

Sponsor: Carrick Institute for Graduate Studies

Course: 807 (Cerebellar Cortices)

Date: October 25-26, 2008

Location: Harrisburg, PA

Instructor: Matt Worth D.C., D.A.C.N.B

Curriculum Vitae enclosed for Dr. Worth

**Contact person: Tricia Merlin, Registrar
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Credit Hours: 15 credit hours including 4 hours of diversified technique

Saturday: 8AM – 6PM

Sunday: 8AM – 3PM

Principles Of Neural Science 4th Edition, Kandel & Schwartz. McGraw Hill, 2000

Chapter 42 "The Cerebellum"

Chapter 40 "The Vestibular System"

Chapter 39 "The Control of Gaze"

Saturday

8:00AM – 10:00AM

Review Relationship between the cerebellum and the following...

Posture

Vertebral alignment

Limb Movement

Head tilt

Eye movement

Labyrinthine integration.

Brain activation.

10:00AM – 11:00AM

Review the general anatomy of the cerebellum including review of the various lobes of the cerebellum and their associated nuclei. This discussion

will concentrate on the clinical relationship of midline and lateral aspects of cerebellum as it pertains to embryological development as well as to lesions affecting both lateral and midline areas. Techniques to help differentiate between lateral and midline cerebellar lesions will be introduced at this time.

11:00AM – 11:50AM

View Dr. Carrick's anatomical brain dissection on parts of the brain and cerebellum appropriate to the material being presented. Correlate this information with clinical considerations during this time period.

Lunch, 11:50AM – 1:00PM

1:00PM – 2:00PM

Review of the general nomenclature used in describing the cerebellum with regards too both functional and structural divisions.

2:00PM –3:00PM

Review of the lateral line system in fish and its importance in cerebellar development. Emphasis will be placed on the labyrinthine system in its ability to influence cerebellar function and the introduction of techniques to aid in diagnosing cerebellar lesions secondary to labyrinthine pathology. The relationship between the labyrinthine system and the ocular motor system will be developed at this time as well as the relationship between the cerebellum and vertebral column.

3:00PM – 4:00PM

Review the afferent and efferent projections system of the cerebellum. The discussion will emphasis the relationship of these cerebellar projections and the effects of concomitant lesions affecting these pathways.

4:00PM –6:00PM

Chiropractic Diversified Techniques: EX
Adjustments to reduce median nerve entrapments

Adjustments to reduce ulnar nerve entrapments

Case Study Presentations:

Male patient suffering from Ataxia as seen by Dr. Carrick during grand rounds in Dallas Texas during the Sensory Systems module.

Sunday

8:00AM – 9:00AM

Review the integral neurophysiology of the cerebellar cortex emphasizing the interneuronal connections as well as their functional clinical importance.

The effects of hypoxia as well as oxygen deprivation to the susceptibility of cerebellar function will be discussed in detail.

Case Study Presentations:

Female patient suffering from cerebellar TND as seen by Dr. Carrick during grand rounds in Dallas Texas during the sensory system module.

9:00AM-9:50AM

Participants will be asked to Problem solve the concomitant affects of a lesion affecting the right dorsal spinocerebellar tract on the ipsilateral cerebellum as well as the effects on the aspects of ocular motor function (direction of dysmetria) and its relationship to limb and or trunk ataxia. Other relationships of changes affecting Optokinetic pursuits and saccades would be introduced at this time.

The participants will be asked to problem solve how they would use eye exercises to help increase the FOF of the involved cerebellum and how to couple these eye exercises to palpatory and eventual manipulative reduction of vertebral subluxations. The relationship to brain function from a postural standpoint affecting rib excursions capacity will be discussed at this time. References made to neuron theory and the affects of hypoxia will be reviewed at this time as well.

10:00AM-11:00AM

Discussion of the canal mechanisms and their influences on cerebellar function as well as their relationship to ocular motor function. The disorder of vertigo will be discussed as it pertains to cerebellar dysfunction. This will be linked to canal integration, ocular motor function and the direction of nystagmus to aid the practitioner in diagnosing pathologies that are either cerebellar based and or labyrinthine based.

11:00AM-12:00PM

In-depth discussion of the relationship of the cerebellum to ocular motor function and head tilt position. Emphasis will be placed on the relationship of the canals to their influences on cerebellar integration, the direction of saccadic dysmetria as well as to the speed of pursuit to re-fixation saccades upon optokinetic testing. The clinical importance of understanding these relationships will be stressed from not only a diagnostic standpoint but from also a treatment standpoint.

Review the inter-relationships of the labyrinthine system and its concomitant affects on cerebellar function as well as the relationship of labyrinthine induced cerebellar dyscrasia in the pathogenesis of saccadic dysmetria.

Lunch: 12:00PM – 1:00PM

1:00PM –3:00PM

Chiropractic Diversified Technique: EX

Review of diversified listings involving the upper cervical spine and their relationship to cerebellar dysfunction. Time will be allotted for hands on demonstration of the corrective procedures along with active participant participation

Practicum:

Review the integration of the ant/post lat canals on eye movements. Have the participants move the eyes in the appropriate directs and observing the smoothness of movement as well as the ability of the eyes to stop appropriately when movement is arrested. Participants swill be asked to describe the degree of over shoot that they may see and in which direction.

Participants then will be asked to describe what type of eye exercise they would do to correct for the above findings and to write down the mechanism as to why they would prescribe the particular exercise.

Rate of pupillary summation to fatigue. Accuracy and smoothness of finger to nose from right and left hands. the smoothness and speed of rapid alternating hand movements from side to side. Participant swill be asked to switch amongst each other and repeat the procedures I.E. The doctors will be blinded. A comparison will be done at the end.

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