. They offer patients with spinal disorders and injuries the most innovative diagnostics, surgical and rehabilitative strategies.

The centre performs over **800** surgeries every year. Some of the most common problems treated include:

- Disc herniation of back or neck
- Trauma of the spine
- Degenerative disc conditions, including osteoarthritis
- Failed back syndrome
- Infections of the spine and osteoporosis

Led by a highly skilled and experienced Spine surgeon, the team includes neurosurgical and orthopaedic surgeons, neurologists, physiotherapists, neuroradiologists, anaesthesiologists, nurse practitioners and therapists.

All spinal ailments are accurately diagnosed by the state-of-the-art Radiology department, which has the latest 64-slice CT Scan and 1.5 Tesla Magnetic Resonance Imaging (MRI) technology that identifies not only anatomy, but also vascular flow characteristics and spinal fluid dynamics. Additionally, internal medicine consultants are available to assist in pre and post-operative patient management and work closely with patients' primary physicians.

The department specializes in complex spine surgery, including reconstructive tumour surgery. MIOT's results for the correction of complex spinal deformities are unmatched, even by elite centres of the world.

CONGENITAL DEFORMITIES

Congenital deformities are physical defects that are present at the time of birth. These can affect not just appearance but also function in the affected bone system. Our expert surgeons work with specialists from the reconstruction team to correct these deformities and restore their form and function.

Treatments & Procedures

KNEE

- Computer Navigated Total Knee Replacement
- Minimally Invasive Total Knee Replacement
- Revision Total Knee Arthroplasty

HIP

- Minimally Invasive Hip Replacement
- Bone Conserving Hip Replacement
- Acetabular Reconstruction and Hip Replacement
- Revision Hip Arthroplasty

SHOULDER

- Anatomical Shoulder Arthroplasty (ASA)
- Reverse Shoulder Arthroplasty (RSA)
- Shoulder Arthroscopy
  - Arthroscopic Capsular Plication
  - Arthroscopic Sub-acromial Decompression
  - Arthroscopic Acromio-clavicular Joint Excision
  - Arthroscopic Calcium Excision for Calcific Tendonitis
  - Arthroscopic Capsular Release for Diabetic Frozen Shoulder

ORTHOPAEDICS

- Acromioclacvicular Joint Stabilization
- Fixation of Proximal Humeral Fracture
- Hemiarthroplasty and Reverse Shoulder Arthroplasty

ELBOW

- Elbow Arthroplasty
- Elbow Arthroscopy
  - Arthroscopic Release for Post Traumatic Stiff Elbow
  - Arthroscopic Osteocapsular Arthroplasty for Osteoarthritis Elbow
  - Arthroscopic Radial Head Excision
  - Arthroscopic Treatment of Osteochondritis Dessicans
- Fixation of Elbow Fracture
- Total Elbow Replacement for Comminuted Fracture of Elbow

WRIST & HAND

- Wrist Arthroplasty and DRUJ Replacement
- Hand and Finger Joint Replacement
- Wrist Arthroplasty
  - Arthroscopic Assisted Scapholunate Repair
  - Arthroscopic Excision of Ganglion
  - Arthroscopic Trapeziectomy
- Fixation of Distal Radius and Ulna Fracture
- Percutaneous Scaphoid Fixation and Non Union Surgery
- Scapholunate and Perilunate Ligament Repair
- Distal Radio-ulnar Joint Stabilization
- Fixation of Complex Metacarpal and Phalangeal Fractures
- Repair of Volar Plate Injury and Fracture Dislocation of Finger Joints
- Repair of Ulnar Collateral Ligament Injury
- Repair of Mallet Finger

SPORTS INJURIES

Knee

- Diagnostic Arthroscopy
- Arthroscopic Meniscal Repair
- Arthroscopic ACL & PCL Reconstruction
- Arthroscopic Multiligament Repair, including ACL, PCL, MCL and LCL Repair
- Arthroscopic ACL & PCL Avulsion Reattachment
- Arthroscopic Mosaicplasty
- Arthroscopic Loose Body Removal

Shoulder

- Arthroscopic Rotator Cuff Repair
- Arthroscopic Stabilisation and Capsular Remplissage
- Arthroscopic SLAP Repair
- Arthroscopic Biceps Tenotomy and Biceps Tenodesis

Elbow

- Elbow Arthroscopy - Removal of Loose Bodies

Wrist and Hand

- Diagnostic Arthroscopy
- Arthroscopic TFCC Debridement
- Arthroscopic Assisted TFCC Repair/ Reconstruction

SPINE

- Microdiscectomy, Endoscopic Discectomy
- Minimally Invasive Internal Decompression for Spinal Stenosis
- Posterior Lateral Spinal Fusion
- Posterior Lumbar Interbody Fusion
- Anterior Interbody Fusion
- Spinal Stabilization - Posterior, Anterior
- Spinal Column Reconstruction - Posterior, Anterior
- Vertebral Body Resection (Corpectomy) and Reconstruction
- Scoliosis Corrective Surgery
- Spinal Osteotomies
- Disc Replacement
- Vertebroplasty and Kyphoplasty
- Paediatric Spinal Surgeries
- Surgery for Spinal Tumours
- Laminoplasty
- Minimally Invasive Spinal Stabilization

ACCIDENTS & TRAUMA CARE

MIOT International is a **Level 1 Trauma centre,** providing the highest level of surgical care to patients round the clock. The hospital performs over **4500** trauma surgeries a year.

In the treatment of accident patients **(vehicle, industrial & ocupational)**, the department follows the modern guidelines of Osteosynthesis and uses current technology and techniques through collaboration with other Level 1 trauma centres abroad. Our patients also benefit from a planned post operative rehabilitation programme that is in-line with European rehabilitation concepts for early recovery.

The trauma team is comprised of trained paramedics, doctors and nurses, who work together to contain the extent of damage and give severely injured patients the specialised care they require. They work closely with surgeons from neurosurgery, maxillofacial surgery and plastic and reconstructive surgery, to offer patients comprehensive care.

Among the more commonly handled traumas are closed and open long bone fractures, articular fractures, pelvi-acetabular fractures, multiple injured and polytrauma patients with multi system injuries. MIOT also has extensive experience in dealing with neglected injuries such as:

- Mal union/ non-union/ infection
- Limb deformity correction
- Management of bone defects
- Limb-length discrepancy
- Metabolic bone disorders
- Congenital deformity
- Bone infections (Osteomyelitis)

CARDIOLOGY

HEART REVIVE CENTER

Cardiac Emergency

INTERVENTIONAL CARDIOLOGY

Complex Coronary Interventions

Electrophysiology (Arrythmia) Devices & Therapies

Structural & Percutaneous Valve Interventions

Heart Failure Devices & Therapies

CENTER FOR THORACIC & CARDIAC CARE

Coronary Artery Disease

Aortic Aneurysm

Valvular Heart Disease

Mimimally Invasive Cardiac Surgery

Heart Transplant

CENTER FOR CHILDREN'S CARDIAC CARE

Paediatric Cardiac Surgery

Interventional Paediatric Cardiology

MIOT INSTITUTE OF
CARDIAC CARE

CARDIOLOGY

Changing lifestyles, dietary patterns and work styles have led to a significant increase in cardiovascular disease, across the globe. India is the 'heart attack capital' of the world. However, general awareness of heart disease remains limited to heart attack. It has resulted in heart disease going undetected or being diagnosed after there is irreversible damage.

Taking a stand against heart disease, The MIOT Institute of Cardiac Care offers 360º heart care, from emergency to heart transplants, through its dedicated centres for Emergency, Interventional cardiology, Thoracic & Vascular care, and Paediatric cardiology. Experienced specialists, backed by state-of-the-art infrastructure, treat the entire spectrum of heart diseases with excellent outcomes. It's little wonder then, that MIOT International is a referral centre for complex cardiac cases, across age groups, both nationally and internationally.

MIOT HEART REVIVE CENTER

Every minute that the heart is under stress, parts of it are dying. The damage is permanent and irreversible. However, today's technological advances make it possible to prevent it. The MIOT Heart Revive Center (MHRC) offers comprehensive emergency cardiac care, **24x7x365**, using the latest interventional cardiology procedures.

MHRC is headed by a top-notch team of specialists, many of whom have experience at emergency care centres abroad. It assures patients who have suffered from heart attack a **door to balloon time of less than 90 minutes**, well within the 'golden hour' or optimal time frame for treatment to be effective. The layout and process flow at MHRC have been designed to start the right treatment in the shortest possible time. It is ideally equipped with resuscitation bays, portable ECGs, in-house diagnostics and CATH labs.

MIOT Centre for Interventional Cardiology

Advanced, complete cardiac care

Interventional Cardiology (minimally invasive procedures, **without open surgery**) is the latest and globally preferred mode for diagnosis and treatment of heart disease. At MIOT it is the **first choice** of treatment. The MIOT Centre for Interventional Cardiology led by super specialists for each branch of the speciality treats every type of heart condition: Coronary artery disease, Valve problems, Arrhythmia (irregular heartbeats) & Heart Failure. Armed with cutting edge tools & techniques, the latest devices & drugs, they **intervene** - to **prevent, diagnose,** or **correct** all types of cardiac conditions, at any stage.

They focus on offering solutions that are patient-friendly, treat completely and protect the patient's long term quality of life.

The **Dept. of Coronary Interventions** handles all complex conditions that affect blood flow in the coronary arteries. Advanced procedures, offered at few centres in India, are used to widen heavily calcified arteries, remove stubborn blocks, and place stents in difficult locations.

The **Dept. of Electrophysiology & Devices** treats all types of Arrhythmia, which occur when the heart's electrical systems do not work properly. Expert Electrophysiologists determine the source & cause of the arrhythmia, and treat them with the latest techniques, such as **Cardiac Resynchronisation Therapy** (CRT), **Radiofrequency Ablation**, or **Implantation of ICDs** (Implantable Cardioverter Defibrillators) and **Pacemakers**.

The **Dept. of Structural & Percutaneous Valve Interventions** treats all diseases that affect the Aortic, Mitral, Tricuspid or Pulmonary valves through keyhole procedures, even in patients who are considered high-risk for open surgery. Specialists repair or replace faulty valves and treat obstructions, leaks & congenital valve defects, with outcomes that match international standards.

CARDIOLOGY

Specialists at the of **Dept. of Heart Failure** work with patients to alleviate symptoms of heart failure & restore them to a better quality of life - **without open surgery**. This could include medications, coronary interventions, valve repairs & replacements, and implantation of devices to regulate heart rhythm and assist the pumping of blood.

Cutting-edge Equipment for Advanced Treatment

MIOT's Interventional specialists are supported with state-of-the-art diagnostic and treatment facilities.

- The path-breaking Discovery **750 HD CT** seamlessly images the heart in one phase, and gives physicians 47% more image clarity, enabling a much more accurate diagnosis.
- Two state-of-the-art **Phillips FD Cardiac CATH** labs supports advanced procedures such as **Fractional Flow Reserve (FFR)** to confirm exact percentage of block and **Optical Coherence Tomography (OCT)** which gives specialists information from inside the arteries, to ensure 100% accuracy during treatment.
- The widest range of stents, including drug coated stents and bio-absorbable stents.
- The advanced **Electrophysiology lab** facilitates detailed studies of the heart's electrical circuits.

MIOT Centre for Thoracic and Cardio Vascular Care

All patients are not ideal candidates for Interventional procedures and **open surgery becomes the solution**.

The MIOT Centre for Thoracic and Cardio Vascular Care (CTCC), which specialises in complex heart surgeries, performs more than **1000 surgeries** annually with a success rate matching global standards.

It is a **referral centre** for CABGS, complex Mitral Valve Repairs, Re-do cardiac surgeries, complex aortic aneurysm surgeries, aortic dissections, Endovascular stenting & Hybrid procedures, Minimally Invasive Cardiac Surgeries (MICS), Video Assisted Thoracoscopic surgeries (VATS) and surgery for Heart Failure.

Comprehensive Cardiac Care

Patients benefit from the expertise of highly skilled cardiac surgeons with vast and varied experience, who adopt a **patient-centric approach** right from the first out-patient consultation. Patients and relatives are made part of the treatment process to ensure adequate post operative care and care after discharge, so critical for good long term results in this speciality.

Supported by state-of-the-art diagnostic systems, new age operating theatres and surgical ICUs, the dedicated surgical team offers treatment for the entire spectrum of cardio thoracic diseases:

Coronary Artery Disease

Treatments offered

- Off pump CABG (Coronary Arterial Bypass Graft - beating heart surgery)
- Total arterial revascularisation
- MICAS (Minimally invasive coronary artery surgery)
- Redo CABG
- CABG + Mitral valve repair

MIOT is today one of India's most experienced centres in the beating heart **CABG technique** which has **distinct advantages**: Reduced blood requirement, Minimal stay in the hospital and Faster recuperation. The technique is used in most of the bypass surgeries done at MIOT, which has performed over **10,000 beating heart surgeries with a success rate of 99.5%**. This surpasses benchmarks set by the Society of Thoracic Surgeons (USA).

Our referral patients mostly include elderly patients and patients with other complications like lung diseases, kidney failure, poor heart pumping capacity, or those generally considered inoperable. These surgeries are more complex in nature.

Valvular Heart Disease

Treatments offered

- Mitral, Aortic and Tricuspid valve replacement
- Valve repairs
- MIVS (Minimally invasive valve surgeries)

A successful valve repair restores the heart to its normal working without the need for lifelong blood thinners. MIOT International, one of the few hospitals in the country that performs this surgery has done over **500 Mitral Valve Repairs** with a **99% success rate**.

CARDIOLOGY

Heart Failure

Treatments offered

- CABG for severe LV Dysfunction
- Left ventricular aneurysm repair
- Post myocardial infarction ventricular septal repair
- LVAD (Left ventricular assist device)
- ECMO (Extra corporeal membrane oxygenation)
- **Cardiac Transplants**

Patients with heart failure are managed by a dedicated team. Patients, selected for the optimal procedure benefiting them are closely monitored for best outcomes. MIOT also offers the **ECMO**, an advanced life support device for patients with heart failure and severe respiratory disease. It has reversed the outcome of fatal diseases that patients would have otherwise succumbed to.

Treatments for Adult Congenital Heart Diseases

- ASD, VSD closure
- TOF(Tetralogy of fallot) repair

Aortic Aneurysm Surgeries

MIOT is a reputed referral centre for comprehensive management of **aortic aneurysm and aortic dissections** (98% success rate). Endovascular stent repairs are routinely performed.

Treatments offered

- Bentall's operation
- Arch aneurysm surgeries
- Hybrid surgeries for Aortic aneurysm
- EVSR for aortic aneurysm
- Dissection of Aorta (acute & chronic) repairs

EVSR for aneurysm (before & after)

Minimally Invasive Cardiac Surgeries (MICS)

MICS is the globally preferred option in cardiac surgery today, given its obvious advantages: **Less traumatic, More cosmetic and Back to work early.**

MIOT, is one of the few hospitals in India that routinely performs the MICS. Procedures done by MICS are:

MICS for CABG

- CABG (Coronary Arterial Bypass Graft)
- Valve replacements / repairs
- ASD / VSD closures

General Thoracic Surgeries

- Lung resections
- VATS (Video assisted thoracoscopic surgeries)
- Tracheal reconstruction

MIOT Centre for Children's Cardiac Care

The MIOT Centre for Children's Cardiac Care is a front runner in providing cardiac care for children with **congenital and rheumatic heart disease** across the country. It is a global referral centre for neonates (including pre-term and underweight babies), performing highly complex and pioneering procedures. Led by a team of renowned specialists, it has revolutionised cardiac care for children in the region and set the standards for other healthcare providers.

Complete Paediatric Cardiac Care Under One Roof

- Neonatal cardiac surgery
- Paediatric echocardiogram-based surgery
- Complex cardiac defect correction
- Valve repairs
- Minimally invasive cardiac surgery
- Catheter interventions
- Interventional and non-interventional procedures

INTERVENTIONAL PAEDIATRIC CARDIOLOGY

The surgical team is ably supported by Interventional Paediatric Cardiologists with expertise in imaging and interventional procedures. The Interventional programme performs several 'keyhole' therapies which reduces pain during treatment and leaves the young patient scar free. These include device closure of septal defects, stenting of great vessels and balloon dilation of valves.

Facilities at MCCC

The **out-patient department**, with a team of dedicated paediatric cardiologists, makes the initial assessment with advanced imaging tools. These include **Live 3-D echocardiography,**

CARDIOLOGY

Fetal echocardiography and Transesophageal echocardiography. The atmosphere is child- friendly and designed to keep both the child and the parent relaxed.

Infection-free Environments

Aseptic precautions are a priority in this department. MIOT International has an entire floor dedicated to its young patients. Specially designed laminar airflow systems and near zero bacteria air conditioning in Operating suites and Intensive Care Units help maintain these environments as per international standards. The advanced monitoring equipment, lights, large operation suites, pace and heart lung machines enable surgery in even day old babies, with good results.

The Intensive Care Unit is equipped with 9 beds in a spacious area, a 1:1 nurse-patient ratio and dedicated respiratory therapists, who play a key role in the safe recovery of its tiny inmates.

Advanced Ventilation

Management of **pulmonary hypertension** is facilitated by Nitric Oxide ventilation. The new generation ventilators allow ventilation of even preterm babies without injury to lungs, while modern syringe pumps ensure low volume infusion with precision. The current trends in paediatric cardiac surgery encouraged at MIOT are for the early weaning of its little patients from their ventilators, and early mobilization with shorter ICU stay. This minimizes the trauma of surgery and separation from parents.

An excellent blood bank service that makes available fractionated blood components is another key advantage.

Treatments & Procedures

CENTRE FOR INTERVENTIONAL CARDIOLOGY

- Coronary Angiography (Radial & Femoral)
- Coronary Angiography (Trans-Radial & Trans-Femoral)
- Primary Angioplasty & Stenting For Heart Attacks
- Complex Coronary Angioplasty & Stenting
- Rotablation - Angioplasty & Stenting
- Balloon Valvotomies (Aortic, Mitral, Pulmonary)
- TAVI & Percutaneous Valve Interventions
- Permanent Pacemaker Implantations (PPI)
- Implantable Cardioverter Defibrillator (ICD) Implantations
- Heart Failure Therapy & Cardiac Resynchronization Therapy (CRT)
- Electrophysiology Study & Radio Frequency Ablation
- Right Heart Catheterization.
- Myocardial Biopsy
- Intra - Aortic Balloon Pump Implantation
- Pericardiocentesis

THORACIC AND CARDIO VASCULAR CARE

- Coronary artery disease
- Valve replacement surgeries
- Mitral valve repair
- Bentall's procedure
- Aortic aneurysm repair surgery
- Endovascular stenting for aortic aneurysm
- ASD / VSD repair
- Minimally invasive cardiac surgeries - CABG / Valve replacement
- Carotid Endarterectomy
- Lung resection surgeries
- Surgical ventricular restoration
- Heart transplantation
- VATS
- Mechanical assist devices for heart failure
- ECMO

CENTRE FOR CHILDREN'S CARDIAC CARE

- Neonatal Cardiac Surgery
- Valve Repairs
- Minimally Invasive Cardiac Surgery
- Catheter Interventional Procedures (CASD, VSD, PDA, Coarctation)
- Complex Repairs and Re-do Surgeries
  - Arterial Switch Surgery newborns
  - Unifocalisation for Pulmonary Atresia
  - Double Switch Operation
  - Ross Procedure
  - Repair of Anomalies such as Truncus Arteriosus, AV Canal Defect, TAPVC
  - Rastelli Procedure, Nikaidoh Procedure, Conduit Repairs
  - Univentricular Repairs, Extracardiac Fontan Surgery
  - Norwood Procedure

GASTROENTEROLOGY

UPPER & LOWER GASTROENTEROLOGY
(Stomach, Oesophagus, Large & Small Intestine)

Medical Gastroenterology

Surgical Gastroenterology

HEPATO-BILIARY & PANCREATIC SURGERY

Liver Transplant

BARIATRIC SURGERY

MIOT
ADVANCED CENTER FOR GASTROINTESTINAL AND LIVER DISEASES

GASTROENTEROLOGY

The last few decades have seen a significant increase in the incidence of diseases of the digestive system (food pipe, stomach, intestines, pancreas, gall bladder and liver). However, they are often ignored or treated inadequately because their symptoms do not present as major irritants. Over time, they worsen, affecting other body systems, the patient's emotions and behaviour. Often, a diagnosis is made only when the disease has advanced, limiting treatment options.

The MIOT Advanced Center for Gastro Intestinal and Liver Diseases (MACGILD), established in response to the spiralling increase in gastrointestinal and liver diseases, covers the complete spectrum of conditions, from ulcers to cancers. The Center's approach to treatment is integrated and wholistic, with customised therapies and preference for the least interventional option.

MACGILD today offers comprehensive diagnostic and therapeutic facilities and the latest procedures in endoscopy, laparoscopy and open surgery. The Center's top-notch facilities include dedicated, laminar air flow Operation Theatres with infection free systems, ICUs and the latest instrumentation. It is supported by MIOT's sophisticated laboratory and advanced imaging facilities.

Often, the center's expert specialists - Gastroenterologists, Endoscopists, Hepatologists, Paediatric Gastroenterologists and Gastrointestinal surgeons - work together with specialists from other departments, such as Oncology and Interventional Radiology, to offer patients innovative, customised and complete care.

MACGILD places priority on screening, prevention and the management of diseases to prevent their progression. Its various programmes include:

- A **Jaundice Clinic** to diagnose and manage all forms of jaundice.

- An **Immunisation Clinic** for immunisation against Hepatitis B.
- A specially staffed and equipped **Paediatric Gastroenterology Clinic** that deals with problems in children related to the stomach, intestine and liver, a facility offered by few healthcare centers in the country.
- The **MIOT Liver Gym** is a unique awareness initiative that offers special packages for a complete liver check and counseling by specialists to stay liver healthy.

MIOT Liver Gym
Let's Get Your Liver Back In Shape

UPPER AND LOWER GASTROENTEROLOGY

The upper GI tract is comprised of the oesophagus (food pipe), stomach and duodenum, while the lower GI tract is made up of the large & small intestines and the anus. At MIOT International, ailments of the upper and lower GI tracts are treated medically and surgically.

Medical Gastroenterology

The department specializes in the prevention, diagnosis and treatment of GI disorders. Its services include **diagnostic and therapeutic endoscopy, disease management and clinical nutrition**.

New Frontiers in Endoscopy

Endoscopy enables doctors to look inside the body using an instrument called an *endoscope*, with 'scopes' that have a tiny camera attached to a long, thin tube. MIOT's expert endoscopists make **simultaneous diagnosis and treatment** possible.
Most procedures can be done on an out-patient or day care basis. New developments in the field of Gastrointestinal Endoscopy have now made it possible to visualise even the 'dark organ' - the small intestine, the liver, the biliary and pancreatic ducts, significantly impacting diagnosis and treatment of diseases in these organs.

Endoscopic facilities:

- **Capsule Endoscopy**, a non-invasive method to diagnose lesions in the small intestine. Extremely convenient for the patient, it consists of a capsule sized camera that he or she swallows. The endoscope takes about 50,000 colour images that are recorded on to the data-recorder worn as a belt around the patient's waist.
- **Endoscopic Ultrasound**, which combines digital imaging and ultrasonography to diagnose and identify the extent of spread of tumours deep inside the chest and abdomen.
- **Double Balloon Enteroscopy** to visualize the small intestine and perform therapeutic procedures.

GASTROENTEROLOGY

Capsule Endoscopy

- **The ERBE GI Workstation,** with facilities for Argon Plasma Coagulation and Thermal Therapy for haemostasis, enables doctors to tackle acute gastrointestinal bleeding. Its **Hybrid Knife** uses a jet to raise the mucosa to help remove early cancers.
- **Paediatric ERCP Scope** to manage gastrointestinal and liver disorders in children.
- **Nasal Gastroscope**, which gives patients the option of endoscopy without gagging or other discomfort.
- **Narrow Band Imaging**, which allows the visualization of the epithelium and vascular lesions clearly, and thus helps identify early cancer of the stomach.
- **High Resolution Manometry and pH monitoring**, which help in the diagnosis and management of motility disorders and gastroesophageal reflux disease.

Surgical Gastroenterology

The department of Surgical Gastroenterology, Minimal Access and Bariatric Surgery is involved in the **surgical treatment** of all patients with diseases of the digestive tract, from the oesophagus (food pipe) to the anal canal. It also treats patients with severe or morbid obesity.

Our trained and expert surgeons perform **open and advanced minimal access surgery** (laparoscopy or thorascopy). Day care surgery is done for select patients. MIOT also does **revision surgeries** on patients who have had complications from earlier operations.

Few centers enjoy the advantage of **cutting-edge surgical infrastructure** that MIOT has. For **laparoscopy procedures**, surgeons use sophisticated HD system optics, power systems such as harmonic scalpel, Enseal, Ligasure and APC, and high precision operative imaging systems such as laparoscopic ultrasound etc.

The equipment and instrumentation for **open surgery** is similarly high end and includes intra-operative ultrasound and CUSA.

The department offers treatment for:

- **Upper GI conditions** such as severe gastroesophageal reflux disease (GERD), cancer of the oesophagus and stomach, complicated duodenal or gastric ulcers, and upper GI bleeding not controlled by endoscopy
- **All diseases of the colon and rectum**, from polyps to uncontrolled ulcerative colitis to rectal prolapse to cancers of the colon and rectum
- **Other abdominal conditions** such as treatment of various tumours of abdominal cavity and gastro-intestinal lining (the mesentery, mesocolon and retroperitoneum)

HEPATOBILIARY PANCREATIC SURGERY & TRANSPLANT

The hepato pancreato biliary system is comprised of the **liver, pancreas, gall bladder and bile ducts**. Together they are responsible for over 3600 functions in the body, including processing of food, absorption of nutrition and disposal of toxins and waste.

At MIOT International, the entire gamut of liver, pancreatic and biliary conditions are diagnosed and treated through **endoscopy, laparoscopy and open surgery**. Surgeons use sophisticated imaging and screening techniques to root out disease in the early stages, and are supported by the world-class 24-hour laboratory.

Endoscopy is used for both diagnosis and treatment at the center.

- The **Cholangioscope (SPYGLASS system)** enables endoscopists to enter and visualise the biliary and pancreatic ducts and obtain target biopsies of suspected cancer lesions. It is also used to target and fragment stones using a laser beam.
- **Endoscopic Retrograde Cholangio Pancreatography (ERCP)** is a specialised procedure performed with fluoroscopy and contrast injection to examine and treat conditions of the bile ducts and pancreas.

Other Diagnostic Procedures

Traditionally, liver fibrosis is identified through a liver biopsy, an invasive procedure that can cause bleeding and pain. MIOT International provides a **new, painless, rapid scan** for identifying liver fibrosis at an early stage, called **Acoustic Radiation Force Impulse (ARFI)** imaging (also known as **fibroscan**).

GASTROENTEROLOGY

It is hugely beneficial to patients with fatty liver, diabetes, obesity, alcohol abuse and viral hepatitis.

Transjugular Liver Biopsy and **Pressure Studies** are performed with the help of MIOT's Interventional Radiologists in patients with advanced liver disease and portal hypertension.

Transjugular Intrahepatic Porto Systemic Shunt (TIPSS), a percutaneously created connection within the liver between the portal and systemic circulation, is also done for patients with advanced liver disease.

Surgical Treatments

One of the biggest challenges surgeons face in liver surgery is **haemorrhage** because of the difficulty in suturing or sealing hepatic tissue. In pancreatic surgery, the complexity of the organ's location as well as its multiple channels to transport the digestive juices, bile and blood make surgery difficult.

The **MIOT Hepato Pancreato Biliary Centre for Surgery and Transplantation** performs **surgery and transplants of the liver, pancreas and biliary tree** with excellent results.

Better understanding of these organs has led to sub super-specialization at MIOT. Advanced technology and the development of new surgical and anaesthetic techniques have also helped significantly counter the risks of surgery on these organs.

MIOT's experienced surgeons perform **laparoscopic surgeries** on the liver, gall bladder and pancreas regularly using cutting-edge, high-definition laparoscopy equipment, including the harmonic scalpel, which allows them to visualize and approach difficult areas confidently.

Disease	Diagnostic Tests
Gallstones	Ultrasonogram
Bile Duct Obstruction	Magnetic Resonance Cholangio Pancreatography (MRCP), Endoscopic Retrograde Cholangio Pancreatography (ERCP), Endoscopic Ultrasound (EUS), Ultrasonogram
Cancer Of The Bile Ducts	Magnetic Resonance Cholangiopancreatography (MRCP), Endoscopic Retrograde Cholangio Pancreatography (ERCP), Endoscopic Ultrasound (EUS), CT scan
Liver disease such as Viral Hepatitis	Liver function tests, Ultrasound
Advanced Liver Disease	Fibroscan (ARFI), Liver function tests, Ultrasound
Liver Cancer	CT scan, MRI, Liver function tests, Ultrasound, Tumour markers
Acute Pancreatitis	CT scan, S.Amylose, Endoscopic Retrograde Cholangio Pancreatography (ERCP)
Chronic Pancreatic Disease	CT scan, Endoscopic Retrograde Cholangio Pancreatography (ERCP)
Pancreatic Cancer	CT scan, Endoscopic Retrograde Cholangio Pancreatography (ERCP), Tumour markers, Endoscopic Ultrasound (EUS)

Liver Transplantation

The liver is the second most transplanted organ. **Advanced cirrhosis, liver cancers, inherited** and **congenital diseases** are common reasons for a transplant. The success of a transplant depends not just on the quality of the donor organ but also the right facilities and expertise at the treatment centre.

At MIOT, these include world-class imaging and radiology facilities, advanced laboratory services, surgical and ICU facilities, a dynamic blood bank, specially trained nursing staff, counsellors and nutritionists. Most important is the expertise of the **multi-disciplinary team,** which includes Hepatologists, Transplant Surgeons, Anaesthetists who specialise in liver surgery, Haematologists, Oncologists, Interventional Radiologists and Infectious Disease Specialists.

A crucial aspect of liver surgery is **controlling, regulating and managing blood flow and clotting.** This is done with cutting-edge equipment such as the Intra-op Cell Salvage device, Rapid Infuser system, Cavitron Ultrasonic Suction Aspirator, Intra-operative Ultrasound, Veno-venous Bypass Circuit and ROTEM Thromboelastogram, which help to control and monitor bleeding, conserve the patient's blood and preserve circulation of blood to the heart. This integrated approach has earned MIOT recognition as a **referral centre for liver transplantation.**

Treatments & Procedures

MEDICAL GASTROENTEROLOGY

- Endoscopy
  - Oesophago-gastro-duodenoscopy
  - Colonoscopy
  - Enteroscopy
  - Nasal UGI scopy
  - NBI Gastro-duodenoscopy
  - Endoscopic procedures in children
- Enteral, Colonic, Esophageal Metallic Luminal Stenting
- ERCP Procedures
  - ERCP
  - Sphincterotomy
  - Stone Extraction
  - Biliary, Pancreatic Stent Placement
  - Naso-biliary, Pancreatic Drain
- Endoscopic Ultrasound
  - EUS
  - EUS - FNA
  - EUS - Celiac Block
  - EUS - Pseudocyst Drainage
  - Endoscopic Naso-jejunal Tube Placement
- Spyglass
- Capsule Endoscopy
- Manometry and pH Studies
- Other Specialised Procedures
  - Oesophageal Stricture Dilatation
  - Pneumatic Dilatation
  - PEG Tube Placement
  - Polypectomy
  - Submucosal Resection
  - Foreign Body Removal
  - Variceal Ligation
  - Variceal Sclerotherapy
  - Adrenaline Injection
  - Gold Probe Application
  - APC
  - Hemo Clipping Procedure
  - Hydrogen Breath Test

SURGICAL GASTROENTEROLOGY

- Nissen's 360° Floppy Fundoplication
- Partial Fundoplication
- Heller's Seromyotomy
- Excision of Osesophageal Diverticulum
- Oesophagectomy
- Truncal Vagotomy & Gastric Drainage
- Pyloroplasty
- Closure of Duodenal / Gastric Perforation
- Resection of GIST
- Colectomies for Cancer, Benign Diseases
- Total Mesorectal Resection
- Abdominoperineal Resection
- Total Proctocolectomy & Illeopouch Anal Anastomosis
- Rectopexy
- Colostomy
- Illeostomy
- Resection & Anastomosis of Small Intestine
- Adhesiolysis for Intestinal Obstruction
- Closure of Intestinal Perforation
- Splenectomy
- Adrenalectomy
- Removal of Intra Abdominal & Retroperitoneal Cysts
- Staging Laparotomy
- Devascularisation
- Lienorenal Shunt
- Warren's Shunt

GASTROENTEROLOGY

HEPATOBILIARY PANCREATIC & LIVER SURGERY

- Biliary System
  - Laparoscopic Cholecystectomy
  - Laparoscopic / Open Bile Duct Stone Removal
  - Repair of Bile Duct Injuries
  - Excision of Choledochal Cyst and Bile Duct Cancers
- Pancreas
  - Whipple's Procedure
  - Pancreatectomy (central, distal, subtotal, total)
  - Pancreatojejunostomy
  - Frey's Procedure
  - Pancreatic Necrosectomy
  - Cystoenterostomy and Cystogastrostomy for Pseudocysts of Pancreas
  - Pancreatic Tumour Enucleation
- Liver
  - Hepaticojejunostomy
  - Liver Resection for liver cancers and hydatid cysts
  - Hepato-pancreato-duodenectomy
  - Radiofrequency Ablation of tumours
- Laparoscopic Procedures
  - Deroofing of Cyst
  - Hepatectomy
  - Metastasectomy
- Liver Transplant

BARIATRIC SURGERY

MIOT International's **Weight Loss Surgery Programme** offers patients surgical treatment, health improvement and long term management of **severe or morbid obesity.**

Every patient is assessed and counselled in-depth about benefits, shortfalls and actual weight loss. Patients also visualise the entire process through a '**medical walkthrough**' with the surgeons to ensure that they are prepared for both surgery and life after it.

Surgeons at MIOT perform **one of three** procedures to achieve the weight loss, based on the patient's medical history and health condition.

- In **Laparoscopic Gastric Banding,** an adjustable gastric band is placed around the upper third portion of the stomach to create a pouch that limits food intake.
- The size of the stomach is reduced by surgically removing part of the stomach in a **Laparoscopic Sleeve Gastrectomy**.
- In **Laparoscopic Gastric Bypass**, considered the gold standard for Bariatric surgery, surgeons create a small stomach pouch using staples. The first segment of the small intestine is then 'bypassed' and the rest is joined to the opening, giving the stomach less time to absorb fats from food.

The surgery is usually carried out by a multi-disciplinary team, which continues to support the patient even after the procedure.

Special facilities include the sophisticated operation table that can support patients with body weight upto 250 Kg, calf squeezing venous pumps to prevent intra-operative thromboembolism, mattress body warmers to prevent hypothermia, and more.

NEPHROLOGY

DIALYSIS

INTERVENTIONAL PROCEDURES

PERFUSION STUDIES

KIDNEY TRANSPLANTS

Across Blood Group Transplant

Deceased Donor Transplant

Live Related Donor Transplant

MIOT INSTITUTE OF NEPHROLOGY

NEPHROLOGY

The MIOT Institute of Nephrology, a center of excellence at MIOT International, is among the most modern and larger units in the country. It offers comprehensive diagnosis and treatment for the entire spectrum of kidney ailments across age groups, covering general nephrology, dialysis and kidney transplants.

Led by a team of renowned Nephrologists, the centre offers care for patients with acute renal failure, chronic renal failure, hypertensive and diabetic kidney disease, obstructive kidney disease, and immunologically mediated kidney disease. This includes management of electrolyte disturbances and hypertension, care for patients who require renal replacement therapy (including dialysis and renal transplants) and treatment of systemic disorders (such as ANCA vasculitis, lupus or polycystic kidney disease), which could require special treatment.

State-of-the-art Infrastructure

The centre is supported by **advanced imaging and diagnostic facilities** like the latest 4D ultrasonography, MRI, 750 high definition CT scan and nuclear radiography. The **24x7 centralised laboratory** processes all types of renal biopsy specimens. Light microscopy, special stains and immunofluorescent studies are performed routinely, which aid in the accurate diagnosis and management of kidney disease.

MIOT is one of the few centres in the country with a **dedicated Nephrology ICU** and specially trained staff for kidney transplant and critically ill patients.

Access to Multi-disciplinary Care

Patients with kidney disease suffer the effects of their illness on many organs, especially the heart, bones and joints. At MIOT, they have access to all medical and surgical specializations (cardiology, diabetology, infectology, neurology, rheumatology, etc.), which enable wholistic treatment for kidney disease.

Sophisticated Dialysis Facilities

The centre's state-of-the-art **Out-patient dialysis unit** caters to over 75 - 80 patients every day. Dialysis facilities are also provided in all Intensive Care Units, including the Liver ICU, Post Transplant ICU, Medical Intensive Care Unit and Post Operative Care centre. MIOT's **haemodialysis unit** has one of the best water treatment plans and is manned by trained technologists.

MIOT routinely performs **special dialysis procedures** such as CVVH, CAVH, CVV HD, CAVF, Total Plasma Exchange, Apheresis, etc. for highly critical patients.

The department provides facilities for Continuous Ambulatory Peritoneal Dialysis (CAPD) and also trains patients and their families to continue the CAPD at home.

Interventional Procedures

MIOT offers the advantage of interventional procedures in Nephrology through specially trained personnel and facilities. It helps dialysis dependant patients get permanent access placed such as AV fistula, AV graft etc. Other interventions include permanent catheter, temporary femoral (or) subclavion or jugular access and percutaneous catheter insertion.

A Centre for Kidney Transplant

MIOT International is one of the largest centres in the country for kidney transplant. The centre performs **live related kidney transplants** as well as **deceased donor kidney transplants** on adults and children. To address today's deficit of donor organs, the MIOT Institute of Nephrology has devised a programme for **Across Blood Group transplants** with the world's largest Across Blood Group Transplant unit in Japan. Several of these transplants have been performed on adults and children at MIOT International in the last few years, with a high success rate.

Supporting the transplant unit are the state-of-art laboratory, which provides specialised immunology services, advanced imaging and radiology facilities such as MRI (with and without contrast), CT scan, PET scan, nuclear imaging facilities, drug estimating lab, and a full-fledged haematology department. This **multi- departmental approach** to transplants has enabled MIOT International achieve results that are comparable to the best institutes in the world.

NEPHROLOGY

Research

The research wing of the department of Nephrology is currently pursuing world-class drugs trials (level III) for the invention of resin / binders and facilitates new concepts in Nephrology care.

Treatments & Procedures

- Dialysis - Haemodialysis and Continuous Ambulatory Peritoneal Dialysis (CAPD)
- Interventional Procedures
  - Arterio-venous (AV) Fistula
  - Arterio-venous (AV) Graft
  - Renal Angioplasty and Stenting
  - Transplant Kidney Biopsy
  - Native Kidney Biopsy
  - Permanent Catheter Insertion
  - Jugular, Sub Clavian, Femoral Vein Catheter Insertion
  - Acute Peritoneal Dialysis Catheter Insertion
  - Continuous Ambulatory Peritoneal Dialysis (CAPD) Catheter Insertion
- Kidney Transplantation
  - Live Related Kidney Transplantation
  - Deceased Donor Kidney Transplantation (Indian nationals)
  - Across Blood Group Kidney Transplantation

ONCOLOGY

MEDICAL ONCOLOGY

RADIATION ONCOLOGY

SURGICAL ONCOLOGY

MIOT
INSTITUTE OF
CANCER CURE

ONCOLOGY

A person who receives a diagnosis of cancer needs not only medical advice but also emotional support to handle the treatment of the disease and the challenges afterwards.
At the MIOT Institute of Cancer Cure, we take a wholistic view of cancer care by providing a comprehensive and positive experience to our patients. Our objective is to treat the disease completely, minimize trauma during treatment and return patients to near normal lifestyles after their treatment with us. This has led to a customised treatment approach that combines latest procedures and other specialties on a case to case basis, which has benefitted our patients from across the world.

At MICC we treat the entire range of cancers, in adults and children. State-of-the-art facilities for diagnosis and all modes of treatment **under one roof** make it convenient and comfortable for patients. Expert oncologists, empathetic nursing staff, nutritionists and counsellors enable patients to receive complete care in a soothing world-class ambience.

New Age Diagnostics

Fast, Accurate and Conclusive

Cancer cure starts with an accurate and comprehensive diagnosis that gives specialists a definite direction for treatment.

MIOT International today offers one of the most advanced and comprehensive set ups in the country for **diagnosing and staging** all types of cancer. MICC's armoury includes the sophisticated 64-slice PET CT that gives patients a diagnosis in 15 minutes, digital mammography - which picks up tumours in the breast even before they can be felt, comprehensive diagnostics for gastrointestinal and liver cancers, minimally invasive biopsy machines and more.

The 'cure' actually begins in the laboratory. MIOT's histopathology lab not only identifies and stages the cancer at a molecular level, but also uses genetic probes to predict what drugs would be most effective against it.

Comprehensive Treatment Plan

MIOT favours a multi-disciplinary approach to cancer care. There are three primary treatment approaches to cancer: **Medical Oncology** (chemotherapy), **Surgical Oncology** and **Radiation Oncology**.

A patient may be asked to undergo one or more of these treatments. The most effective approach is determined by the **Tumour Board**, which is comprised of specialists from the three treatment modes as well as other specialists from Interventional Radiology, Orthopaedics, Gastroenterology, Neurosurgery, Cosmetic Surgery etc. Armed with complete diagnostic information, they meet thrice a week to plan the most effective treatment course for every case.

MEDICAL ONCOLOGY (Chemotherapy)

Medical Oncology deals with the treatment of cancers with medication. When the cancer is diagnosed at an early stage, chemotherapy supplements the benefits provided by surgery and radiotherapy. In advanced stages, it improves quality of life and prolongs survival.

In **blood-related cancers** - lymphomas, leukaemia and germ cell tumours, chemotherapy often plays a curative role. MICC's medical oncologists work with haemato-oncologists at the **MIOT Institute of Haematology, Haemato-oncology and Bone Marrow Transplant.**

ONCOLOGY

Chemotherapeutic drugs kill cancer cells. However, they do not always discriminate between the cancer cells and normal cells of the body, leading to side effects. At the MIOT Institute of Cancer Cure, these effects are anticipated and offset or managed with **pre-medications** and use of the latest **chemo drug delivery devices.** Drugs are prepared under the specialised **infection-free laminar hood** to maintain their effectiveness.

Oncologists work with MIOT's team of trained nurses to continuously monitor and streamline medication or dosages to help patients complete drug cycles as planned.

Targeted therapy or treatment with biological agents is another option at MICC. It involves the use of medications that are selective

to cancer cells with minimal effect on other cells of the body. These medications, in the form of tablets or injections, are used to **hinder cancer cell growth** by blocking male & female hormones, or by blocking certain receptors on the cancer cells and inhibiting their activity. These chemotherapeutic agents or targeted therapies are indicated in certain types of cancers and serve different purposes in various situations:

- After the surgical removal of the tumour (breast, colon) - **adjuvant therapy**
- Before surgery to shrink the tumour and to facilitate surgery - **neo-adjuvant therapy**
- To control the spread of disease, prolong life and improve quality of life in advanced incurable disease - **palliative therapy**

- As a **sole curative therapy** in cancers such as testicular cancers, lymphomas and leukaemias

HIPEC

The cutting-edge Hyperthermic Intra Peritoneal Chemotherapy - **HIPEC** - is currently the most effective treatment for colorectal and ovarian cancers that have spread to the lining of the abdomen (peritoneum), and in malignancies of the peritoneum, even in the later stages.

The procedure, which has increased the 5 year survival rate from **5% to 25%**, also has fewer chemo-related side effects. Traditionally, these complex cancers are treated with systemic chemotherapy, which is palliative in most cases. During a HIPEC procedure, the onco-surgeon carefully examines all the organs in the abdominal cavity and removes as much of the cancerous tissue as possible. Next, the appropriate chemotherapeutic drug, heated to a few degrees about normal body temperature, is pumped into the abdominal cavity. This mixture, which is gently agitated and then drained after about 90 minutes, destroys any remaining microscopic cancer cells. Precision and experience are crucial to its success at every stage.

RADIATION ONCOLOGY

Radiation therapy maybe recommended as the sole treatment for treating cancer, or in conjunction with other treatments like surgery and chemotherapy.

A patient may receive radiation therapy **before, during or after surgery**. The decision to use radiation therapy and its timing depends on the type of cancer being treated and the stage of the disease.

At MIOT, patients may receive external radiotherapy through the revolutionary **TrueBeam STx** or internal radiation therapy, more commonly called **Brachytherapy**. These treatments involve visualization of the tumour, planning of the individual treatment and delivery of the treatment. MICC's expert team, comprising of radio-oncologists, medical physicist, dosimetrist, radiation therapy nurses and radiation therapists, jointly plan and administer treatments.

ONCOLOGY

TrueBeam STx is the world's most advanced radiosurgery system and performs non-invasive, image-guided **radiotherapy and radiosurgery procedures** with pinpoint accuracy and precision.

- It is 4 times faster than conventional systems, reducing treatment time from **hours to minutes.** Also, the total duration of radiation is shortened.
- Advanced imaging clarity helps specialists target tumours as small as a pinhead with **sub millimetre accuracy**, even in moving organs such as the lungs.
- The radiation beam can be **custom shaped** to tumours even in the fast rotation arc therapy, sparing the surrounding tissue from damaging side effects. This is especially important in critical areas like the spinal cord and brain.
- Fast and accurate dosage results in **quicker relief** from pain and alleviation of other symptoms. Within a few sessions patients who have been immobile or unable to swallow have shown dramatic improvement.

- TrueBeam STx is often used to tackle tumours in **inoperable** sites and to treat **challenging cancers**, including those in the brain, spine, lung, liver, pancreas and prostate.

SURGICAL ONCOLOGY

Surgery is the treatment modality that gives best cure rates for cancer. At MICC, surgeons work to **preserve** as much of their patients' organs as possible to give them a better quality of life. This is accomplished through a conservative approach, using a combination of **pre-operative treatments** such as Interventional Radiology, Radiofrequency Abalation, Chemotherapy and Radiation. These treatments shrink tumours to a size that allows for keyhole surgery, which is minimally invasive. It enables organ preservation and minimises scarring.

The surgical team at MICC includes plastic surgeons and surgeons from other specialities, who help reconstruct organs and limbs.

In **early stages** of several cancers, such as cancers of the breast, mouth or colon, surgery alone may suffice for cure. In more **advanced stages,** chemotherapy and/or radiation may be needed before or after surgery to achieve an optimal result.

Surgical Oncology also includes diagnostic procedures such as biopsies and endoscopies, placement of implantable devices (chemoports) for the administration of chemotherapy and treatment of complications requiring a surgical intervention. Palliation of symptoms such as breathing difficulty due to throat tumours, obstruction of the intestine or stomach etc, are also dealt with by the surgical oncologist.

Treatments & Procedures

SURGICAL ONCOLOGY

- Head and Neck Tumours - mouth, throat, voice box, salivary gland and thyroid cancers
- Chest Cancers - oesophageal (food pipe) and lung cancers

ONCOLOGY

- Gastrointestinal Cancers - stomach, large and small bowel, liver, gall bladder, pancreatic and colorectal cancers
- Genitourinary Tumours - kidney, adrenal and bladder cancers
- Gynaecological Cancers - affecting the ovaries, uterus, cervix and external genitalia
- Sarcomas (tumours of the muscles, nerves and bones) and Skin Cancers

MEDICAL ONCOLOGY

- Conventional Chemotherapy
- Biological Therapy/ Targeted Therapy
- **HIPEC** - Hyperthermic Intra Peritonial Chemotherapy for abdominal cancers

RADIATION ONCOLOGY

- TrueBeam STx - the world's most advanced radiotherapy (IMRT / IGRT / Rapid Arc / Respiratory Gating / Radio Surgery-SRS/SRT / SBRT)
- Brachytherapy

Haematology & Bone Marrow Transplant

MIOT INSTITUTE OF HAEMATOLOGY HAEMATO-ONCOLOGY & BONE MARROW TRANSPLANT

The institute, a dedicated centre for all haematological needs, addresses a significant gap in our healthcare system today. It is led by expert and experienced specialists, who provide comprehensive treatment across age groups, for all diseases and disorders of the blood.

Highly Specialized Services

The institute adopts a wholistic approach in managing blood disorders, including:

- Diagnosis, treatment and management of blood and lymphnode cancers like leukaemia, lymphoma and myeloma including In-patient, out-patient and day care chemotherapy.
- Diagnosis, treatment and management of anaemia, thalassaemia, bleeding and clotting disorders and more.
- End-to-end treatment for Bone Marrow Transplants.
- Bone marrow biopsy, bone marrow harvest, intrathecal chemotherapy.
- Diagnosis of haematological problems, i.e., reporting on bone marrows, blood films, flow cytometry, etc.
- Blood and blood product support, including single donor apheresed platelets, universal leuco-depleted and irradiated blood products.

World-class Centre for Bone Marrow Transplants

The institute provides transplant services to international standards and performs all types of bone marrow transplants: **Autologous**, **Allogeneic**, **Haplo-identical** and **Umbilical cord blood transplants**.

Haplo-identical Transplants

Most centres offer conventional transplants that require a 100% stem cell match. MIOT is one of the few centres worldwide to offer the path breaking Haplo-identical transplant that only requires a **50%** stem cell match, which can usually be found in the donor's family. This procedure, which requires special expertise and facilities, is opening doors for thousands of patients who are waiting for perfectly matched donors.

State-of-the-art Infrastructure

- Sophisticated laboratory facilities, ranked 8th internationally.
- State-of-art apheresis machines, crucial for the collection of stem cells, platelets & other components, and certain therapeutic procedures.
- Cryopreservation Unit (processing and freezing unit) for stem cells, to ensure long term storage in aseptic environments.
- 5 HEPA filtered, pressure controlled, individual rooms with en-suite facilities, to minimize airborne infections.
- Diagnostic and treatment support from MIOT Institute of Cancer Cure.

Transfusion Medicine is concerned with blood products and blood transfusions; its scope at MIOT International is not limited to the blood bank but has reached the patient's bedside.

The department of Transfusion Medicine is a state-of-the-art facility that offers the entire spectrum of services from **blood collection** to **testing** and sophisticated **component separation**. The department's services are organized by functional area, each handled by skilled and experienced staff. Stringent standards and protocols are adhered to, in line with international guidelines, to ensure that safe blood is provided to our patients. MIOT also participates in an external quality assurance with CMC, Vellore, and is getting enrolled with the UK NEQAS quality assurance programme.

Transfusion Medicine

Blood Collection

MIOT International's donor complex remains open throughout the day and has facilities for autologous and directed blood donations. A qualified physician screens prospective donors and counsellors talk to them before and after donation.

The department also registers donors for the emergency panel, which meets requirements when there are shortages and specific group requests. It organizes regular voluntary donation camps.

Component Separation

Blood component separation, a specialised procedure performed at few centres, promotes **optimal** use of blood. Component separation is undertaken at MIOT with advanced Apheresis machines, which have a better collection capacity. The various blood components available are packed red blood cells, fresh frozen plasma, platelet concentrate and cryoprecipitate.

Apheresis

Apheresis is a technology by which the blood of a donor or patient is passed through an apparatus that separates out one particular constituent and returns the remainder to circulation. It is used to collect **specific blood components** like platelets, granulocytes and stem cells from blood donors for use in patients. We also provide round the clock therapeutic apheresis services for a variety of neurological, rheumatological, nephrological and haematological conditions.

Transfusion Transmitted Infection Screening

All donor units are screened for transfusion transmissible infections using the advanced **Abbott Architect i1000 SR**

system. The donor blood is screened for HIV, Hepatitis B, Hepatitis C, Syphilis and Malaria.

Serology Laboratory

MIOT's 24-hour laboratory performs various **immune-haematological tests** in the serology laboratory before the blood is issued to patients. These include:

- Blood grouping (ABO and Rh) of donors and patients
- Cross matching
- Direct and indirect Coomb's test

- Antibody titration for ABO Mismatch organ transplants
- Rh antibody titration in HDN
- Antibody screening
- Antibody identification
- Red cell phenotyping

Leucofiltration of Blood Components

Removal of leucocytes, a type of white blood cell, from blood components has been shown to minimize reactions to transfused blood, HLA allo-immunization and platelet refractoriness in multi-transfused patients. It also prevents transmission of leuko-tropic viruses such as EBV and CMV. All blood components issued at MIOT International are **100% leuco-filtered** according to international standards.

Neurology & Neurosciences

The department of Neurology and Neurosciences at MIOT International offers patients of all age groups end-to-end care for the complete range of diseases related to **brain, spinal cord, muscles and nerves**.

Emergency Services

The department of Neurology & Neurosciences at MIOT International is always ready to deal with emergencies such as **Accidents, Stroke**, **Myasthenia Gravis** (an autoimmune neuromuscular disease), **Guillain Barre Syndrome** (a disorder affecting the peripheral nervous system), **Epilepsy**, **Cerebral Venous Thrombosis** (CVT) and **Acute Disseminated Encephalomyelitis** (ADEM).

Out-patient Services

The department caters to patients with a wide spectrum of ailments, including headache, epilepsy, vertigo, neck and back pain, Parkinson's disease, memory problems / dementia and more. It also manages neurological problems in **children** such as cerebral palsy, developmental delay, mental retardation and behavioural disturbances.

Neuro Lab

The department's neurophysiological lab, manned by an experienced technician, assesses the patient's spinal cord, peripheral nerves and muscles using sophisticated **electrophysiological equipment**. Additionally, the laboratory helps in studying patients with disc disease involving the neck as well as the lower back to pinpoint the exact location of the disease.

The modalities for the electrophysiological investigations that are done here include 16-channel EEG, nerve conduction studies, reflex studies, electromyography, nerve stimulation, sleep study and needle EMG study.

MIOT Stroke Restore Centre

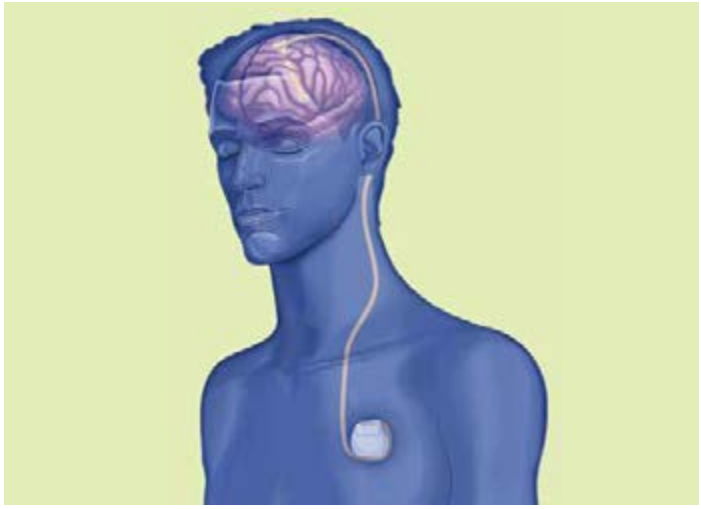
The MIOT Stroke Restore Centre is on standby 24x7x365, and handles **all types of strokes** using the latest treatments and techniques, in state-of-the-art facilities. It is the first centre in the country to offer **Mechanical Thrombectomy**, the latest and **globally preferred stroke treatment** that can **reverse stroke damage** completely, by removing blocks in large blood vessels. The centre is led by experienced Neuro Endovascular specialists who are aided by Neurosurgeons, Neurologists, dedicated Neuro Intensivists and nurses.

Neurosurgery

The department of Neurosurgery at MIOT International offers cutting-edge treatments for the entire spectrum of diseases and disorders of the brain, spinal cord, peripheral nerves and the cerebrovascular system. Our surgeons offer surgical treatments for cancer, stroke, correction of congenital defects, trauma and infection. It is one of only a few centres in India that offers advanced treatments in Functional Neurosurgery for conditions such as Parkinsonism and cerebral palsy, which affect the day to day life of patients. The department also offers 24x7 neurosurgical trauma care.

Our expert surgeons perform **micro-neurosurgery** for:

- **Brain Cancer:** Excision of brain tumours, CT guided biopsy of brain tumours and computer assisted brain surgery.
- **Functional Neurosurgery**: Deep brain stimulation for Parkinson's disease, tremors and dystonia; spinal cord stimulation for chronic intractable pain, intrathecal baclofen pump (ITB) for spasticity from conditions like cerebral palsy, spinal cord injury etc.
- **Spine Lesions**: Microdiscectomies for disc prolapse, cervical lumbar disc replacement, excision of spinal cord tumours, repair of spinal birth defects and surgery for recurrent disc prolapses.
- **Cranio-vertebral Junction Anomalies**: Correction of basilar invagination, Arnold-Chiari malformations, atlanto-axial dislocations, dens fractures, syringomyelia.
- **Epilepsy Surgery**: Surgery for drug resistant epilepsy, including resections, temporal lobectomy disconnections and deep brain stimulation.
- **Trigeminal Neuralgia**: Micro-vascular decompression, retrogasserian ganglion glycerol injection and balloon therapy.
- **Cerebrovascular Lesions**: Clipping or coiling of aneurysms, pre-operative embolization for highly vascular lesions and brain tumours.
- **Paediatric Neurosurgical Procedures**: Correction of split cord malformations, spina bifida, excision of brain tumours and CSF drainage procedures for hydrocephalus.
- **Surgery for Head Injury and Stroke**: Evaluation of critically ill patients with ICP monitors, surgery for intracranial clots and decompressive craniotomy.
- **Endoscopic Neurosurgery**: Endoscopic excision of tumours including pituitary tumours and endoscopic discectomy.
- **Infections of the Brain** including aspiration of brain abscess.



Deep brain stimulation

Cutting-edge Facilities

MIOT International's state-of-the-art dedicated neurosurgical operation theatre has the Neurosurgical Moller Wedel operating microscope. It also has the Aesculap high speed micro drill system and the Karl Storz Neuro-endoscope, with all the requisite microsurgical instruments, along with a Cavitron Ultrasonic Aspirator (CUSA).

The department follows a team approach to treatment and often works closely with medical and radiation oncologists, neuro intervention specialists, ENT specialists and oral and maxillofacial surgeons.

Urology

The department of Urology at MIOT International is one of Chennai's top **referral centres** for diagnosis, treatment, management and care of urological problems. Patients are referred to us with kidney and ureteric stones, prostate enlargement, stricture urethra, hydronephrosis, cancers of the kidney, prostate and urinary bladder, male infertility and sexual dysfunction.

The department has all the latest endo-urological and laparoscopic instruments including a laser machine for expert management of all elective and emergency urological procedures.

Most of the extirpative and reconstructive urological procedures are done **laparoscopically** at MIOT International.

In **renal transplantation**, the renal graft is often harvested through a laparoscopic donor nephrectomy.

The department's surgeons routinely perform **complex procedures** such as the complete reconstruction of urinary tract, repair of

uro-gynaecological fistulae, reconstruction of urethral strictures and reconstruction following cancer surgery.

A dedicated team offers stoma care for those who require urostomy. Correction of congenital abnormalities and genital anomalies is also done.

Cancers that involve the kidneys, bladder and ureter, prostate and testicular tumours are treated at the department along with specialists from the **MIOT Institute of Cancer Cure**. Most tumours are treated laparoscopically. A **screening programme** for bladder and prostate cancers is also offered.

MIOT has a specialized **Continence Clinic** where comprehensive evaluation of incontinence is done for both women and men. Advanced procedures such as TVT (Tension-free Vaginal Tape), Transobturator Tape (TOT), laparoscopic colposuspension and advanced pelvic floor mesh repair are done for incontinence in females.

The department offers a **bladder rehabilitation programme** for patients with diseases involving spinal cord and bladder, such as myelodysplasia, multiple sclerosis, Parkinsonism, cerebrovascular accidents and spinal cord trauma or tumours. Advanced urodynamic tests identify the extent of bladder involvement in neurological illness. The programme is an essential part of the comprehensive spinal rehabilitation programme, which takes care of bowel, bladder and locomotor disturbances.

The department also offers specialized programmes to deal with **infertility** and **sexual dysfunction** and to help patients make lifestyle modifications.

Interventional Radiology

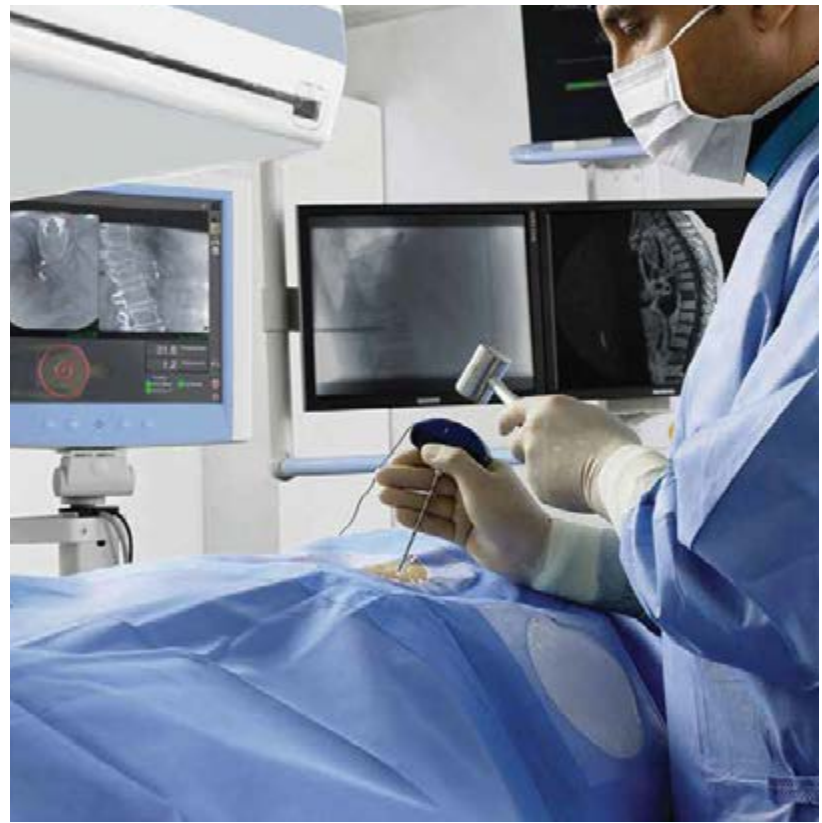
Interventional Radiology uses minimally invasive, image-guided procedures to enter natural highway of veins and arteries through a tiny hole and reach diseased organs in nearly every organ system. This could mean cutting off blood supply to a tumour to shrink it so that it can then be removed surgically, delivering medication directly to the diseased organ or clearing blocks in the patient's circulatory highway with the latest stents.

Interventional Radiologists at MIOT International **work alongside** cardiovascular surgeons, oncologists, neurosurgeons, hepatobiliary surgeons, gastroenterologists and other specialists during or before surgery.

The department is equipped with the latest state-of-the-art flat panel digital subtraction angiography unit with peripheral table and 3D rotational angiography. The hospital also has a radiofrequency ablation unit (RITA) and an endovenous laser ablation unit.

Treatments & Procedures

- Neuro Endovascular Stenting in cases of acute ischemic strokes
- Embolisation of brain aneurysm / brain AVM / fistulae
- Angioplasty and Stenting for stroke prevention
- Endovascular Stent Grafting for repair of aortic aneurysms in chest and abdomen
- Peripheral Vascular Interventions
  - Angioplasty and Stenting for blocks in the aorta, lower and upper limb vessels
  - Laser Ablation of varicose veins
  - Embolisation of vascular malformations
  - Fibroid Embolisation
- Intervention for Tumours (Oncologic)
  - Ultrasound and CT Guided Biopsies (with fluroscopy and robotics)
  - Radiofrequency Tumour Ablation for cancers of the liver, lungs and bones
  - Palliative Therapy for inoperable tumours
- Yttrium-90 therapy for liver cancer



Rheumatology

The department of Rheumatology treats disorders that affect the locomotor system including joints, muscles, connective tissues, soft tissues around the joints, and bones. Many of these are disorders of the immune system. MIOT's skilled rheumatologists, with experience at leading global centres, treat the **entire gamut of rheumatological conditions**, including inflammatory arthritis, connective tissue diseases, degenerative problems, soft tissue rheumatism and metabolic bone diseases.

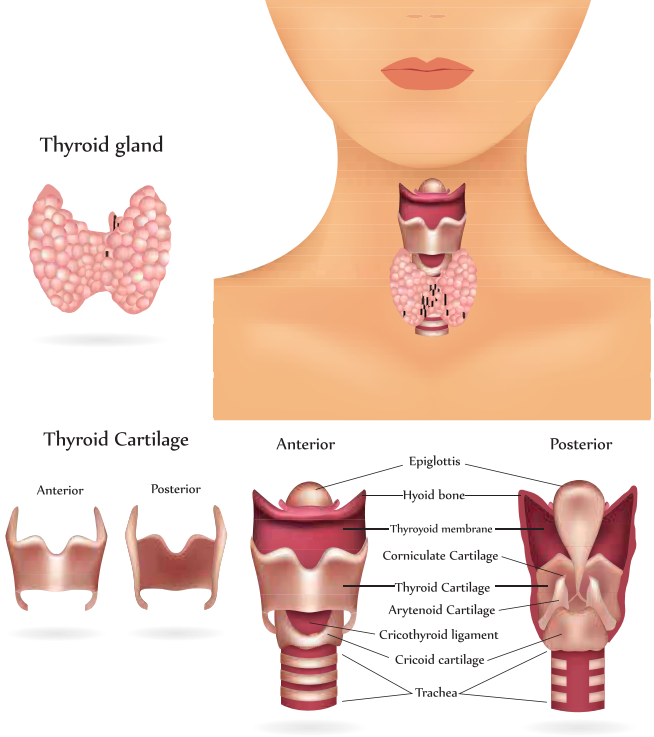
Patients of **all ages** with musculoskelatal conditions are treated here. A diagnosis is made based on the patient's symptoms, a clinical examination and laboratory investigations. MIOT's sophisticated laboratory is equipped to carry out all types of immunology, biochemical and haematological studies. State-of-the-art imaging and radio-diagnostic facilities, which include the nuclear scan and Dexa scan, aid doctors in making an accurate diagnosis.

Most rheumatic conditions are managed with the **latest disease modifying anti-rheumatic drugs**, including biologic therapies such as anti-TNF drugs and intra articular steroids. **Physiotherapy** is offered for pain relief, to strengthen muscles and prevent deformity. Patients with structural damage to their joints are referred to the department of Orthopaedics for corrective surgery.

Endocrinology

The endocrine system consists of several glands which secrete 'hormones' directly into the blood rather than into a duct system. Hormones regulate various human functions, including metabolism, growth and development, tissue function, sleep and moods.

The department of Endocrinology at MIOT International deals with the complete range of conditions related to the endocrine system in both **adults** and **children**. It is aided by advanced diagnostic facilities, which enable doctors to closely track and treat conditions.



MIOT offers comprehensive treatment for all **thyroid disorders**. Nuclear medicine, FNAC and ultrasonogram offer complete diagnosis, while ablation therapy is an effective treatment. These are complemented by sensitive Thyroid Hormone Assay and Antibody Studies at the MIOT laboratory. The latest bone densitometry services enable early detection and effective treatment of **osteoporosis**, **metabolic bone disease** and **parathyroid disorders**. Common **endocrine conditions in women** are routinely handled. The department also offers treatment for **paediatric endocrine disorders** such as growth disorders, congenital hypothyroidism and delayed puberty. Disorders of the **pituitary gland** are treated in collaboration with neurologists.

Diabetology

The department of Diabetology at MIOT International offers state-of-the-art services, which cover comprehensive screening and management of the disease.

Diabetes affects virtually every part of the body. Hence, MIOT adopts a Team approach - with the diabetologist working closely with the diabetic counsellor and diabetic nurse to offer patients complete care.

Screening for diabetes complications are thorough and extensive, and include the eyes, heart, kidneys, peripheral vascular system, feet and blood.

The comprehensive **Diabetic Health Check-Up Package** offered by MIOT includes fundoscopy and retinal photographic documentation, cardiac autonomic neuropathy screening, screening for microalbuminuria renal function tests and renal

ultrasonography, biothesiometry, filament testing and HCP studies, podoscopy and biochemical tests like lipid profile, apoprotein studies and blood sugar estimation.

Other facilities available include insulin pump services and 24-hour blood glucose monitoring through real-time, continuous glucose monitoring systems.

Pulmonology & Sleep Medicine

MIOT International's department of Pulmonology & Sleep Medicine provides sophisticated care for respiratory diseases such as bronchial asthma, COPD, bronchitis, lung cancer, acute and chronic respiratory failure, interstitial lung diseases, pulmonary hypertension, pneumonia, tuberculosis, pleural disease, occupational lung diseases, allergies and sleep disorders, snoring, advanced lung diseases and more. It also offers **round-the-clock emergency care** for respiratory failure, pulmonary embolism, pneumothorax, chest injuries and more.

The department's state-of-the-art **Pulmonology Function Lab** performs advanced studies such as spirometry, lung volumes, diffusion capacity, respiratory drive, bronchoprovocation testing, allergic skin tests, airway resistance and chest wall compliance.

Diagnostic and therapeutic bronchoscopies are undertaken in the department's dedicated Bronchoscopy suite with the latest Video Bronchoscope. MIOT's pulmonologists perform advanced bronchoscopy techniques such as foreign body removal, trans-bronchial lymph node needle aspiration, bronchial stents, electrocautery for endobronchial lesions and endobronchial brachytherapy. **Interventional procedures** like medical thoracoscopy, pleural drainage and ultrasonography / CT guided lung & pleural biopsy are also done.

A fully equipped respiratory ICU with advanced ventilators, BiPAP machines and trained nurses manage critical patients with respiratory failure.

Specially trained and dedicated respiratory physiotherapists work to rehabilitate patients with Chronic Pulmonary Disease (COPD) and end stage lung disease. The **pulmonary rehabilitation services** also include counselling, assisting smoking de-addiction and post operative pulmonary rehabilitation. The **Sleep Lab** offers comprehensive services in the diagnosis and management all types of sleep disorders including sleep apnea, snoring, narcolepsy etc.

The department also offers allergy services: skin allergy testing, asthma education and counselling, and treatment of all types of allergic airway diseases. Advanced therapies like monoclonal antibodies (anti-IgE) and immunotherapy are also administered by the department.

Dermatology, Cosmetic Surgery & Hair Transplant

The department of Dermatology, Cosmetic Surgery & Hair Transplant at MIOT International offers expert medical, surgical and cosmetic care for all ailments that relate to the skin, nails and hair. The services of the department range from common skin conditions such as pimple marks, pigmentation, hair loss, eczema and allergies, to complicated life threatening reactions to drugs and blistering disorders.

Pigment LASER therapy (Before & After)

The department offers aesthetic and laser procedures, hair transplant surgery, vitiligo surgery and dermato surgical procedures. Customized **aesthetic procedures** to improve skin complexion and rejuvenation include botox treatments, dermal fillers, tripolar RF skin tightening for non-surgical face and skin lifts and chemical peels.

State-of-the-art **laser therapies** include **eTwo** for treatment of open pores, superficial scarring and facial rejuvenation, the **Fractional CO_2 laser**, the gold standard treatment for deep acne and burn scars, the revolutionary **eLASE with motif system**

Hair transplant surgery (Before & After)

for permanent removal of unwanted hair and **Q-switched ND-YAG laser** for removal of tattoos and deep dermal pigmentation.

Hair transplant surgery is the only permanent solution for baldness. At MIOT International, our surgeons offer expertise in both the Follicular Unit Extraction (FUE) and Follicular Extraction Transplantation (FUT) techniques. The former is less invasive and therefore offers the benefit of less scarring, while the latter is more effective against extensive baldness.

MIOT International offers the most advanced Epidermal Melanocyte Transfer surgery for **Vitiligo**. The procedure involves taking a small sheet of skin from the individual and processing it in our sophisticated Stem Cell lab to separate the individual keratinocytes and melanocytes (colour cells) in the skin. These are subsequently transferred to the white spots which are devoid of colour cells. This technique allows surgeons to treat large areas in a single session with an excellent colour match. MIOT also peforms extensive **allergy testing** and treatments for contact dermatitis.

Internal Medicine & Infectious Diseases

The department of Internal Medicine at MIOT International deals with **out-patients**, **in-patients** as well as **round the clock emergencies.** The prevention, diagnosis and treatment of **adult diseases** fall under its purview. Senior Consultant Physicians offer total care from the initial assessment to the management of all non-surgical cases, sometimes in consultation with other departments. The department's internists are skilled in managing patients with **undifferentiated or multi-system diseases.**

In **Critical Care Medicine,** MIOT's internists are actively involved in the day-to-day treatment of internal medical problems in the Medical ICU. They cover a wide spectrum of medical emergencies with a focus on toxicology, complicated septicemias, hepatic disorders and blood problems. They work closely with critical care specialists as well as the sophisticated laboratory, blood bank and nuclear medicine units.

MIOT offers care for the gamut of **orthopaedic ailments**, including complicated arthritic diseases. Patients undergo the latest therapeutic regimens such as anti TNF therapy and biological agents (as corollary to the surgical procedures) under the watchful care of the hospital's internists. The department works with the **Immunology lab** to diagnose and manage life threatening auto-immune disorders using the latest immunomodulatory medications.

The department of Internal Medicine also deals with **lifestyle diseases** that lead to accelerated atherogenesis**.** Patients are assessed for standard risk factors - obesity, addictions, diabetes, hypertension, hyperlipedemias, and appropriate therapeutic and preventive measures are undertaken.

MIOT International is currently in the process of setting up a dedicated centre for **geriatric care.**

INFECTIOUS DISEASES

Infectious diseases caused by bacteria, viruses and fungi can be life threatening, requiring hospitalization and specialized care. The team of specialists in this department who **deal with Infectious diseases** offer services- in general consultations, inpatient services, transplant cases, infection control and prevention.

Anaesthesiology

With MIOT emerging as a **global referral centre for surgeries** across specialties, the department of Anaesthesiology at MIOT International plays a pivotal role in ensuring patient safety and well-being. Following internationally recognised protocols and guidelines, the department is today equipped and manned on par with the best international healthcare institutions. It provides comprehensive anaesthesia care, covering pre-operative, peri-operative, post operative, critical care and pain relief services.

The department, which functions from a suite of cutting-edge, modular, laminar flow operating theatres, is equipped with ceiling mounted, microprocessor-controlled anaesthesia workstations, multi-parameter monitors and volumetric infusion devices. They are manned by **highly skilled anaesthesiologists,** trained in the latest techniques, whose watchful eyes and quick intervention can prevent complications such as excessive bleeding, clotting, organ damage and more. Further to surgery, support teams assist and manage the ICU and post operative wards, round the clock.

Offering services **across specialities**, the department's extensive experience in orthopaedic, liver, bariatric, maxillofacial, paediatric, tumescent liposuction surgeries, acute trauma and

Draeger Anaesthesia Systems

poly trauma is a major source of confidence for surgeons in these critical areas.

The department also takes up **post-operative pain management** which is tailored to suit specific population groups such as the elderly, paediatric patients, obese patients and those with obstructive sleep apnea. Patient controlled analgesia with an individually tailored cocktail of analgesic drugs allow a pain free post operative period for arthroplasty patients, who can walk a few hours after surgery without pain.

Other services include ambulatory anaesthesia and anaesthesia care outside the operating suite, i.e. during CT scan, sedation for MRI, during cardiac catherisation and labour analgesia.

Gynaecology & Obstetrics

The department of Gynaecology & Obstetrics at MIOT International offers women medical care and support at every stage in their lives. Its services cover all gynaecological problems, including screening, diagnosing and treating cancer.

Our specialists meticulously and thoroughly evaluate every patient to make an accurate diagnosis and chart a treatment course. We routinely perform **laparoscopic gynaecological surgeries** such as hysterectomy, cystectomy, myomectomy, salphingectomy, sterilization and ovarian cystectomy, as well as **hysteroscopic procedures** like endometrial polypectomy, submucosal fibroid removal and septal resection.
MIOT has the facilities to offer **Thermachoice Uterine Balloon Therapy** for endometrial ablation, a non-surgical treatment for dysfunctional uterine bleeding. An out-patient procedure, it does not require an incision or sutures and leaves no scars. **All types of open gynaecological surgeries** are also done.

The department offers **screening for cancer of the breast, cervix and genital tract**, as well as **vaccination against cervical cancer**. **Colposcopy directed cervical biopsies** are done for patients with an abnormal pap smear.

General Paediatrics

The department of Paediatrics deals with all medical ailments, including medical emergencies and critical care, for children of all ages from **neonates to adolescents**. It is one of MIOT International's busiest departments.

A significant function of MIOT's Paediatric unit is **immunisation**. The department has all the latest vaccines stored in a controlled, aseptic ice lined unit. The hospital's dedicated ICU and wards for its little patients have world-class facilities for secondary level neo-natal care and emergency care.

MIOT's paediatricians work alongside other specialists to offer treatment for congenital heart conditions, orthopaedic conditions, craniofacial anomalies, paediatric oncology, nephrology, pulmonology and gastroenterology.

Paediatric Surgery

Paediatric surgery involves surgery for children, from neonates upto the age of 14 years with birth defects and acquired problems. At MIOT international, the surgeons of the department of Paediatric Surgery perform a wide range of **elective and emergency procedures** on its little patients from India and abroad. These include correction of congenital malformations, abdominal wall defects and chest wall deformities, removal of tumours and multi-modal cancer care.

We focus on performing single stage surgeries for complex conditions and on organ preservation. Of special note is the **mesh repair of abdominal wall,** a surgical technique developed by MIOT's paediatric surgeons to correct exstrophy of the bladder.

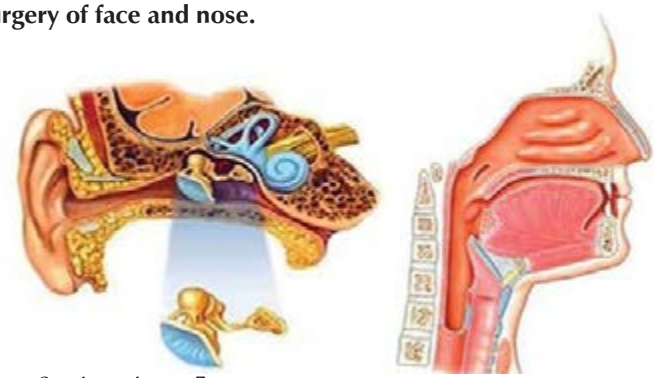
MIOT's state-of-the-art facilities include dedicated laminar flow operation theatres and a Paediatric ICU, as well as dedicated **paediatric laparoscopy, cystoscopy and flexible endoscopy facilities**, which enable our expert surgeons to perform complex surgery even on day old babies. We also provide chemotherapy by saphenous vein technique of chemoport insertion.

ENT-Head & Neck & Skull Base Surgery

The department of ENT- Head & Neck & Skull Base Surgery at MIOT International is today one of the leading **otorhinolaryngology** centres in the country, offering comprehensive and advanced care for all conditions, including ermergencies related to the **ear, nose and throat**.

The department is equipped with state-of-the-art diagnostic, therapeutic and surgical facilities, including the latest microscope, sinus endoscopy system and the shaver/microdebrider system used in endonasal and endolaryngeal procedures.

Highly trained specialists perform all **routine ENT treatments** as well as **advanced ENT procedures** which include skull base surgery, CSF rhinorrhoea repair, head and neck tumours and oncological procedures. Specialist surgeons also take up **plastic surgery of face and nose.**



Cross Section - Inner Ear

The department offers treatment for deafness, ear discharge, giddiness/ vertigo, ear infections, nose bleeding, sinus infections, tonsil infections, voice change as well as difficulties in swallowing and breathing, snoring and headaches. MIOT has an advanced set-up for **audiology** and **speech pathology** for diagnosis and rehabilitation.

Plastic & Reconstructive Surgery

MIOT is a **Level 1 Trauma care centre offering care to victims of road accidents** and **industrial mishaps**, requiring plastic and reconstructive surgery, on a daily basis. The department of Plastic & Reconstructive Surgery at MIOT International is a comprehensive care unit specialised in basic procedures and **advanced reconstructive microsurgery**.

Highly trained surgeons work alongside orthopaedic surgeons to provide soft tissue cover over injuries that have resulted in exposed bone, such as compound fractures. This helps patients avoid multiple staged surgeries, prevents infections, minimizes hospital stay and improves prognosis. In fact, MIOT has a success rate that is **>99%** in **microvascular flap reconstructive surgery**.

Surgical reconstruction of chin (Before & After)

MIOT International is a leading **tertiary care hand surgery referral centre** and offers round the clock replantation of severed fingers and hands in suitable patients. It is one of the few centres in the country to take up reconstructive microsurgery on patients who suffer from **traumatic or birth related brachial plexus injury** (resulting in paralysis of the entire arm). Our specialists also work alongside **onco-surgeons** to perform **complex reconstructions of defects** involving the oral cavity, head, neck and soft tissue in any part of the body.

Correction of congenital deformities, care of diabetic wounds and **liposuction** are also offered by the department.

Craniofacial & Aesthetic Surgery

The department of Craniofacial & Aesthetic Surgery offers comprehensive treatment and support to patients with birth deformities or trauma to the face and those looking to enhance their appearance.

A major trauma centre, MIOT International's facilities include modern instrumentation such as the **Synthes implant system** and **Aesculap bone cutting instruments**. Advances in biomaterials, precision instrumentation and new developments in aesthetic surgeries have expanded the scope of craniofacial and aesthetic surgery in recent years.

Our team of skilled, dedicated surgeons and specially trained support staff are up-to-date on the latest techniques and technology available. They are ably supported by specialists from neurosurgery, orthopaedic surgery and plastic surgery.

The department **restores form and function** to the facial structure for both adults and children. Craniofacial trauma,

correction of post traumatic craniofacial defects and large vascular malformations are routinely performed.

MIOT International is one of only a few centres in India that offers all forms of craniosynostosis correction. The surgery is performed by a multi-disciplinary team with excellent outcomes, on par with international standards.

Reconstructive surgery on vicitims of **chemical attacks** is also done at MIOT International.

Treatments & Procedures

- Management of Facial Trauma
- Craniosynostosis Correction
- Early Detection and Management of Oral Cancers
- Surgical Correction of Facial Deformities for cosmetic and functional improvement
- Jaw Joint Problems and Salivary Gland Diseases
- Management of Cleft Palate
- Face Lift; Brow Lift
- Rhinoplasty
- Pinhole Liposuction, Body Contouring and Total Body Sculpting
- Scarless Gynaecomastia (male breast) Reduction
- Breast Reduction / Augmentation
- Post Mastectomy Breast Reconstruction
- Abdominoplasty (tummy tuck)
- Removal of Disfiguring Scars and Wrinkles
- Rejuvenation of Face through Botox; Silicon Filler Injections
- Blephroplasty (eyelid surgery)
- Otoplasty (correcting deformity of the outer ear)

Surgical correction of cleft lip & palate (Before & After)

Oral & Maxillofacial Surgery

The department of Oral and Maxillofacial Surgery focuses on the diseases that affect the mouth and face. Our surgeons combine surgical training and dental expertise to treat diseases, injuries, tumours and deformities of the face, jaws, teeth and surrounding structures. Treatments offered use latest techniques and follow global guidelines.

Our maxillofacial surgeons work alongside orthopaedic surgeons, neurosurgeons, plastic surgeons, ENT surgeons, head & neck oncologists and craniofacial surgeons, to **restore both function and cosmetic appearance of the facial region**.

In the department's armamentarium are sophisticated tools that enable our surgeons to perform complex surgeries on the face and oral cavity. This includes the Aesculap micro drill system, Stryker CORE drill system, W&H physiodispenser, Stryker plating kit, Synthes plating kit, and Zimmer and Nobel Biocare dental implant systems.

The department also offers oral surgery to paediatric patients, medically compromised, mentally challenged and anxious patients on a day care basis.

Ophthalmology

The department of Ophthalmology at MIOT International deals with the varied conditions that affect sight from **cataracts to corneal and retina diseases** and more, in children and adults. Its surgeons perform **sophisticated ophthalmologic surgery** with cutting-edge facilities which include the renowned Carl Zeiss microscope, the Millennium microsurgical systems for sutureless cataract surgery and IRIDEX Green Laser for laser procedures.

Treatments & Procedures

- Microsurgery
  - Sutureless cataract surgery
  - Paediatric cataract surgery
  - Surgery for glaucoma

- Squint correction surgery
- Vitreoretinal surgery
- Corneal transplantation and other corneal surgeries
- Occuloplastic surgery
- Phakic intraocular lens implantation

- Laser procedures
- Screening for glaucoma, diabetic retinopathy and retinal disease
- Contact lens and optical services
- Customised ocular prosthesis

Dental Surgery & Orthodontics

The department of Dentistry at MIOT International offers specialised dental care, covering the **entire range of procedures**. Our expert orthodontists diagnose, **treat and correct** dental and facial malformations using braces to bring teeth, lips and jaws into proper alignment and achieve facial balance.

Successfully spreading smiles among national and international patients of all ages, the department's strength lies in its comprehensive and integrated clinical practice, adoption of the latest innovations and continued learning.

The department, on par with international standards also offers **24x7 emergency geriatric care**. Other advantages to patients include 'teeth in an hour', 'metal free mouth' and quick replacement of teeth.

RESOURCES

Radiology & Imaging Sciences

The Radiology and Imaging Sciences department at MIOT International is one of the most advanced facilities in the country. On par with the best healthcare institutions in the West, it is led by competent and experienced technologists.

MIOT International has a **4D ultrasound with colour Doppler** as well as portable 3D colour Doppler and intra-operative colour units. These enable physicians and surgeons to get a better view of the abdomen, chest, thyroid, breast, scrotum and musculo-skeletal system. They also enable liver elastography, which is performed routinely at MIOT International.

The **750 HD CT scan** with dual energy imaging is of great assistance to our specialists as the high resolution, high definition images aid in accurate diagnosis. There is minimal radiation exposure, and the whole body can be scanned in under a minute, which translates into greater comfort for the patient.

The state-of-the-art **3T MRI** enables Magnetic Resonance Imaging (MRI) of the whole body, including routine studies of the breast, small joints, brain and spine. Specialised studies such as spectroscopy, diffusion tensor imaging, MR angiogram, and MR mammogram can also be done.

4D Echo machines like the IE333, which also have a transesophageal probe, are helpful for patients who require a valve replacement. We use the most recent ultrasound machines to perform routine & special imaging and biopsies.

MIOT International also offers **advanced digital mammotomography** with contrast enhanced mammography. Non-invasive and almost painless, it enables the detection of lesions hidden even in dense breasts, as well as the differentiation between scar tissue and recurrent tumours. It aids the identification of multicentric tumours in the early stages. Identified lesions are biopsied using an imaging ultrasound or with the stereotactic biopsy system. This enables early detection of cancer, which translates into early treatment and a better chance of a normal life.

The department's sophisticated imaging equipment includes multiple digital and portable X-ray units with computerized radiography, colour doppler ultrasound units and bone mineral densitometry.

Nuclear Medicine & PET CT

The department of Nuclear Medicine and PET CT is instrumental in the accurate diagnosis of varied and complex conditions that routinely present at MIOT International. Imaging done with the advanced systems at the department provide detailed physiology and pathophysiology data **at a molecular level across organ systems**, which is then analysed by expert technicians. Information and analysis at this level has placed MIOT at the forefront in Imaging Sciences. The department plays a vital role in the diagnosis and treatment of a number of oncological, cardiological and neurological conditions.

The systems at MIOT International include the advanced Dual Head Gamma camera with a sophisticated workstation and the 64 Slice PET CT. The scans are simple and non-invasive, and offer clinicians detailed information about the functional capacity of a diseased organ. The department also administers several radionuclide therapies.

Services Offered

- **Nuclear Medicine Scans**
  - Stress Myocardial Perfusion Imaging (previously called Stress Thallium)
  - Whole Body Bone Scan
  - Renal Scans (DTPA and DMSA)

- Thyroid Scan (Technetium-99m and Iodine-131)
- Lung Perfusion Scan
- Hepatobiliary Scan (HIDA)
- Gastro-intestinal Bleeding Scan
- Meckel's Scan
- Brain Scan
- Esophageal Transit/Gastric Emptying/Colonic Transit Studies

- **PET CT Scan**
  - FDG PET CT Whole Body
  - FDG PET CT Brain
  - FDG Myocardial PET CT for viability
  - F-18 Bone Scan
- **Radionuclide Therapies**
  - Low Dose Iodine-131 Therapy for thyrotoxicosis
  - High Dose Iodine-131 Therapy for thyroid cancer patients
  - Bone Pain Palliation using Strontium-89, Samarium-153 and Phosphorus-32
  - I-131-mIBG Therapy for neuro-endocrine tumours
  - Lu-177 Labelled Octreotide Therapy for neuro-endocrine tumours
  - Y-90 Radio Embolization for hepatic tumours

Laboratory Services

The world-class department of Laboratory Services at MIOT International offers 24-hour services in **all branches of Laboratory Medicine**: Clinical Pathology, Clinical Chemistry, Endocrinology & Serology, Haematology, Immuno-haematology & Coagulation, Microbiology, Anatomic Pathology & Cytology, Transplantation Immunology, Flow Cytometry & Molecular Diagnostics.

The centralised laboratory on-campus provides invaluable services to all specialities and enables discussion between pathologists, lab medicine experts, doctors and surgeons. Patients benefit from an accurate and quicker diagnosis, resulting in quicker treatment and a shorter hospital stay.

The sophisticated 6000 sq. ft. laboratory, **ranked 8th** internationally and accredited by the **National Accreditation Board for Testing and Calibration Laboratories (NABL)**, has state-of-the-art diagnostic technology and a full-time, dedicated team of pathologists and microbiologists.

The laboratory has adopted the ISO 15189:2007 Quality Management System.

The **Clinical Chemistry** division is equipped with three fully automated analysers with a throughput of more than 2600 tests per hour. Common metabolic panel and electrolytes are run on these machines, including esoteric tests.

The **Clinical Pathology** section with a fully automated urine chemistry analyser along with urine flow cytometry enables:

- Early detection of kidney disease and prevention of kidney failure
- Identification of abnormalities in urine segment and diagnosis of urinary tract infection

The laboratory's advanced **Transplantation Immunology and Molecular Diagnostics** division supports the **organ transplant team** with the following:

- Advanced multiplex testing systems for HLA typing and detection, donor specific antibodies, panel reactive antibody identification, flow cross match and tissue cross match
- Automated RT-PCR machine for viral loads
- Renal and skin biopsies and auto-immune disorder detection with immunoflorescent testing
- Flow cytometry studies for immune phenotyping of blood cancer
- Therapeutic drug monitoring using the Automated Immunoassay Analyser
- Evaluation of genetic markers for cancers using FISH and RTPCR

The **Anatomic Pathology and Cytology** division is equipped with:

- Cryostat for frozen section, which facilitiates intra-operative consultations between surgeon and pathologist
- Cytospin facilities for Cytology and FNAC consultations
- Immunohistochemistry for challenging cases and in onco-pathology consultations

The **Haematology** section is equipped with Automated Hematology Analyser with Reticulocyte and Body Fluid Analysis. These systems enable the detection of haematological disorders like anaemia and leukaemia.

Further, the haematology division is equipped with:

- Capillary electrophoresis for detection of abnormal haemoglobins like thalassemia, haemoglobin S, haemoglobin C, haemoglobin D, haemoglobin E, serum protein electrophoresis.
- Automated Coagulometer for individual factor assay to diagnose and monitor diseases like haemophilia. Some of the tests performed are protein C, protein S, anti thrombin III and lupus anticoagulant.

The **Microbiology** division is involved in bacteriology, mycology, mycobacteriology and hospital surveillance. The automated blood and body fluid culture systems and antibiotic sensitivity testing system help in the early detection of infection.

The **Mycobacterology** section is fully equipped with BS-III labs and renders molecular testing for detection, antibiotic sensitivity and resistance testing for mycobacterium.

Critical & Intensive Care

MIOT's highly specialised treatments combine intensive nursing with the latest technology to support our patients' complex needs as they battle their way to recovery.

MIOT International is one of the few centres in the country with a fully evolved Critical & Intensive Care Unit, which manages life threatening conditions across specialities through sophisticated organ support and intensive monitoring. The department, equipped to handle all kinds of emergencies has expert staff and full time intensivists to provide consistent and round-the-clock care in all ICUs.

Facilities

The Critical Care ICUs at MIOT are clearly demarcated based on specialities and situated in different locations on campus. This unique design aids in reducing cross infection rates, so essential in caring for the critically ill.

The spacious ICUs with large windows and ample sunlight provide a positive environment for our patients, giving them hope and orientation. They include:

- The **Multidisciplinary Medical ICU**, a closed ICU with 25 critical beds and 10 step-down beds. It handles patients from various specialties like General Medical, Pulmonology, Nephrology, Gastroenterology, Neurology and Cardiology.

  12 spacious and exclusive Multidisciplinary Medical ICU rooms for critically ill patients with provision for 1:1 nursing care, Central Monitoring, Continuous Cardiac Output Monitoring, CRRT and ECMO.

- The **7-bed Stroke ICU**: Care for patients who have suffered acute stroke is handled in this exclusive ICU in close conjunction with the neurologist, neurosurgeon and interventional radiologist.

- 25-bedded exclusive ICU for **Trauma and Resuscitation**: The critical care team works alongside the Trauma and Orthopaedics team, handling poly-trauma and severe head injuries that require active resuscitation, neurosurgical, surgical, orthopaedic and cosmetic interventions.

- **2 Post Operative ICUs**: These critical ICUs handle post-op ventilation and stabilization of patients following complex gastroenterology surgeries, hepatic surgeries, spine & orthopaedic surgeries, plastic surgery, vascular and urological surgeries.

All ICUs of the Critical & Intensive Care Unit are equipped with the latest medical technology to support patients in the most vulnerable state of their illness. This includes:

- Equipment that assists ventilation with life support machines, specialist equipment which take over the functions of the kidney and pumps that deliver essential drugs to support the heart and circulation.
- State-of-the-art monitors with multi-channel ECG, invasive haemodynamic monitoring, continuous temperature and ETCO2 monitoring to keep close tabs on his or her vitals.
- In-house ABG, bronchoscopy, ECHO, USG, bedside endoscopy, pacemaker insertion and IABP for failing heart, ICP monitor for neuro critical care and sophisticated plasmapheresis machine that yields high volume plasma exchange.
- **ECMO machine for severe ARDS and heart failure.**

Specialised Services

MIOT's Critical & Intensive Care Unit offers specialised services for:

- Polytrauma and head injury
- Patients affected by shocks and septicaemia

- Patients with respiratory failure and severe ARDS
- Patients in renal failure being treated with various modes of renal replacement therapy, including CRRT for patients with severe haemodynamic instability
- Post cardiac arrest patients, who require invasive haemodynamic monitoring and therapeutic hypothermia
- Morbidly obese & sleep apnea patients with respiratory failure
- Acute stroke patients with provision for **emergency neuro-radiological intervention and Clot lysis**
- Catastrophic stroke patients requiring **decompressive craniectomy and clot evacuation**
- Patients requiring intense neuro critical care for conditions such as subarachnoid haemorrhage, cortical venous thrombosis, status epilepticus etc.

Physiotherapy

Physical therapy plays an integral role in a full recovery after surgery. It is an essential step in restoring normal mobility after orthopaedic and other procedures. Our team of 20 experienced physiotherapists work with patients on a one-on-one basis to get them back on their feet in facilities that are specially designed with the latest equipment. Together with related specialists, they work out customised routines that enable patients to return to normal lives quickly, comfortably and safely.

Our patients also learn therapy routines that they can safely practise at home, to improve their mobility and movement. A key component of any routine is the prevention of injury which could hamper the patient's recovery.

International Patient Care

Patients from over 130 countries make their way to MIOT seeking world class healthcare. Our International Patient Care Centre offers vital services to patients far away from their homes, friends and families.

The Patient Care Centre, staffed with trained and multilingual coordinators, is equipped with modern communication facilities like email, fax, internet (wi-fi) and a 24-hour helpline.

Our services begin even prior to the patient's arrival in MIOT - appointments with the concerned doctors are coordinated to avoid delays. Every International patient is received at the airport or station by MIOT personnel and is conveyed safely and comfortably to MIOT.

An exclusive kitchen for international patients serves up meals that are suited to their dietary requirements and also tailored to their palates.

Every patient is allotted a coordinator who speaks their language and ensures that they feel at home. They act as interpreters between patients and doctors, and other personnel, whenever required.

Patients can contact their coordinators for help with visas, tickets and other travel arrangements.

By popular demand, the office also organizes guided tours around the city for patients and their attendants.

Patients from the Middle East can make use of the Prayer Room, specially constructed for their use.

PROGRAMMES

Master Health Check (MMHC)

The **comprehensive** MIOT Master Health Check (MMHC) offered at MIOT International and preferred by patients from rural and urban areas helps patients keep tabs on their health, thereby preventing illness. The MMHC has an excellent record for cost - effective and **thorough investigations** on advanced facilities. This is followed by **expert analysis** and referance to appropriate specialists of other departments, if necessary. The entire process is carried out by dedicated teams of experienced physicians, technicians and efficient marketing personnel, who come together to offer complete care.

Tests in the MMHC are done for **all patients** based on their age and associated medical problems. Reports are received on the same day with a complete explanation of the results. Stringent protocols for all investigations ensure tests are done correctly and in time.

The **Treadmill** is mandatory for males **above 30 years** while a **Mammogram** must be done by all female patients above 40 years to detect early heart disease and breast cancer, respectively.

1 in 4 patients reporting for the MIOT Master Health Check are either **overweight or obese**. Our dietician gives them dietary counselling and lifestyle tips, while in the case of morbid obesity the bariatric surgeon evaluates them for weight loss surgery. We have customised Master Health Check packages based on life style for corporates, men & women across age groups and children.

Nutrition and Weight Loss Clinic

MIOT International's Nutrition and Weight Loss Clinic is a special programme to help our patients maintain a healthy weight and adopt a healthier diet.

MIOT's nutritionists counsel patients who are inclined to be overweight and provide them with personalized diet programmes based on their lifestyles, food preferences and health conditions, such as diabetes, hypercholesterolemia, gout etc. The diet chart is modified every month. Patients lose between **2 to 4 kgs per month,** and an average of **10 to 15 kgs in about 3 - 4 months**, depending on how committed they are to the programme.

This programme is especially helpful for people who are not in good enough health for an exercise regime, such as those with knee problems, spine problems etc. At the end of the programme, patients are also counselled on how they can keep the weight off through their diet. Aside from weight loss, it also helps them to bring blood sugar levels and cholesterol levels down to normal.

Our specialists work with **bariatric surgeons** to chart out diets for patients who require bariatric surgery, pre and post surgery. The department also co-ordinates with the **oncology** institute, customising patient diets, which play a major role in getting patients through their treatment plans.

Apart from its weight loss programme, the department also offers diet recommendations to gain weight, keep diabetes in check, and control high cholesterol, gout and more.

Organ Transplant

Organ Transplants are no longer considered a 'last resort' when all other options have been exhausted; but rather as a **curative option** in the disease phase. These challenging procedures performed by only a few certified centres in the country, offer patients permanent solutions, and the chance at a near-normal life, post procedure.

Transplants involve replacing the patient's damaged or diseased organ with a healthy donor organ. They demand precise timing, an extremely high level of skill and multi-specialist care.

MIOT International's Organ transplant programme is considered one of the **premier transplant programmes in the country**. Our renowned specialists follow the **Gold standard** in choosing the donor organ to ensure good quality of living, post-procedure. Their expertise aided by sophisticated facilities for surgery and post surgery care, have ensured a **90%** sucess rate across transplants. At MIOT **Liver, Kidney, Heart** and **Bone-Marrow** transplants are done regularly.

Our Transplant coordinator interacts with patients and their families to maintain utmost transparency by keeping them informed at every stage.

MIOT Organ Drive (MODE)

MODE or MIOT Organ Drive is MIOT's initiative to drive organ donation and extend the reach of the Tamil Nadu government's organ donation programme. Its objectives are to create awareness and dispel misconceptions with regard to organ donation, and help potential donors register their willingness to donate their organs. The data collected is then sent to the Government of Tamil Nadu's Organ Donor Programme, which regulates the distribution of donated organs.

Medical Education

MIOT International gives high priority to Academic programmes, Medical and Paramedical education. It is approved by the National Board of Examinations, which maintains uniform standards in Post Graduate Medical Education in India.

Post Graduate Medical Courses

MIOT offers DNB courses in five major specialities. It is one of only three centres in India approved by the National Board for Post Doctoral Fellowship in Spine Surgery.

Post Graduate Courses For Doctors

- DNB Orthopaedics
- DNB Anaesthesia
- DNB Cardio Thoracic Surgery
- DNB Nephrology
- DNB Gastroenterology
- Post Doctoral Fellowship Course in Spine Surgery

Nursing Courses

At MIOT, great importance is placed on nursing education in order to maintain its uniformly high standards of care. Through its School and College of Nursing, the hospital offers Diploma, B.Sc., M.Sc. and Ph.D. Nursing programmes.

In the pipeline is a Post Basic B.Sc. (N) Course for nurses who have completed a Diploma in Nursing.

Nursing Courses

1) MIOT SCHOOL OF NURSING

DIPLOMA (N) COURSE

2) MIOT COLLEGE OF NURSING

- BASIC B.Sc. (N)
- M.Sc. (N) (Specialities: Medical Surgical Nursing, Paediatric Nursing, Community Nursing)
- Ph.D. Nursing

The MIOT Academy of Allied Health Science (MAAHS)

The MIOT Academy of Allied Health Science offers a large number of career-oriented, technological degree programmes in the fields of medical, paramedical, bio-technological and other health sciences for students who have completed Class XII.

The MIOT Academy of Allied Health Science

- B.Sc. - Accident and Emergency Care Technology
- B.Sc. - Cardiac Pulmonary Care Technology
- B.Sc. - Critical Care Technology
- B.Sc. - Operation Theatre & Anaesthesia Technology
- B.Sc. - Physician Assistant
- B.Sc. - Radiology Imaging Technology
- B.Sc. - Dialysis Technology
- B.Sc. - Nuclear Medicine Technology
- MBA - Hospital & Health System Management

CHIME

2,50,000 children are born in India with congenital heart disease every year. 40% of them need life saving surgery within the first year of their lives.

Only 10,000 of them actually get the treatment that they need.

CHIME (Children's Heart Internationale MIOT) was founded by MIOT International in 2007 to provide free and subsidized surgery for children from families without the financial means to pay for treatment. In fact, CHIME has helped over 800 children since its inception!

We would not have been able to make it possible for these little heart patients to live their dreams without the support of our patrons and well wishers.


MIOT
International

Am I really getting the care that I need?
Is this the best option for me?

These are some of the questions that haunt most patients and caregivers today. Though they would rather depend on experts to make that choice for them, there are very few voices they are willing to trust, considering the competitive healthcare environment.

When patients from over 130 countries come to MIOT International in their hour of need, we believe they do so because of the consistently high standards in medical care, innovation, safety and comfort that we offer. They do so based on our record of giving patients solutions that have returned them to a good quality of life, often from points of no return.

We would also like to think they come to MIOT because they believe they can entrust us with their care, that we will take care of them in the best possible way.

It is a humbling thought. It inspires us to search further, learn deeper and choose more astutely, as we continue to harness the latest that science has to offer, in the care of our patients.

MIOT International

MIOT HOSPITALS 4/112, Mount Poonamallee Road, Manapakkam, Chennai - 600 089. India
Tel : 91-44-4200 2288 Fax : 91-44- 2249 1188 E-mail : chief@miothospitals.com www.miotinternational.com