

MODULE 1:

FACTS AND FIGURES OF SCI

(A) More demographics, less economics

≈ You Are Not Alone ≈

- 280,000-560,000 new cases are recorded every year across the world.
- Number of men suffering from SCI is over twice the number of women.
- Men between the ages of 20 to 29 years and ages above 70 years appear to be at the highest risk.
- Women are observed to be at the highest risk between the ages of 15 to 30 years and at ages above 60 years.
- More than 90% of the recorded cases are a result of traumatic injury
- More than 12,000 people in Australia suffer from a spinal cord injury.
- The victims of spinal cord injury have a 2 to 5 times the normal mortality rate which is maximum during the first year following the injury.
- The lifetime cost is estimated to be AUD 5 million per case of paraplegia and AUD 9.5 million per case of quadriplegia.
- The economic burden of spinal cord injury on the Australian society was estimated at AUD 2 billion per annum in 2009 by Access Economics.

≈ Economics of SCI treatment and management ≈

Table: The costs are estimated as per US health care standards and are reflected in US Dollars.

Extent of Injury	Cost for the 1 st year	Each following year
C1-C4 (Grade A,B,C)	1 Million	185,000
C5-C8 (Grade A,B,C)	770,000	114,000
Paraplegia (Grade A,B,C)	520,000	69,000
Any Grade D injury	350,000	42,000

≈ Causes of Spinal Cord Injury ≈

- Trauma resulting from vehicular accidents, falls from heights, violence and sporting injuries cause over 90% of SCIs in total
- In rare cases, infection of the cord or a cancerous tumour can also cause a SCI.
- Problems related to blood vessels of the spinal cord may result in SCI as well.

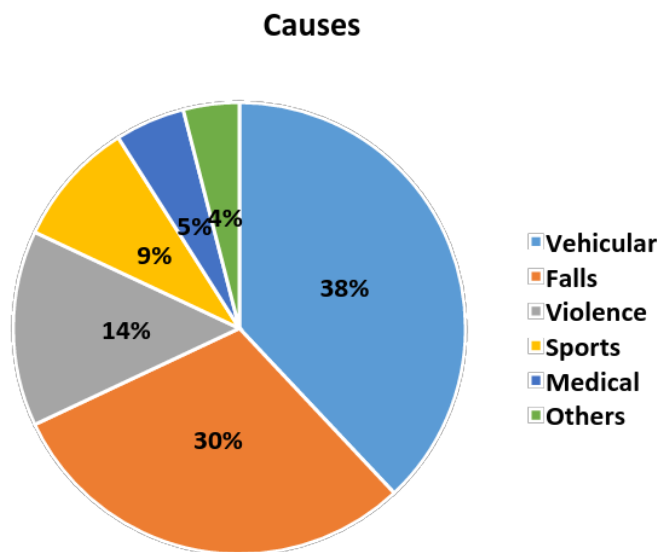
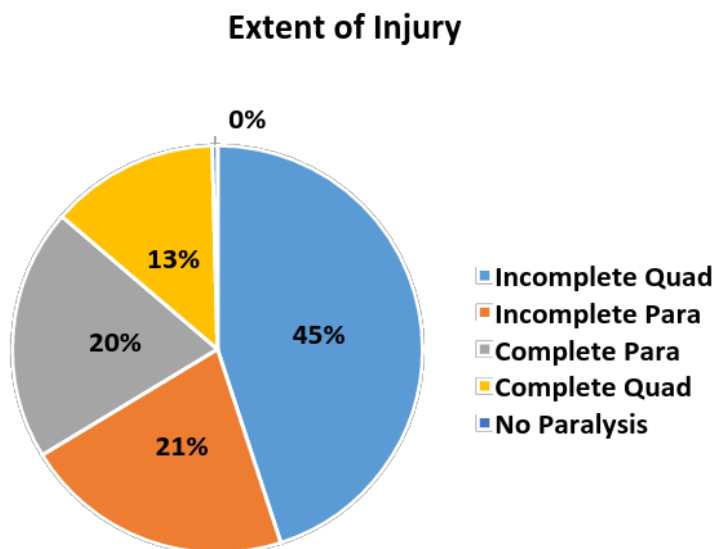


Figure: National SCI Statistical Centre, US Fact Sheet 2016

≈ Extent of Spinal Cord Injury ≈



- Over 58% people with SCI suffer from quadriplegia from which 45% of the people suffer from incomplete quadriplegia
- Only 1 in 250 cases of SCI may show full recovery without any long lasting paralysis.

Figure: National SCI Statistical Centre, US Fact Sheet 2016

(B) Recovery of function

≈ The Status Quo ≈

- As of now, the recovery of function varies greatly with the extent of injury, the most severe cases show minimal to no recovery.
- The best possible outcomes are seen when the patients receive prompt medical assistance and treatment.
- Surgery is very important to remove the debris and take the pressure off of the injured cord to prevent further damage to the cord.
- After the initial surgical treatment intensive physical therapy over an extended period tends to yield maximum functional recovery.
- We already have many systems in place where assistive devices help the SCI patients stay mobile and active- as much as their condition allows
- However, depression and substance abuse are significantly higher in people with SCI which usually leads to a poorer outcome.

≈ There is Hope ≈

- Clinicians and scientists are working relentlessly to overcome the current limitations of the functional recovery.
- A lot of different therapies are being explored to increase the functional gain after SCI, if not heal the injury completely.
- These include cell transplants, natural products, growth factors, robotics, brain-computer interface and many more (module 11).
- These therapies would target different aspects of SCI and help the people living with SCI either regain lost function by healing the injury or by providing mechanical support externally.

(C) How long does recovery take

- Recovering from a SCI is very long and slow process.
- Time and degree of recovery often depends greatly upon the commitment from the patient.
- The recovery within the first six months is relatively quicker than later.
- Any remaining loss of function after 1-2 years will likely become permanent.
- However, in some cases, with a positive outlook and hard work, patients have defied all odds and regained function even after 2 years.