

# Stem Cell Therapy For Spinal Cord Injury

A Medical Guide for Patients and Caregivers

Prepared by Cyrona Cell Sdn. Bhd.  
Kuala Lumpur, Malaysia



- ☐ **Important Disclosure**  
Cyrona Cell provides patient education and care coordination. Medical evaluation and treatment are delivered by licensed healthcare professionals at partner medical facilities. This booklet is for educational purposes and is not a substitute for medical advice, diagnosis, or treatment.

# Executive Summary

A spinal cord injury (SCI) can affect movement, sensation, bladder or bowel control, and daily independence. Many families explore options beyond standard care, including stem cell therapy, because standard rehab, surgery, and medicines cannot fully rebuild nerve tissue.

## Standard care remains the foundation

- Ongoing assessment by specialist physicians (spine/neurology/rehabilitation)
- Symptom-focused medications when appropriate (pain, spasm, sleep, mood)
- Rehabilitation support (physiotherapy, occupational therapy, mobility training)
- Safety planning, caregiver routines, and complication prevention
- Management of coexisting conditions such as blood pressure, diabetes, infections, and sleep disorders

## Where stem cell therapy may fit

- Considered by some patients as an adjunct program to support the healing environment and inflammatory balance
- May aim to support function and quality of life step-by-step, alongside rehabilitation
- Outcomes vary; improvement is not guaranteed



### Not a cure

There is currently no proven cure for spinal cord injury. Responsible programs focus on safety, careful screening, and realistic goals.



# Understanding Spinal Cord Injury

A spinal cord injury happens when the spinal cord is damaged by trauma, pressure, or reduced blood flow. Because nerves carry signals between the brain and body, damage can affect feeling, strength, bladder control, balance, and daily function. Many people also deal with nerve pain, spasms, and fatigue.

## Common challenges



### **Weakness or paralysis**

Below the level of injury



### **Reduced sensation**

Numbness, tingling, altered pain/temperature feeling



### **Nerve pain, spasms, stiffness, and fatigue**

Ongoing discomfort affecting daily life



### **Bladder or bowel control problems**

Requiring management and monitoring



### **Skin breakdown risk**

Pressure injuries from immobility



### **Mood stress, sleep disruption**

And reduced independence



### **Urgent warning signs**

Seek immediate medical attention if there is sudden worsening weakness, new loss of sensation, high fever, seizures, stroke-like symptoms, chest pain, severe shortness of breath, fainting, or suspected serious infection.



# Stages and Caregiver Basics

## Mild stage

- Partial weakness or sensory changes
- Increased fatigue, pain, or spasms affecting daily tasks
- Needs help with some activities but remains active with support

## Moderate stage

- More obvious mobility limits or balance issues
- Difficulty with transfers, dressing, bathing, or toileting routines
- Higher risk of urinary infections, constipation, and skin issues

## Severe stage

- Significant dependence for daily function
- Higher risk of infections, pressure injuries, breathing issues (in some cases), and complications from immobility
- Greater caregiver involvement needed for safety and daily routines

## Caregiver basics that often help

### Routine

Consistent daily schedule and rehab plan

### Skin care

Frequent checks, pressure relief schedule, proper cushions/mattress

### Safety

Safe transfers, fall prevention, home accessibility planning

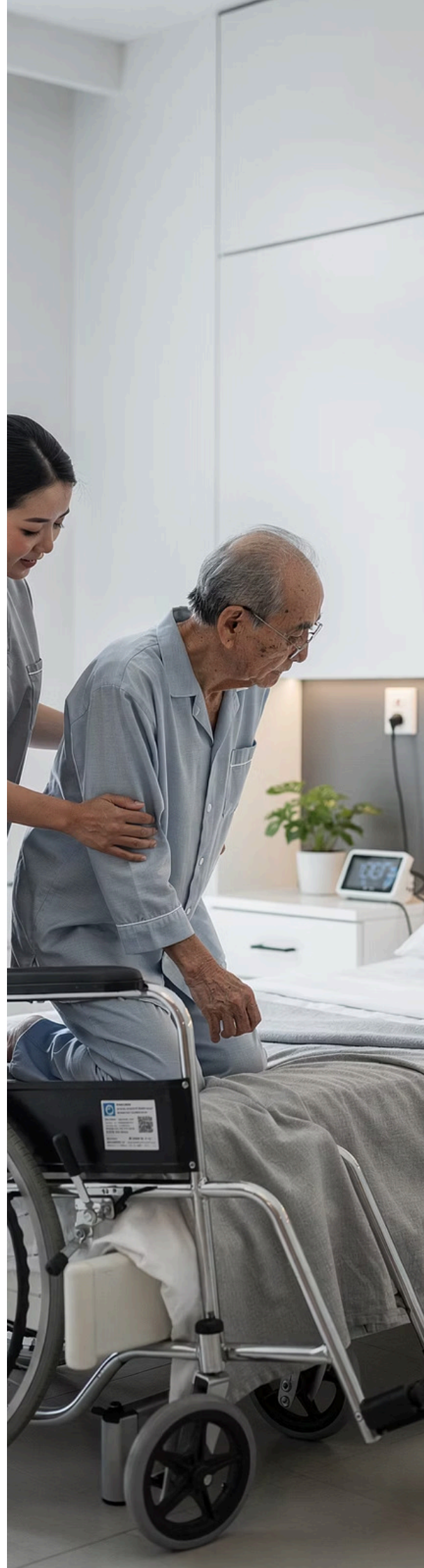
### Communication

Short clear instructions during transfers and exercises

### Nutrition and hydration

Support energy, bowel regularity, and tissue health

☐ **Important:** Do not change prescribed medications without medical advice.



# Stem Cell Therapy Overview

Stem cell therapy is being explored because spinal cord injury can cause lasting nerve pathway disruption and standard care mainly focuses on stabilization, rehabilitation, function, and complication prevention.

## Why some families explore MSC-based programs

Research has studied mesenchymal stem cells (MSCs) for their potential to:



**Support inflammatory balance and immune signaling**



**Release biologically active factors that may influence repair pathways**



**Support the cellular environment involved in tissue stress responses**



**Support blood flow and overall recovery environment around injured tissues**

## What this does not mean

- It does not mean a cure
- It does not mean guaranteed improvement
- It does not replace specialist-led care and rehabilitation

## Programs vary depending on

- Injury level and severity
- Time since injury and current rehabilitation progress
- Medical risk factors and comorbidities
- Clinician assessment and safety considerations
- Treatment approach and monitoring plan



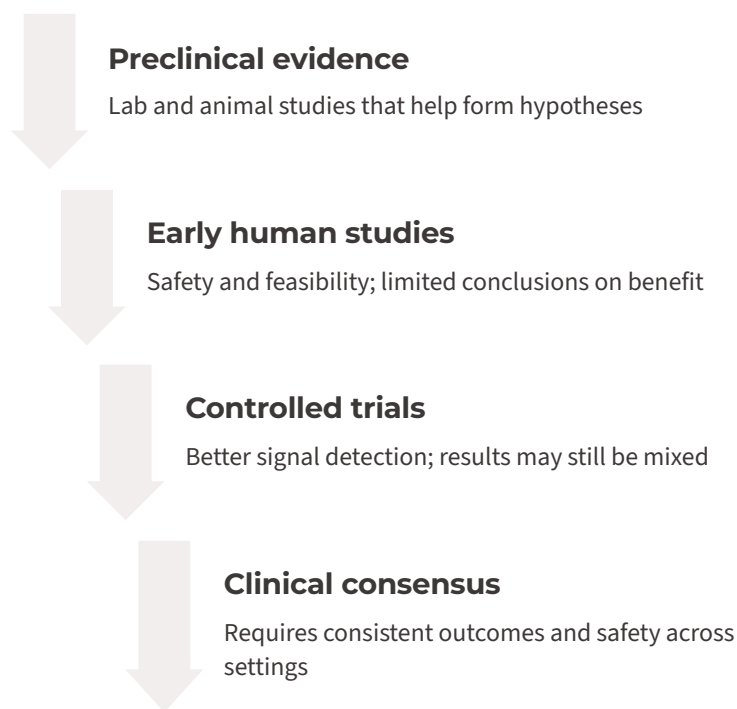
**Important note:** Mechanisms discussed in research do not guarantee clinical outcomes. Results differ widely between patients.



# Clinical Evidence Snapshot

Stem cell approaches for spinal cord injury are an active area of research. Evidence differs by protocol, cell source, delivery route, and patient selection. Many studies focus first on safety and feasibility, then track functional measures such as strength, sensation, spasticity, pain, bladder/bowel function, and quality of life.

## How to interpret evidence



## What families should know

- Protocols are not identical, so outcomes are not interchangeable
- Some studies use umbilical cord-derived MSCs, some use bone marrow-derived cells, and some explore other approaches in controlled settings
- Responsible materials should not exaggerate potential benefits or underplay risks and uncertainties



### Reality check

Evidence is still developing. Outcomes are not guaranteed.



# Quality and Safety Controls

In the programs Cyrona Cell coordinates, clinicians use mesenchymal stem cell products sourced from umbilical cord tissue, specifically the Wharton's jelly layer.

## Quality and safety questions patients should ask

### Donor and cord infectious disease screening commonly includes

- Syphilis (RPR-VDRL)
- HIV 1 and 2 antibody
- Hepatitis B surface antigen (HBsAg)
- Hepatitis C antibody (Anti-HCV)
- Cytomegalovirus IgM antibody
- HTLV-1 and HTLV-2 antibody
- HIV p24 antigen

### Product testing after expansion commonly includes

- Bacterial culture
- Fungal culture
- Mycoplasma

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### Passage policy

Our coordinated programs use lower passage cells, specifically **Passage 2**, as a quality-focused strategy.

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### Certificate of Analysis

The CoA includes cell source, passage number, quantity, barcode ID, thaw date and time, and a list of key screening and quality check results.



# Risks and Aftercare

All medical procedures carry risk. Patients should discuss individualized risks with licensed clinicians.

## Common short-term effects that may occur

- Fatigue, headache
- Low-grade fever or chills
- Temporary aches
- Mild infusion-related discomfort

## Possible but less common risks

- Significant allergic or infusion reaction
- Infection-related complications, especially in medically fragile patients
- Worsening of existing medical issues that require monitoring
- Temporary symptom fluctuation during recovery and rehab adjustments

## Aftercare guidance

1

### Seek medical evaluation promptly

If concerning symptoms occur

2

### Keep a clear list

Of medications and allergies

3

### Notify Cyrona Cell by WhatsApp

So we can help coordinate communication

4

### Do not stop prescribed medications

Unless a doctor advises you



### When to seek urgent care

High fever, chest pain, severe shortness of breath, fainting, seizures, severe headache with neck stiffness, uncontrolled vomiting or dehydration, or sudden new severe weakness or loss of sensation.



# Who May Consider a Stem Cell Program

A stem cell program is typically explored as an adjunct—not a replacement—for specialist-led spinal cord injury care and rehabilitation.

## ✓ Often a better fit when

- The patient is medically stable enough for monitored procedures and travel if needed
- There is a consistent rehabilitation plan in place (before and after)
- Goals are realistic and focused on functional support and quality of life
- A caregiver or support person can assist during and after the program

## ❑ Often not a fit or should be delayed when

- Active infection or unstable medical conditions
- Uncontrolled blood pressure, severe heart or lung instability, or other high-risk issues
- Expectations are based on guarantees or "instant recovery"
- The patient cannot access appropriate monitoring and follow-up support

❏ **Practical point:** Timing is evaluated case-by-case by licensed clinicians using medical records, imaging, and functional assessment.



# Program Pathway and Travel Planning

Programs are planned case-by-case after record review by licensed healthcare professionals at partner medical facilities.

## Typical steps

- 01
- Free record review
- 02
- Eligibility feedback and proposed plan outline
- 03
- Scheduling and preparation
- 04
- Pre-treatment consultation on arrival
- 05
- Treatment under medical monitoring
- 06
- Follow-up planning

## Administration routes

Programs commonly use intravenous infusion. Other routes may be considered depending on clinician assessment, patient factors, and safety considerations.

## International patient checklist

|                                                                                                             |                                                                                                           |
|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| <b>Records</b><br>Keep records in digital and printed form                                                  | <b>Medication</b><br>Bring enough medication for the full trip with prescriptions                         |
| <b>Caregiver companion</b><br>A caregiver companion is strongly recommended                                 | <b>Arrival timing</b><br>Consider arriving ahead of your treatment time slot to allow time for evaluation |
| <b>Accessibility</b><br>Plan for accessibility needs (wheelchair transport, hotel access, clinic transfers) |                                                                                                           |



# Medical Records Checklist

Sending complete records improves review accuracy and speeds up feedback.

## Essential

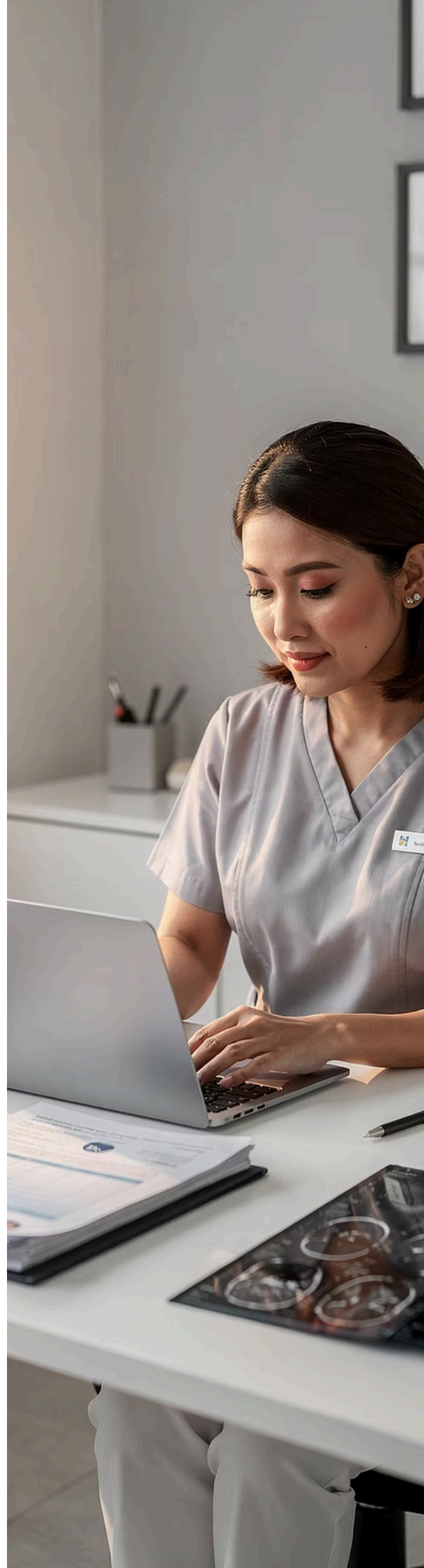
- Diagnosis summary and injury details (level and completeness if available)
- Specialist notes (spine surgery, neurology, rehabilitation)
- Current rehabilitation plan summary
- Medication list and supplements
- Allergies
- Major comorbidities: heart, lung, kidney, liver disease; diabetes; hypertension

## Strongly recommended

- MRI/CT reports of spine and relevant imaging
- Neurological and functional assessments if available
- Recent labs if available: CBC, kidney function, liver function, glucose control markers if diabetic
- History of infections (especially urinary tract infections) and bladder/bowel plan summary

## Helpful

- Caregiver note: main symptoms, spasm triggers, pain pattern, skin issues, sleep pattern
- Short videos if comfortable: transfers, standing (if possible), walking attempt, hand function tasks
- Mobility equipment list: wheelchair type, braces, walkers, pressure cushion details



# Next Steps

 FREE RECORD REVIEW

Submit your medical records for an initial eligibility review.

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## Contact

**Email:** [info@cyronacell.com](mailto:info@cyronacell.com)

**WhatsApp:** +6018 222 0032

### Sales Office Address:

Suite 4801-1-09, CBD Perdana, Jalan Perdana Off  
Persiaran Flora, 63000 Cyberjaya, Selangor, Malaysia.

Treatments are conducted at partner medical facilities in  
the Kuala Lumpur Golden Triangle area.

Walk-ins are not accepted. Please contact us via email or  
WhatsApp to schedule an appointment before visiting.

## Please include in your message

The patient's age and country of residence.

## What to send

Injury summary (level and timing), specialist notes,  
medication list and allergies, imaging reports, and recent  
lab reports if available.

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# Privacy and Consent

By submitting your information and medical records, you consent to Cyrona Cell Sdn. Bhd. contacting you by email and WhatsApp to respond to your enquiry, provide a preliminary review, and share follow-up information related to your request. We use your data only for communication, case coordination, and internal quality checks. We do not sell your personal data.

## Data retention

Patient records are retained for up to three months from submission for eligibility review and coordination, then deleted, unless retention is required by applicable law or you request ongoing follow-up. You may request access and correction within this period by contacting [info@cyronacell.com](mailto:info@cyronacell.com).

