

# Optic Nerve Hypoplasia







## **Overview**

Optic nerve hypoplasia (ONH) befalls from the underdevelopment of the optic nerve, the sole purpose of which is to carry neuronal transmission from the retina in the eye to the brain. Septo-optic dysplasia (SOD), also recognized as de Morsier syndrome, is a subtype of ONH and ascends from the underdevelopment of the optic nerve, pituitary gland dysfunction and deficiency of the septum pellucid, which is a mid line region of the brain. SOD ascends from shortcomings during the embryological development of babies and studies show that ONH might be connected to some gene defects as well as embryo exposure to infections. Along with this the deficiency of vision which is a characteristic symptom of ONH, SOD also elicits other symptoms such as pituitary deficiency, autistic behaviors, epileptic seizures, etc. Optic Nerve Hypoplasia stem cell is the treatment for such ailments.

Few conventional treatment choices are available for patients detected with ONH-SOD, it typically concentrates on assisting the patients to cope up with their incapacity. However, none of them are essentially treating the loss of optic nerve function. Optic nerve hypoplasia stem cell treatment in India has the aptitude to rejuvenate nerve cells in the optic nerve, permitting ONH-SOD patients to gain some vision.



Pain. Most people who develop optic neuritis have eye pain that's worsened by eye movement. Sometimes the pain feels like a dull ache behind the eye.

Vision loss in one eye. Most people have at least some temporary reduction in vision, but the extent of loss varies. Noticeable vision loss usually develops over hours or days and improves over several weeks to months. Vision loss is permanent in some people.

Visual field loss. Side vision loss can occur in any pattern, such as central vision loss or peripheral vision loss.

Loss of color vision. Optic neuritis often affects color perception. You might notice that colors appear less vivid than normal.

Flashing lights. Some people with optic neuritis report seeing flashing or flickering lights with eye movements.



- •Age. This illness is basic in individuals more than 50
- •Family history and hereditary qualities
- •Macular degeneration is all the more regularly observed among the Caucasians
- Smoking
- Obesity
- •Cardiovascular infection

## Diagnosis



- Visual field test
- •Dilated eye exam
- •Fluorescein angiography
- Optical coherence tomography (OCT)

## **Adverse Reaction**

We comprehend that patients might have apprehensions about adverse reactions to the treatment. Possible side-effects of stem cell therapy may differ from individual to individual; any complications depend upon the type of processes you are undergoing.

Side-effects experienced by our patients are consistent with predictable reactions for routine IV and LP injections. The most common reactions to the treatment are fever, headache, diarrhea, leg pain, vomiting and allergic reactions. Less than four percent of patients experience any of these signs.

#### The most common reactions to the stem cell treatment are:

Fever Headache Leg Pain
Diarrhea Vomiting Allergic reactions





## **Treatment Procedure**

Global Stem Cell Care

The Global Stem Cell Care offers a very safe and non-invasive treatment protocol and procedure. The patients can travel the next day. The following is the day-wise schedule for the patients.

#### Day 1-

- •Pick up from the Airport to the Hospital
- •Interaction between Dr and Patient, to clear all their doubts at that time
- Admission procedure
- •Clinical examination & Lab test will be done prescribed by the doctor

#### Day 2-

- •Stem cell Procedure
- Supportive therapies
- Physiotherapy

#### Day 3-

- Supportive Therapy
- Physiotherapy
- Discharging formalities
- •Drop back to the Airport



















#### **International Patient Facilities**

Quote/treatment plan
Complimentary airport pick up
Scheduling of all medical appointments
Cost estimates for anticipated treatment

Visa assistance letter Dedicated guest relation officers Coordination of the admissions process





## **Treatment**



The majority of the cases of AMD involve the slow-developing type of AMD, called dry AMD. Currently, as of 2020, there are no treatment options available for dry AMD, but some promising new therapies are in it. The slow-developing form of AMD, called dry AMD, constitutes the majority of AMD cases. There are no treatment options currently available for dry AMD as of 2022, but some exciting new treatments are in the pipeline.

For all aspects of medicine today, including multiple cases of cancer, as well as for dry AMD, stem cell treatment is gaining momentum. The aim of stem cell treatment for AMD is to be able to replace retinal cells that have been damaged or killed by symptoms with new stem cells.

Stem cells are also inserted, through IV infusion, into the blood supply of the body. But, experts are focusing on how the stem cells can be transplanted directly into the eyes. One strategy involves placing the stem cells into a fluid suspension that can be injected under the retina

We use the unique technology of Mesenchymal stem cells extracted from Wharton's jelly (WJ) for treating MS. WJ-MSCs offer remunerative and budget friendly favorable treatment for tissue engineering purpose. An optic nerve stem cell regeneration aids this and more. They might help in the three peculiarly prominent ways – prevent damage, repair damage and develop new medicines.

The treatment will take place in multiple steps comprising of the following.

- •Qualification for the treatment: Our experts will assess all your past medical history and symptoms to examine and correctly judge the severity of your condition. A series of tests will be performed to gain a knowledge of the stage of disease. As per the test results, our experts will counsel the patient for further process of the procedure.
- •Source Extraction: With guidance and approval from the physician, the source of extraction will be decided. In general, WJ-MSCs are the most potent allogenic sources available. Stem cells from a healthy person (the donor) are transferred to the patient's body. A bone marrow donor is considered for allogenic stem cell transplantation. A scraping from the inside of the patient and his or her sibling's cheek is tested to determine tissue type. An expert will examine to identity Human Leukocyte Antigens (HLAs). If the HLA on the donor cells are identical or similar, the transplant is more likely to be successful. Stem cell for optic nerve atrophy is promoted to aid patients suffering from similar kind of ailment.
- •<u>Laboratory Processing:</u> The extracted samples will be sent to government approved cGMP laboratory for processing. The sample manipulation will take place in a state-of-the-art facility in compliance with the ISO and GMP standards and using the latest technologies. The client will receive a third party certificate from an internationally accredited lab for quality purpose. An optic nerve stem cell therapy provides just that and more.
- •<u>Stem Cell Implantation:</u> Once the stem cells are ready to be implanted, the doctor will identify the most potent method of infusion based on the patient's physical and mental well-being. The only limitation of the allogenic stem cell treatment is that this procedure carries the risk of developing Graft vs. host disease (GVHD), wherein the patient's body rejects the donor stem cells. Human leukocyte antigens (HLA) can help minimize the risk of any side effects. In this procedure, the HLA of the patient and the donor are primarily matched as closely as possible.

<u>Stem cell treatment Aftercare:</u> The patients will be asked to visit the doctors for evaluation. You will be provided counselling for speedy recovery and also kept on check to ensure that no side effects affect the human body.



Stem cells can help restore the weakened retina and can contribute to a complete halt in the process of loss of vision, thus enhancing the general quality of life of humans. The new doors to the cure and changes in Macular Degeneration patients have been opened through Stem Cell Therapy.

Program for Stem Cell Therapies to treat multiple diseases. Each patient receives 200-300 million stem cells during the stem cell procedure. Not only does the sum of stem cells compensate everyday losses, but it beats them by a million times. The stem cell source, which has basically been missing for the last 15 to 20 years, is thus retrieved and revived. Different organs get rejuvenated following our stem cell injection, and they get revived when the new and activated stem cells replace the old ones fully.

Introduced into the retrobulbar space, stem cells may start to work on damaged tissue and begin to rejuvenate the optic fibers and retinal cells. Photoreceptors and other cells can be differentiated from mesenchymal stem cells. It is possible to use segregated stem cells to treat tumors in the macular and retinal cells.



- There are three stem cell classes that vary, based on their position in the body and their potency (the ability to develop in different cell lines). Ophthalmologist performs experiments on both of these classes. Embryonic stem cells (ESCs) are cells that are found at an early stage of development in the inner cell mass of an embryo. ESCs are pluripotent, meaning that in the course of growth they will become any cells.
- Fetal stem cells. Following an abortion or from cord blood, this community of cells is removed from the fetus. Fetal SCs have greater functionality than adult SCs and are pluripotent. Such cells exhibit increased recovery rates of photoreceptors and are capable of sustained doubling during cultivation. Their use, however, is often synonymous with ethical concerns. Study on fetal cells is banned by law in many countries worldwide.
- Adult stem cells, found in mature tissues, are immobile and non-specialized cells. Adult SCs collaborate with new ones to replace dead cells and facilitate tissue regeneration. Nonetheless, they create a microenvironment for tissues, shield them from degeneration (destruction), and also have the capacity to self-renew and create mature cells. Hematopoietic stem cells, mesenchymal stem cells, and neural stem cells may be differentiated by multiple forms of SCs.



Relevant antigens, which are a common cause of incompatibility between donor tissues and the recipient during transplantation, are still not generated. ESCs may be useful in managing retina degenerative disorders, retinal pigment epithelium pathologies, and optical neuropathies. Research on ESCs is banned at the regulatory level in many countries, as their extraction from the embryo interrupts its further production.

## **Patient Testimonials**



#### Gurleen Kaur (Mathura, India):

My daughter has optic nerve hypoplasia. She's been getting treatment for her optic nerve hypoplasia through Stem Cells. The treatment has been working well. Her vision is improving. We're very happy with the results. Thanks to GSCC her vision has improved.

#### Anju Garg (Delhi, India):

My dear child was diagnosed with optic nerve hypoplasia. The doctor recommended stem cell treatment. We found a clinic in our city that provides this kind of treatment. I am very happy with the results. Thank you GSCC.

#### Gabe Corpuz (Texas, U.S.):

I was looking for a stem cell treatment for my baby and I found this. It's effective, affordable, and the results are great. This is one of the best treatments for optic nerve hypoplasia that I've encountered and I highly recommend it!





## **Improvement**



It's frightening to envision a life without a clear central goal, but there's reason to be hopeful. Doctors are also searching at ways to improve patients with this condition, and they're researching experimental therapies that may one day be used as a therapy. For instance, stem cell development is currently ongoing, with the potential to lead to a cure in the future.

Before these groundbreaking therapies become a reality, it's important to speak with an experienced doctor who will guide you through current procedures for the type of macular degeneration you have already. We have physicians available to work with you, and our doctors will use cutting-edge procedures to keep your eyes as healthy as possible. Patients' effects have changed as a result of stem cell therapy provided by Stem Cell Treatment India.

## **Our Promise**

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## **Post Treatment Care**

#### Postoperative care

The stem cell therapy does not damagingly affect patients in any way. Generally, the patients are permitted to leave after few hours after the completion of the stem cell treatment. A 24-hour patient hotline number is there for any inquiries after their discharge. The concerned physicians or surgeons of the clinic also stay in contact with their corresponding patients through telephone or email. By doing this, they can get the precise feedback about their progress and also suggest further recovery if required. Say for example, in case of a diabetic patient, after hearing about the patient's present symptoms, the concerned doctor can recommend the needed dosage of insulin.

#### **Treatment disclaimer**

It is an imperative fact to comprehend that stem cell treatment in every prospect has the ability to diminish symptoms of numerous diseases. It also has the aptitude of ceasing several degenerative procedures, but one should also know that this treatment may not work for all kinds of patients. GlobalStemCellcare does not have the right of forecasting or warranting the success of this treatment.

In harmony to the current condition of a patient, the medical team of GlobalStemCellcare might propose the stem cell transplantation or may even withdraw the treatment under abnormal situations. However, in any case, the approval of the patient is a must. Keeping the patient's current health condition and unforeseen health hazards in mind, the medical staff might propose an alternative stem cell transplantation process. In exceptional situations, they may entirely cancel the treatment.



### Global Stem Cell Care

#### 1. Do I need to habitually examine my eyes?

Yes, it is always sensible to check your eyes frequently. Young adults between the age group 20-39 should have their eye checkups after every 3-5 years. Whereas grown-ups between the age group 40-64 should have their eye checkups after every 2-4 years. In case of senior citizens above 65 years of age, ophthalmic visit has to be once a year. Regardless of age groups, some individuals congregated under the category of high risk adults should also visit ophthalmologist once a year such as folks with diabetes, strong family history of glaucoma, persons with AIDS, etc.

#### 2. Will working at a computer screen or sitting close to TV screen harm my eyes?

No, there is not yet any scientific indication that these instruments release rays that can be dangerous to the eyes, however long working hours can be wearisome and hence it is often useful to take episodic breaks, looking off in the distance etc.

#### 3. Sometimes I notice dark patchy spots or floaters particularly on the white surface. Can this be the reason for me to worry?

These are the common eye complications which are signs of retinal or corneal malfunctioning. It is always desirable to visit the doctors as timely as possible.

#### 4. I have slowly found it harder to read without glasses. Why?

The capability to focus the near objects declines with age and is referred to as presbyopia. The condition is recognized as the natural aging of the optic lens. The condition is often unalterable with conventional treatments; however, stem cell treatment for eyes can to some degree reverse the impairment naturally with complete stoppage of more progression.

#### 5. Is my kid likely to inherit some eye problems?

Yes, some of the eye sicknesses such as glaucoma, photophobia etc. are witnessed to be directly connected up with a hereditary abnormality which can either be genetic or mutational. However, some of the common eye issues such as burns, corneal damage, etc. are associated with environmental impairment.

#### 6. Can eyes be transplanted?

No, there are no confirmations presently to transplant the whole eyes, however portion of the eye can be replaced if an apt donor is found via eye stem cell transplant.

#### 7. Can stem cell treatment treat my damage?

Yes, stem cells are the unspoiled cells of the body, which can give rise to several diverse kinds of cells once they get appropriate signaling. In case of eye disorders, these cells have shown amazing improvements by segregating into photoreceptor cells, rods and cones cells of the inner eyes, optic nerve cells, etc.



## **Global Stem Cell Care**

As a stem cell company at the cutting edge of Regenerative Medicine, GSCC is dedicated to developing technologies and protocols for safe and effective treatments utilising adult stem cells derived from the umbilical cord.

StemCellCareIndia offers a comprehensive range of stem cell solutions in India for the treatment of different kinds of diseases. Our main focus is helping people get back to good health through stem cell treatment. We have association with the leading hospitals, research institutions and medical colleges specialising in regenerative medicine to offer cost – effective healthcare.

Around the world, emerging technologies and advancements in stem cell therapies are driving major changes in healthcare. With the use of potent mesenchymal stem cells isolated from the tissue of umbilical cord, damaged cells are replaced by new cells. This makes the symptoms of the diseases disappear. We are passionate about the latest developments in stem cell therapies and strive to deliver safe and effective treatment options to patients' world over at the highest medical standards.

As the leading stem cell therapy company, StemCellCareIndia takes care of each and every section of the Medical Trip to New Delhi. We ensure our patients get the best healthcare service by bringing in place, the renowned multispecialty hospitals, latest stem cell treatments, economical accommodations and travel options for the patients.

#### **VISION**

Our vision is to provide effective healthcare services to patients all over the world fast and hassle-free. For this, we work closely with some of the best medical centres and research institutions in providing stem cell therapeutic solutions to our patients. Our work is to redesign and deliver the best treatment possible for the safe and fast recovery of patients and make their journey towards 'good health' as stress-free as possible.

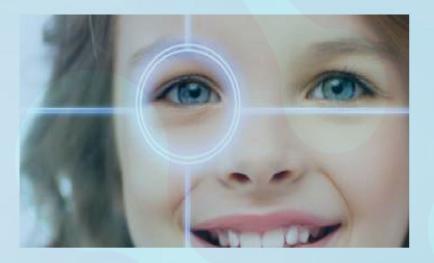
#### **MISSION**

Our mission is to provide the international patients visiting in New Delhi, the satisfaction of best treatment for any kind of disease. The face of healthcare has changed over the years and so, have the healthcare costs. We have a professional team that takes care of every need of international patients, from appointment to accommodation. Through our network of internationally accredited hospitals and research clinics, we provide reliable and bespoke assistance. Seeing patients getting healthier and happier is what make us happy.



## EYE DISORDER

Our eyes are one of the most significant organs in our body. Through it, we are able to see things and do our errands efficiently. The human eye is a complex yet imperative organ of our body filled with nerves, a lens, liquid and more. This organ gives us the aptitude to envisage the world in different colors, shapes and dimensions; centered on the reflection and refraction norm. In our eye, several major constituents work concurrently to capture and transmit the image to the occipital lobe of the brain through optic nerves. Separate info from left and right eye is directed to the brain through these nerve impulses. This info is then combined by our brain for determining the distance and profundity of the image so as to envisage full three dimensional images. The upward and downward muscular movement of the eye is monitored by superior and inferior rectus muscles, whereas the side movement and staying in level is controlled with the assistance of medial and lateral rectus muscles. These muscles are in turn controlled over with the aid of oculomotor nerves. To prevent the frictional impairment from these movements, the tears are released by lacrymal glands, which can improve lubrication, confiscate foreign objects and avert bacterial infection.



Occipital lobe is the portion of central nervous system, accountable for deciphering vision. Thus, any impairment to optic nerve can sternly affect central vision, peripheral vision and color vision of an individual. The functional aberration in any of the above major constituents might cause serious eye glitches; which if overlooked, might gradually result in vision loss. Thus, there are a number of eye conditions such as retinopathy or some forms of corneal sicknesses, which can be very upsetting for some of the patients; where as some of the other disorders can be so subtle that they can be routinely treated by an ophthalmologist.



# SUPPORTIVE THERAPIES

Global Stem Cell Care is unlike any other stem cell treatment provider in the world, the reason? Since its inception, we have been developing and enhancing our stem cell treatment protocols with the notion that stimulation via anumber of supportive therapies is essential to augment stem cell regenerative response. Our treatment methodology permits our patient to maximize their improvements. Learn more about the diverse therapies provided in our treatment practices.

#### **ACUPUNCTURE**

Acupuncture is a method in which practitioners stimulate particular points on the body – most often by inserting thin needles via the skin. It is one of the most effective practices used in old-style Chinese medicine. Acupuncture arouses nerve fibers to convey signals to the spinal cord and brain, stimulating the body's central nervous system. The spinal cord and brain then release hormones accountable for making us feel less pain while improving overall health. Acupuncture might also: upsurge blood circulation and body temperature, affect white blood cell activity (responsible for our immune function), decrease cholesterol and triglyceride levels and normalize blood sugar levels.

#### **EPIDURAL STIMULATION**

Epidural stimulation has aided preceding patients to recoup some voluntary motor function. The technology comprises of a device implanted in the epidural space which constantly delivers electric signals to the spinal cord. These electric signals mimic the ones that are delivered by the brain to voluntarily control the body's movements. The epidural stimulation device is offered by Medtronic.

#### **AQUA THERAPY**

Aquatic Physical Therapy is the practice of physical therapy in a specially designed water pool with a therapist. The exceptional properties of the aquatic environment augment interventions for patients with neurological or musculoskeletal conditions. Aquatic therapy embraces a widespread variety of techniques permitting patients to improve their balance, muscle strength and body mechanics. Aquatic therapy works to boost the rehabilitation process and support efficiency of stem cell treatment.

#### HYPERBARIC OXYGEN THERAPY

Hyperbaric Oxygen Therapy (HBOT) is the medical use of oxygen at a level upper than atmospheric pressure. The equipment necessary comprises of pressure chamber, which might be of rigid or flexible construction, and a means of supplying 100% oxygen into the respiratory system. Published research shows that HBOT upsurges the lifetime of stem cells after inoculation and offers an oxygen-rich atmosphere for the body to function at optimal levels.



### **NERVE GROWTH FACTOR (NGF)**

Nerve growth factor (NGF) is a member of the neurotrophic factor (neurotrophin, NTFS) family, which can inhibit the death of nerve cells and has several features of typical neurotransmitter molecules. NGF plays an imperative role in the development and growth of nerve cells. NGF is synthesized and secreted by tissues (corneal epithelial, endothelial, and corneal stromal cells), and it can be uptaken by sympathetic or sensory nerve endings and then conveyed to be stored in neuronal cell bodies where it can encourage the growth and differentiation of nerve cells. NGF can exert neurotrophic effects on injured nerves and promote neurogenesis (the procedure of generating neurons from stem cells) that is closely related to the development and functional maintenance and darning of the central nervous system. It is also adept of encouraging the regeneration of injured neurons in the peripheral nervous system, improving the pathology of neurons and guarding the nerves against hypoxia (lack of oxygen)/ischemia (lack of blood supply).

## TRANSCRANIAL MAGNETIC STIMULATION

Research has shown that TMS can efficiently treat symptoms of depression, anxiety, neurological discomfort, stroke, spinal cord injuries, autism and more. This process is very simple and noninvasive. During the process, a magnetic field generator or "coil" is placed near the head of the individual getting the treatment. The coil produces small electrical currents in the area of the brain just beneath the coil via electromagnetic induction. This electrical field causes a change in the trans membrane current of the neuron which results in depolarization or hyper polarization of the neuron and the firing of an action potential.

#### **OCCUPATIONAL THERAPY**

Occupational therapy interventions concentrate on adapting the environment, revising the task and teaching the skill, so as to upsurge participation in and performance of everyday activities, predominantly those that are meaningful to the patient with physical, mental, or cognitive maladies. Our occupational therapists also focus much of their work on detecting and eradicating environmental barriers to independence and participation in day-to-day activities, akin to everyday life.

#### **PHYSIOTHERAPY**

Physical therapy or physiotherapy (often truncated to PT) is a physical medicine and rehabilitation specialty that, by using mechanical force and actions, remediates damages and promotes flexibility, function and quality of life via examination, diagnosis, prognosis and physical intervention. We combine our PT with stem cells for supreme physical rehabilitation improvements.

#### **NUTRITION THERAPY**

Medical nutrition therapy (MNT) is a therapeutic methodology to treat medical conditions and their related symptoms by the usage of a specifically tailored diet formulated and monitored by a specialist. The therapy targets at fixing nutritional inefficiencies and physiological imbalances so as to provide the best environment possible for the stem cells to develop appropriately as well as improving patient's general health.















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