



**A MISSION TO  
CONQUER CANCER. CELEBRATE LIFE**



*The Foundation's primary objective is to provide assistance in the treatment of all types of cancer, to the deserving sections of society.*

ENVISIONING A CANCER-FREE WORLD DEMANDS THAT WE TAKE **THE BATTLE AGAINST CANCER RIGHT TO THE BOTTOM OF THE PYRAMID.**

**Apollo Cancer Foundation" (ACF) is a 'Not for profit' organisation,** registered under Sec. 8 of the Companies Act. The Foundation's primary objective is to provide assistance in the treatment of all types of cancer, to the deserving sections of society. ACF seeks to help these patients by either by fully defraying their medical expenses, or subsidizing on the basis of need.

The Foundation is empowered by its deep access to the wide range of clinical talent in the Apollo Hospitals ecosystem, and will provide the widest range of therapeutic options in cancer treatment. This would enable even the vulnerable sections of society to have access the best treatments possible thereby ensuring equity in healthcare delivery.

**Apollo Cancer Foundation develops and supports programs that offer hope and encouragement to cancer patients and their loved ones through:**

- Patient financial assistance
- Patient support and survivorship groups
- Patient and caregiver education
- Providing connections to existing local support services
- Supporting Pediatric cancer research



## A BLUEPRINT TO GET INDIA HEALTHY, THAT WOULD ALSO BE **THE TEMPLATE TO HEAL THE WORLD**

India faces a huge challenge in terms of Non Communicable Diseases (NCDs), Top among them being Cardio Vascular diseases and Cancer. They accounts for more than **half the deaths** in our country today. If we have to address this challenge faced by all cross sections of the society, we need to have a multipronged strategy to effectively tackle and blunt the impact of these diseases. Unfortunately, the poorer & weaker section bears the maximum brunt and it is even more disturbing to see the sole bread winner of the family being affected by these **life threatening diseases**. Equally ominous is when cancer is attacking our youth; in India, out of **One Million new cancers cases** diagnosed annually, about **90,000** are **childhood cancers**. Of these, 40% are leukemia and lymphomas and 30% are Brain tumors & Central Nervous System.



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**A CLARITY OF PURPOSE  
FOR INCISIVE EFFORT AND CLEAR,  
MEASURABLE RESULTS**

An agenda of transformation in three specific fields

### PAEDIATRIC CANCER

Across India and world over, the prevalence of cancer is on the rise and if this goes unheeded, it could have a devastating impact on our future. In particular, childhood cancer has an catastrophic aftermath.

Based on recent data, it is estimated that 10 - 12 children per 1,00,000 population develop cancer every year. In India, with a population of over a billion, about 100,000 children could develop cancer each year and unfortunately, most may either go undiagnosed or not receive appropriate treatment.

### INDIA SPECIFIC CANCERS: HEAD AND NECK

The actual burden of head and neck cancer in India is much greater than reflected through the existing literature and hence can be regarded as a 'tip of iceberg' situation. South-east Asia is likely to face sharp increases of over 75% in the number of cancer deaths in 2020 as compared to 2000. Since the percentage increase of Indian population has been nearly twice that of the world in last 15 years there is a likelihood of increase in cancer burden with the same proportion. The distribution of population based cancer registries is grossly uneven with certain important parts of the country being not represented at all and hence the current cancer burden is not reflected by registry data.

Head and neck cancer (including thyroid lesions) is third most common malignancy seen in both the sexes across the globe but is the commonest malignancy encountered in Indian males. Also oral cavity cancer is the most prevalent type amongst the males and one of the highest across the globe

Many cancers of the head and neck can be cured, especially if they are found early. Although eliminating the cancer is the primary goal of treatment, preserving the function of the nearby nerves, organs, and tissues is also very important. When planning treatment, doctors consider how treatment might affect a person's quality of life, such as how a person feels, looks, talks, eats, and breathes.

1

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2

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3

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### BREAST CANCER

Recent research has demonstrated that treating breast cancer patients with conventional radiation may cause significant damage to their hearts. Advanced cancer care decreases the amount of radiation to the heart and lungs, which results in lower the risk of developing side effects such as heart disease, reduced lung function, or secondary cancer.



**A FUTURE WHERE EVERYONE  
HAS ACCESS TO THE VERY BEST.  
WHERE METALEAPS IN CARE  
CAN TOUCH EVERYONE**

Over six lakh people die of cancer every year in India and more than half of them are in the age group of 30-70 years. Today, Proton therapy is used to treat many cancers and is mainly appropriate in situations where treatment options are restricted or conventional radiotherapy poses a peril to the patient.

The clinical advantages of proton therapy compared to conventional radiation therapy are very widely known as it is a viable and successful option, with more than 80,000 patients treated worldwide. And as more people in medical and patient communities gain understanding of about the benefits of this superior treatment, demand will increase, leading to the necessity for more proton therapy facilities. Apollo has planned, developed and equipped this proton therapy centre, providing the latest hi-tech equipment as well as scientific and engineering expertise. We use a pragmatic approach that is scalable to meet patient needs and help us bring the real advantages of proton therapy to more patients and communities.

Proton Beam Therapy is one of the most advanced forms of radiation therapy in the world. It uses high-energy proton beam for cancer treatment. The proton beam therapy is a form of particle therapy that will usher in a paradigm shift in cancer treatment. It provides targeted treatment and amplification unlike any other radiation treatment.



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## **SOUTH EAST ASIA'S FIRST PROTON CENTRE. IN INDIA. FOR ALL INDIANS.**



The Proton Treatment Centre at Apollo Hospitals, Chennai will be the **first proton cancer centre in South East Asia** to identify priority areas for Paediatric cancers, Indian specific Research study and One Year Proton Fellowship program. Foundation will develop cancer control strategies which will include newer modalities of prevention, early diagnosis and treatment of cancer.

The Proton Treatment Centre will focus on organ specific cancer management and will have a dedicated Apollo oncology team. The Proton Beam Therapy provides an advanced radiation treatment option for the oncologists. The treatment provided is highly precise and focused radiation directly into the tumor, without causing any harm to the adjoining tissues. Tumours in difficult to access areas such as, in head, neck, brain, pancreas and prostate will be targeted. Paediatric cases will also benefit to a greater extent from this technology.

### **Highlights**

- **1<sup>st</sup> Proton centre** in South east Asia
- Combined cancer hospital and translational research facility at OMR, Chennai
- Spread over a vast 4 acres site
- Total Beds - **150**
- Clinical beds - **140**
- Research beds - **10**



THE NEXT FRONTIER OF CANCER CARE  
IS BEING HERALDED BY THE PROTON.  
**INCREDIBLE EFFICACY THAT ENSURES  
QUALITY OF CURE, QUALITY OF LIFE**

Proton Beam Therapy is one of the most advanced forms of radiation therapy in the world. It uses high-energy proton beam for cancer treatment. The proton beam therapy is a form of particle therapy that will usher in a paradigm shift in cancer treatment. It provides targeted treatment and amplification unlike any other radiation treatment.

Conventional radiotherapy uses high energy X-Rays to treat cancer and certain benign tumors. In doing so, it also damages the healthy tissue. Another disadvantage is the delivery of radiation to the healthy tissue around the tumor. In contrast, proton beam delivers a high dose of radiation only to the tumor maximizing the chances of cure and in turn minimizing the adverse effects to the surrounding healthy tissues.

In addition, a superlative advantage is the proper dose distribution. A low dose of radiation is released at the body surface which is followed by a sharp burst once it hits the tumor, with negligible radiation travelling beyond the target. The protons can deliver highly conformal radiation to any shape, volume or depth of the tumor by controlling the delivery of their entire energy to the so-called 'Braggs Peak Region'

Proton Beam Therapy has revolutionized the treatment of several cancers like paediatric cancers, skull base tumors, brain tumors, Breast, prostate cancers, and lung cancer to name a few. It becomes a viable option; particularly in cases where treatment options are limited and conventional radiotherapy possess a higher risk to patients. Proton beam therapy has to a large extent, overcome the limitations of conventional radiotherapy. It has the potential to cure more cancers with better quality of life, during and after treatment.

**LITTLE ONES NEED THE BIGGEST CARE.**  
PROTON THERAPY REPRESENTS  
THE CUTTING EDGE OF PAEDIATRIC  
CANCER CARE



**HOW PROTON THERAPY  
EFFECTIVELY TREATS  
PEDIATRIC CANCER**

Generally, cancer in children is treated with traditional radiation, chemotherapy or surgery – or a combination of the three. And while traditional radiation can go a long way in defeating pediatric cancer, it can also result in harmful side effects for growing children. These risks include developmental delays, hormone deficiencies, effects on bone and muscle tissue, and hearing loss or damage to salivary glands.

Because protons can be precisely controlled, pediatric proton therapy is ideal for tumors located near growing tissues in the spinal cord and brain, eyes, ears or mouth. For sarcomas and lymphomas, proton therapy may also deliver less radiation to the heart, lungs, and intestines. Healthy tissues surrounding the pediatric cancer are spared from excess radiation, meaning physicians can deliver more potent doses of radiation directly to the child's tumor.

**BENEFITS**

Conventional radiotherapy (X-rays) for brain tumors has been associated with long-term neurocognitive deficits, including decreases in IQ, difficulties with attention, processing speed and executive skills. Proton therapy is known for its tremendous advantages in treating certain pediatric cancers. The dose delivered outside the tumor is reduced, as well as the probability of secondary malignancies. This is especially critical for children, as the risk for long-term survivors to develop radiation-induced tumor may reach 35%.

*Proton therapy may limit the radiation exposure to healthy, growing tissue in pediatric cancer patients. And even avoids need for Chemotherapy*



**PROTON THERAPY IS TAILOR MADE  
FOR THE INDIAN REQUIREMENT.  
WITH PROVEN PROWESS IN  
TACKLING THE COMPLICATIONS  
OF HEAD AND NECK CANCERS**

## **THE POWER OF PROTONS IN TREATING HEAD & NCKE CANCERS**

Proton therapy allows for effective treatment of complicated head and neck tumors, while minimizing the radiation dose to vital structures such as the eyes, mouth and brain. Vital physical functions such as vision, smell, taste and swallowing remain virtually untouched when a patient is treated with proton therapy.

### **Proton Therapy Center treats cancers of the:**

- Nasal and sinus cavities
- Oral cavity, including the salivary glands, tongue and tonsils
- Larynx
- Eye
- Skull base
- Spine

Many head and neck cancer patients can benefit from the precision of intensity modulated proton therapy, or IMPT. IMPT delivers protons to the most complicated tumors by focusing a narrow proton beam and essentially "painting" the radiation dose onto the tumor layer by layer.

The need to implant a feeding tube during head and neck treatment, which can occur in up to 70% of standard radiation patients, may be avoided in IMPT patients due to less collateral damage to the oral cavity.

Side effects such as nausea, damage to the salivary glands, loss of taste and endocrine disorders are also reduced with proton therapy. This enables patients to better maintain their weight and hydration, contributing to successful treatment outcomes and substantially improving quality of life both during and after cancer treatment.



MATCHING  
THE MENACE OF  
BREAST CANCER  
WITH THE POWER OF  
PROTON THERAPY.  
**A LONG TERM  
SOLUTION THAT  
HAS BEEN PROVEN  
TO WORK.**

Proton therapy offers a safe and effective alternative to conventional radiation. Proton radiation treats breast cancer without damaging the underlying tissues, including the heart, so that women no longer have to risk their hearts to treat their cancer.

When we decrease the amount of radiation to the heart and lungs, we lower the risk of developing side effects such as heart disease, reduced lung function, or secondary cancer. The proton therapy advantage may be more likely in cases where cancer has developed in the left breast, since it is situated so close to the heart. Whether cancer develops in the right breast or left breast, clinical research pilot study results have shown the proton therapy plan to be superior to the conventional plan in reducing the amount of radiation to the heart and lungs.<sup>1</sup> Additionally, proton therapy may provide better dose coverage to the lymph node regions as compared with conventional radiation.

#### Where we can Treat on Hyperfraction

- Stage I, stage II and stage III breast cancer
- Locally advanced breast cancer
- Node positive breast cancer

#### Eligible patients include those who are

- ER, PR positive or negative
- Her2Neu positive or negative
- Triple positive
- Triple negative
- With or without implants or expanders

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**For more details**

**Website** - <https://www.apollohospitals.com/departments/cancer/proton-treatment-centre>

**Email** - [protontherapy@apollohospitals.com](mailto:protontherapy@apollohospitals.com)