



Jefferson®

Magee Rehabilitation

Regional Spinal Cord Injury Center of the Delaware Valley

NIDRR-designated

Spinal Cord Injury Manual

A publication of the
Regional Spinal Cord Injury Center
of the Delaware Valley

The Regional Spinal Cord Injury Center of the Delaware Valley provides a comprehensive program of patient care, community education, and research. It is a federally designated program of Thomas Jefferson University and its affiliated institutions of Thomas Jefferson University Hospital and Magee Rehabilitation Hospital.



Spinal Cord Injury Patient-Family Teaching Manual

**A Publication of the
Regional Spinal Cord Injury Center
of the Delaware Valley**

Researched and prepared by the clinical
personnel of Thomas Jefferson University
Hospital and Magee Rehabilitation Hospital

Available online at:

www.spinalcordcenter.org

© 1993, 2001, 2009 Thomas Jefferson University. This publication is the property of Thomas Jefferson University. All rights reserved. This Manual is intended for use in a total system of care that meets all applicable CARF standards for SCI Centers. Neither Thomas Jefferson University Hospital, nor Magee Rehabilitation Hospital is responsible for any liability, claims, demands or damages asserted to be the result, either directly or indirectly, of the information contained herein. The use or reprinting of any part of this manual requires the express permission of Thomas Jefferson University.

Dedication

The Handbook Committee of the RSCICDV gratefully acknowledges the assistance and dedication of all who contributed to this manual, and all the others who worked so hard to make this Handbook a reality.

Lori Bennington, RN
Amy Bratta, PT, DPT, NCS
Sharon Caine, PT
Catharine M. Farnan, RN, MS, CRRN, ONC
Dawn Frederickson, BSN
Karen Fried, RN, MSN, CRRN, CCM
Colleen Johnson, PT, NCS
Nicole Krafchek, PT
Cynthia Kraft-Fine, RN, MSN
Marlene Kutys, MSW
Linda Lantieri, PT, ATP
Frank Lindgren
Mary Grace Mangine, OTR/L
Dina Mastrogiovanni, OTR/L, ATP
Vilma Mazziol, LPC
John Moffa, RT
Mary Patrick, RN (**Editor**)
Evelyn Phillips, MS, RD, LDN, CDE
Marie Protesto, RN
Julie Rece, RN, MSN, CRRN, CWOCN
Katheleen Reidy, PhD
Jessica Rickard, CTRS
Margaret Roos, PT, DPT, MS
Susan Sakers Sammartino, BS
Mary Schmidt Read, PT, DPT, MS (**Editor**)
Patricia Thieringer, CTRS
John Uveges, PhD
Cheryl West, PT, DPT

This publication is supported in part by Thomas Jefferson University, a grant received from the National Institute on Disability and Rehabilitation Research (NIDRR), Office of Special Education and Rehabilitative Services (OSERS), U.S. Department of Education, Washington, D.C. and by the Geoffrey Lance Foundation.

Introduction

About This Manual	1-1
Introduction to the Regional Spinal Cord Injury Center of the Delaware Valley	1-1
System of Care	1-2
Acute SCI Units (NICU or INICU)	1-2
Acute Rehabilitation Unit at TJUH or Ongoing Inpatient Rehabilitation at Magee	1-3
Lifetime Follow-Up System.	1-4
Outpatient Therapy/Day Hospital/Community Re-Entry	1-5
Introduction to the Medical and Treatment Team	1-5
Trauma	1-6
Neurosurgery and Orthopedic Surgery	1-6
Rehabilitation Medicine	1-6
Rehabilitation Nurse	1-7
Physical Therapist	1-7
Occupational Therapist	1-7
Speech-Language Pathologist	1-8
Social Worker / Case Manager	1-8
Psychologist	1-8
Recreational Therapist	1-9
Registered Dietician.	1-9
SCI Project Office	1-9
Selecting a Rehabilitation Center for Spinal Cord Injury.	1-9
Introduction	1-9
Accreditation.	1-10
How Many Patients with SCI Are Treated?	1-10
Provision for Peer Interaction of Patients	1-10
Specialized SCI Rehabilitation Team	1-10
Attending Physician	1-10
Bladder Management.	1-11
Equipment.	1-11
Patient and Family Education	1-11
Sexual Counseling	1-11
Medical Consultation.	1-11
Acute Care Hospital	1-11
Community Integration Services	1-12

Other Services	1-12
Follow-Up	1-12
Glossary	1-13
References	1-14

Spinal Cord Injury

The Spinal Column	2-1
The Spinal Cord	2-2
The Spinal Cord After Injury	2-4
Diagnosing a Spinal Cord Injury	2-5
Complete vs. Incomplete	2-6
Tetraplegia (Quadriplegia) or Paraplegia	2-6
Spinal Surgery	2-8
How Do Muscles and Nerves Work Together?	2-9
Halo Brace	2-10
Dos and Don'ts While in a Halo	2-11
Care of the Halo Brace	2-12
Skin Care	2-12
Care of the Halo Liner	2-13
Cervical Collar	2-13
Clamshell (Body Jacket)	2-14
Dos and Don'ts While in a Clamshell	2-14
Care of the Clamshell	2-15
How to Put On and Remove the Clamshell	2-16
When You Are Not Wearing the Clamshell	2-17
Glossary	2-18
References	2-20

Bladder

Introduction	3-1
The Purpose and Parts of the Urinary System	3-1
The Process of Urination: What Usually Happens	3-3
Changes That Occur in Your Urinary System	
After a Spinal Cord Injury	3-3
What Happens Immediately After Injury	3-4
Spinal Shock Bladder Dysfunction	3-4

Areflexic / Flaccid Neurogenic Bladder	3-4
Reflex / Spastic Neurogenic Bladder	3-4
Bladder Sphincter Dyssynergia.	3-5
What a Bladder Management Program Is and What It Will Do for You	3-5
Bladder Testing	3-6
Urinalysis	3-6
Urine Culture and Sensitivity	3-6
BUN (Blood Urea Nitrogen) and Creatinine	3-6
24-Hour Urine for Creatinine Clearance.	3-7
Cystometrogram (Urodynamics)	3-7
Cystoscopy.	3-7
KUB (Kidney, Ureter, Bladder) X-rays	3-7
Cystogram	3-8
Renal Scan and Ultrasound.	3-8
Bladder Retraining	3-8
Different Types of Bladder Management Programs	3-9
Intermittent Catheterization (IC) Program.	3-9
Getting Started	3-10
Reflexive Bladder Techniques.	3-12
Bladder Stimulation.	3-12
Autonomic Dysreflexia / Hyperreflexia	3-13
Indwelling Foley Catheter	3-13
Male Intermittent Catheterization Procedure.	3-14
Purpose	3-14
Equipment You Will Need.	3-14
Directions	3-14
Female Intermittent Catheterization Procedure.	3-16
Purpose	3-16
Equipment You Will Need.	3-16
Directions	3-16
Clean Technique for Intermittent Catheterization Program	3-18
Purpose	3-18
Equipment You Will Need.	3-18
Directions	3-19
Male External Collecting Devices	3-20
Sheaths	3-20
Securing Tapes and Fasteners	3-20

Guidelines for Applying External Sheaths.....	3-20
Reasons for a Foley Catheter.....	3-21
Females.....	3-21
Males and Females.....	3-21
Insertion of the Foley Catheter.....	3-22
Procedure for Males.....	3-22
Purpose.....	3-22
Equipment You Will Need.....	3-22
Directions.....	3-22
Insertion of Foley Catheter.....	3-25
Procedure For Females.....	3-25
Purpose.....	3-25
Equipment You Will Need.....	3-25
Directions.....	3-26
Latex Allergy.....	3-29
What It Is.....	3-29
What to Do.....	3-30
Surgical Procedures.....	3-31
Suprapubic Catheter.....	3-31
Sphincter Releases (Males Only).....	3-31
Urinary Diversions.....	3-31
Bladder Augmentation.....	3-32
Factors That Help with Successful Bladder Management.....	3-32
The Correct Amount of Fluid Intake.....	3-32
An Adequate Diet.....	3-32
Physical Activity.....	3-32
Medications.....	3-33
A Lifetime Commitment to Health.....	3-33
The Confidence Program.....	3-33
Potential Bladder Complications.....	3-34
Medications Commonly Used in Bladder Management.....	3-41
If You Have An Indwelling Catheter (Foley).....	3-42
Further Precautions And Recommendations:.....	3-42
Glossary.....	3-43
References.....	3-45

Bowel

Introduction	4-1
Anatomy.....	4-1
What Is the Bowel, and What Does It Do?	4-1
Types of Neurogenic Bowel with Spinal Cord Injury	4-2
What Is a Bowel Program?	4-2
Tips to Effectively Manage a Bowel Program	4-3
Positioning	4-3
Proper Diet / Fluids.....	4-3
Timing	4-3
Digital Rectal Stimulation.....	4-3
Time of Your Bowel Routine.....	4-4
Placing the Suppository.....	4-4
Medications.....	4-5
Conclusion.....	4-6
Complications of Bowels Associated with SCI.....	4-7
Medications for Bowel Program	4-10
Glossary	4-12
References	4-13

Respiratory

Introduction	5-1
Normal	5-1
Respiratory Complications	5-2
Potential Respiratory Complications	5-3
Prevention of Complications	5-4
Coughing.....	5-4
Breathing Exercise.....	5-4
Mobility	5-4
Fluid Intake.....	5-4
Moisture Humidity.....	5-5
Health	5-5
Pulmonary Care	5-5
Chest Physiotherapy – (CPT) (Clapping)	5-5
Postural Drainage.....	5-7
Quad Assist Cough.....	5-8

Deep Breathing with Incentive Spirometer	5-8
Deep Breathing without Incentive Spirometer.	5-9
Cough Assist Machine	5-9
The Vest Airway Clearance System	5-9
Glossary	5-11
References	5-12

Respiratory Dependent

Introduction	6-1
Artificial Airways	6-1
Mechanical Ventilation	6-1
About Mechanical Ventilators	6-2
Portable Ventilators	6-2
Operation of the Ventilator	6-3
Alarms	6-4
Weaning from the Ventilator	6-4
Monitoring the Weaning Process	6-5
Postural Drainage and Chest Physical Therapy	6-5
Assistive Cough	6-6
Manual Resuscitator	6-6
Electrophrenic Pacing	6-6
Surgery	6-7
Limitations on Electrophrenic Pacing	6-8
Medications	6-8
Medications for Respiratory Program	6-9
Glossary	6-10
References	6-12

Skin

Introduction to Skin Function.	7-1
Changes in Skin Function After Spinal Cord Injury	7-1
Anatomy of Skin	7-1
Keeping Your Skin Healthy	7-2
Cleanliness	7-2
Turning and Positioning in Bed	7-3
Skin Inspection	7-3

Hydration (Fluid Intake)	7-4
Nutrition	7-4
Sun Exposure	7-5
Equipment.	7-5
Excessive Heat / Cold	7-5
Pressure Relief	7-5
Why Is All This Turning and Moving Necessary?	7-5
Building Up Skin Tolerance for Pressure	7-6
How Do You Know If It Is Okay To Increase Sitting Time, or Lengthen the Time You Can Stay in One Position in Bed?	7-6
Pressure Relief Methods	7-6
Turning	7-6
Positioning in Bed	7-7
Susceptible Areas for Pressure Sores	7-9
Pressure Ulcers – Risk Factors.	7-10
How Do Pressure Ulcers Happen?	7-10
Risk Factors for Developing Pressure Ulcers	7-10
What Will a Pressure Ulcer Look Like?	7-11
What To Do When You Notice a Potential Pressure Ulcer.	7-11
Pressure Ulcer Staging System	7-11
Stage I	7-12
Stage II.	7-12
Stage III.	7-12
Stage IV	7-13
Treatment of Pressure Ulcers	7-13
Pressure Ulcers – Susceptible Sites	7-15
Dressings / Skin Products	7-20
Glossary	7-22
References	7-23

Cardiovascular

Introduction	8-1
Description of the Cardiovascular System	8-1
Identification of Normal Regulation of the Cardiovascular System	8-1
Description of Cardiovascular Compromise Experienced by People with Spinal Cord Impairment	8-2
Glossary	8-6

References 8-7

Nutrition

Introduction — Why Nutrition Matters 9-1

Ideal Body Weight in SCI 9-1

Nutritional Needs in Spinal Cord Injury 9-2

 Dietary Guidelines for Individuals with SCI 9-2

 Basic Review of Digestion 9-3

Food Groups 9-4

 Meat, Fish and Poultry Group 9-4

 Fruit and Vegetable Group 9-5

 Milk or Dairy Group 9-5

 Bread / Cereal Group 9-6

 Fat Group 9-6

Special Highlights 9-7

 Protein 9-7

 High Protein / Low Fat Foods 9-7

Fiber 9-7

 What Is Fiber? 9-7

 Why Is Fiber Good for You? 9-8

 What Foods Contain Fiber? 9-8

 How to Add Fiber to Your Diet 9-9

 Supplements 9-9

Fluids 9-9

 Caffeine-Free Beverage Choices 9-10

 Remember 9-10

Nutrition Screening and Consultations 9-11

 Nutrition Screening 9-11

 Nutrition Assessments 9-11

 Diet Orders 9-12

 Nutrition Monitoring 9-12

 Staff Consultation 9-12

Glossary 9-13

References 9-15

Activities of Daily Living

Introduction	10-1
Upper-Body Dressing Techniques for Persons with Paraplegia	10-1
Lower-Body Dressing for Persons with Paraplegia.....	10-2
Pants	10-2
Introduction to Bathing Techniques for Individuals with Paraplegia .	10-3
Introduction to Dressing Training	10-4
Types of Clothing Recommended.....	10-4
Lower-Body Dressing Techniques for Persons with Tetraplegia.....	10-5
Method One	10-5
Method Two	10-8
Introduction to Bathing Techniques for Persons with Tetraplegia....	10-8
Upper-Body Dressing Techniques for Persons with Tetraplegia	10-9
Method One	10-9
Method Two	10-10
Method Three	10-10
Glossary	10-11
References	10-12

Equipment

Introduction	11-1
How Equipment Is Ordered and Financial Aspects of Equipment.....	11-1
About Your Equipment	11-2
Instructions for Wearing Splints / Casts	11-3
Purpose	11-3
Precautions	11-3
Check for Pressure Areas.....	11-3
Cleaning of Splints	11-4
Instructions for Wearing the Dorsal Wrist Splint.....	11-4
Purpose of the Splint	11-4
Application of the Splint	11-5
Wearing Schedule.....	11-5
How to Check for Pressure Areas	11-5
Instructions for Wearing Elbow Extension Splints.....	11-5
Purpose of the Splint / Cast	11-5
Application of the Splint / Cast.....	11-6

Wearing Schedule.	11-6
Wrist-Driven Flexor Hinge Splints.	11-6
Purpose of Splints	11-6
Identification of Parts	11-7
Wearing the Splint	11-7
To Remove Splint.	11-7
Adjusting the Tenodesis Bar	11-7
Skin Precautions	11-8
Maintenance	11-8
Instructions for Overhead Suspension Arm Slings.	11-8
Purpose of Slings	11-8
Identification of Parts	11-8
Set Up of Sling	11-9
Adjustments	11-10
Instructions for Mobile Arm Supports (MAS).	11-10
Purpose of MAS	11-10
Identification of Parts	11-10
Set Up of Mobile Arm Support	11-11
Adjustments	11-11
Metal Short Leg Brace (Ankle Foot Orthosis)	11-12
Care of Skin.	11-12
Fit and Alignment	11-12
Cleaning.	11-12
Maintenance	11-13
Other	11-13
Plastic MAFO (Molded Ankle / Foot Orthosis).	11-13
Care of Skin.	11-13
Fit and Alignment	11-14
Cleaning.	11-14
Maintenance	11-14
Other	11-15
Scott-Craig Braces	11-15
Care of Skin.	11-15
Alignment	11-16
Importance of Range of Motion (ROM) for Proper Fit of Braces	11-16
Cleaning.	11-16
Maintenance	11-17
Other	11-17

Mouthsticks11-18
 Docking Systems 11-18
 Hygiene / Cleaning (Performed Daily) 11-19
 Types of Mouthsticks 11-19
 Electronic Aids to Daily Living 11-20
 Wheelchair Cushions 11-20
 General Care and Maintenance Tips 11-21
 Seat Boards 11-21
 About Your Wheelchair11-22
 Wheelchair 11-22
 Cushion 11-22
 Types of Manual Wheelchairs11-22
 The Care and Maintenance of Your Manual Wheelchair11-23
 Cleaning 11-23
 Equipment Needed 11-23
 Cleaning the Chair (Chrome and Upholstery) 11-24
 Minor Repairs and Adjustments11-24
 Wheels 11-24
 Footrests 11-26
 Armrests 11-26
 Body Frame 11-26
 Major Repairs 11-27
 Manual Wheelchair Maintenance Checklist 11-28
 Trouble Shooting for Manual Wheelchair11-29
 Power Wheelchairs 11-30
 General Scooter and Power Wheelchair
 Maintenance and Precautions 11-30
 Batteries 11-30
 Charger 11-30
 General Maintenance 11-31
 Maintenance Schedule for Scooters and Power Wheelchairs11-31
 Mechanical Inspection 11-31
 Electronic Inspection 11-31
 Trouble Shooting for Scooters and Power Wheelchairs11-32
 Rules of the Road for Scooters and Power Wheelchairs11-33
 Ramps11-33
 How to Measure for a Ramp 11-33
 Recommendations 11-34

Materials Needed to Construct a Plywood Ramp	11-34
How to Construct a Plywood Ramp	11-35
Chair Lift and Wheelchair Lifts	11-39
Chair Lift	11-39
Wheelchair Lifts	11-39
Bathroom Equipment	11-41
Glossary	11-42
References	11-43

Mobility

Introduction	12-1
Elevation in Bed	12-2
Sitting in the Wheelchair	12-2
Weight Shifts	12-3
Tilt Back Weight Shift	12-3
Lateral Weight Shift	12-4
Modified Lateral Weight Shift	12-4
Push-Up Weight Shift	12-5
Modified Push-Up Weight Shift	12-5
Forward Weight Shift	12-5
Rolling in Bed (See Skin Section for Position Schedules)	12-6
Range of Motion of Upper and Lower Extremities	12-6
Upper-Extremity Passive Range of Motion for People with Tetraplegia Performed in a Sitting Position	12-7
Shoulder Flexion	12-7
Shoulder Abduction	12-7
Shoulder Horizontal Abduction and Adduction	12-8
Shoulder Rotation	12-8
Elbow Flexion and Extension	12-9
Forearm Pronation and Supination	12-9
Wrist and Finger Flexion and Extension	12-10
Thumb Movements	12-10
Upper-Extremity Passive Range of Motion for People with Tetraplegia Performed Lying in Bed	12-11
Shoulder Flexion	12-11
Shoulder Abduction	12-11
Shoulder Horizontal Abduction and Adduction	12-12

Shoulder Rotation	12-12
Elbow Flexion and Extension	12-13
Forearm Supination and Pronation	12-13
Wrist and Finger Flexion and Extension	12-14
Thumb Movements	12-14
Lower-Extremity Self Passive Range of Motion for People With Paraplegia or Low Tetraplegia	12-15
Hip And Knee Flexion	12-15
Hip External Rotation with Abduction	12-15
Hip Internal Rotation and Adduction	12-16
Ankle Dorsiflexion	12-17
Straight Leg Raise	12-18
General Transfer Rules	12-19
Repositioning In Wheelchair	12-21
Purpose of Repositioning	12-21
Lifting the Hips Back to the Chair: Attendant in Front Method	12-21
Lifting Hips Back Into Chair: Attendant Behind Method	12-22
Lifting Hips Back Into Chair: Alternate Attendant Behind Method	12-22
Lifting Hips Back Into Chair: Two-Person Method	12-22
Lift Hips Forward in Chair: Two-Person Method	12-23
Centering Hips in Chair	12-24
Centering Hips in Chair: Alternate Attendant in Front Method	12-24
Assisted Lateral Transfer (With or without Transfer Board)	12-25
Bed-to-Chair Method	12-25
Chair-to-Bed Method	12-26
Assisted Stand-Pivot-Sit Transfer	12-27
When to Use	12-27
Special Considerations	12-27
Assisted Stand-Pivot Transfer	12-28
Transferring from the Wheelchair	12-28
Sitting-to-Supine Transfer	12-29
Method One	12-29
Method Two	12-29
Supine-to-Sitting Transfer	12-30
Method One	12-30
Method Two	12-30
Wheelchair-to-Commode / Toilet Transfer - Side Approach	12-31
Commode / Toilet-to-Wheelchair Transfers - Angled Approach	12-32

Toilet-to-Wheelchair Transfers - Front Approach	12-33
Chair-to-Toilet Method	12-33
Toilet-to-Chair Method	12-33
Tub Transfers	12-34
General Tub Transfer Rules and Comments	12-34
Tub Transfers (With or without Transfer Board)	12-35
Front-On Method	12-35
Side Approach Method	12-37
Stand-Pivot-Sit Assisted Method	12-39
Independent Transfer to / from Bottom of Tub (Side Approach)	12-41
Independent Transfer to / from Bottom of Tub (Front Approach)	12-43
Car Transfers (With or without Transfer Board)	12-45
One-Person Assist Method	12-45
One-Person Assist Method: For Dependent Patient	12-48
Two-Person Assist Method	12-50
Independent Method	12-53
General Floor Transfer Rules for an Assistant	12-54
Helpful Hints	12-55
Wheelchair-to-Floor Transfers (One person assisting)	12-55
Transferring from Wheelchair-to-Floor	12-55
Transferring from Floor-to- Wheelchair (One person)	12-58
Wheelchair-to-Floor Transfer (Two persons assisting)	12-61
Floor-to-Wheelchair Transfers (Two persons assisting)	12-63
Helpful Hints	12-64
Mechanical-Lift Instructions	12-65
Sling Placement (For a Wrap Around Sling)	12-65
Mechanical-Lift Instructions	12-66
Mechanical-Lift Safety Guidelines	12-67
Assisting a Person in a Wheelchair Up and Down Curbs	12-68
Going Up Curbs Forward	12-68
Going Up Curbs Backwards	12-69
Going Down Curbs	12-70
Carrying a Person in a Wheelchair Up and Down Stairs	12-72
Wheelchair on Stairs	12-72
To Go Up Steps	12-72
Wheelies	12-74
Wheelie with Assistance	12-74
Independent Wheelies	12-75

Neuromuscular Electrical Stimulation (NES) Program 12-76
 Benefits of Neuromuscular Electrical Stimulation 12-76
 Tenodesis 12-77
 Avoid the Following 12-77
 Tendon Transfers for Tetraplegia 12-78
 Potential Complications Interfering with Mobility 12-80
 Glossary 12-81
 References 12-83

Psychology

Introduction 13-1
 Coping with a Spinal Cord Injury 13-1
 Psychological and Social Services / Case Management
 Support Services 13-2
 Individual Psychological Counseling 13-2
 Psychological and Neuropsychological Assessment 13-3
 Social Work / Case Management Services 13-3
 SCI Patient Group 13-3
 Women’s SCI Support Group 13-4
 SCI Peer Counselors 13-4
 SCI Resource Group 13-4
 SCI Family CARE (Connections, Assistance, Resources, Education) . . 13-5
 SCI Family Peers 13-5
 Drugs, Alcohol and SCI 13-5
 Alcohol 13-5
 Narcotics 13-6
 Stimulants 13-7
 Hallucinogens 13-7
 Self Evaluation of Drug and Alcohol Use 13-7
 Community Resources 13-8
 Community Resources for Independent Living 13-8
 Glossary 13-10
 References 13-12

Vocational Services

Introduction	14-1
Vocational Consultation.....	14-1
Your Return to Work	14-1
Vocational Counseling	14-1
Work Tolerance	14-2
Vocational Evaluation	14-2
Returning to Your Job	14-2
Seeking a New Job or Career Change.....	14-3
State Vocational Rehabilitation Services	14-3
Placement Services	14-3
Educational Services for High School Students	14-3
Patient Learning Resource Center	14-4
Social Security and Other Benefits	14-4
Social Security Disability (SSDI)	14-4
Supplemental Security Income for the Aged, Blind, Disabled (SSI).....	14-5
Housing and Rental Assistance	14-5
Loans	14-6
State and Federal Laws Affecting People with Disabilities	14-6
Introduction	14-6
Most Important Laws Affecting People with Disabilities	14-7
Conclusion and Resources.....	14-11
Glossary	14-14
References	14-15

Recreational Therapy

Introduction	15-1
What Is Recreational Therapy?.....	15-1
Why Is Recreational Therapy Important?	15-1
Recreational Therapy Treatment As an Inpatient	15-2
Returning Home —Resuming Your Leisure Lifestyle.....	15-3
Specialized Recreational Community Programs And Resources	15-3
The SCI Center’s Community Services.....	15-4
SCI Resource and Support Group	15-4
SCI Peer Consultants	15-4
Family Caregivers Support Group	15-4

Wheelchair Sports 15-5
Recreation Publications. 15-5

Recreation Resource Guide

Accessibility Guides 15-8
Education and Enrichment 15-9
Museums, Stadiums, Concerts and Sporting Events 15-10
Parks and Campgrounds 15-11
Religious Affiliation Groups 15-12
Senior Adult Activity Centers 15-13
 Philadelphia County. 15-13
 Montgomery County 15-13
 Delaware County 15-13
 Bucks County 15-14
Social Clubs and Support Groups 15-14
Transitions. 15-15
Sports and Fitness 15-16
 Bicycling / Handcycling. 15-16
 Cerebral Palsy Sports. 15-16
 Elder-Sports 15-16
 Flying / Gliding. 15-17
 Fitness Classes / Aerobics 15-17
 Golf. 15-17
 Hunting and Fishing 15-18
 Martial Arts. 15-18
 College Sports 15-18
 Quad Rugby 15-18
 Roadracing 15-19
 Rowing. 15-19
 SCUBA Diving. 15-19
 Skiing 15-19
 Sled Hockey. 15-19
 Tennis 15-20
 Walking / Wheeling Club 15-20
 Weightlifting / Fitness Center 15-20
 Wheelchair Basketball 15-20
 Therapeutic Horseback Riding 15-20

Therapeutic Swimming and Adapted Aquatics	15-21
Travel and Vacations	15-23
New Jersey Recreation Resources	15-25
Accessibility Guides	15-25
Service Agencies	15-25
Therapeutic Horseback Riding Programs	15-25
Social Clubs	15-26
Fitness / Therapeutic Swimming and Adapted Aquatics	15-27
Glossary	15-28
References	15-29

Travel and Transportation

Introduction	16-1
Driving	16-1
Behind the Wheel Evaluation	16-1
Vehicles and Modifications	16-2
Special Parking Placard for the Handicapped	16-2
Traveling Tips	16-2
Passport	16-3
Durable Medical Equipment	16-4
Medications	16-4
Bowel and Bladder	16-4
Traveling By Plane	16-5
Plan Ahead	16-5
Checking Wheelchair In	16-5
Security Checkpoint	16-6
Traveling by Train	16-6
Traveling by Bus	16-6
Renting a Car	16-7
Traveling by Ship	16-7
Hotels	16-7
Information Guides	16-8
Travel Websites	16-8
Hotline for AirTravelers with Disabilities	16-8
Camping	16-8
Performing Arts	16-8
The Basics When Traveling with a Power Wheelchair	16-9

Glossary16-11
 References16-12

Sexuality

Introduction17-1
 Sexuality.....17-1
 Body Image..... 17-1
 Improving Your Appearance..... 17-2
 Self-Esteem..... 17-2
 Beliefs and Values 17-2
 How Do I Feel More Like a Man / Woman? 17-3
 Dating.....17-3
 Who Would Find Me Attractive? 17-3
 When Do I Tell a Partner About the Extent of My Injury? 17-4
 How Do I Get People to Look Past the Wheelchair? 17-4
 How Do I Find a Partner? 17-4
 Sexual Functioning.....17-5
 Normal Anatomy of Sexual Functioning: Men 17-5
 Normal Anatomy of Sexual Functioning: Women 17-7
 Sexual Response Cycle..... 17-8
 Spinal Cord Impairment Changes that Affect Both Men and Women..17-10
 Changes in Sensation..... 17-10
 Changes in Movement 17-11
 Bowel and Bladder Involvement 17-11
 Spasticity..... 17-12
 Medications..... 17-12
 Autonomic Dysreflexia 17-12
 Depression 17-13
 Ability to Have an Orgasm 17-13
 Safe Sex 17-13
 Spinal Cord Impairment Changes that Affect Men.....17-14
 Erectile Function 17-14
 Erectile Management..... 17-15
 Oral Medications 17-15
 Urethral Suppositories..... 17-16
 Injectable Medication 17-16
 Tension Rings 17-17

Vacuum Devices	17-17
Ejaculatory Function	17-18
Retrieving Sperm	17-19
Penile Vibratory Stimulation (PVS)	17-20
Rectal Probe Electroejaculation (RPE)	17-21
Needle Aspiration Retrieval	17-21
Problems with Sperm Retrieval	17-22
Autonomic Dysreflexia	17-22
Retrograde Ejaculation	17-22
Semen Quality	17-22
Spinal Cord Injury Changes that Affect Woman	17-23
Interruption of the Menstrual Cycle (Menses)	17-23
How Do I Handle My Menstrual Cycle (Menses)?	17-23
Lubrication	17-24
How Do I Handle Incomplete Lubrication?	17-24
Contraception (Birth Control)	17-25
Pregnancy	17-27
Menopause	17-30
Maintaining Your Sexual Health	17-30
PAP Test	17-31
Self-Breast Examinations	17-31
Self-Testicular Examination	17-32
Prostate Examinations	17-32
Conclusion	17-32
Glossary	17-33
References	17-35
Websites	17-35

Spinal Cord Injury Follow-Up Care System

Introduction	18-1
Transportation for Follow-Up Care	18-2
Your Own Vehicle	18-2
Ambulance	18-2
Paratransit	18-2
Other Counties and States	18-3

Medical Assistance Transportation Program (MATP) 18-3
Prescriptions 18-4
Family / Community Physician. 18-4
Scheduling 18-5
Problems / Emergencies 18-5
Equipment 18-5
Glossary 18-7
References 18-8

Master Glossary

Introduction G-1
Spinal Cord Injury G-2
Bladder G-3
Bowel G-4
Respiratory G-5
Respiratory Dependent G-6
Skin G-7
Cardiovascular G-8
Nutrition G-9
Activities of Daily Living G-10
Equipment G-11
Mobility G-12
Psychology G-13
Vocational Services G-14
Recreational Therapy / Recreation Resource Guide G-15
Travel and Transportation G-16
Sexuality G-17
Spinal Cord Injury Follow-Up Care System G-18

Comments and Feedback

Feedback Form 2
Suggestions and Comments 3

Comments and Feedback

The staff of the center has recently spent a lot of time and effort in revising this manual. However, we realize that those who are actively reading and using the manual can improve it. As a part of our program of continuous quality improvement, we ask you to help guide our efforts to improve the manual.

In the next section of the chapter are two forms. The first form is an overview by chapter that seeks to identify those areas of the manual that could benefit the most from additional work. We also seek to identify any major areas of concern that have not been addressed.

The second section is a more focused questionnaire that has as its goal the specific items that should be targeted. For example, should an item be added to the glossary or the definition changed. Should a drug be added to the discussion of bowel programs?

The more specific the comments are the more likely that we will be able to make the improvements that form the basis of your idea. By communicating with the Regional Spinal Cord Injury Center of the Delaware Valley, however, users grant us permission to use any information, suggestions, ideas, drawings or concerns communicated for any purpose we choose, commercial, public or otherwise, without compensation or acknowledgement whatsoever.

Thank you for taking the time to assist us in improving this manual.

Sincerely,

SCI Manual Committee

Regional Spinal Cord Injury Center of the Delaware Valley
Thomas Jefferson University Hospital
132 S. 10th Street
375 Main Building
Philadelphia, PA 19107

Feedback Form

Rate each chapter by placing an “X” on the scale underneath the term that best captures your opinion. Using the next page, provide specific comments regarding your ratings. Feel free to make copies of the next page.

	No Opinion	Fair	Satisfactory	Good	Excellent
Credits / Front Matter					
Table of Contents					
Introduction					
Spinal Cord Injury					
Bladder					
Bowel					
Respiratory					
Respiratory Dependent					
Skin					
Cardiovascular					
Nutrition					
Activities of Daily Living					
Equipment					
Mobility					
Psychology					
Vocational Services					
Recreational Therapy / Resource Guide					
Travel and Transportation					
Sexuality					
Spinal Cord Injury Follow-Up Care System					
Master Glossary					

Suggestions and Comments

Chapter: _____

Page(s): _____

Comments: _____

Any terms that need to be added to the glossary? How would you define the terms?

Any section or paragraph that was not clear?

Any drawing or sketch that would help to illustrate the material being covered?

Any additional topic that should be covered?

Any questions you have that you feel should have been answered by the manual?

What is the question?

What is the suggested answer?

Any references that should be added? Any other resources that should be mentioned?

By communicating with the Regional Spinal Cord Injury Center of the Delaware Valley, however, users grant us permission to use any information, suggestions, ideas, drawings or concepts communicated for any purpose we choose, commercial, public or otherwise, without compensation whatsoever.

