

# The Woozy Smoker: Instructor Guide

**Title:**

The Woozy Smoker

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**Discipline:**

Biological Sciences

**Target Audience**

Advanced, majors

**Keywords**

Human anatomy, neuroanatomy, neuroscience

**Length of Time/Staging**

The problem is delivered in two parts. Each part will require approximately twenty minutes of class time and two to four hours of out-of-class research time. Completion of the final report may require additional time.



## **Abstract**

David, a 76-year-old male with a history of heavy cigarette smoking has developed a progressive gait disorder. He complains of frequent balance loss, staggering and unsteadiness. Students are given the results of a series of physical examinations and laboratory tests and are asked to diagnose the patient as well as answer several related questions.

## **Date Submitted**

3/11/2005

## **Date Published**

3/29/2005

## **Format of Delivery**

This problem is constructed in two parts. Each part presents the results of a physical examination and related laboratory tests. Each part of the problem will require approximately twenty minutes of class time. Complete solution of the problem will require approximately four to six hours of out-of-class research by the students.

## **Student Learning Objectives**

This problem was written with the following summative objectives in mind:

1. Development of a three-dimensional understanding of the anatomy of the cerebellum.
2. Development of an understanding of the influence of the cerebellum upon motor function, and how motor function is influenced following a disruption of cerebellar function.
3. Development of an understanding of the concept of cancer metastasis, and how cancer cells can spread from the thorax to intracranial structures.
4. Development of an understanding of pyramidal and extrapyramidal motor function.

This problem was written with the following formative objectives in mind:

1. Increase overall problem solving skills, including the ability to define problems, gather and evaluate information, and develop solutions.
2. Develop effective knowledge acquisition skills.
3. Develop better team skills.
4. Increase communication skills.
5. Increase self-assessment skills.
6. Increase ability to assess the work of others.
7. Increase ability to identify, find and use appropriate resources.

## **Student Resources**

Suggested student resources, in addition to their textbook, are listed below:



*McGraw Hill Encyclopedia of Science & Technology* REF Q 121 .M3 2002

Various Medical Dictionaries found at REF R 121

*Gray's Anatomy* REF QM 23.2 .G73 1995

*Professional Guide to Signs and Symptoms* REF RC 69 .P77 2001

*Atlas of Human Anatomy* REF QM 25 .N46 1997

*The Merck Manual* REF RC 55 .M4 1999

*Magill's Medical Guide* REF RC 41 .M34 2002

## **Instructor Resources**

Instructor resources, in addition to the student's textbook, are listed under “Student Resources.”

Brown, JR. Diseases of the cerebellum. In: Baker AB, Baker LH, eds. *Clinical neurology*. Philadelphia: Harper & Row, 1955.

Gilman, S. Cerebellum and motor dysfunction. In: Asbury AK, McKhann GM, McDonald, WI, eds. Diseases of the nervous system. *Clinical neurobiology*, 2nd ed. Philadelphia: Saunders, 1992: 319-341.

## **Teaching Notes**

Teaching notes suggesting a possible method for utilizing this problem are outlined in “Assessment Strategies.”

## **Assessment Strategies**

This problem has been utilized in Neuroanatomy classes with an enrollment ranging from twenty to forty students. Assessment has been both formative and summative.

### ***Summative Assessment:***

Summative assessment has been broken down into two formats. One format involves evaluation of both the group and individuals within the group. The following procedure is followed in evaluating individual and group progress on the PBL:

On the day the PBL is assigned the class will break up into PBL groups and do some preliminary work on the problem. By the next class session each PBL group member must turn in an individual hard-copy preliminary report. The preliminary report must contain the following:

- Possible hypothesis of what is wrong with the patient.
- What you will need to find out in order to prove or disprove your preliminary hypothesis, and where you will look to find this information.

- Any terminology that is not understood must be listed and defined, and the source of the definition cited.
- It is expected that each member of the group will review all of the group's preliminary hypotheses prior to coming to class the day the preliminary reports are due.

On the day the preliminary report is due the second part of the problem will be handed out. The class will again break into PBL groups and do further preliminary work on the problem. In this session the group will now:

- Determine how the additional information has changed any or all of the preliminary hypotheses, and why.
- Determine the course of action the group will take in order to solve the problem.
- Divide up the work that needs to be completed in order to solve the problem. The group leader will then post, in the group's Public Folder, a listing of what task is to be accomplished by what group member.

At the next class session (after distribution of part 2 of the PBL) each group member will turn in an individual hard-copy secondary preliminary report. (A copy will also be posted in the Public Folder). This secondary report must contain the following:

- Statement as to how your preliminary hypothesis of what is wrong with the patient has changed, and why.
- What you will need to find out in order to prove or disprove your newly formed hypothesis, and where you will look to find this information.
- Any new terminology that is not understood must be listed and defined, and the source of the definition cited.

As published in the course schedule, each group is required to submit a final report at the state of the appropriate class period. (It would be advisable for the group to keep at least one backup copy on computer disc.) The group report is to contain at least the following:

- Hypothesis of the solution to the problem.
- Sound anatomical reasoning to substantiate your hypothesis.
- Citations for any and all sources utilized, including your textbook.
- PBL reports will be graded on the anatomical accuracy of the final solution to the problem, as well as the anatomical logic utilized to arrive at the final solution.

A second form of summative evaluation is inclusion of material covered in the PBL on a "standard" lecture examination. The anatomical objectives may be assessed in the form of objective or essay questions.

### ***Formative Assessment:***

Formative assessment is accomplished two times during the course: at midterm and at the end of the course. Students are asked to fill out a form that assesses team and individual performance twice during the term. Individual growth throughout the term is assessed only at the end of the term.

## **Solution Notes**

Solution removed.



This problem is an adaptation of a problem entitled "Walking Like a Drunkard" in Neuroanatomy Through Clinical Cases. Sunderland, MA: Sinauer Associates, Inc. Publishers, 2002.