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PT 568.01: Neurorehabilitation II

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PT 568 Neurorehabilitation II – 2 credits
Course Syllabus Spring 2003

Instructor: Dr. Steve Fehrer
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Class Schedule:

Monday 1:10 – 2:00 PM SB 113/018
Wednesday 8:10 – 10:00 SB 020 (Lab activities)
Friday 8:10 – 10:00 SB CP 204

Required Textbook:

Somers MF. Spinal Cord Injury Functional Rehabilitation 2nd edition, Prentice Hall 2001.

Additional Resources:

Umphred DA. Neurological Rehabilitation 4th edition, Mosby 2001.

O'Sullivan SB and TJ Schmitz. Physical Rehabilitation Assessment and Treatment 4th edition, FA Davis, 2001.

Shumway-Cook A. Motor Control Theory and Practical Applications 2nd edition,
Lippincott Williams and Wilkins, 2001
612.7S562m

Bromley I. Tetraplegia and Paraplegia A Guide for Physiotherapists 5th edition, 1998
616.837062B868t

Campbell M. Rehabilitation for Traumatic Brain Injury Physical Therapy Practice in Context, 2000
616.806C189r

Grading:

Student performance evaluation will be based on two 25-point quizzes, a 50-point midterm exam and a 75-point comprehensive final exam. A portion of the midterm exam and the second quiz will be composed of a “take-home question” activity. Each student will be expected to complete the “Take home question” without any assistance from other persons. Grade distribution: A = 90-100%, B = 80 - 89%, C = 70 – 79%, <70% requires retake of quiz or exam.

Any evidence of cheating or plagiarism will result in failure of the course and possible remand to Academic Court for possible suspension or expulsion.

Schedule:

Mon 1/27	Introduction, Classification of SCI (Reading in text 2-29)
Wed 1/29	Lab: ROM, Pressure Management (171-174)
Fri 1/31	Primary and secondary effects of SCI (30-37)

Mon 2/3	Outcomes following SCI (156-159)
Wed 2/5	Lab: Transfers by the Therapist, Bedmobility skills (165-179, 183-199, 218)
Fri 2/7	Outcomes continued
Mon 2/10	SCI, acute care management (38-54)
Wed 2/12	Videotape: Respiratory Management of the Patient with Quadriplegia (VT 10498). You will view this videotape on your own either at the library or in SB 018.
Fri 2/14	No class
Mon 2/17	Presidents Day – no class
Wed 2/19	Lab: Respiratory management techniques (121-142)
Fri 2/21	Videotape: Clinical kinesiology applied to persons with tetraplegia
Mon 2/24	Quiz 1
Wed 2/26	Lab: Functional mat skills – tetraplegia (187-203)
Fri 2/28	ASIA classification system – videotape (144-156)
Mon 3/3	FIM classification system – mobility tasks
Wed 3/5	Lab: Transfer training skills – tetraplegia (228-252)
Fri 3/7	MDS and inpatient rehabilitation
Mon 3/10	Home assessment – OASIS (Chapter 15 Architectural Adaptations on web site)
Wed 3/12	Lab: Basic wheelchair skills
Fri 3/14	Wheelchair assessment
Mon 3/17	Bladder function following SCI (Chapter 14 Bowel and Bladder Management on web site)
Wed 3/19	Lab: More advanced wheelchair skills
Fri 3/21	Bowel and sexual function following SCI (71-91)
3/24 – 3/28	Spring Break
Mon 3/31	Ambulation; Provided “Take home question” (349-406)
Wed 4/2	Case study - groups
Fri 4/4	Midterm Exam and “Take home question” due
Mon 4/7	Introduction Traumatic Brain Injury
Wed 4/9	Lab: De-escalation strategies
Fri 4/11	Rancho Los Amigos Level of Cognitive Function (LOCF) - videotape
Mon 4/14	Client management based on LOCF, Behavior modification

Wed 4/16	Case study – rehabilitation team
Fri 4/18	Behavior modification, retraining cognition
Mon 4/21	Vestibular dysfunction and TBI; Provided “Take home question”
Wed 4/23	Videotape review Common Movement Disorders
Fri 4/25	Physical Therapy for People with Parkinson Disease
Mon 4/28	Quiz 2 and “Take home Question” due
Wed 4/30	Assessment of gait and balance disorders in PD
Fri 5/2	PT interventions continued
Mon 5/5	Multiple Sclerosis – review of pathology
Wed 5/7	Videotape and PT interventions
Fri 5/9	PT interventions

Final exam date Wed May 14 10:10 – 12:10.

Course Objectives:

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- 1 = knowledge and comprehension
- 2 = application
- 3 = psychomotor
- 4 = synthesis
- 5 = affective

Spinal Cord Injury (SCI) , Traumatic Brain Injury (TBI), Parkinson Disease (PD), and Multiple Sclerosis (MS)

A. Pathophysiology

- 1.1 Understand the etiology for SCI, TBI, PD, and MS.
- 1.2 Describe the lifestyle risk factors associated with SCI, TBI, and PD.
- 1.3 Understand the mechanisms and cellular damage in SCI, TBI, PD, and MS.
- 1.4 Identify systemic complications of SCI, PD, MS.
- 1.5 Understand the difference between UMN and LMN lesions.
- 1.6 Identify and locate spinal cord tracts and their respective function.
- 1.7 Understand principles of medical management of SCI, TBI, PD and MS.
- 1.8 Understand the functional expectations based upon level of injury.
- 1.9 Identify prognostic indicators for clinical and medical improvement following TBI.
- 4.1 Demonstrate the application of primary and secondary prevention interventions appropriate for clients with SCI, TBI, PD, and MS.

B. Examination/Evaluation

- 1.1 Understand classification of SCI by injury level and paraplegia versus tetraplegia.
- 1.2 Understand the classification of SCI as complete versus incomplete.
- 1.3 Understand the importance of environment on TBI evaluation outcome.
- 2.1 Apply understanding of ASIA, Glasgow Coma Scale, Rancho Levels, Hoehn and Yahr, United Parkinson Disease rating Scale, and Expanded Disability Status Scale when planning appropriate examination activities.
- 2.2 Differentiate the clinical signs of UMN and LMN lesions.
- 2.3 Identify types of spinal cord lesions from clinical signs.

- 2.4 Explain the potential for achievement of functional ambulation given the level of the client's SCI injury.
- 3.1 Independently examine a client and obtain history and potential for community and work reintegration.
- 3.2 Demonstrate proper technique for client examination.
- 4.1 Demonstrate clinical decision making skills in evaluation, differential diagnosis, and planning treatment.
- 4.2 Using case studies, assess clients with SCI, TBI, MS, and PD for optimal utilization of assistive and adaptive devices.
- 4.3 Using a case study, construct an effective physical therapy examination protocol for a client exhibiting SCI/TBI injuries, PD, or MS.
- 4.4 Using the results of a physical therapy examination of a client with SCI, TBI, PD, or MS, in the form of a case study, complete an evaluation of the client and propose a physical therapy diagnosis.
- 5.1 Demonstrates appropriate professional behavior during model client examination/evaluation lab.

C. Cognition/Behavior

- 1.1 Understand impact of TBI, MS, and PD on overall cognitive function.
- 1.2 Understand the effect of cognitive impairments on client performance in physical therapy.
- 4.1 Identify factors that can influence a client's cognitive performance based on knowledge of cognitive impairment.
- 5.1 Demonstrates understanding of severity of client's cognitive impairment and acts accordingly.

D. Clinical Management

- 1.1 Understand general physical therapy treatment strategies for SCI, TBI, PD, and MS.
- 1.2 Understand the psychosocial issues that accompany SCI, TBI, PD, and MS.
- 1.3 Identify assistive and adaptive equipment commonly used by clients with SCI, TBI, PD, and MS.
- 1.4 Describe appropriate extremity and trunk orthotics for use by clients with SCI, TBI, and MS.
- 2.1 Apply ASIA, Glasgow, and Rancho scales to clients based on role playing case studies.
- 2.2 Explain how you would incorporate training in self-care and home management.
- 3.1 Demonstrate techniques of bedmobility, mat activities, transfers, and wheelchair skills.
- 3.2 Demonstrate appropriate use of assistive and adaptive devices for clients with SCI, TBI, PD and MS.
- 3.3 Demonstrate by role playing how you would instruct the client in functional training.
- 3.4 Demonstrate appropriate physical therapy interventions for cough assist, breathing sequence, and respiratory muscle strengthening for clients with SCI.
- 4.1 Monitor and adjust plan of care in response to client status.
- 4.2 Using the results of a physical therapy examination of a client with SCI, TBI, PD, or MS in the form of a case study, construct an intervention program for the client during the initial week in an inpatient rehabilitation program.
- 4.3 Illustrate the utilization of the UDS-FIM system for collective outcomes assessment of clients with SCI, TBI, PD, or MS.