

Creatively Solving the Body's Problems : An individual or group exercise for understanding and offering a solution for a physiological problem, injury or malfunction. In order to do this exercise in a way that will have lasting meaning for you, answer these questions using what you know from A & P and fields ***outside of A & P***, which might help solve the problem. Try to answer each question simply and then use all of the information together to come up with a solution.

I) What is the problem you are trying to solve?

- A) Is there a name for the disease, condition or malfunction?
- B) Describe the actual problem
 - 1) What is happening or not happening that is a problem?
 - 2) Why is this a problem?
 - 3) How did the problem start – what is the genesis of the problem? (this is not always known)
 - a) Is it from trauma?
 - b) Is it from neglect of the body
 - i) eating fast food frequently
 - ii) not exercising
 - iii) smoking, etc.
 - c) is it a normal wear and tear issue?
 - d) is it a problem with genetic origins?
 - e) is it a problem caused by infection of some sort?
 - f) is it a combination of some of the above?
 - 4) Are there long term consequences or does the condition worsen with time?

II) Now compare the problem to something else (a thing, process, pathway or idea) from a field other than A&P.

- A) Do any of the involved organs, systems or tissues remind you of anything?
 - 1) Do any of the involved organs, systems or tissues look like something else?
 - 2) Do any of the involved organs, systems or tissues behave like something else?
 - 3) Do any of the involved organs, systems or tissues perform a function like something else?
- B) What can go wrong with the ‘something else’?
 - 1) Is there any similarity at all between what can go wrong in your A&P subject and your ‘something else’?
- C) Do you know or can you think of a way to fix the broken ‘something else’?

III) Now go back to your original problem. Start by looking at 1 & 3 in the above section I-B keeping in mind any comparisons you made with the ‘something else.’

- A) Can you reverse the problem or damage or simply help the person to cope with the dysfunction?
 - 1) Can you reverse the problem or damage chemically?
 - a) does the body control this process using hormones or ions?
 - b) is the problem caused by hormones, ions or chemicals the body is producing?
 - c) what compound(s) might help this?
 - i) if you don’t know of one, state what you would want a chemical to do: be as precise physiologically speaking as possible. In other

words, don't just say, the chemical would increase reabsorption of water in the distal tubules, but say how it would increase reabsorption of water in the distal tubules.

ii) if you already know of a compound – whether manufactured by the body, by other organisms or by people- state it and what it does
iii) it is not necessary to research to find such a compound if you don't know of one. Just give a name to the one you described in section (i) and explain your name choice.

2) Can you reverse the problem mechanically or physically?

- a) does the body use a movement or change in rate of activity to affect the problem?
- b) is the problem caused by a movement or change in rate of activity?
- c) What action or change in rate of action might help this?
- d) What kind of device would cause this action or change in rate of action?
 - i) state what you would want an action or device to do: be as precise physiologically speaking as possible. In other words, don't just say that the device would increase bone density but state that the action or device would increase bone density by stressing the bone which apparently causes the mineral crystals to generate minute electrical fields which in turn attract osteoblasts (cells that generate new bone) to the affected area.
 - ii) if you know of, or can find an action or device that causes or changes the rate of an action, state it and what it does
 - iii) it is not necessary to research to find such a device if you don't know of one. Just give a name to what you described in section (i) and explain your name choice.

3) Can you reverse the problem genetically?

- a) does the body try to fix the problem using genetically controlled activities such as the production of proteins?
- b) is the problem caused by a change or change in rate of genetic activity?
- c) What action on the genome might help this?
 - i) state what you would want a genetic therapy to do: be as precise physiologically speaking as possible. In other words, don't just say that the device would decrease production of the increase bone density but state that the action or device would increase bone density by stressing the bone which apparently causes the mineral crystals to generate minute electrical fields which in turn attract osteoblasts (cells that generate new bone) to the affected area.
 - ii) if you know of, or can find a genetic therapy that affects this process, state it and what it does
 - iii) it is not necessary to research such a therapy if you don't know of one. Just give a name to what you described in section (i) and explain your name choice.

OPTIONAL:

Represent your solution to the class in a poster, model, power point, drawing, poem, concept map, song or skit.