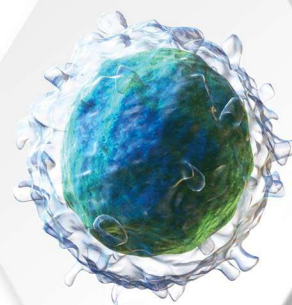


# Muscular Dystrophy





**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.

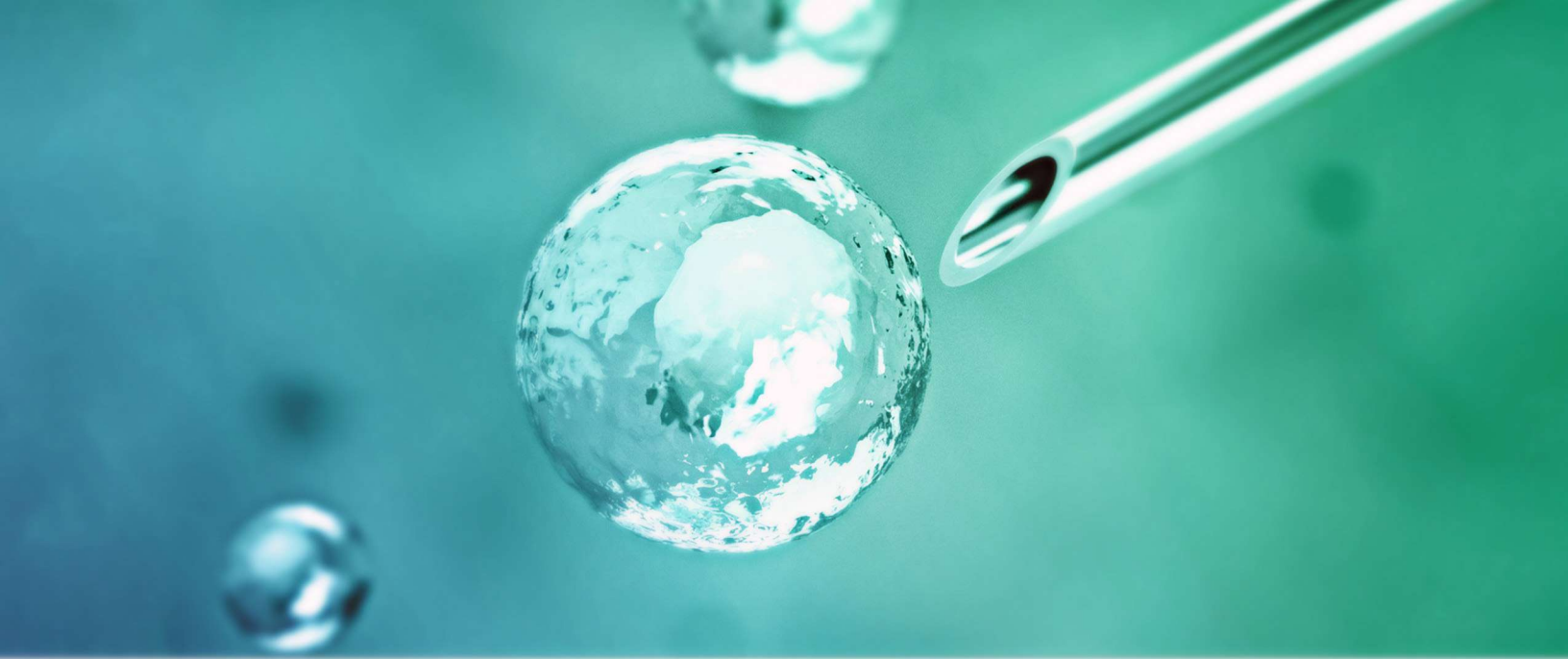
With the **CMO Asia Healthcare Excellence Award** and the **Healthcare and Lifescience Award** (Corporate LiveWire) adorning our achievements, we provide the best medical consultation with value to treatment aesthetics and patient consent. Besides patient-friendly therapeutics, we also aid efficient 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'S DISORDER
- PARKINSON'S DISORDER
- AUTISM
- ALS
- MULTIPLE SCLEROSIS
- STROKE
- **MUSCULAR DYSTROPHY**
- CEREBRAL PALSY

# WE ARE HERE TO HELP





# TABLE OF CONTENTS


01.	ABOUT MUSCULAR DYSTROPHY	03	02.	STEM CELL TREATMENT	04
03.	CELL THERAPY MANAGEMENT	05	04.	WHY SHOULD YOU CHOOSE ADVANCECELLS?	06
05.	SPECIAL SERVICES FOR INTERNATIONAL PATIENTS	06	06.	EACH CASE IS SPECIAL FOR US	07
07.	TECHNOLOGY CALLING	08	08.	STEM CELL THERAPY SUCCESS RATE	08
09.	REHABILITATION PROCESS	09	10.	PATIENT TESTIMONIALS	10
11.	CERTIFICATES	10			

# What is Muscular Dystrophy?

## ■ Damage and Weakness of Muscles Due to Lack of Dystrophin

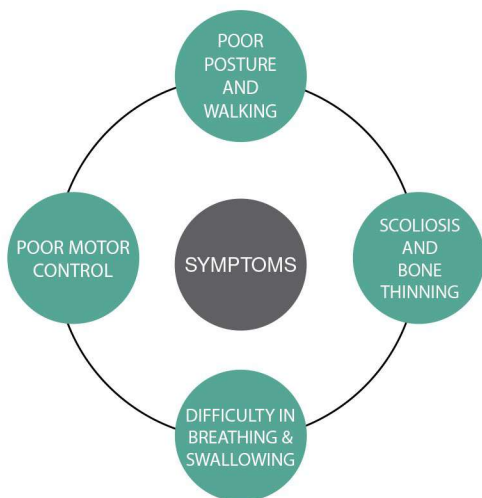
Muscular dystrophy is a group of inherited diseases that damage and weaken your muscles over time. This damage and weakness are due to the lack of a protein called dystrophin, which is necessary for normal muscle function. The absence of this protein can cause problems with walking, swallowing, and muscle coordination. Muscular dystrophy can occur at any age, but most diagnoses occur in childhood. Young boys are more likely to have this disease than girls.

The **MOST COMMON** fatal genetic disorder in children<sup>4</sup>



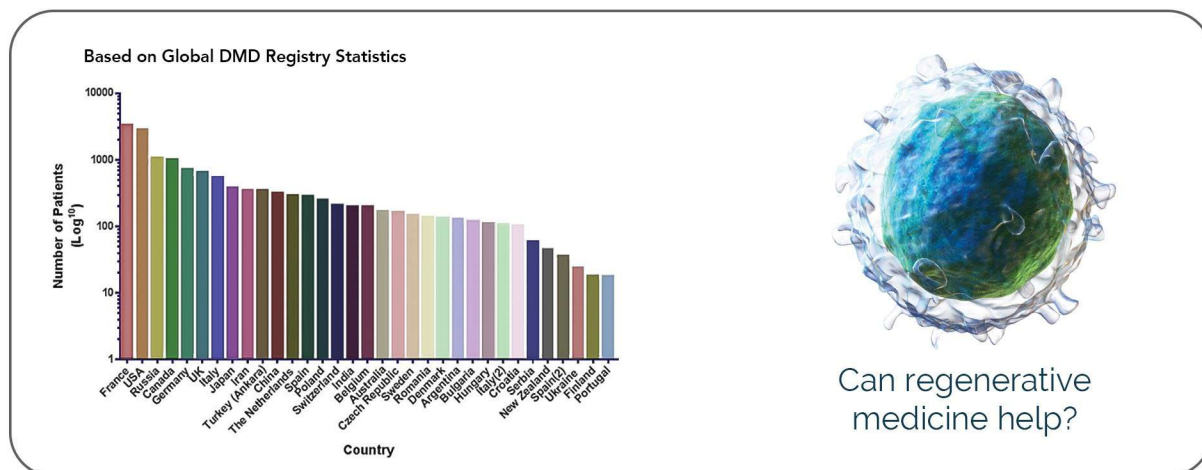
Caused by a change in the dystrophin gene

≈ **1 in 3** cases from a spontaneous mutation<sup>4</sup>



There are around nine categories to diagnose muscular dystrophy, which vary in symptoms and severity. Duchenne muscular dystrophy is the most common among children and patients typically require a wheelchair before their teenage years with a life expectancy around late teens or 20s. The second most common type is Becker muscular dystrophy with muscle weakness in limbs. This is not as severe as Duchene and most people with Becker muscular dystrophy live until middle age or later. Congenital muscular dystrophy is often apparent between birth and age 2, with deficient motor functions and muscle control. Some uncommon dystrophies include Myotonic dystrophy and Facioscapulohumeral dystrophy. Their symptoms most often appear in the face and neck, with distorted appearances and respiratory complications. Some other muscular dystrophies include Oculopharyngeal muscular dystrophy (OPMD) and Distal muscular dystrophy, which are not diagnosed before 30-40 years of age.

Although there is no specific medication for cure of muscular dystrophy, the treatment regime is multimodal and often involves corticosteroids, assisted ventilation and rehabilitation therapy without any potential for damage reversal. With recent scientific advances and research in stem cell therapeutics, muscular dystrophy may have a new damage reversal hope in the form of Regenerative Medicine.





# STEM CELL Treatment *for* Muscular Dystrophy

- Reduced Fatigue and weakness.
- Improved muscle and bone strength.
- Improved balance, & posture.
- Improved breathing, swallowing, & coordination.

## 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?

Majority of the patients treated by us have shown better posture and coordination without side effects. Patients suffering from muscular dystrophy have seen improvements in their muscle strength and have reported improved bone strength.

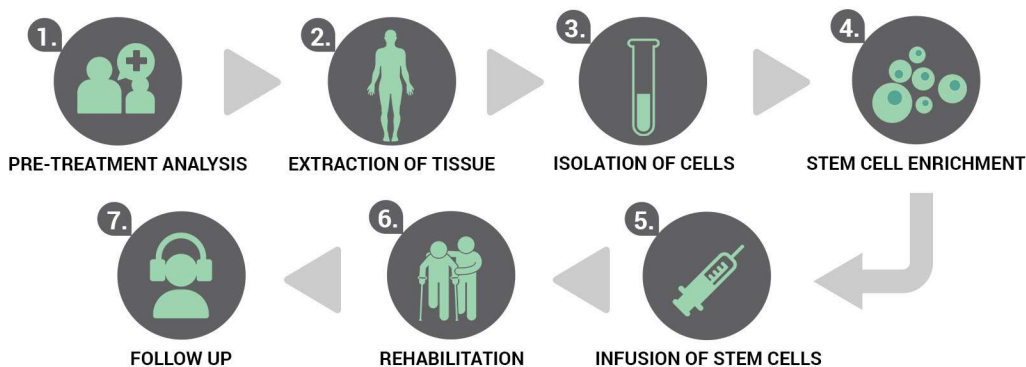
Although type and extent of improvement is patient specific, some of the common benefits that you can expect after stem cells treatment for muscular dystrophy are:

- Reduced pain and bone thinning.
- Improved body posture, gait, and motor control.
- Improved muscle strength with better stability.
- Reduced fatigue, weakness, and anxiety.
- Improved immunological and inflammatory functions based on pre-treatment and post-treatment marker analysis.



# 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 Assessment

- 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

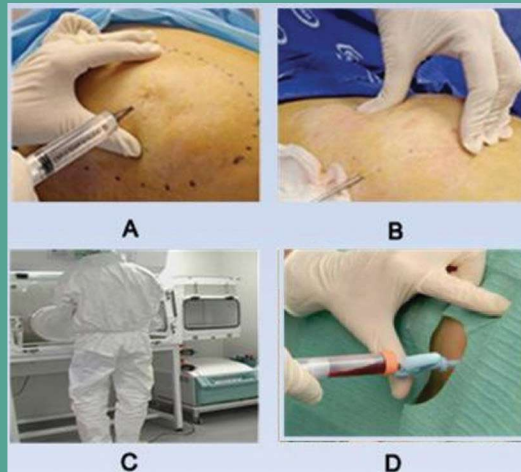
Post treatment care involves multiple reclamation therapies for accelerated recovery. Advancells is recommending range of therapies as discussed later.

## 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?

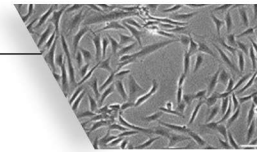
## 01 AUTOMATED and CLOSED System

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.



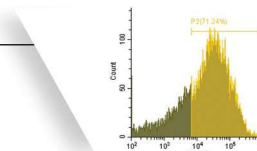
## 02 HIGH Quality of Cells

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.



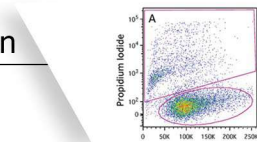
## 03 Disease-Specific MARKER Analysis

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. Reports are shared to confirm physiological improvement.



## 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 throughout 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

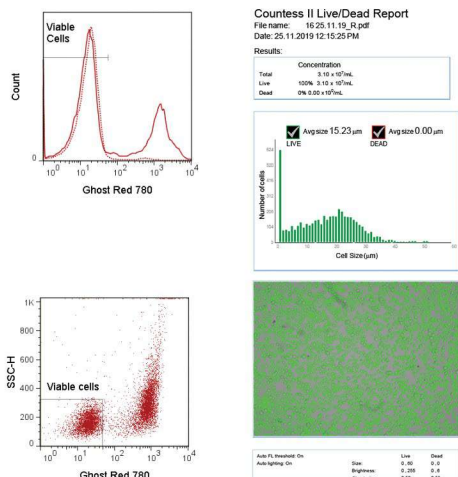
- Stem Cells are the mother cells of our body.
- They can divide unlimited times.
- Can differentiate into any cell type.
- Can be exploited to treat diseased condition.

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



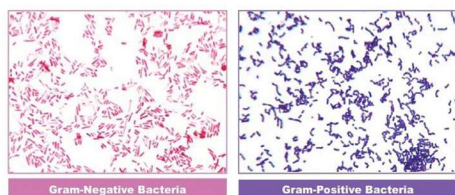
### 2.

#### Mycoplasma Detection



### 3.

#### Detection of bacterial containment



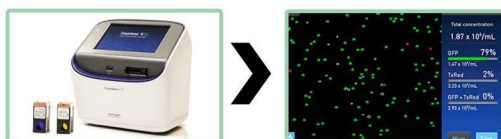
### 4.

#### Endotoxin Analysis



### 5.

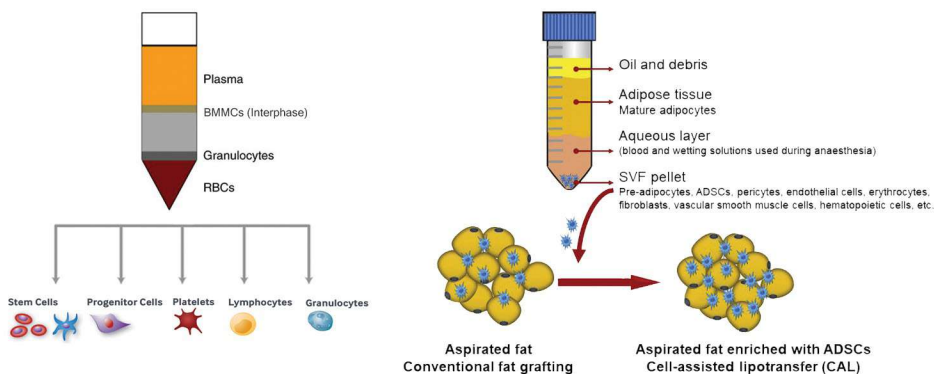
#### Viable Cell Count & Analysis through Automated cell counter



Analysis report		
Viable cell count at the time of dispatch: x * x <sup>6</sup> 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%

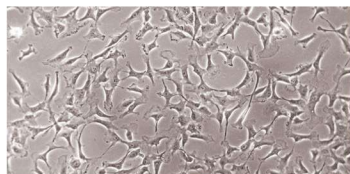


## Technology Calling...



### Bone Marrow derived mononuclear cells

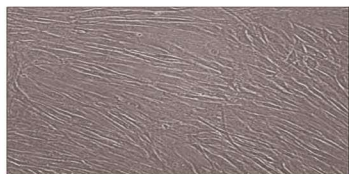
Neutrophil	72.3%
Eosinophil	1.8%
Lymphocyte	12.1%
Monocyte	2.8%
Nucleated Erythrocyte	8.9%
Blast Cells	1.6%



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

### Stromal Vascular Fraction

Endothelial Cells	25%
Myeloid Cells	22%
Monocyte	20%
cKit <sup>+</sup> Progenitor Cells	5%
CXCR4 <sup>+</sup> Multipotent Cells	2.5%
PDGFR-β <sup>+</sup> Perivascular Cells	20%



Pre-Adipocytes are known to produce cells 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*

- Physiotherapy
- Speech Therapy
- Occupational Therapy
- Detection of muscular strength and motor abilities
- Vestibular/Balance Therapy
- Recreational Therapy
- Breathing Therapy/Yoga
- Aquatic Yoga/Aquatic Aerobics
- Hyperbaric oxygen therapy

## 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 compliance & 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 muscular dystrophy require long-term medical management, understanding, and care. Besides seeking treatment from experienced medical personnel, the multi-modal regenerative treatment array might include a variety of rehabilitation therapies based on physio and HBOT to improve their rate of potential cure and cognition.

- Reduce pain and uneasiness.
- Reduce fatigue and weakness.
- Improve posture, cognition, and motor skills.
- Improve focus and concentration in daily activities.



## Let's Hear it from the Patients..

### ■ MR. AKHIL, 38 YRS

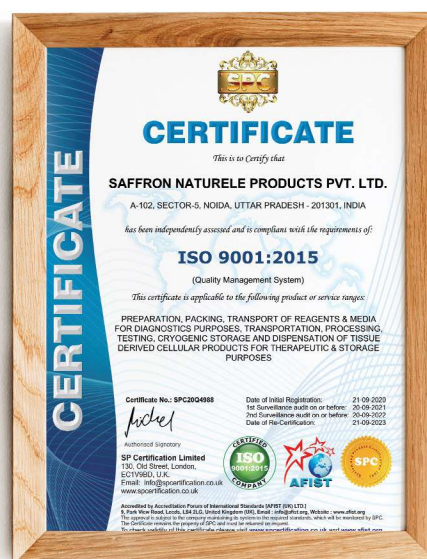
Akhil has been suffering from muscular dystrophy. He was a challenging case as the patient had fibrosis tumors all over spine and body. After the treatment, there have been visible improvements. These improvements happened in the first two months of therapy. As per his physiotherapist, there is improvement in the muscle strength 5 months post treatment with no disease progression.

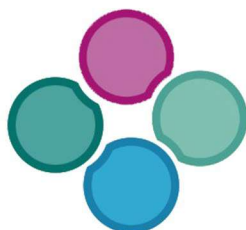
### ■ MR. ALI MOHAMMED, 25 YRS

According to Mr. Mohammed, "I underwent stem cells therapy in three sessions, was advised physiotherapy and nutritional diet. I found my condition to be substantially alleviated, in terms of my emotional strength and favorably active movement, without any falls. My gait has improved; I feel more coordinated with improved strength in my forearms. My doctor has as well acknowledged, a considerable muscle mass improvement, post stem cell therapy; with decreased visibility of pectoral skeletons as well as clavicle. To my surprise, I can now drive effortlessly, which obviously I was not able to do earlier! My next follow up is due in April and I am looking forward for many more astonishments; till then I have been asked to maintain a diet rich in proteins and regular physiotherapy training sessions." Stem cell therapy has been a boon for his condition of muscular dystrophy.



## Certifications





# Advancells

## G R O U P

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/