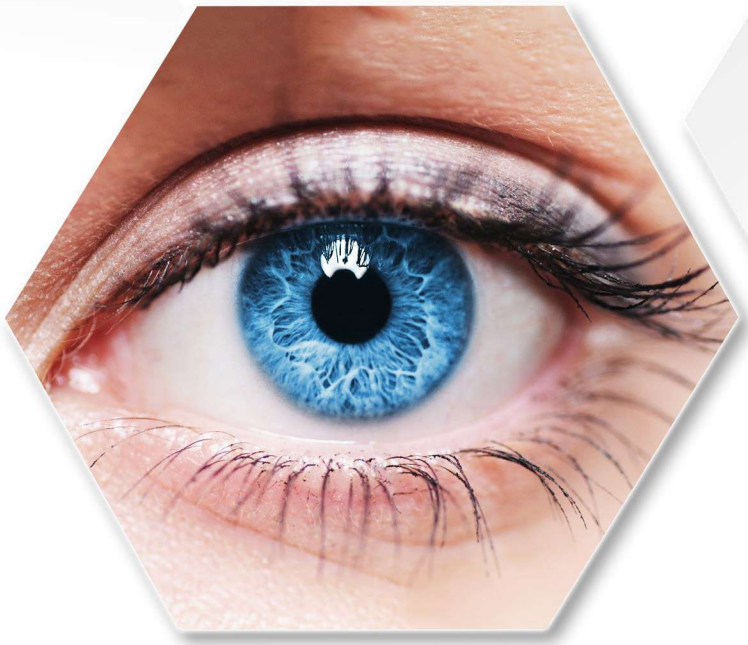
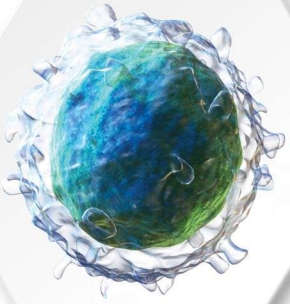
Advancells
GROUP
Shaping the Future

Eye Disorders





advancells
THE POWER TO CURE

Advancells
GROUP
Shaping the Future

Advancells Group believes in the vision of a cure-driven world. Established in **2013** by **Mr. Vipul Jain**, Advancells provides customized protocols for **360°** management of diseases and conditions with regenerative medicine as a solution. We believe in promoting stem cell awareness to ensure that patients and caregivers, worldwide, know their role in the regeneration of damaged body tissues for neurodegenerative, musculoskeletal, organ-damage, and aging disorders.

With the **CMO Asia Healthcare Excellence Award** and the **Healthcare and Lifescience Award** (Corporate LiveWire) adorning our achievements, we provide the best medical consultation with value to treatment aesthetics and patient consent. Besides patient-friendly therapeutics, we also aid efficient biomedical research with our customized stem cells and primary cells, as it precedes every clinical translation that can help our future generation.

NEURODISORDERS FOR REGENERATIVE THERAPY

- ALZHEIMER
- PARKINSON
- AUTISM
- **ALS**
- MULTIPLE SCLEROSIS
- STROKE
- MUSCULAR DYSTROPHY
- CEREBRAL PALSY

WE ARE HERE TO HELP

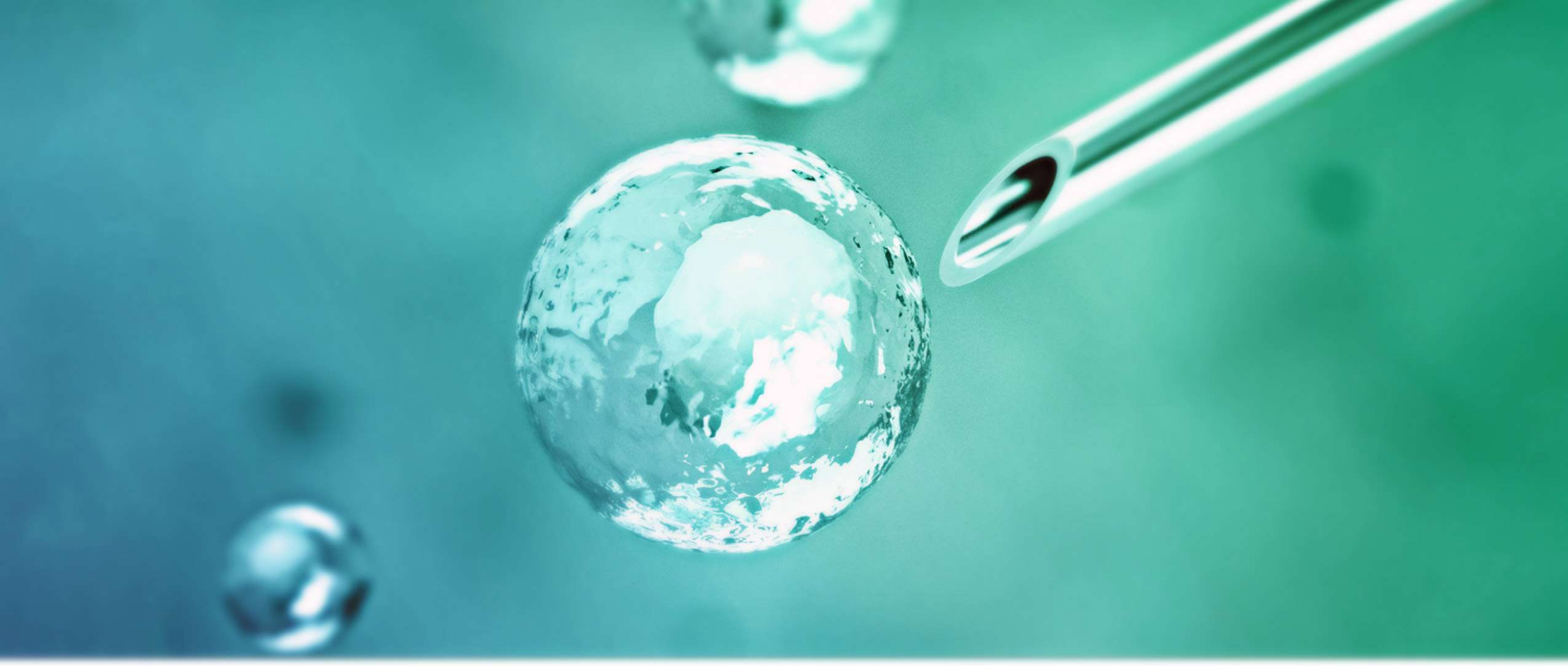
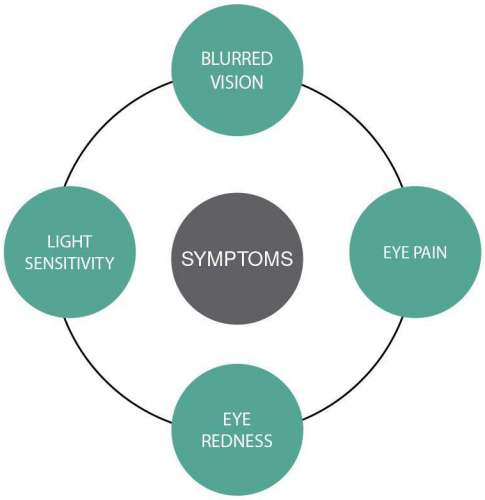


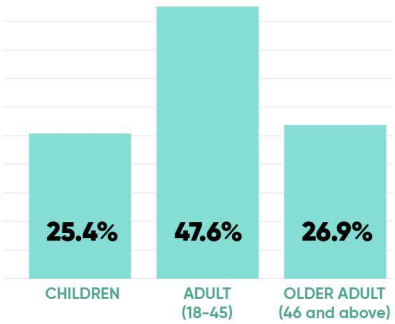
TABLE OF CONTENTS

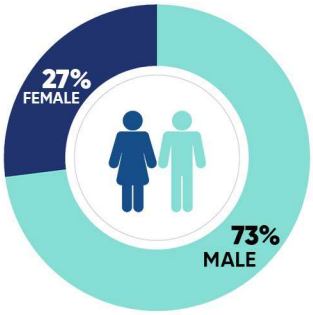
What is Eye Disorders?

■ Poor Vision and Eye Health



WHO IS AT THE GREATEST RISK?



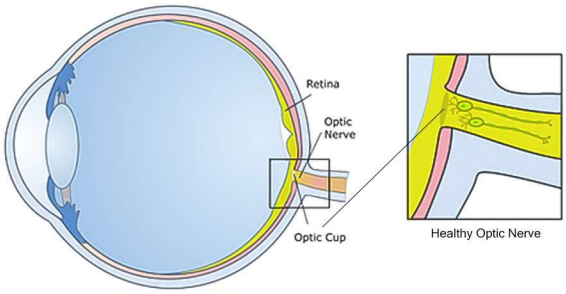


Eye disorders are a set of conditions that dead to damage in the eyes, leading to blurred or lost vision. Eye disorders can be affected by neural atrophy, excess blood vessel and leakage, retinal or macular damage, and external injuries.

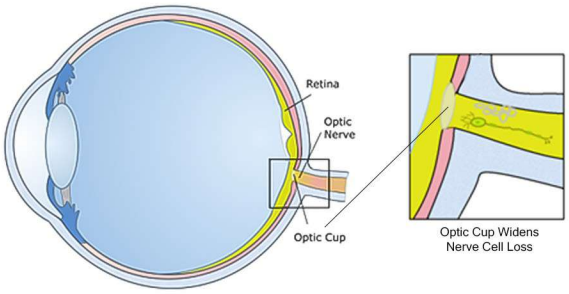
Major Eye Disorders

OPTIC Nerve Atrophy

Optic Nerve Atrophy is characterized by conditions limiting the proper functioning of the optic nerve; i.e. transmission of accurate information about visual acuity. The optic nerve is vitally important for connecting retina of the eye with the occipital lobe, through neural and angiogenic network.Damage to the optic nerve can severely affect central vision, peripheral vision and color vision of a person. Optic nerve atrophy can be characterized with a mild to severe damage to the optic nerve, due to a number of reasons, like trauma, toxins, deficiencies, inflammation, infection and/or congenital complications.



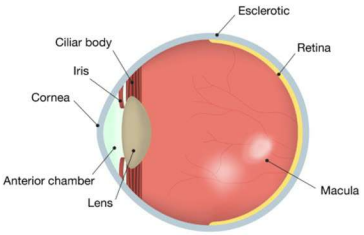
HEALTHY OPTIC NERVE



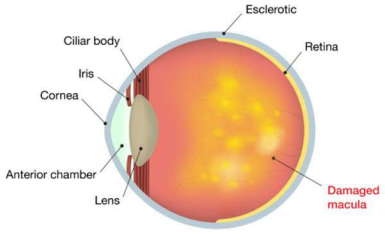
OPTIC NERVE ATROPHY

MACULAR Degeneration

The macula is the most sensitive part of the retina; located at the back of the eye and is made up of a number of light-sensitive cells called as photoreceptors. In age related macular degeneration, these cells begin to die, causing progressive degeneration of the macula. When the macula is damaged, vision appears blurry, distorted or dark. Dry Macular Degeneration is diagnosed when yellowish spots known as "drunsen" begin to appear on the macula indicating the deterioration of the tissue. Wet Macular Degeneration is diagnosed when new blood vessels start growing beneath the retina leaking blood and fluid. In young children, juvenile macular degeneration can also occur in the form of Stargardt disease.



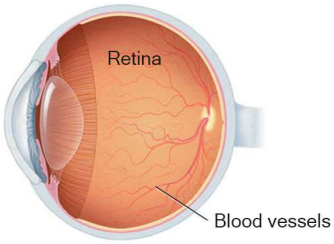
HEALTHY EYE



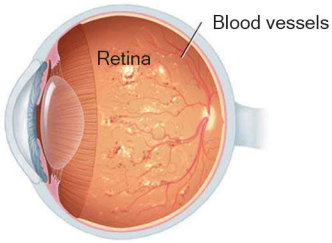
MACULAR DEGENERATION

DIABETIC Retinopathy

Diabetic Retinopathy is a diabetes complication that affects the eyes by causing damage to the blood vessels of the light-sensitive tissue at the back of the eye (retina). At first, diabetic retinopathy may cause no symptoms or only mild vision problems but eventually it can cause blindness.



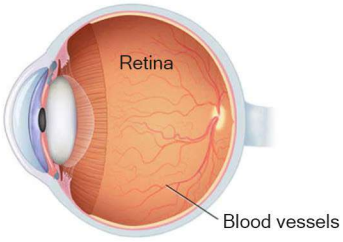
NORMAL RETINA



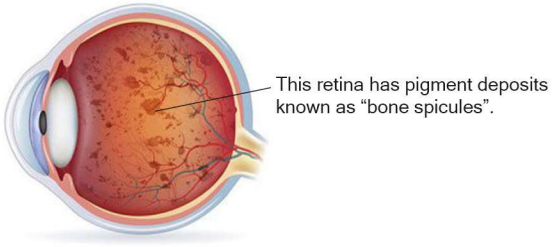
DIABETIC RETINOPATHY

RETINITIS Pigmentosa

Retinitis Pigmentosa (RP) is a group of rare, genetic disorders that involve a breakdown and loss of cells in the retina — which is the light sensitive tissue that lines the back of the eye. Common symptoms include difficulty seeing at night and a loss of side (peripheral) vision.



NORMAL RETINA



RETINITIS PIGMENTOSA

Eye INJURIES

The surface of the eye is made up of thin, transparent dome called as the Cornea. The cornea covers the entire iris and the pupil. The first ray of light that is refracted from the image, strikes the cornea. Since the part is exposed, it is more prone to injuries. There are various reasons of eye injuries such as flying dust, a foreign object like metal or sand, a fingernail, an animal claw may cause a damage. A minor scratch or corneal abrasion may lead to corneal ulcers if unnoticed for a longer period of time.

Although scientific research is ongoing to explore the underlying mechanisms of several eye disorder types, the multi-modal treatment regime involves psychosocial support, vision aid support,related drugs, and surgery. With recent scientific advances and research in stem cell therapeutics, eye disordersmay have a new hope, upon early intervention, in the form of Regenerative Medicine.

STEM CELL *Treatment for* Eye Disorders

- Reduced blurred vision.
- Improved vision and color perception.
- Reduced eye pain and irritation.

Regenerative Medicine

Stem cells have the unique potential to undergo self- renewal as well as differentiate into cells of neuronal origin in the body upon natural. stimulation.

What can you expect?

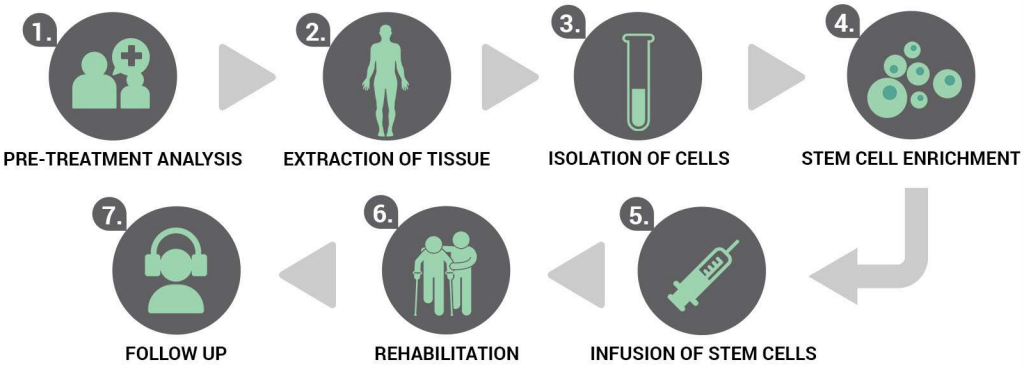
Being a progressive degenerative disorder, eye disorders take time to cause blindness but generally start with pain or irritation symptoms. Most eye disorders cause mild vision problems and might lead to severe conditions.Upon early intervention in case of macular degeneration or diabetic retinopathy, patients have shown signs of reduced eye pain, irritation and blurry vision.

Although the type and extent of improvement is patient specific, some of the common benefits that you can expect after stem cells treatment for eye disorders are:

- Improved vision and color perception.
- Reduced irritation and eye pain.
- Reduced risk of blindness and vision deterioration.

Cell Therapy Management

Establishment of day care procedure.



PRE-TREATMENT procedure

Complete assistance will be given to the patient in all pre treatment procedures such as consultation. hospitalization (If required), Assessment.

■ Eligibility Criteria

Pre-Treatment Assesment

- Routine Blood Test
- Routine Urine Analysis
- Infectious Disease Testing
- Physical Examination
- X-Ray

Pre-Op Procedure

- MRI
- CT Scan
- Neurophysiology
- Medical Neurological Reports
- Medical History

EXTRACTION of tissue sources

Generally the entire procedure takes around 7-8 hrs including 1-2 hrs of source aspiration, 2-3 hrs of stem cell isolation and another 1-2 hrs in injecting cells. The processing of sample is done in a state-of-the-art class 10000 clean room facility wherein we strictly adhere to maintain quality of standards. Wherein the extracted sources undergo minimum manipulation such as been spun in a centrifuge to cull out a stem cells.

TARGETED delivery

Once isolated, intensified and ready for reinstalling back into the body. we work out different mode of implantation: depending upon patient's health condition.

■ Intravenous Administration

Cells will be infused directly into the vein to be able to circulate in the vascular system. This may further help to induce immediate signaling pathways to direct cells to the site of injury.

■ Intra-thecal Administration

Intrathecal administration is the infusion of stem cells via injection into the spinal canal, most popularly known as **Lumbar Puncture**.

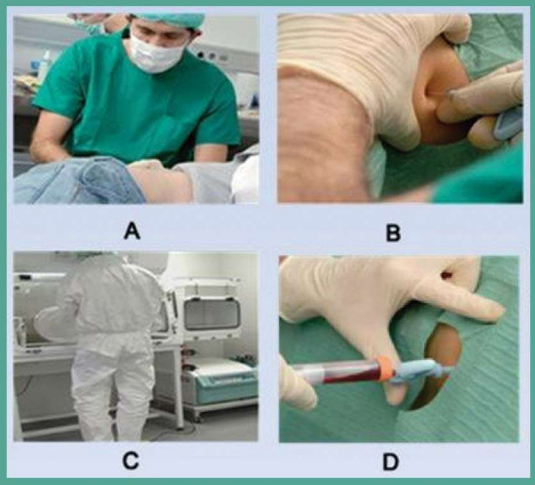
■ Intra-muscular Administration

Intra muscular injection is infusion of stem cells directly into the muscles. Clinical results have further indicated that a combination of intramuscular injections with more than one infusion protocol is much more beneficial in promoting the regeneration and functional recovery of musculoskeletal environment.

REHABILITATION

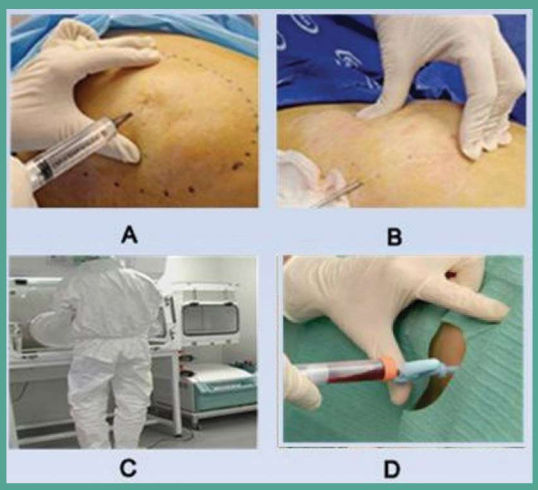
Post treatment care involves multiple reclamation therapies for accelerated recovery. Advancells is recommending range of therapies as discussed later.

Bone Marrow Extraction



A. Application of local anesthesia.
B. Bone Marrow collection by needle insertion in the hip bone.
C. Isolation of Stem Cells in the clean room.
D. Intra-thecal Injection of stem cells.

Adipose Tissue Extraction



A. Application of tumescent anesthesia.
B. Adipose Tissue collection by lipoaspiration.
C. Isolation of Stem Cells in the clean room.
D. Intra-thecal Injection of stem cells.

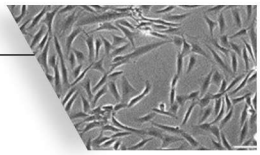
Why Should YOU choose Advancells?

01 AUTOMATED and CLOSED System

At Advancells, stem cell therapy is performed under the supervision of medical experts in a multi speciality hospital and cells are processed in the state-of-the -art GMP compliant laboratory i.e. fully functional with automated equipments.

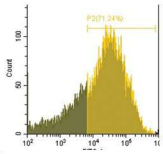
02 HIGH Quality of Cells

At Advancells, we ensure that cells are of best quality; and hence we perform a thorough **Quality Assessment** by experienced scientists. We provide a detailed certificate of analysis to each patient further authenticating the cell quantity and viability.



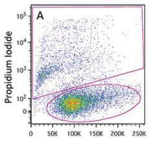
03 Disease-Specific MARKER Analysis

Our clinical research scientists do a thorough disease-specific marker analysis both **pre and post-treatment** to ensure subjective reduced expression levels of the same, thus showing evidence based assesment of improvement in each case.



04 HIGH Concentration Enriched with MULTIPLE Cell Population

The treatment procedure is performed using a high concentration of viable cells with multiple cell population, created from a very small portion of the tissue.



05 SAFE Treatment Procedure

The procedure is completely safe and has not detected any adverse events throughtout the globe.

06 PATIENT SATISFACTION Assurance

Our medical team assures you treatment aesthetics and formal consent for your stem cell therapy. We prioritize patient follow-ups to ensure that your health improvements ascend with our therapeutic solutions.

07 Globally Recognized HEALTHCARE

Advancells Regenerative Medicine solutions have been globally recognized with the CMO Asia Healthcare Award for the Best Product Innovation and Quality Initiative. We were also privileged to host His Royal Highness, the king of Kuwait, for regenerative therapy during his 2017 visit.

Special services for International Patient

- Assistance in Visa and planning travel itinerary.
- Assistance in getting comfortable accommodation in nearby location.
- Travel Assistance for sight seeing.
- Assisting with your interpretation services.
- Assisting with multiple payment options.
- Expedite arrival with fast track registration.

Each Case is Special For Us,

Therefore Every Cell has to pass through a Stringent Quality Control Parameter.

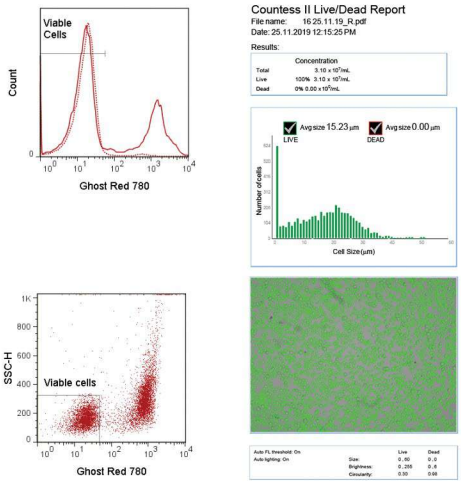
■ Clinical Definition of Stem Cells

- Stem Cells are the mother cells of our body.
- They can divide unlimited times.
- Can differentiate into any cell type.
- Can be exploited to treat diseased condition.

At Advancells, we provide a high concentration of viable stem cells with enhanced differentiation potential for our treatment procedure. The patient derived stem cells are checked for mycoplasma and endotoxin contamination after isolation from the patient's body.

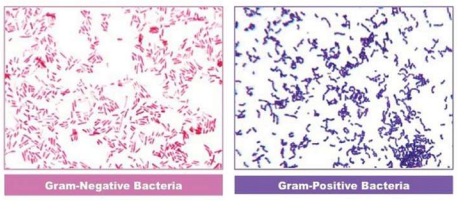
The stem cell suspension are checked for both gram-positive and gram-negative bacterial load during procedure for preventing any bacterial infection upon re-injecting them to the patient's body.

1. Characteristics of Stem Cells



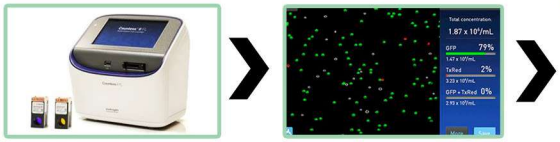
2. Mycoplasma Detection

3. Detection of bacterial containment



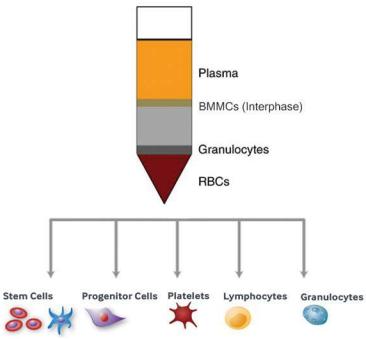
4. Endotoxin Analysis

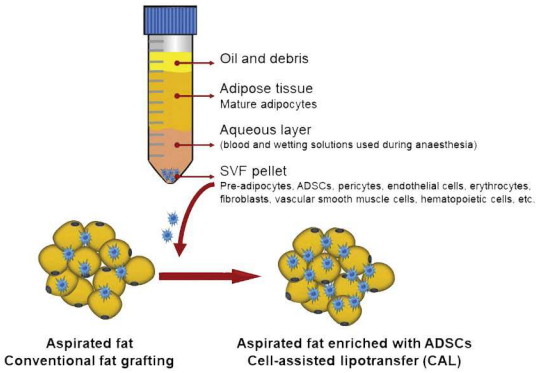
5. Viable Cell Count & Analysis through Automated cell counter



Analysis report		
Viable cell count at the time of dispatch: x * x^x cells		
Mycoplasma : Negative	**Endotoxin :** Negative **(Qualitative Test > 0.2EU/ml)**	
Marker Analysis (Reference Document No: 0024GI001552)**:**		
Markers Detected	**Interpretation**	**Percentage**
xx	Positive/ Negative	xx%
xx	Positive/ Negative	xx%
xx	Positive/ Negative	xx%

Technology Calling.. .





Aspirated fat
Conventional fat grafting

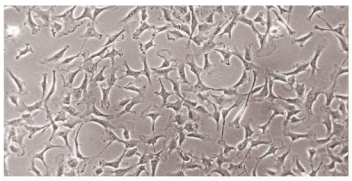
Aspirated fat enriched with ADSCs
Cell-assisted lipotransfer (CAL)

Bone Marrow derived mononuclear cells

Neutrophil	72.3%
Eosinophil	1.8%
Lymphocyte	12.1%
Monocyte	2.8%
Nucleated Erythrocyte	8.9%
Blast Cells	1.6%

Stromal Vascular Fraction

Endothelial Cells	25%
Myeloid Cells	22%
Monocyte	20%
cKit$^+$ Progenitor Cells	5%
CXCR4$^+$ Multipotent Cells	2.5%
PDGFR-β$^+$ Perivasular Cells	20%



Bone Marrow Stem Cells promote vasculogenesis and differentiation to enhance blood circulation.

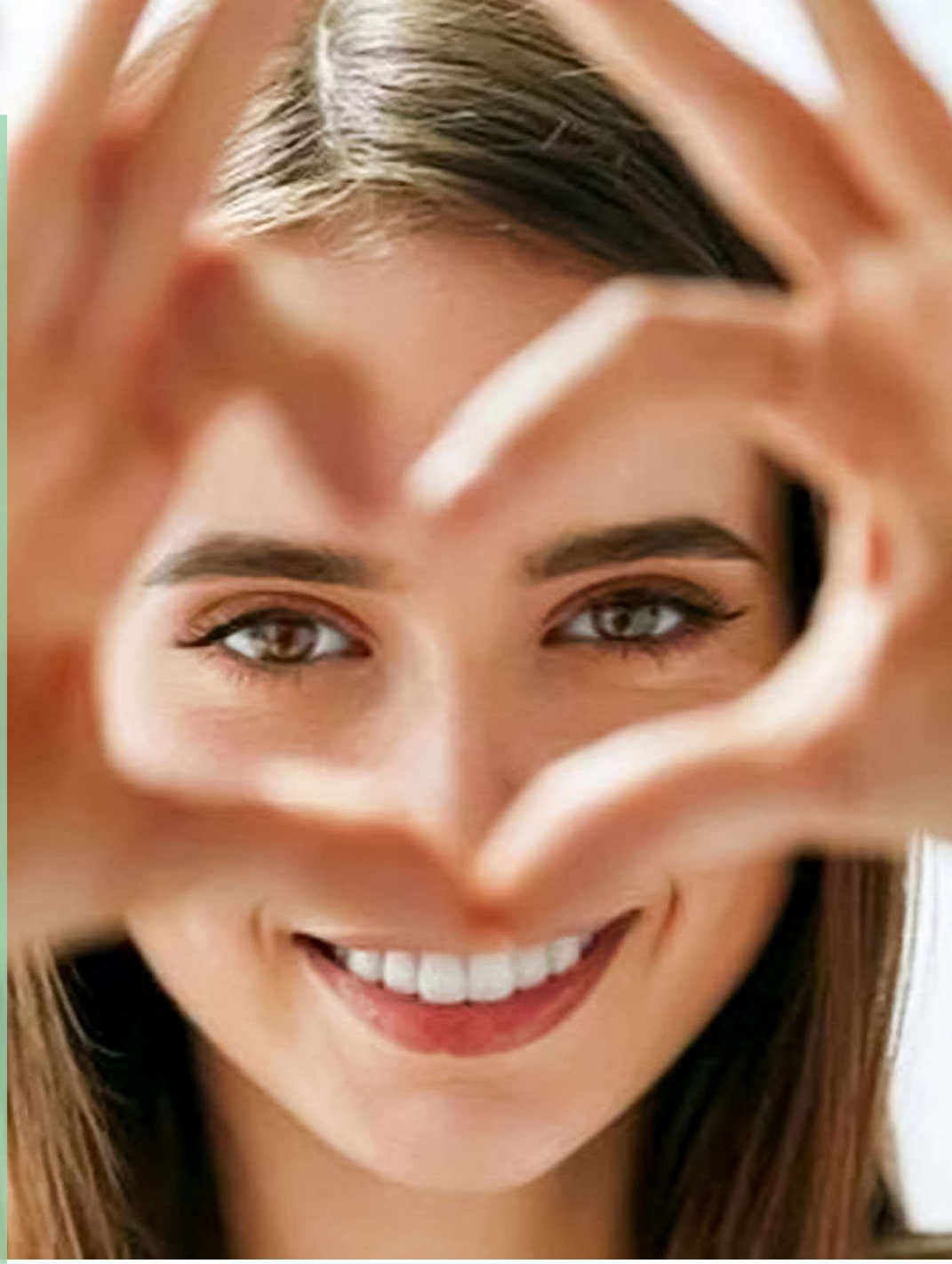
Pre-Adipocytes are known to produce cels of neuronal origin and regularise inflammatory immune responses.

* Wide Range of other cell types such as Mesenchymal Stem Cell are available for therapeutic operations.

Stem Cell Therapy Success Rate

Symptoms	Percentage Improvement
Social Interaction	67.30
Eye Contact	81.06
Attention/ Concentration	83.41
Stereotypical behaviour	54.30
Aggressiveness	59.04
Hyperactivity	66.49
Self-Injurious Behaviour	61.33
Sitting Tolerance	87.93
Command Following	85.43
Speech	60.48
Communication	61.27
ISAA	94.23
CARS	95.67

FACILITY & EXPERTISE



Rehab *is important*

- Occupational therapy
- Vision aids
- Mobility training
- Home skills training

How should I choose a good center for stem cell therapy?

The following criteria should be kept in mind:

• A center with all types of regulatory complaince & certifications.

• Specialized in offering safe & viable stem cells which is further certified through CoA.

• A centre with good technical expertise & good infrastructure.

People suffering from eye disordersrequire long-term medical management, understanding, and care. Besides seeking treatment from an experiencedophthalmologist, the multi-modal treatment array includes a variety of therapies based onoccupational, mobility, and vision aids.

- Improved vision and mobility with vision aids
- Reduced eye pain and irritation
- Reduced depression and anxiety

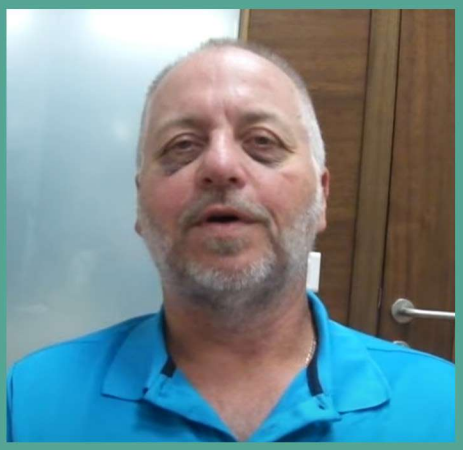
Let's Hear it from the Patients.. .

■ MS. NISH S, 29 YRS

Nish S was suffering from Vitelliform Macular Dystrophy. The patient showed typical symptoms of central vision loss and diminishing peripheral vision.Upon examination, it was found that the vision in the right eye was 6/60 and in the left eye was 6/12. Stem cells were transplanted via Intravitreal and Retrobulbar injection in the right eye. A follow-up after 48 hours and local examination revealed normal eye pressure and no apparent discomfort, while Ms. Nishreported slight haziness in vision. Post 10 days, Mrs. Nisha was able to easily pass the finger counting test and the haziness in vision was almost gone,with capability to read the eye chart upto the third line. Examination revealed stable eye pressure and improvement of vision to 6/24.

■ MR. ALLAN PURDY, 57 YRS

Allen Purdy, 57-year-old, had been suffering from Macular Degeneration from childhood and was legally blind for past 42 years. He decided to opt for stem cell therapy with Advancells. Considering his clinical condition and pre-treatment assessments, he was administered stem cells via intravitreal as well as retrobulbar route to confirm targeted delivery.After stem cell therapy, with a myopic correction, his vision has improved to 20/400 OD and 20/200 OS. Within 6 months from stem cell therapy, Mr. Purdy experience almost 25% increase in his vision and could read the eye chart up to two lines.



Certifications

Advancells GROUP

Shaping the Future

advancells

THE POWER TO CURE

A-102, Sector 5, Noida, India - 201301

+91-96543 21400 +91 120 425 0694

info@advancells.com

www.advancells.com www.advancellsgroup.com

+91-96543 21400 +91-96543 21400

/advancells /advancells @advancells /company/advancells/