



# COVID-19 PANDEMIC & SPINAL CORD INJURY

Social Distancing Is Your Only Protection



IIT Madras  
TTK Center for  
Rehabilitation Research  
and Device Development





## **Breathing Difficulty is COVID-19 EMERGENCY**



Go to **EMERGENCY** in a tertiary hospital



Request immediate oxygen support



Show **Must-Know List** to the doctor



Inform A Peer Mentor for Guidance

# COVID-19 PANDEMIC

## Disease

Coronavirus Disease (COVID-19)

## Infecting Virus

Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2)

## Mode of Transmission

- 🦠 Droplets of cough or sneeze by a person infected with COVID-19
- 🦠 Touch of surfaces and objects that may carry the Coronavirus load
- 🦠 Contact with any outsider without following prevention measures
- 🦠 Contact with a person who has the infection, but does not have symptoms



# COVID-19 Symptoms



Sore Throat



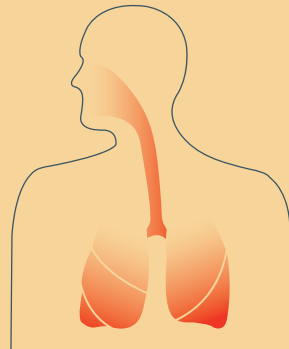
Dry Cough



Fever



Headache



Impacts The Lungs



Tiredness



Loss of Smell



Breathing Difficulty



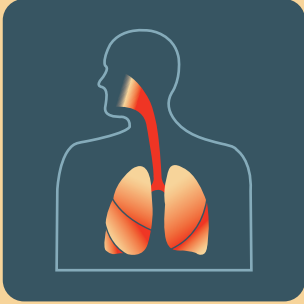
Loss of Taste



# COVID-19 Respiratory Impact



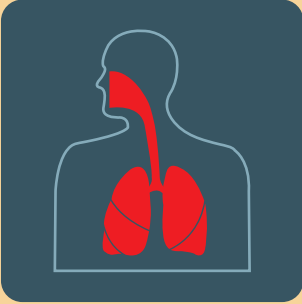
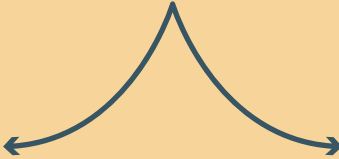
Infection



Respiratory Illness



Pneumonia



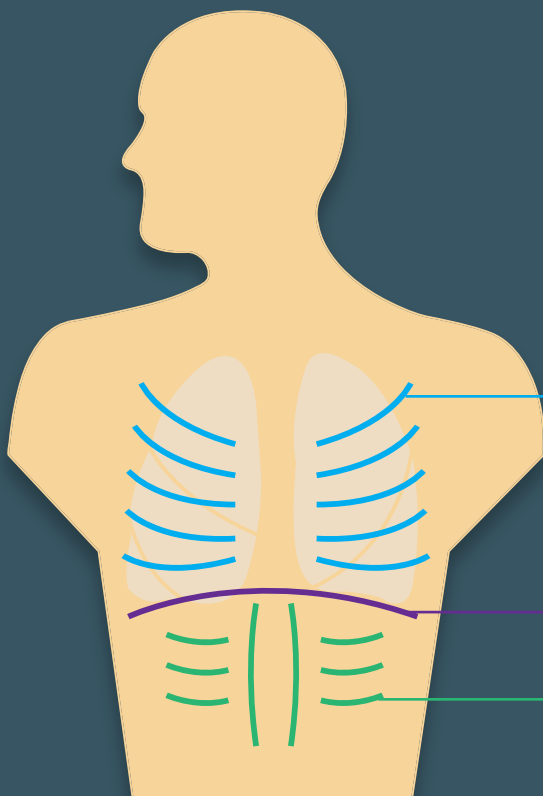
Mortality



Recovery

# No Spinal Cord Injury

## COVID-19 Vulnerability



Muscles enabling breathing and cough

Intercostals are fully functional

Diaphragm is fully functional

Abdominals are fully functional

Intercostals, Diaphragm and Abdominals enable breathing and cough

Breathing  
Normal

Cough  
Normal

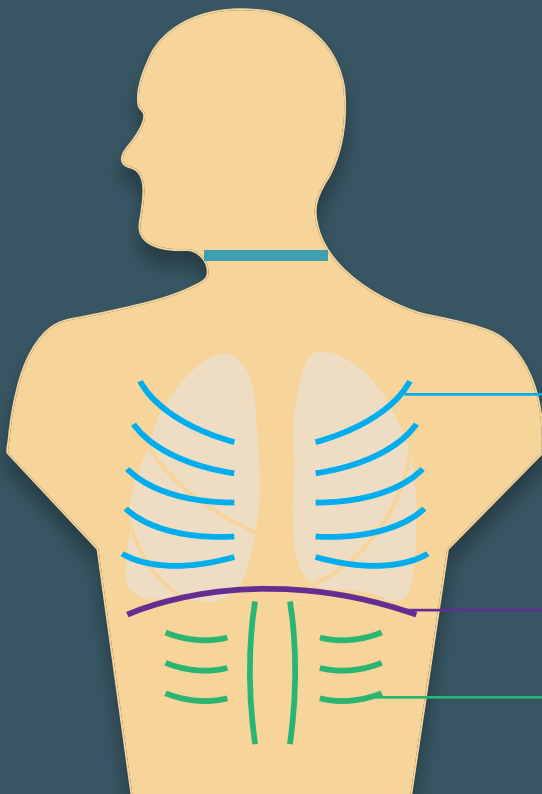
Lung Vulnerability  
Normal Risk

Risk of COVID-19 is at the normal level



# Quadriplegic

## COVID-19 Vulnerability



Cervical (C) Level Spinal Cord Injury

Intercostals do not work

Diaphragm is weak

Abdominals do not work

Respiratory and cardiovascular functions are partially affected for lifetime

Breathing  
Weak

Cough  
Weak

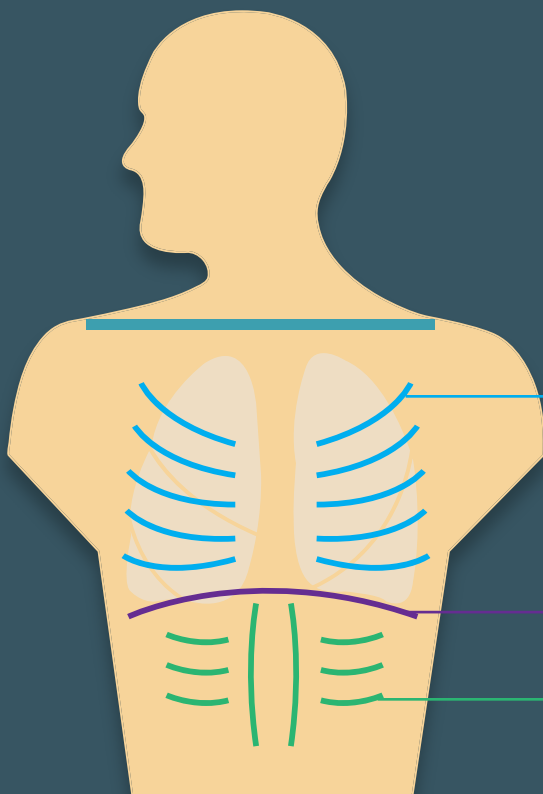
Lung Vulnerability  
Highest Risk

Highest Risk of COVID-19 as it attacks compromised breathing ability



# Higher-Level Paraplegic

## COVID-19 Vulnerability



Spinal Cord Injury (T1, T2, T3, T4, T5)

Intercostals are weak

Diaphragm is functional

Abdominals do not work

Cardiovascular functions are impaired for lifetime

Breathing  
Normal

Cough  
Weak

Lung Vulnerability  
Higher Risk

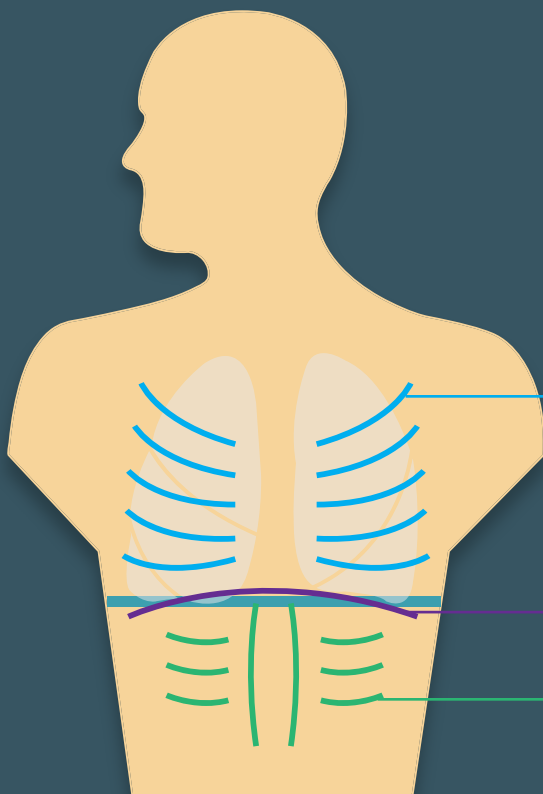
Compromised breathing ability raises COVID-19 Risk for high-level paraplegics





# Lower-Level Paraplegic

## COVID-19 Vulnerability



Spinal Cord Injury (T6 and lower)

Intercostals are functional

Diaphragm is functional

Abdominals are functional below T8

Ability to cough is impaired up to T12 level

Breathing

Minimally Affected

Cough

Weak

Lung Vulnerability

High Risk

COVID-19 Risk enhanced by compromised health due to spinal cord injury



# Spinal Cord Injury + COVID-19 Enhanced Risk Level



+ Above Age 50



+ Hypertension (High Blood Pressure)



+ Diabetes



+ Impacted Heart Conditions



+ Chronic Kidney Diseases



# Spinal Cord Injury + COVID-19 Enhanced Risk Level



+ Obesity



+ Grade 3 or Grade 4 Pressure Ulcer



+ Recent Surgery / Persistent Infections



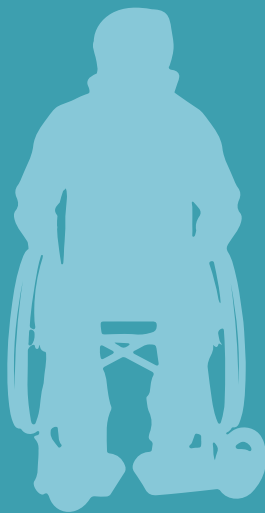
+ No Regular Exercise



+ Recent Autonomic Dysreflexia



# COVID-19 & Prevention

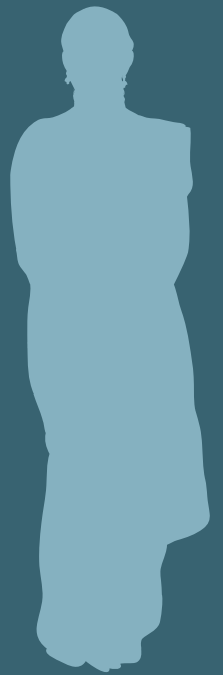
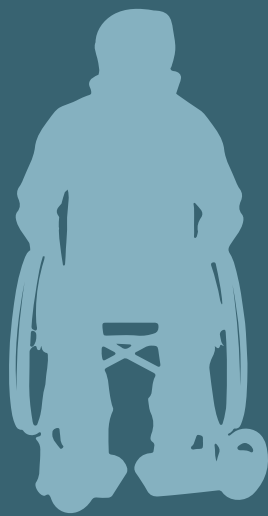


The Only Way to Stay Safe  
**SOCIAL DISTANCING**



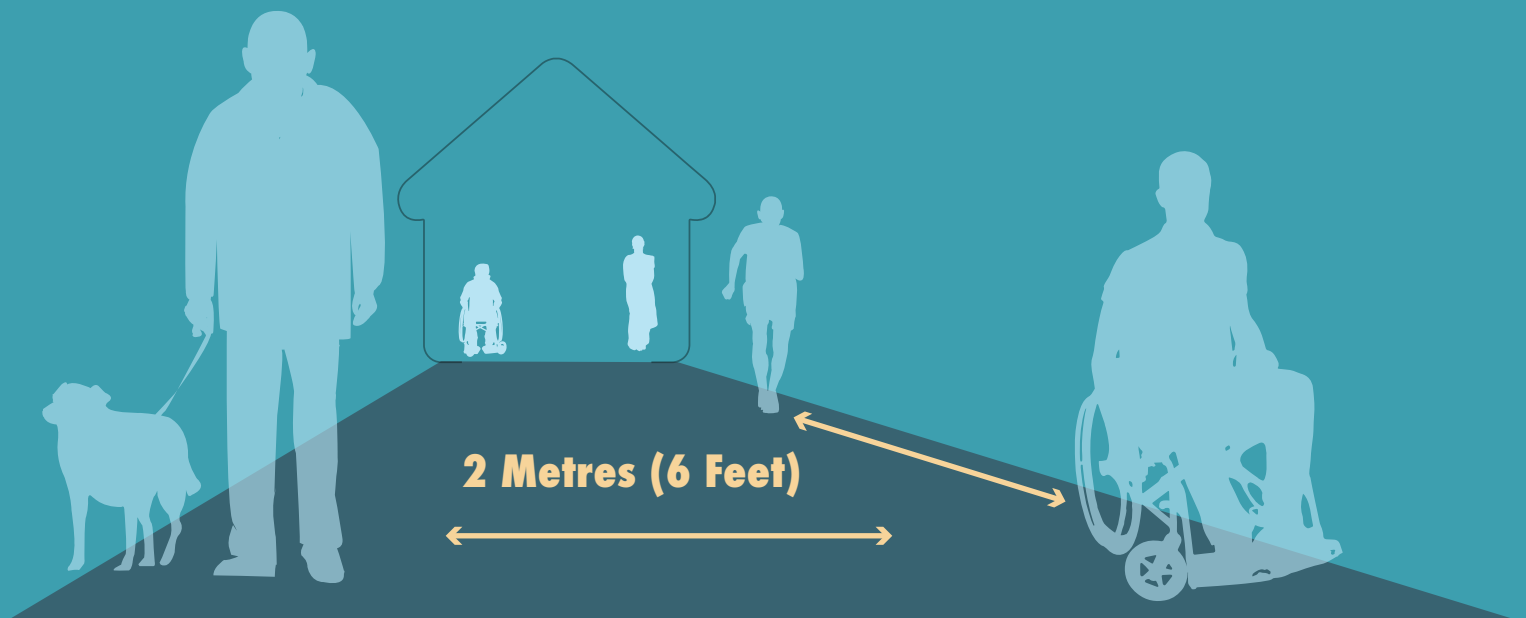
# COVID-19 & Prevention

Safely Observe Social Distancing by  
**Staying at Home**



# COVID-19 & Prevention

Safely Observe Social Distancing by  
**Maintaining Physical  
Distance of 2 metres  
outside your home**



# COVID-19 & Prevention

Indicators of 2 Metres (6 Feet)



# COVID-19 & Prevention

## Enhance Your Safety



Wash hands with Soap and Water for 20 seconds



Avoid touching your face with palms or fingers



Cough or sneeze into the creek of your elbow



Have breakfast within two hours of waking up



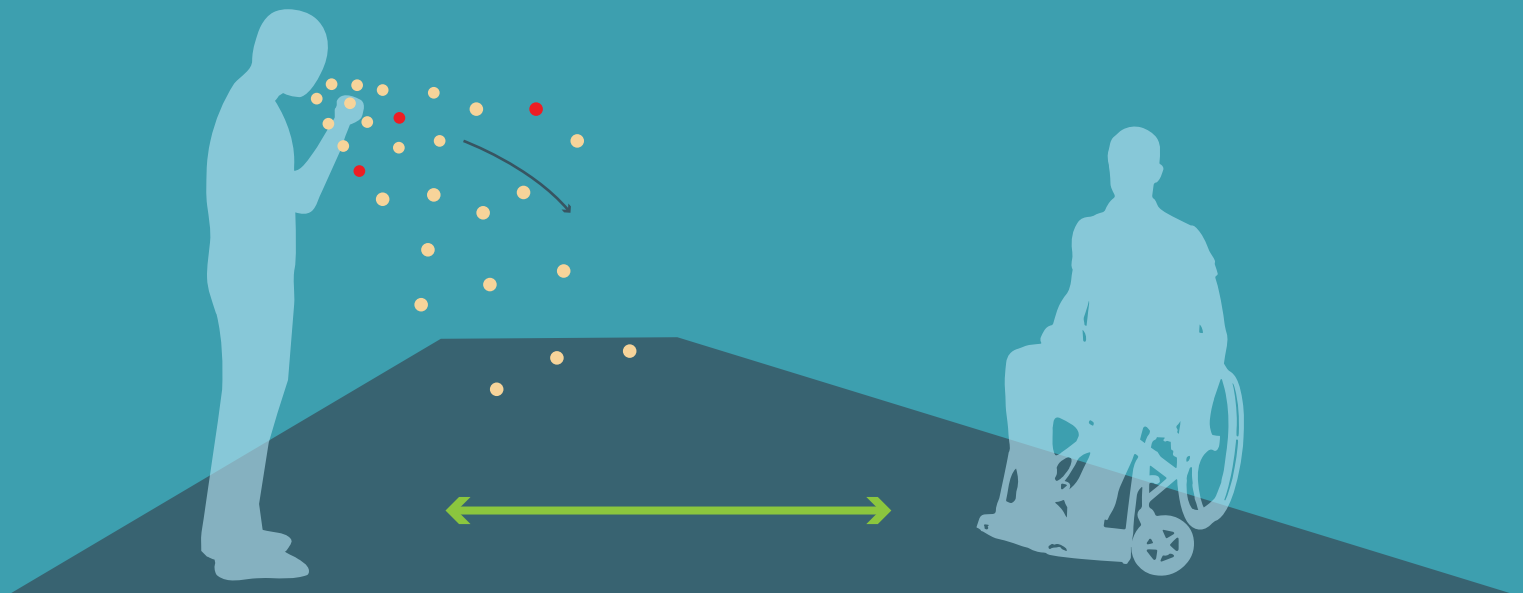


# COVID-19 & Prevention



## Why Stay at home

Zero risk of contracting infection from outsiders



## Why Physical distance of 2 metres (6 feet)

Infected droplets will not reach you



# COVID-19 & Prevention



**Why** Wash your hands with Soap and Water  
Soap and Water removes viruses and other germs



**Why** Avoid touching your face with palms or fingers  
Prevents the virus getting in through your nose, mouth, eyes



# COVID-19 & Prevention



**Why** Cough or sneeze into your elbow  
Keeps the virus off your hands and prevents spread



**Why** Breakfast withing two hours of waking up  
Restores strength to macrophage cells that strengthen immunity



# COVID-19 & Prevention

## The Correct Way To Wash Hands



Wet your hands with water. Apply soap



Rub palms on each other thoroughly



Rub back of each palm with other palm



Rub each thumb with the other palm



Clean the nail area by rubbing on palms



Rub in between fingers of both hands



Clean finger tips by rubbing on palms



Rub your wrists using the other palm



Wash your hands. Dry them in air

Wash your hands 20 seconds each time and at least 8 times a day



# COVID-19 & Prevention

## Who Must Practice



**Person with Spinal Cord Injury**

**Caregiver (Family Member or Hired)**

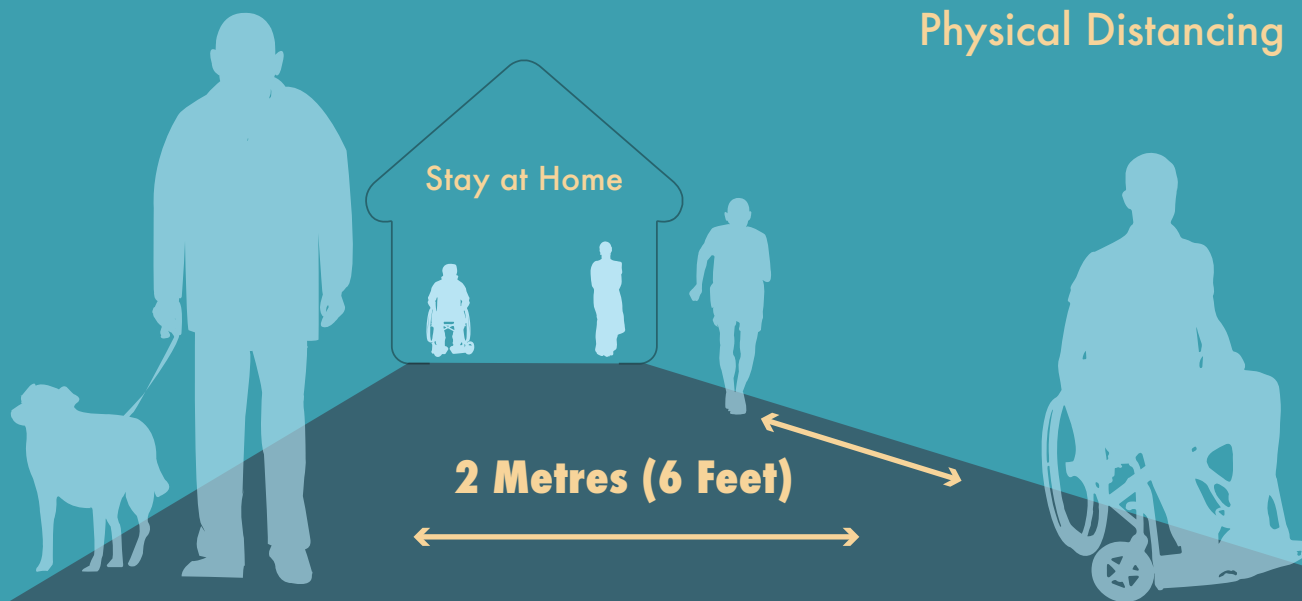
**Family Members at Home**



# COVID-19 & Prevention

## Your Safety Kit - Social Distancing Plus

### Physical Distancing



Wash hands with Soap and Water for 20 seconds



Avoid touching your face with palms or fingers



Cough or sneeze into the creek of your elbow



Have breakfast within two hours of waking up



# Mask

Wear A Mask in Public Places for Common Good



Not necessary at home  
If no one is infected  
at home



Necessary at home for all  
If anyone is infected  
at home



Wash hands with Soap  
and Water before wearing  
and after removing the mask



# Mask

## How To Wear A Surgical Mask



Coloured side of the mask must appear outside

Place the strings beyond the ears or tie behind the head if it is a strap



Pull up the mask to cover the nose and pull down over the chin

Press the metallic strip to fit the shape of the nose



## Precautions



Do not touch the front of the mask



Avoid taking off the mask over the head



Have a separate dustbin to collect the masks



Dispose the mask after use





# COVID-19 Pro-Active Self Isolation



Fever, dry cough, tiredness...

**Assume COVID-19, Manage at Home**



**SELF ISOLATE** in a room for at least 14 days



Paracetamol every four hours to manage fever



Keep a close watch for more symptoms

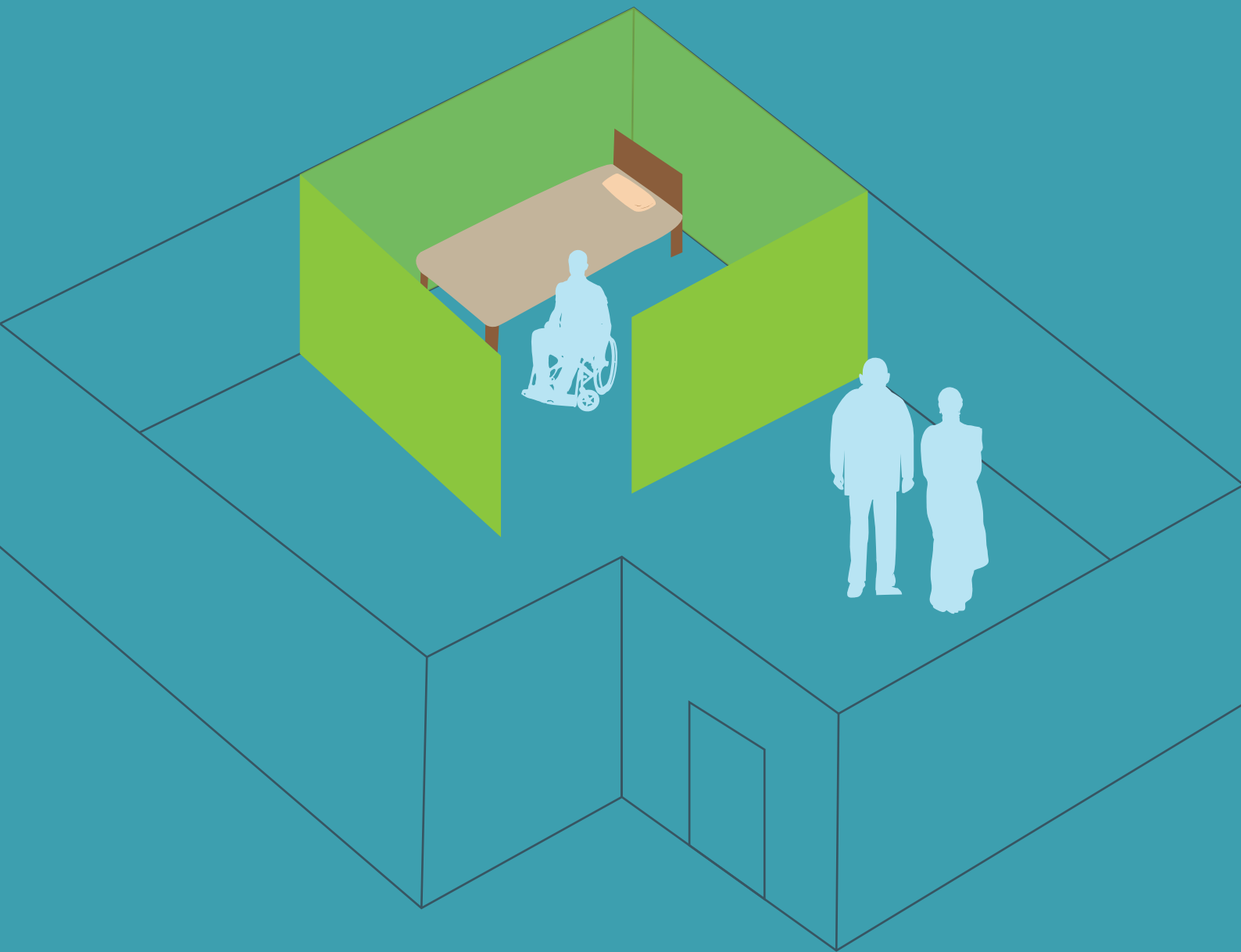


Inform A Peer Mentor for Guidance



# Self Isolation

As soon as you notice symptoms,  
**Self Isolate for at least 14 days**



# COVID-19 Medication Ineffective



Medication is ineffective for two days

## Shift From Home to Hospital



**SELF ISOLATE** in a room



Paracetamol every four hours to manage fever



If no improvement for two days, go to a hospital



Inform A Peer Mentor for Guidance



# COVID-19 Emergency



Breathing Difficulty

**EMERGENCY**



Go to **EMERGENCY** in a tertiary hospital



Request immediate oxygen support



Show **Must-Know List** to the doctor



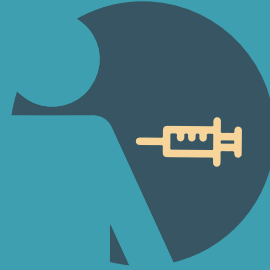
Inform A Peer Mentor for Guidance



# The Safety Point



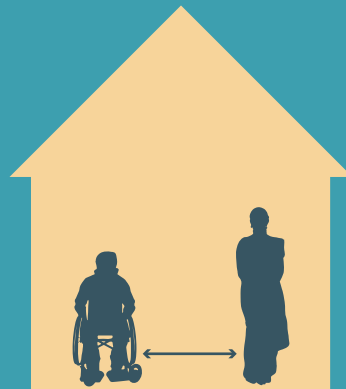
Vaccine Discovery



Vaccination



Immunity Development



## Till Immunity, Practice Social Distancing Plus



Wash hands with Soap and Water for 20 seconds



Avoid touching your face with palms or fingers



Cough or sneeze into the creek of your elbow



Have a healthy breakfast before 9 AM



# For More Guidance, Contact



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# COVID-19 PANDEMIC & SPINAL CORD INJURY

**COVID-19 PANDEMIC & SPINAL CORD INJURY** An initiative of the TTK Center for Rehabilitation Research & Device Development (R2D2) at IIT Madras

**IIT Madras** is an academic institution established by the Government of India to further higher technological education, basic and applied research.

**R2D2** at IIT Madras aims to enhance quality of lives of persons with disability.

**The Spinal Foundation**, the Pan-India Self-Help Group for Persons with Spinal Cord Injury and a registered society under the relevant laws of India, is a project partner.

**Concept & Design** Touch REHAB Team, R2D2 at IIT Madras, India

Touch REHAB is a project to develop a comprehensive evidence-based, user-friendly resource for persons with spinal cord injury in vernacular languages.

**First Edition** May 2020

**Disclaimer** COVID-19 PANDEMIC & SPINAL CORD INJURY is an awareness resource. The information provided here is for general educational purposes only. The material is not intended to be a substitute for professional medical diagnosis. Please note that medical information regarding COVID-19 is constantly changing. Nothing in this document must be construed as medical advice. Users - persons with spinal cord injury and family members - must take medical advice on all matters relating to COVID-19.

**References** Research links and references underpinning the content of COVID-19 PANDEMIC & SPINAL CORD INJURY are available at [www.thespinalfoundation.org](http://www.thespinalfoundation.org).



# COVID-19 PANDEMIC & SPINAL CORD INJURY

## Empowering High-Risk Group to Handle COVID-19 PANDEMIC

Persons with Spinal Cord Injury are a highly vulnerable group to contract COVID-19 (Coronavirus Disease), as they lead day-to-day lives handling lifelong, multiple disabilities that compromise their overall health and immunity.

COVID-19 PANDEMIC & SPINAL CORD INJURY is a dedicated resource for creating awareness of the risks and consequences among persons with spinal cord injury, family members, caregivers, medical and para-medical professionals and other stakeholders.



The visual Identity represents a person with Spinal Cord Injury who leads an active and safe life by always following the Best Practices to prevent Coronavirus Disease (COVID-19).

As the COVID-19 PANDEMIC is an evolving story across the world, we will strive to update this resource, if needed.

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