



## Managing spinal cord injury claims

February 09, 2022 | 2:00-3:00 p.m. ET

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# Presenters



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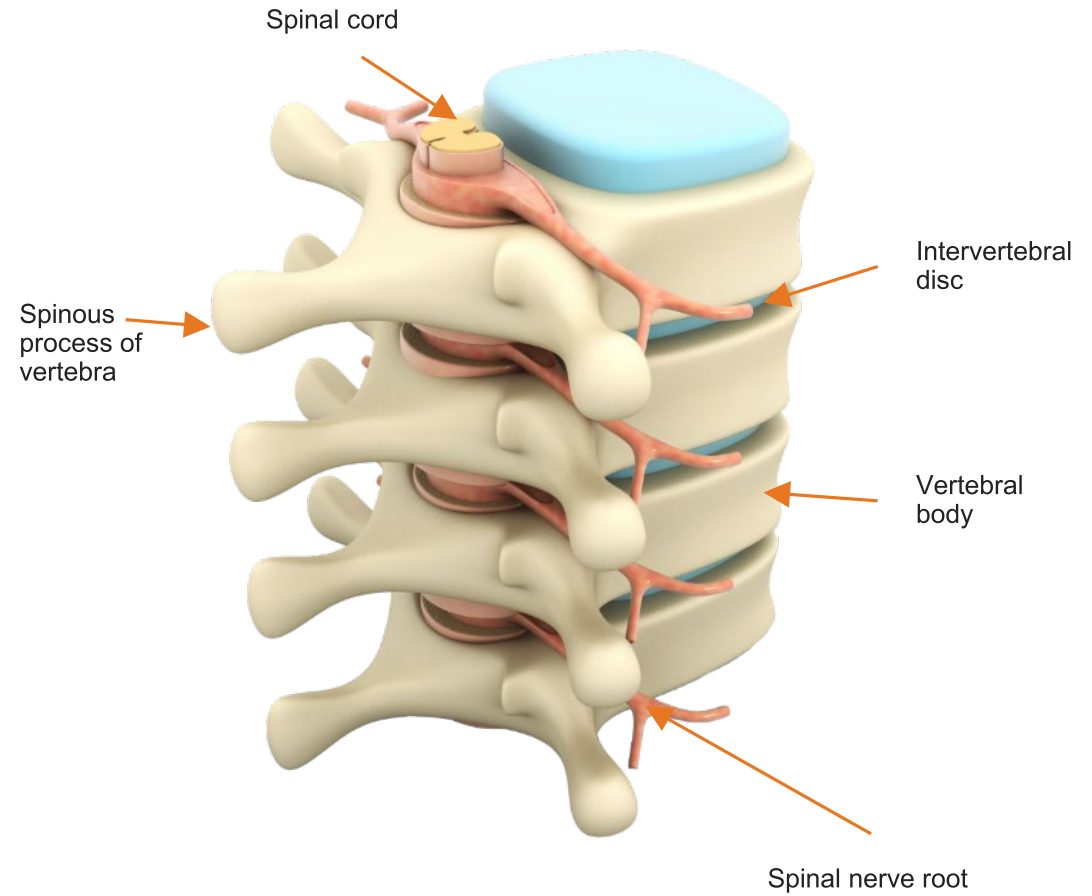
# Learning objectives

1. Understand the anatomy, physiology, and causes of spinal cord injuries (SCIs).
2. Discuss the impact that SCIs can have on the different body systems.
3. Describe the medical treatment for SCIs from the time of injury through rehabilitation.
4. Identify the durable medical equipment (DME) and supplies needed for patients with SCI.
5. Understand the potential long-term medical complications associated with an SCI and the medical treatments required in the home setting.

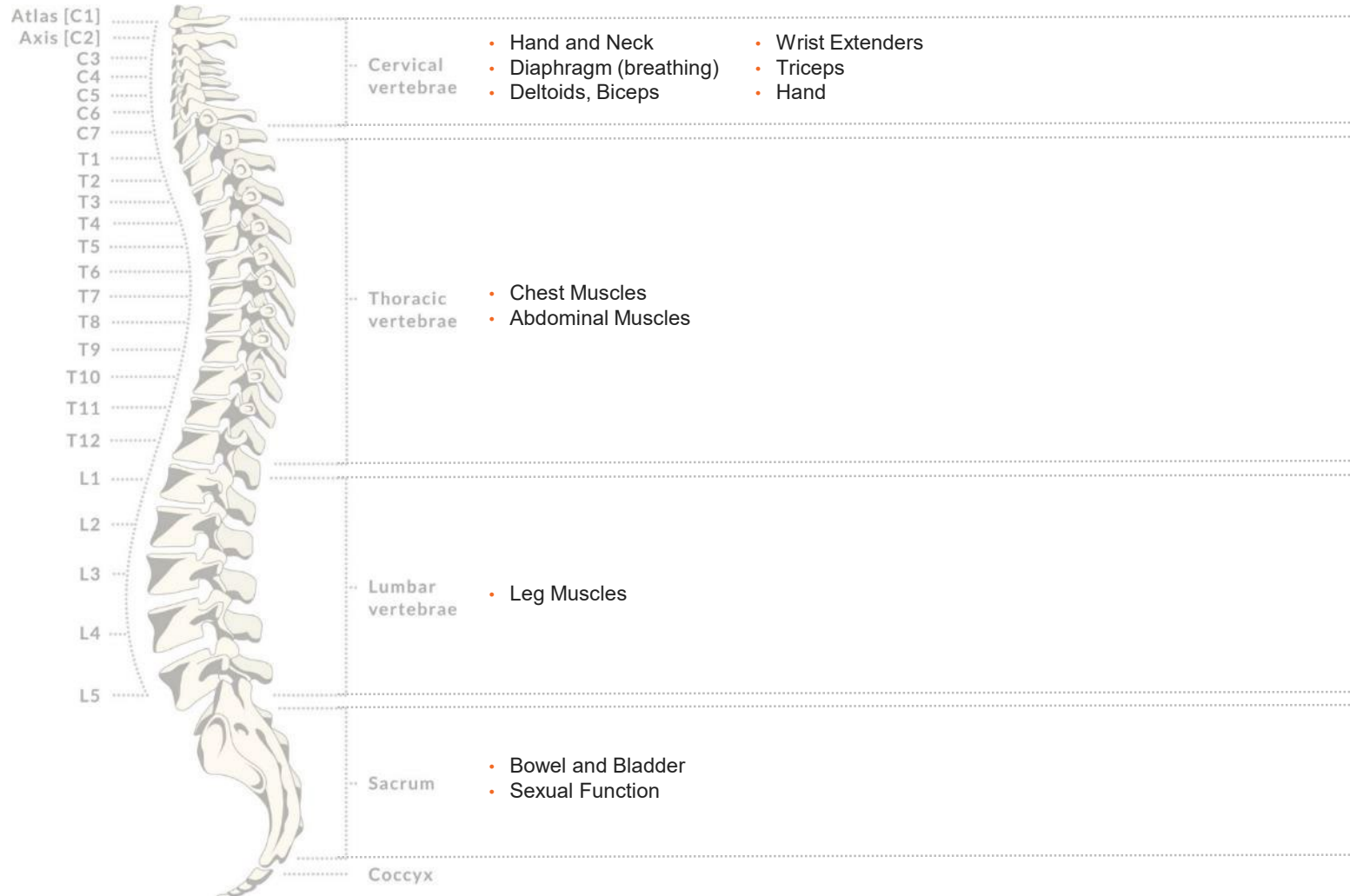


# **Spinal cord anatomy, physiology and function**

# Spinal cord anatomy



# Functions of the spinal cord by level





# Spinal cord injury (SCI) classification

## Tetraplegia (Quadriplegia)

Injury of the spinal cord in the cervical region

vs.

## Paraplegia

Injury of the spinal cord in the thoracic or lumbar regions

## Complete

No sensory or motor function is preserved in the S4-S5 area

vs.

## Incomplete

Sensory or motor function is preserved below the injury level and includes the S4-S5 area

### C4 injury

Quadriplegia/Tetraplegia, results in complete paralysis below the neck

### C6 injury

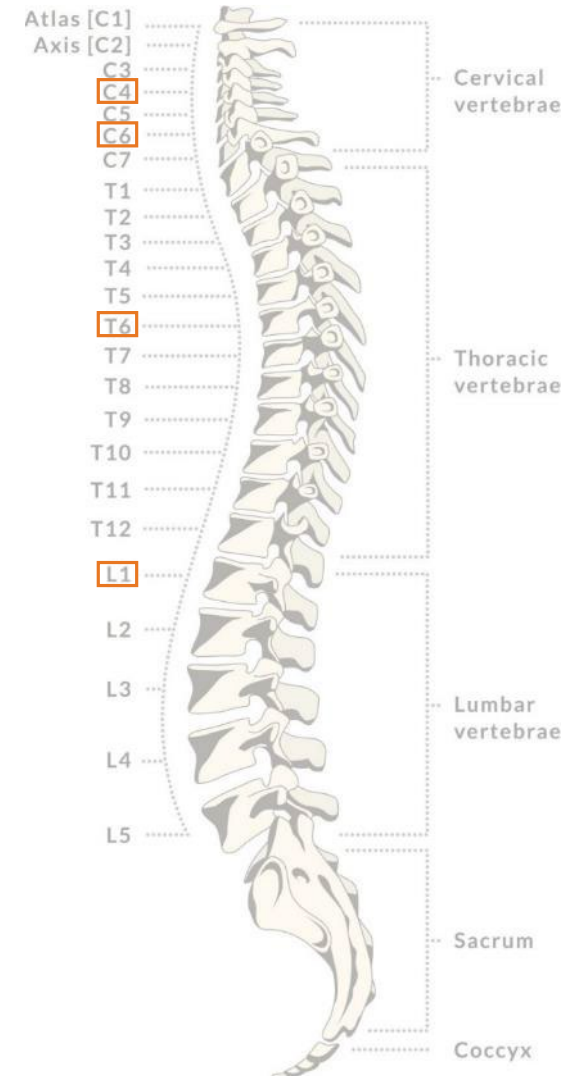
Results in partial paralysis of hands and arms as well as lower body

### T6 injury

Paraplegia, results in paralysis below the chest

### L1 injury

Paraplegia, results in paralysis below the waist



# Muscle strength grading

<b>GRADE</b>	<b>STRENGTH LEVEL</b>
0	Total paralysis
1	Palpable or visible contraction
2	Active movement, full range of motion, gravity eliminated
3	Active movement, full range of motion, against gravity
4	Active movement, full range of motion, against gravity and provides some resistance
5	Active movement, full range of motion, against gravity and provides normal resistance

# The American Spinal Injury Association (ASIA) Impairment Scale

<b>A</b>	<b>COMPLETE</b>	No motor or sensory function is preserved in the lowest sacral segments
<b>B</b>	<b>INCOMPLETE</b>	Sensory function but no motor function is preserved below the neurologic level and includes the lowest sacral segments
<b>C</b>	<b>INCOMPLETE</b>	Motor function is preserved below the neurologic level but more than half of key muscles have <math><3/5</math> strength
<b>D</b>	<b>INCOMPLETE</b>	Motor function is preserved below the neurologic level but more than half of key muscles have $\geq 3/5$ strength
<b>E</b>	<b>NORMAL</b>	Motor and sensory function are normal

# ASIA Impairment Scale

Patient Name \_\_\_\_\_  
 Examiner Name \_\_\_\_\_ Date/Time of Exam \_\_\_\_\_

**ASIA** INTERNATIONAL STANDARDS FOR NEUROLOGICAL CLASSIFICATION OF SPINAL CORD INJURY **ISCS**

**MOTOR**  
 KEY MUSCLES (scoring on reverse side)

C5	<input type="checkbox"/>	<input type="checkbox"/>	Elbow flexors
C6	<input type="checkbox"/>	<input type="checkbox"/>	Wrist extensors
C7	<input type="checkbox"/>	<input type="checkbox"/>	Elbow extensors
C8	<input type="checkbox"/>	<input type="checkbox"/>	Finger flexors (distal phalanx of middle finger)
T1	<input type="checkbox"/>	<input type="checkbox"/>	Finger abductors (distal finger)

UPPER LIMB TOTAL (MAXIMUM)  +  =   
 (25) (25) (50)

Comments: \_\_\_\_\_

**SENSORY**  
 KEY SENSORY POINTS

C2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
S1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
S2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
S3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
S4-5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

TOTALS (MAXIMUM)  +  =   
 (50) (50) (100)

0 = absent  
 1 = altered  
 2 = normal  
 NT = not testable

(VAC) Voluntary anal contraction (Yes/No)

(DAP) Deep anal pressure (yes/no)

PIN PRICK SCORE (max: 112)

LIGHT TOUCH SCORE (max: 112)

NEUROLOGICAL LEVEL: The most caudal segment with normal function. **SENSORY** R  L  **MOTOR** R  L

SINGLE NEUROLOGICAL LEVEL

COMPLETE OR INCOMPLETE?   
 Incomplete = Any sensory or motor function in S4-S5

ASIA IMPAIRMENT SCALE (AIS)

ZONE OF PARTIAL PRESERVATION: Most caudal level with any preservation. **SENSORY** R  L  **MOTOR** R  L

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Source: American Spinal Injury Association

# ASIA Impairment Scale

Patient Name John Smith

Examiner Name Dr. James Jones

Date/Time of Exam 2/9/2022 8:00 a.m.



## INTERNATIONAL STANDARDS FOR NEUROLOGICAL CLASSIFICATION OF SPINAL CORD INJURY ISCO

MOTOR		LIGHT TOUCH				PIN PRICK				SENSORY			
KEY MUSCLES (scoring on reverse side)		R	L	R	L	R	L	R	L	KEY SENSORY POINTS			
C5	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Elbow flexors	2	2	2	2	2	2	2	2				
C6	<input type="checkbox"/> <input type="checkbox"/> Wrist extensors	2	2	2	2	2	2	2	2				
C7	<input type="checkbox"/> <input type="checkbox"/> Elbow extensors	2	2	2	2	2	2	2	2				
C8	<input type="checkbox"/> <input type="checkbox"/> Finger flexors (distal phalanx of middle finger)	2	2	2	2	2	2	2	2				
T1	<input type="checkbox"/> <input type="checkbox"/> Finger abductors (distal finger)	0	0	0	0	0	0	0	0				
UPPER LIMB TOTAL (MAXIMUM) $5 + 5 = 10$		0	0	0	0	0	0	0	0			<p>0 = absent 1 = altered 2 = normal NT = not testable</p>	
Comments:		0	0	0	0	0	0	0	0				
L2	<input type="checkbox"/> <input type="checkbox"/> Hip flexors	0	0	0	0	0	0	0	0				
L3	<input type="checkbox"/> <input type="checkbox"/> Knee extensors	0	0	0	0	0	0	0	0				
L4	<input type="checkbox"/> <input type="checkbox"/> Ankle dorsiflexors	0	0	0	0	0	0	0	0				
L5	<input type="checkbox"/> <input type="checkbox"/> Long toe extensors	0	0	0	0	0	0	0	0				
S1	<input type="checkbox"/> <input type="checkbox"/> Ankle plantar flexors	0	0	0	0	0	0	0	0				
(VAC) Voluntary anal contraction (Yes/No) <input type="checkbox"/> No		0	0	0	0	0	0	0	0				
LOWER LIMB TOTAL (MAXIMUM) $0 + 0 = 0$		0	0	0	0	0	0	0	0				
TOTALS (MAXIMUM) $8 + 8 = 16$		8	8	16	16	16	16	16	16	(DAP) Deep anal pressure (yes/No) <input type="checkbox"/> No PIN PRICK SCORE (max: 112) LIGHT TOUCH SCORE (max: 112)			
NEUROLOGICAL LEVEL	SENSORY MOTOR	SINGLE NEUROLOGICAL LEVEL		COMPLETE OR INCOMPLETE?		ZONE OF PARTIAL PRESERVATION		SENSORY MOTOR		Key Sensory Points			
The most caudal segment with normal function	R C5 L C5	C5		C		NA NA		NA NA		C2 C3 C4 C5 C6 C7 C8 T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 T11 T12 L1 L2 L3 L4 L5 S1 S2 S3 S4-5			

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Source: American Spinal Injury Association



# Facts and statistics

**296,000**

estimated spinal cord injury individuals in U.S.  
(54 cases per 1M people)

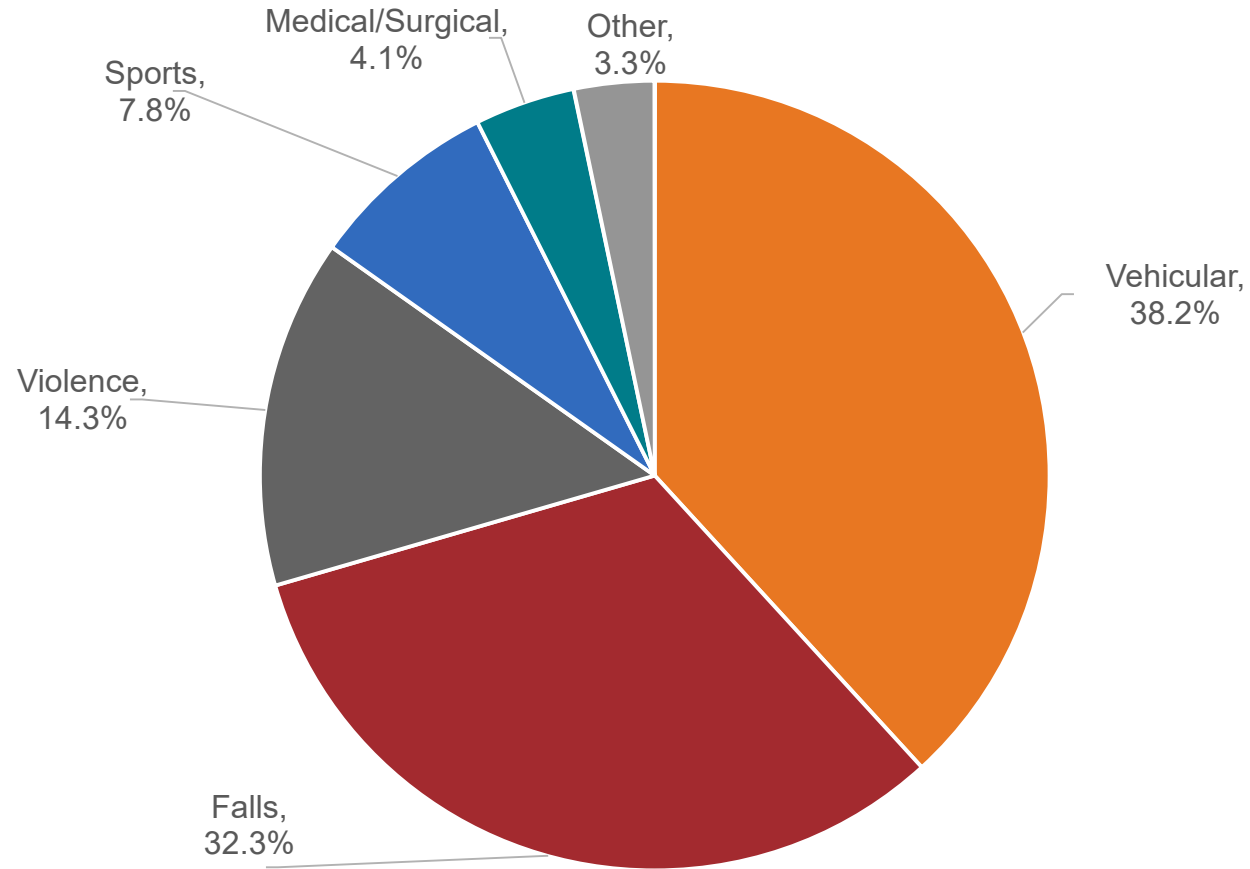
**17,900**

new spinal cord injuries reported yearly

**43**

average age at injury

# Causes of spinal cord injuries (since 2015)



Source: National SCI Statistical Center - 2021

# Demographics

		<1980s	Since 2015
<b>AVERAGE AGE</b>		28.7 years	43 years
<b>GENDER</b>	Males	81.8%	78%
	Females	18.2%	22%
<b>RACE/ ETHNICITY</b>	Caucasian	76.8%	58.1%
	African American	14.2%	24.2%
	Hispanic	6.0%	13.3%
	Asian	0.9%	2.5%
	Native American		0.5%
	Other	2.1%	1.4%
<b>MARITAL STATUS</b>		N/A	44.3% Single

Source: National SCI Statistical Center – 2021



# Average yearly expenses

The average yearly expenses (health care costs and living expenses) and the estimated lifetime costs that are directly attributable to SCI vary greatly based on education, neurological impairment, and pre-injury employment history.

<b>Severity of Injury</b>	<b>First Year after SCI</b>	<b>Each Subsequent Year</b>
High Tetraplegia (C1-4)	\$1,163,425	\$202,032
Low Tetraplegia (C5-8)	\$840,676	\$123,938
Paraplegia	\$567,011	\$75,112
Incomplete Motor	\$379,698	\$46,119

Source: National SCI Statistical Center - 2021

# Estimated lifetime costs by age at injury

Severity of Injury	25 years old	50 years old
High Tetraplegia (C1-4)	\$5,162,152	\$2,837,031
Low Tetraplegia (C5-8)	\$3,771,791	\$2,319,988
Paraplegia	\$2,524,270	\$1,656,602
Incomplete Motor	\$1,724,594	\$1,217,266

Source: National SCI Statistical Center - 2015

# Acute hospitalization

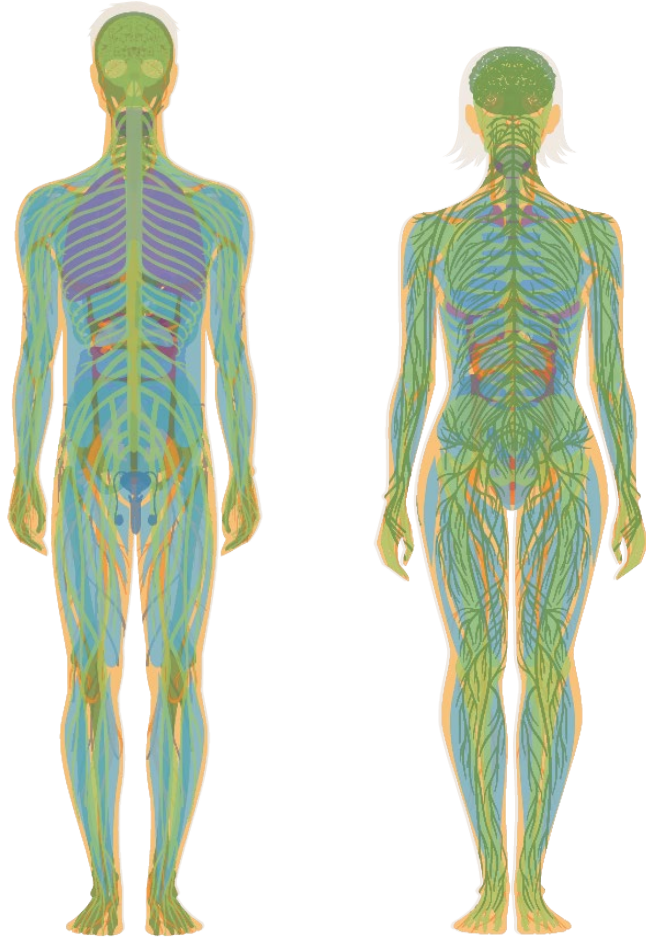
- Spinal stabilization
  - Surgery
  - Bracing
- Cardiopulmonary support
- Pain management
- Nutrition
- Length of stay
- Complication prevention

Year	Length of Stay – Acute-care Facilities
1975	24 Days
2005	15 Days
2009	12 Days
2020	11 Days



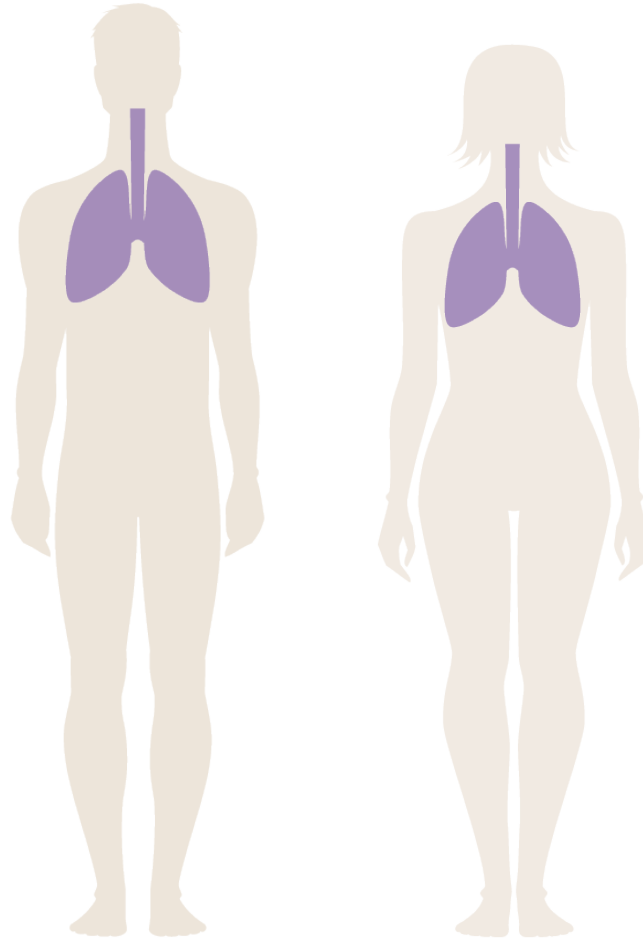
## **Impact on the body systems**

# Spinal cord injuries can affect every major body system



# Respiratory system

- Respiratory failure
  - Mechanical ventilation
  - Tracheostomy
  - Diaphragm weakness
  - Diaphragmatic pacemaker
- Atelectasis
- Pneumonia
- Pulmonary care
  - Insufflator-exsufflator
  - Compression vest
- DVT/pulmonary embolism

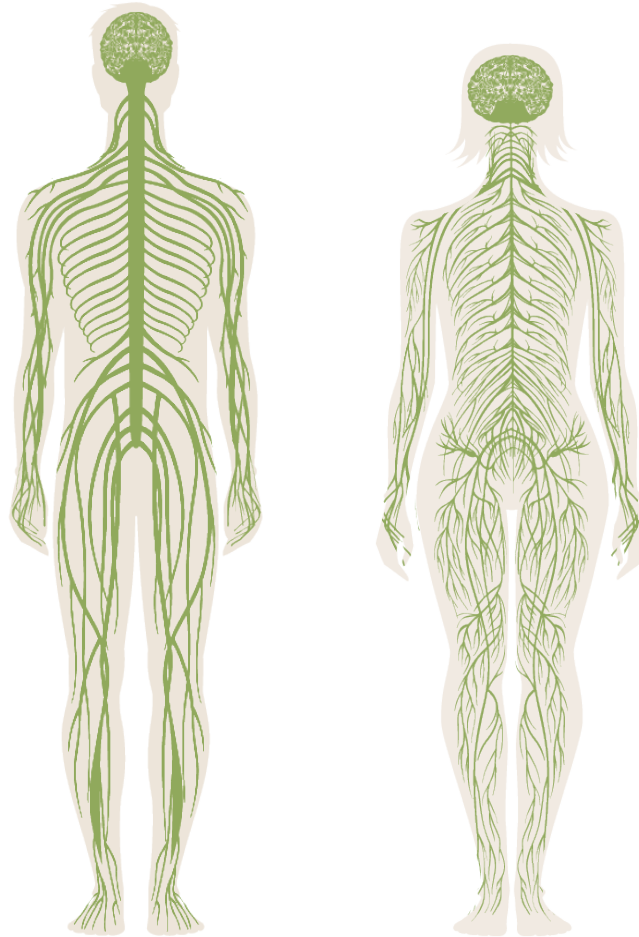


## What to watch for...

- Ventilator and supplies
- Early signs of pneumonia
- Blood thinners

# Nervous system

- Weakness
- Pain
  - Spinal cord injury
  - Orthopedic trauma
  - Visceral pathology
    - Cholecystitis
    - Bladder infection
    - Bowel impaction
- Psychological impact
  - Depression/anxiety
  - Sleeping disorders

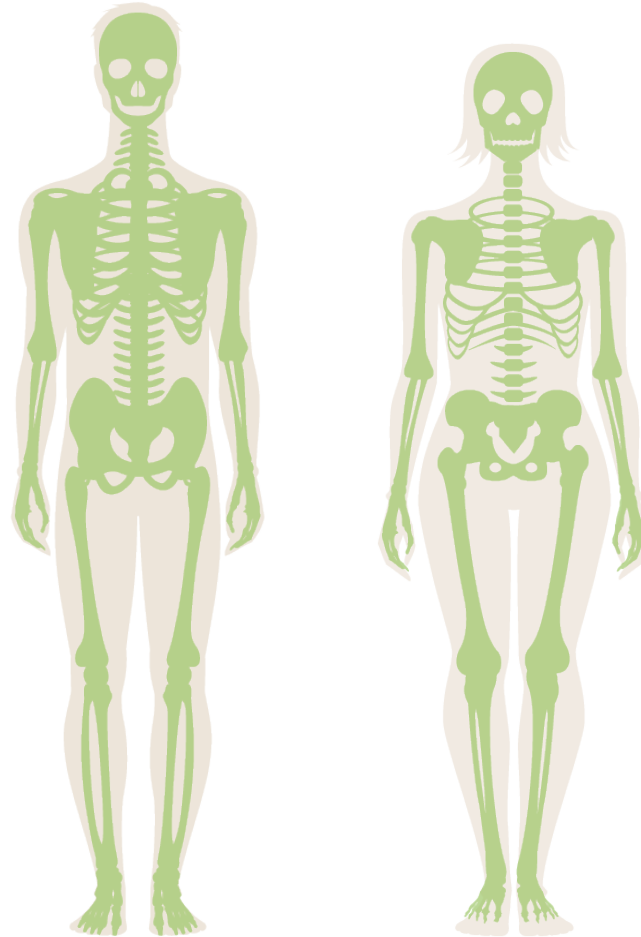


## What to watch for...

- Opioids and other pain medications
- Behavioral health concerns
- Post-traumatic stress disorder (PTSD)

# Skeletal system

- Heterotopic ossification
- Osteoporosis
- Fractures



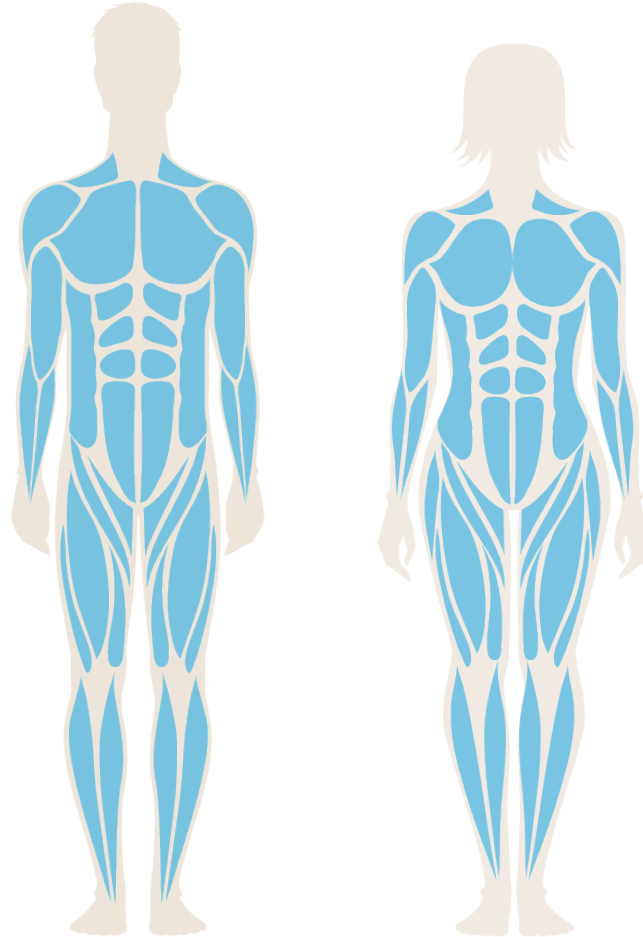
## What to watch for...

- PT and/or OT for range of motion
- Fall prevention



# Muscular system

- Spasticity
  - Range of motion/stretching
  - Muscle relaxants
- Contractures
- Atrophy
- Debility/deconditioning
- Overuse injuries
  - Rotator cuff syndrome
  - Tennis elbow
  - Carpal tunnel syndrome

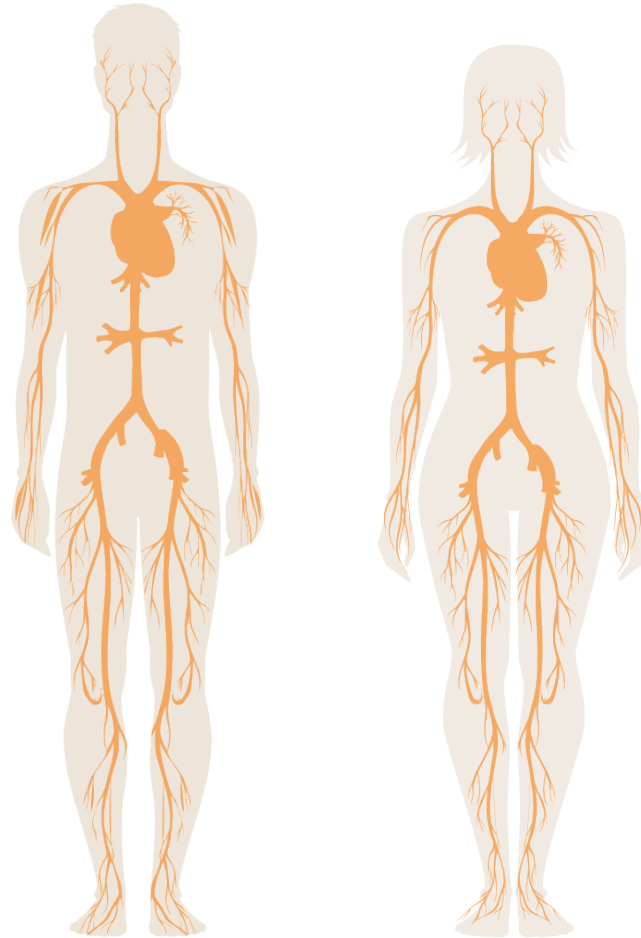


## What to watch for...

- Botulinum toxin injections
- Intrathecal baclofen pump
- PT/OT for range of motion
- Wheelchair ergonomics

# Cardiovascular system

- Bradycardia (pacemaker)
- Autonomic dysreflexia
- Orthostatic/postural hypotension
- Impaired thermal regulation
- Dependent edema
- Increased risk of heart disease
  - Elevated cholesterol
  - Decreased HDL
  - Increased blood glucose levels

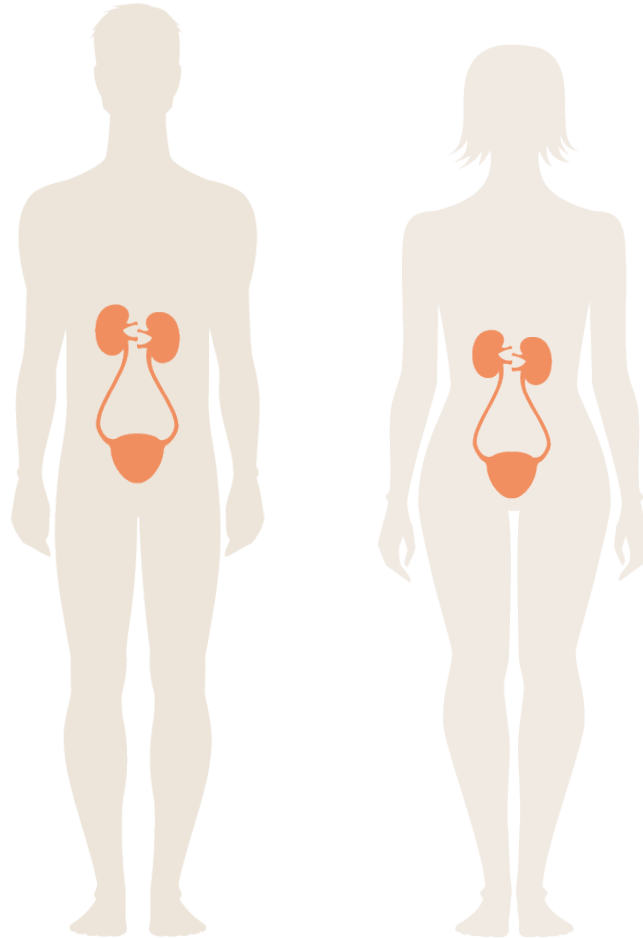


## What to watch for...

- Slow heart rate
- Episodic high blood pressure
- Leg swelling
- Risk factors for heart disease

# Urinary system

- Neurogenic bladder
  - Intermittent catheterization
  - Foley catheter
  - Suprapubic catheter
- Urinary tract infections
- Urolithiasis

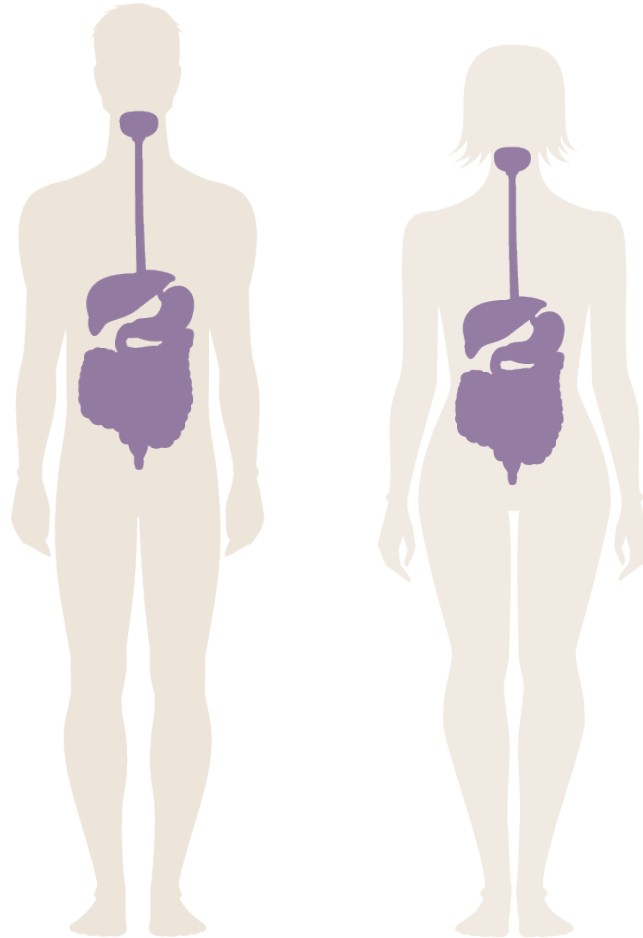


## What to watch for...

- Catheters and other bladder supplies
- Assistance needed with bladder care

# Digestive system

- Dysphagia
  - Modified diet
  - Swallowing precautions and techniques
  - Feeding tube
- Neurogenic bowel
  - Constipation
  - Stool softeners, laxatives, suppository
  - Bowel program
  - Assistance needed

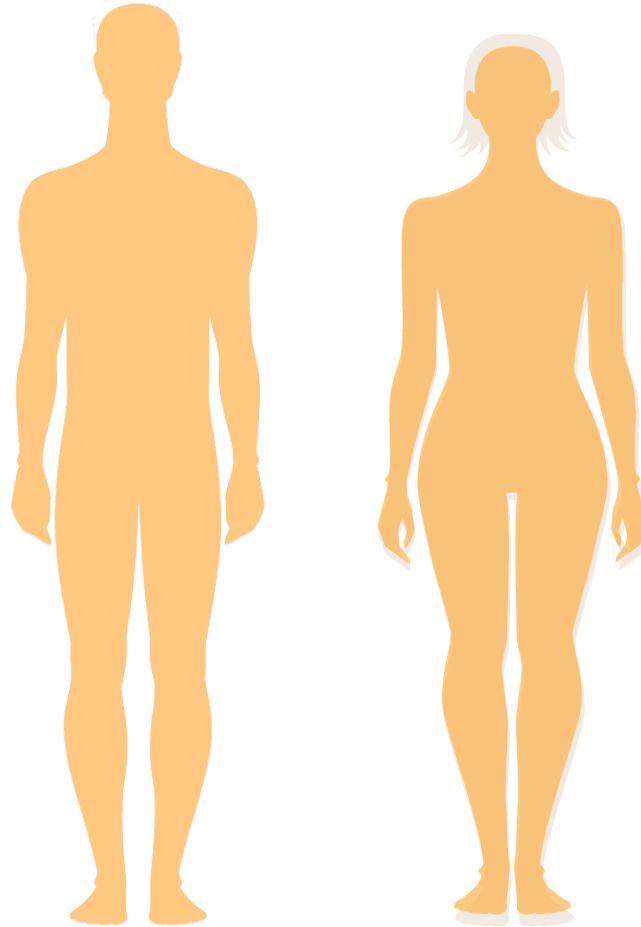


## What to watch for...

- Feeding tube supplies
- Bowel supplies
- Assistance needed with bladder care

# Integumentary system

- Skin fragility
- Pressure wounds
  - Staging
  - Treatment
  - Prevention

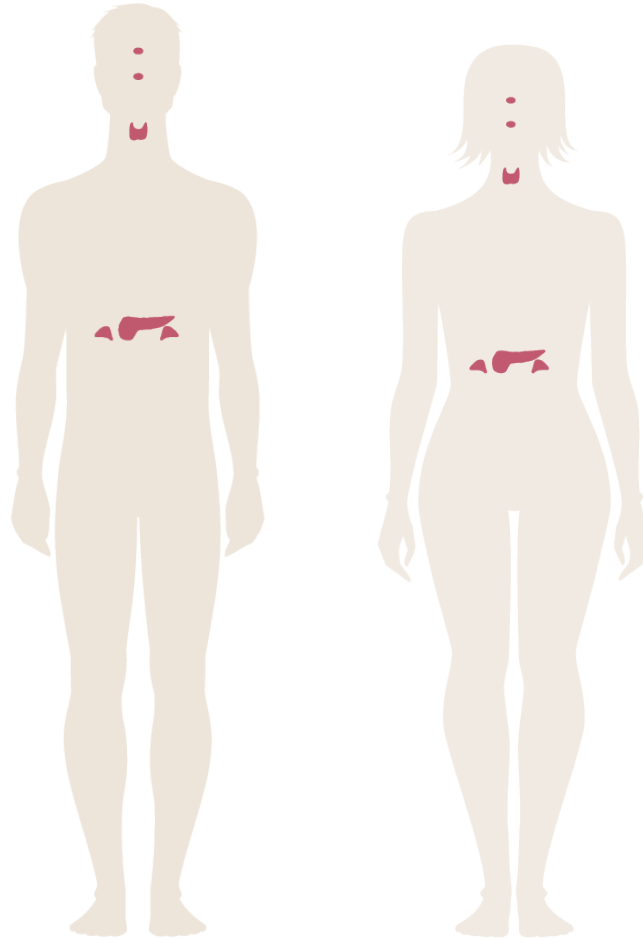


## What to watch for...

- Wheelchair cushion
- Pressure relieving mattress
- Tilt-in-space wheelchair
- Lift systems
- Assistance with repositioning

# Endocrine system

- Insulin resistance
  - Diabetes mellitus
  - Metabolic syndrome

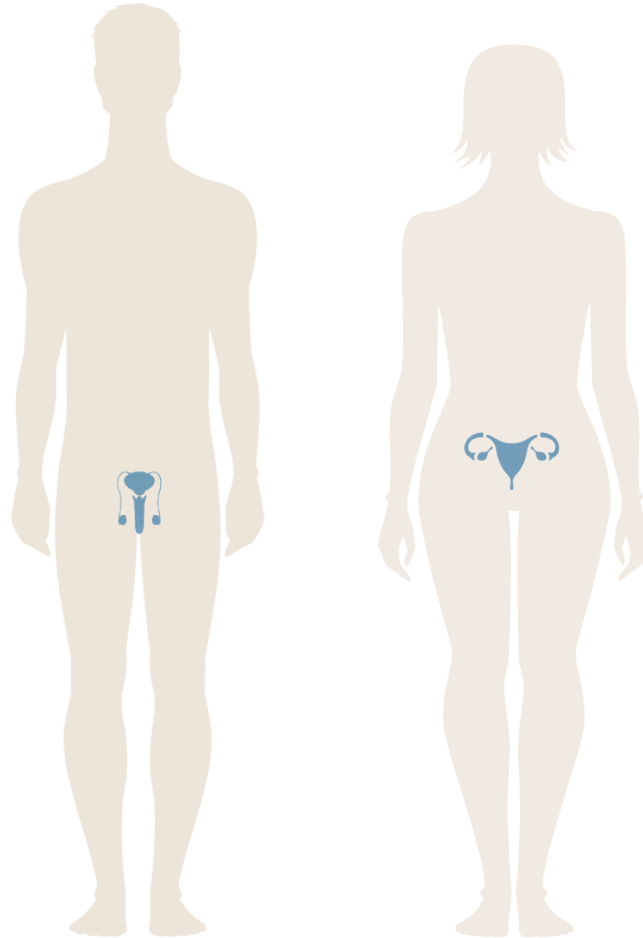


## What to watch for...

- High blood glucose levels
- Diabetic supplies and medications

# Reproductive system

- Sexual dysfunction
- Men
  - Erectile dysfunction
  - Fertility
- Women
  - Temporary amenorrhea
  - Water soluble lubricants
  - Fertility
  - Labor and delivery
- Experienced provider/counselor

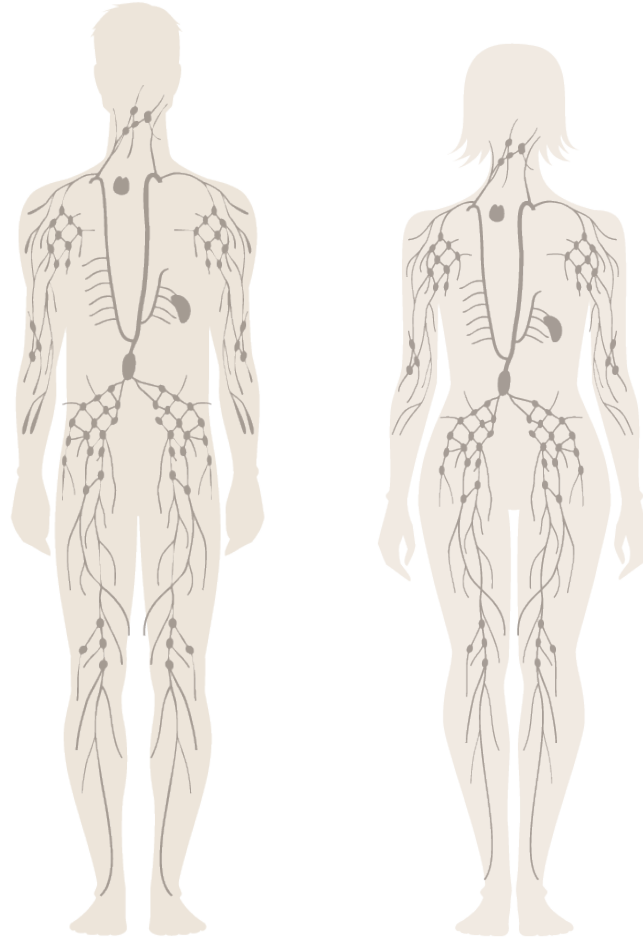


## What to watch for...

- Sexual dysfunction
- Pregnancy

# Immune system

- Chronic inflammation
- Immune system impairment



## What to watch for...

- Vaccinations
- Infection risk





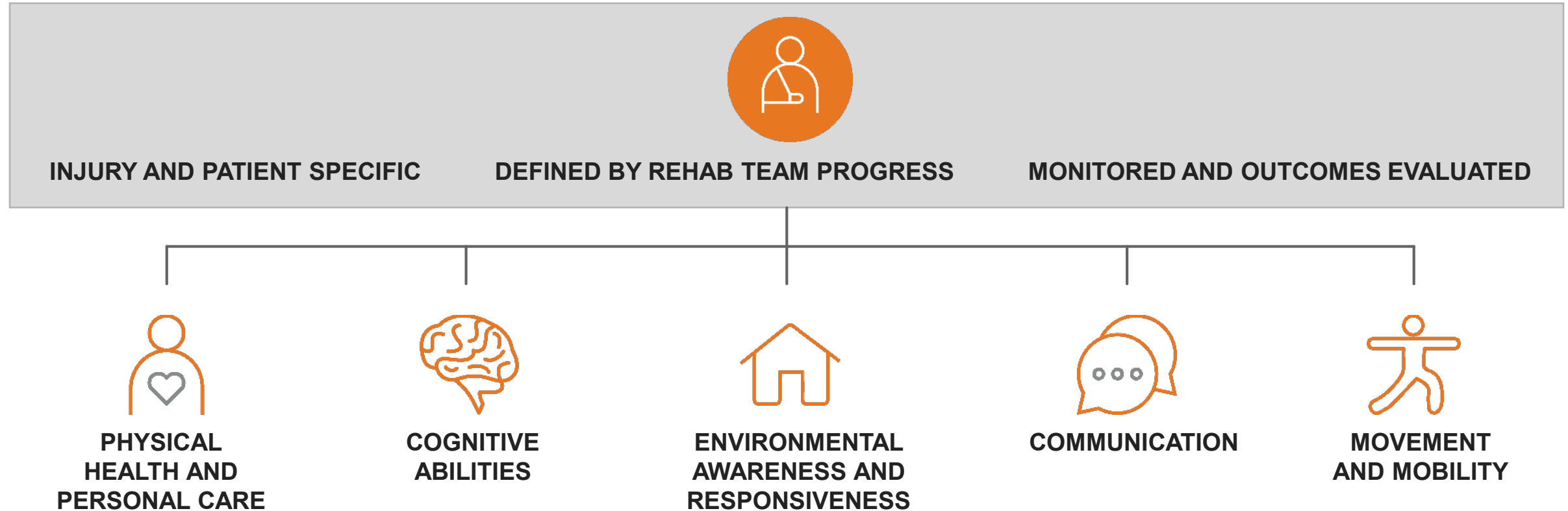
# Rehabilitation

# Acute inpatient rehabilitation

- Interdisciplinary
- Family training
- Direction of care
- Length of stay

Year	Length of Stay – Inpatient Rehabilitation
1975	98 Days
2005	30-60 Days
2009	38 Days
2020	30 Days

# Rehabilitation goals



# Discharge planning

- Family training
  - Medications
  - Nutrition
  - Transportation
  - Rehabilitation to home
  - Community transportation
- Home health
    - Nursing
    - Physical therapy, occupational therapy, ± speech therapy
    - Home health aide
    - Attendant
  - Home modifications
    - Entry
    - Indoors

# Discharge planning

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## MEDICAL SUPPLIES

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- Respiratory
    - Tracheostomy
    - Suction
  - Bowel
  - Bladder
- 

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## DURABLE MEDICAL EQUIPMENT

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- Ventilator (backup system)
  - Specialty bed/mattress
  - Lift system
  - Slide board
  - Assistive devices
  - Wheelchair (power or manual)
  - Bedside commode
-

# Supplies and disposable needs

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## RESPIRATORY

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- Gloves
  - Suction catheters and kits
  - Suction canister
  - Trach kits
  - Tubing
  - Ventilators
  - Back-up generators
- 

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## BOWEL

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- Inspection mirror
  - Moisture barrier cream
  - Suppository inserter
  - Skin cleanser
  - Gloves
  - Wet wipes/dry wipes
  - Pads/diapers
  - Ostomy supplies
- 

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## BLADDER

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- Inspection mirror
  - Pads/briefs
  - Cleansing aids
  - Catheters
  - Insertion kits
  - Drain bags/tubing
  - Straps
  - Lubricants
-

# Supplies and disposable needs

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## HYGIENE

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- Hand-held shower
- Shampoo tray
- Toothbrush
- Skin care products
- Adaptive brushes/combs

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## ACTIVITIES OF DAILY LIVING (ADL)

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- Dressing stick
- Sock and stocking aid
- Trouser pull
- Universal cuff
- Eating utensils/holder

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## WOUND CARE

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- Gauze, dressings
- Wound cleanser
- Moisture barrier cream
- Compression stockings
- Wound VAC

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## PADDING / POSITIONING

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- Therapeutic mattress
- Mobility device
- Lift equipment
- Egg crate/sheepskin/wedges
- Foot and heel protectors

# Home evaluation and modifications

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## HOUSING

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- Modify an existing home
- Relocate to a modified home
- Design/build a new home

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## HOUSING EVALUATION

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- Identify building codes and permits
- General access
- Mobility
- Entry Areas
- Sleeping
- Bathing/Toileting
- Recreation
- Transportation

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## HOME MODIFICATIONS

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- Two exits recommended
- Install ramps/sidewalks
- Modify walks and driveways
- Install lift/elevator/stair
- Widen doorways/halls
- Remove thresholds between rooms
- Replace floor coverings
- Renovate kitchen
- Bathroom modification
- Incorporate Environmental Control Unit (ECU)



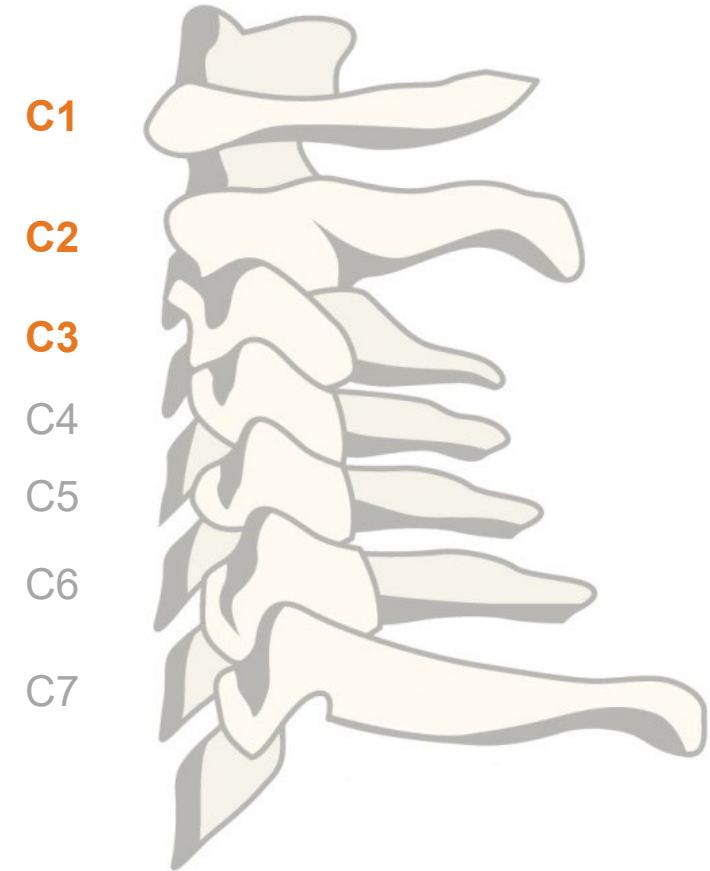
# Functional abilities based on level of injury

<b>C1 – 4</b>	Power wheelchair use with chin or “sip and puff” controls
<b>C5</b>	Feeding and grooming
<b>C6</b>	Transfer from bed and chair with slide board
<b>C7</b>	Manual wheelchair use in the community (not curbs)
<b>C8</b>	Typing, writing, using computers

# Common medical equipment needs by level of injury

## C1-C3

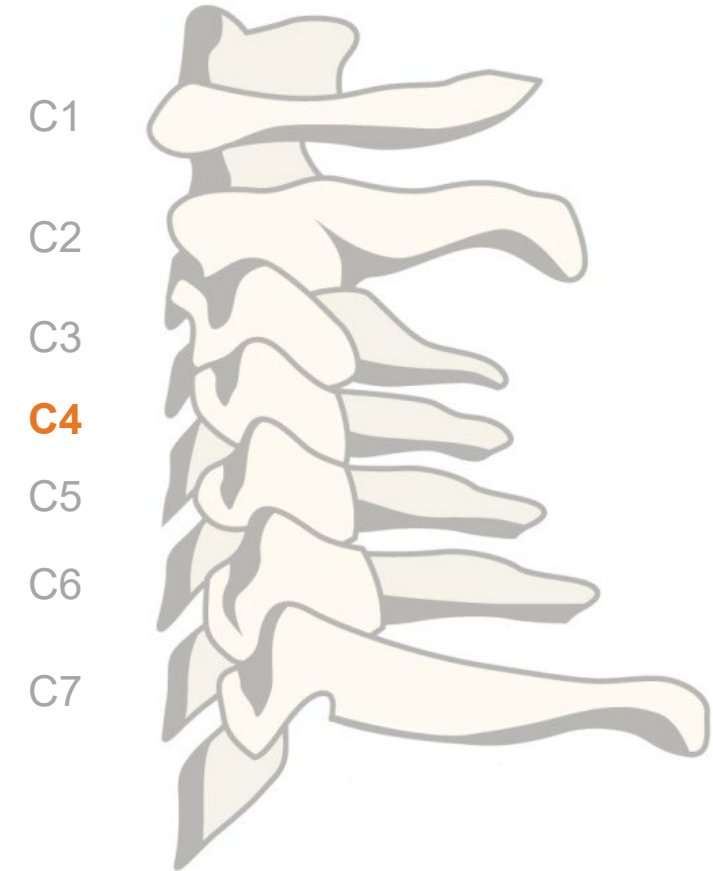
<b>Wheelchair</b>	Power recline/tilt wheelchair with head, chin, or breath control, manual recliner, vent tray, pressure relief cushion, postural support and head control devices as indicated
<b>Bed</b>	Full electric hospital bed with specialty mattress, power or mechanical lift with sling, transfer board
<b>Toilet/Tub/ Shower</b>	Padded/reclining shower/commode chair (if roll in shower available); handheld shower
<b>Respiratory</b>	Two ventilators with accessories, compressor, CPAP/BiPAP, pulse oximeter, humidifier, liquid O <sub>2</sub> , suction machine, nebulizer, incentive spirometer, generator
<b>Other</b>	Mouth stick, ECU, blood pressure cuff (BCU), thermometer, generator



# Common medical equipment needs by level of injury

## C4

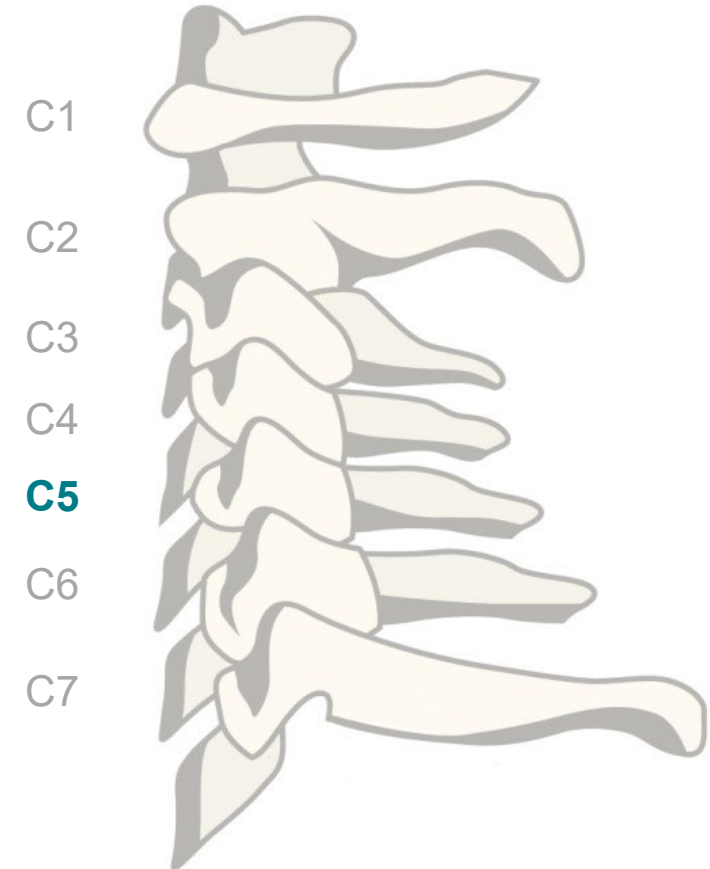
<b>Wheelchair</b>	Power recline/tilt wheelchair with head, chin, or breath control, manual recliner, vent tray, pressure relief cushion, postural support and head control devices as indicated
<b>Bed</b>	Full electric hospital bed with specialty mattress, power or mechanical lift with sling, transfer board
<b>Toilet/Tub/ Shower</b>	Padded/reclining shower/commode chair (if roll in shower available); handheld shower
<b>Other</b>	Two ventilators with accessories (if not ventilator free), mouth stick, ECU, Generator



# Common medical equipment needs by level of injury

## C5

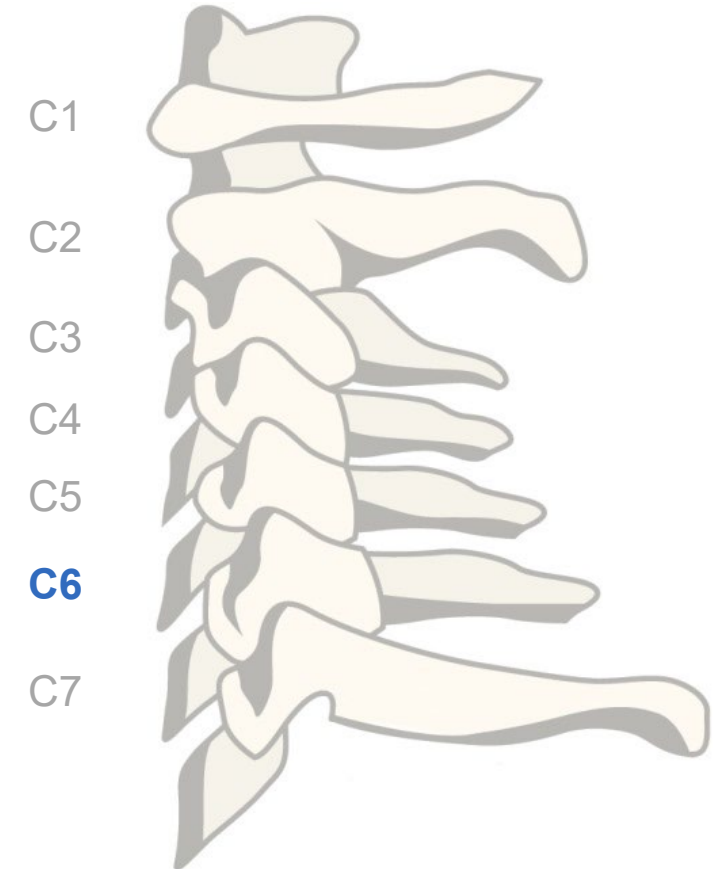
<b>Wheelchair</b>	Patient needs driven. Power recline/tilt wheelchair with arm drive control, lightweight manual wheelchair with hand rim modifications, pressure relief cushion, postural support and head control devices as indicated
<b>Bed</b>	Full electric hospital bed (patient specific at this level of injury) with specialty mattress; power or mechanical lift with sling; transfer board
<b>Toilet/Tub/ Shower</b>	Padded/reclining shower/commode chair (if roll in shower available); or padded transfer tub bench with commode cutout; handheld shower
<b>Other</b>	Adaptive devices as indicated; hydraulic standing frame



# Common medical equipment needs by level of injury

## C6

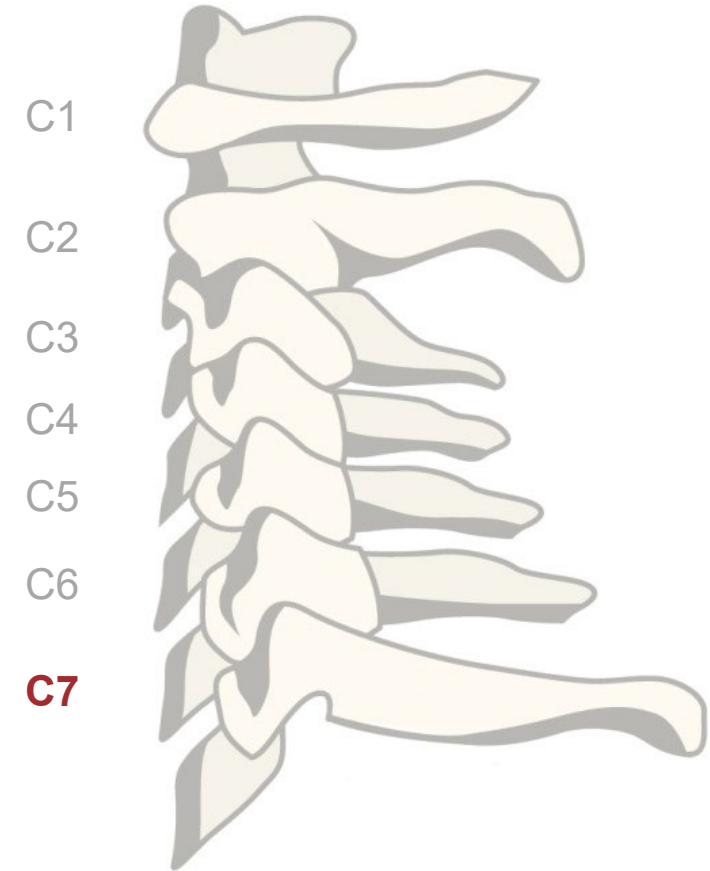
<b>Wheelchair</b>	Lightweight manual wheelchair (rigid or folding) with hand rim modifications, power recline or standard upright power wheelchair, pressure relief cushion, postural support and head control devices as indicated
<b>Bed</b>	Hospital bed (electric or standard) with specialty mattress; power or mechanical lift with sling; transfer board
<b>Toilet/Tub/ Shower</b>	Padded tub bench with commode cutout or padded shower/commode chair; handheld shower
<b>Other</b>	Adaptive devices as indicated; hydraulic standing frame



# Common medical equipment needs by level of injury

## C7

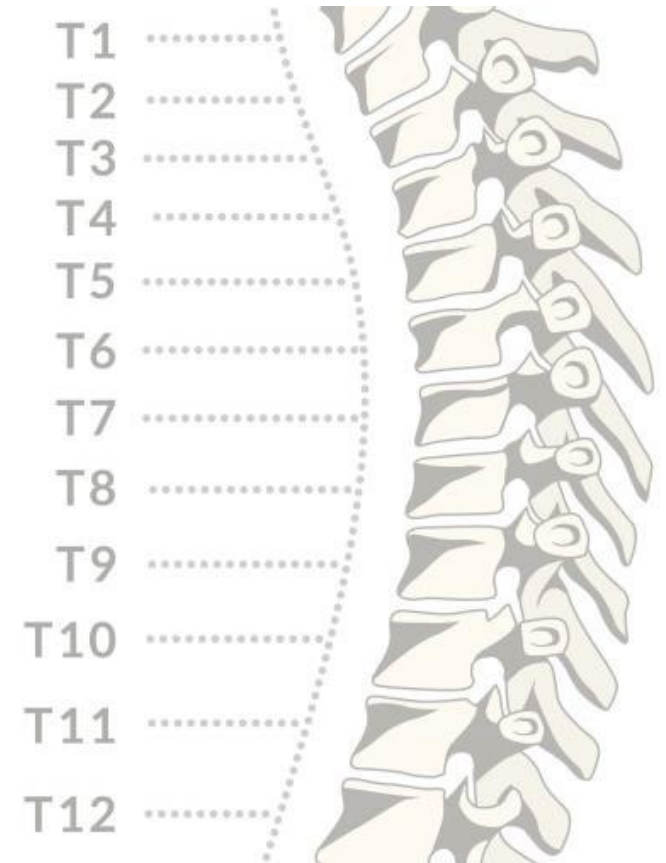
<b>Wheelchair</b>	Lightweight manual wheelchair (rigid or folding) with hand rim modifications; pressure relief cushion; postural support and head control devices as indicated
<b>Bed</b>	Hospital bed (electric or standard) with specialty mattress or overlay; transfer board
<b>Toilet/Tub/ Shower</b>	Padded tub bench with commode cutout or padded shower/commode chair, handheld shower
<b>Other</b>	Adaptive devices as indicated; hydraulic or standard standing frame



# Common medical equipment needs by level of injury

## THORACIC VERTEBRAE

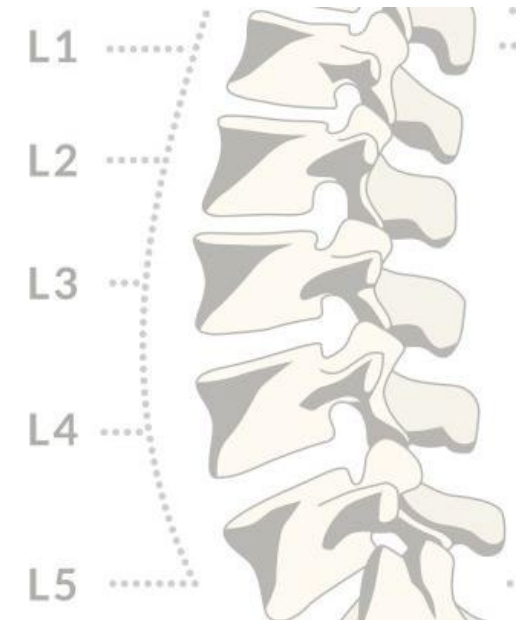
<b>Wheelchair</b>	Patient needs driven. Power recline/tilt wheelchair with arm drive control, lightweight manual wheelchair with hand rim modifications, pressure relief cushion, postural support and head control devices as indicated
<b>Bed</b>	Full electric hospital bed (patient specific at this level of injury) with specialty mattress; power or mechanical lift with sling; transfer board
<b>Toilet/Tub/ Shower</b>	Padded/reclining shower/commode chair (if roll in shower available); or padded transfer tub bench with commode cutout; handheld shower
<b>Other</b>	Adaptive devices as indicated; hydraulic standing frame



# Common medical equipment needs by level of injury

## LUMBAR VERTEBRAE

<b>Wheelchair</b>	Patient needs driven. Power recline/tilt wheelchair with arm drive control, lightweight manual wheelchair with hand rim modifications, pressure relief cushion, postural support and head control devices as indicated
<b>Bed</b>	Full electric hospital bed (patient specific at this level of injury) with specialty mattress; power or mechanical lift with sling; transfer board
<b>Toilet/Tub/ Shower</b>	Padded/reclining shower/commode chair (if roll in shower available); or padded transfer tub bench with commode cutout; handheld shower
<b>Other</b>	Adaptive devices as indicated; hydraulic standing frame





# Potential DME replacement frequencies

## WHEELCHAIR TYPE / PARTS

Power wheelchair with tilt, cushion, etc.	5 to 7 years
Power wheelchair maintenance	Annually
Power wheelchair batteries (2)	Annually
Manual wheelchair (back-up wheelchair)	5 years
Maintenance	Annually
Cushions	1 to 2 years
Wheelchair belts	2 years
Back pack	2 years
Sip and puff	Annually
Wheelchair accessories (armrests, foot plates, gloves, etc.)	2 to 3 years

# Potential DME replacement frequencies

## HYGIENE EQUIPMENT

Shower chair	5 to 7 years
3-in-1 commode	5 years

## RESPIRATORY EQUIPMENT

Ventilator	5 to 7 years
Oxygen concentrator	5 years
Ambu bag	3 to 5 years
Ventilator maintenance	Annually
Battery charger for the wheelchair	2 years
Cigarette lighter adapter for ventilator	2 years
Suction machine	3 to 5 years
Portable suction machine with battery	5 years
Carrying case-portable suction machine	1 to 2 years
Nebulizer	3 to 5 years

# Potential DME replacement frequencies

## SUPPORT SURFACES

Electric hospital bed	10 years
Low-air loss mattresses	5 to 7 years

## OTHER

Ramps	10 years
Lift equipment	5 years
Slings for lift equipment	Annually
Van with modifications	7 years
Stethoscope and BP cuff	5 years
Pulse oximeter	3 to 5 years
IV pole	10 years

# Community reentry

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## COMMUNITY REENTRY

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- Support groups
  - Driving
    - Vehicle modifications
    - Return to driving programs
    - Transport vans
  - Vocational activities
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## RESEARCH AND DEVELOPMENT

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- Medical
  - Functional
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## PROGNOSIS

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- Strength
  - Bowel and bladder function
  - Aging
  - “Will I ever walk again?”
  - The new normal
-

# Summary

- Spinal cord injuries can negatively impact many of the body's systems.
- Prevention of SCI complications is critical for patient care and claim management.
- Planning for continued medical care, DME, and spinal cord injury-related supplies can help with setting reserves and future cost avoidance.

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### **About Optum Worker's Comp and Auto No-fault Solutions**

Optum Workers' Comp and Auto No-Fault Solutions collaborates with clients to lower costs while improving health outcomes for the injured persons we serve. Our comprehensive pharmacy, ancillary, medical services, and settlement solutions, combine data, analytics, and extensive clinical expertise with innovative technology to ensure injured persons receive safe, appropriate and cost-effective care throughout the lifecycle of a claim. For more information, email us at [expectmore@optum.com](mailto:expectmore@optum.com).

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