



Suggestions for Teachers

Module #1

What Do You Know About the Effects of Exercise?

Purpose

Engage students in exploring the effects of exercise on the human body

Objectives

The student will be able to:

- Make observations about how strenuous exercise affects respiration, heart rate, and blood flow.
- Connect their own experiences with the effects of exercise on their cardiovascular and respiratory systems to the observations that they make.
- Convey their current understanding and possible misconceptions about the effects of exercise on the cardiovascular and respiratory systems via analysis of initial KWL/T-chart responses.

Materials and Methods

- Copy of the *My Health Lifestyle Inventory* and *Student Activity Sheet* for each student
- VCR and monitor
- Clips from television, movies, interviews, etc. of persons at rest and persons engaged in heavy exercise (preferably aerobic exercise such as long-distance running, not short-term, anaerobic exercise such as the 100 meter dash -- good possibilities would be clips from the most recent Olympics, a school track meet or training session, or a movie with sports competition, such as a basketball game)
- KWL/T-chart materials for groups of three to four students (poster board or roll paper, Post-It™ notes, markers, or pens...see Student Handout)

Procedure

- 1) Ask students to complete *My Health Lifestyle Inventory* at the beginning of the unit and to hold the *Inventory* for Module #5 (evaluate). We do not recommend collecting the inventory since it includes personal questions about the student. Encourage students to answer the questions honestly and inform them that it is for self-assessment.

- 2) To initially engage students in the unit, they will make some observations about differences they can see and/or hear between persons at rest and persons engaged in strenuous exercise. After you tell students to make observations, show a one to three minute video clip of persons at rest and then a one to three minute video clip of persons engaged in strenuous exercise. We have found that this works especially well if the clips are shown the first time without sound. Students are asked to jot down some of their observations as they watch the clip. Then the clips are again shown with sound to see if students can make any additional observations.
- 3) Divide students into groups of three to four to generate the KWL/T-chart described on the student handout. They should put their names on the back of the poster board. The KWL/T-chart can be used as an initial assessment tool to determine students' understanding of cardiovascular and respiratory responses to exercise and is an excellent way to identify students' misconceptions and questions. Posters can be displayed on bulletin boards so students can refer to them throughout the unit. NOTE: Concept maps can be substituted for KWL's or T-charts.

Safety Issues

None.

Suggestions for Assessment

Use the KWL/T-charts to check for student misconceptions and to provide a baseline assessment of student understanding of the unit concepts.

References and Resources

Karplus, R. & Thier, H.D. (1967). *A new look at elementary school science*. Chicago: Rand McNally.

Lawson, A.E. (1988). *A better way to teach biology*. *American Biology Teacher*, 50(5), 266-289.

U.S. Department of Health and Human Services. (1981). *Healthstyle: A Self-test*. DHHS Publication No. (PHS) 81-0155. Washington, DC: U.S. Department of Health and Human Services, Public Health Service. Reprinted with permission.



Student Activity Sheet

Module #1

What Do You Know About the Effects of Exercise?

Materials

- Pen/pencil
- Poster board or roll paper (1 sheet per group)
- Post-It™ notes

Procedure

Using the poster board and Post-It™ notes, work with your group to develop a “KWL” chart (complete the first two columns only) describing what you know about how exercise affects the cardiovascular and respiratory systems (heart, blood, blood vessels, lungs, etc.), and what you would like to know. See the example below:

How Exercise Affects My Heart, Blood, Blood Vessels, and Lungs		
What I <u>K</u> now	What I <u>W</u> ant to Know	What I <u>L</u> earned

Student Name: _____

My Health Lifestyle Inventory

Directions: Complete each section of the inventory. Circle the number that corresponds to the answer that **BEST** describes your behavior. Then add the numbers you have circled to determine your score for that section. Write the score on the line provided at the end of each section.

My Health Lifestyle Inventory	Almost Always	Sometimes	Almost Never
I. Cigarette Smoking, Drugs, and Alcohol			
If you never smoke or use drugs or alcohol, enter a score of 10 for this section and go to section II.			
1. I avoid smoking cigarettes.	2	1	0
2. I smoke only low tar and nicotine cigarettes (if you do not smoke, mark "2").	2	1	0
3. I avoid drinking alcoholic beverages.	2	1	0
4. I avoid using alcohol or other drugs (especially illegal drugs) as a way of handling stressful situations or the problems in my life.	2	1	0
5. I read and follow the label directions when using prescribed and over-the-counter drugs.	2	1	0
Cigarette Smoking, Drugs, and Alcohol Score:			
II. Eating Habits			
1. I eat a variety of foods each day, such as fruits and vegetables, whole grain breads and cereals, lean meats, dairy products, dry peas, and beans.	2	1	0
2. I limit the amount of fat, saturated fat, and cholesterol I eat.	2	1	0
3. I limit the amount of salt I eat by cooking with only small amounts, not adding salt at the table, and avoiding salty snacks.	2	1	0
4. I avoid eating too much sugar (especially frequent snacks of sticky candy or soft drinks).	2	1	0
Eating Habits Score:			
III. Exercise and Fitness			
1. I maintain a desired weight	2	1	0
2. I do vigorous exercises for 13-30 minutes at least three times a week (such as running, walking, swimming, or aerobics).	2	1	0
3. I do exercises that enhance my muscle tone for 15-30 minutes at least three times a week (such as yoga).	2	1	0
4. I use part of my leisure time to participate in individual, family, or team activities that increase my level of fitness.	2	1	0
Exercise and Fitness Score:			

Continued on following page

My Health Lifestyle Inventory		Almost Always	Sometimes	Almost Never
IV. Stress Control				
1. I have a job, attend school, or do other work that I enjoy.	2	1	0	
2. I find it easy to relax and express my feelings freely.	2	1	0	
3. I recognize early, and prepare for, events or situations likely to be stressful for me.	2	1	0	
4. I have close friends, relatives, or others whom I can talk to about personal matters and call on for help when needed.	2	1	0	
5. I participate in group activities (such as church and community organizations) or hobbies that I enjoy.	2	1	0	
Stress Control Score:				
V. Safety and Health				
1. I wear a seat belt while riding in a car.	2	1	0	
2. I avoid riding with anyone under the influence of alcohol and other drugs.	2	1	0	
3. I only ride with persons who obey traffic rules and the speed limit when driving.	2	1	0	
4. I am careful when using potentially harmful products or substances (such as household cleaners, poisons, and electrical devices).	2	1	0	
5. I get at least 7-8 hours of sleep a night	2	1	0	
Safety and Health Score:				

My Health Lifestyle Inventory

What Your Scores Mean to You

Section Scores of 9 and 10 - Excellent! Your answers show that you are aware of the importance of this area to your health. More importantly, you are putting your knowledge to work for you by practicing good health habits. As long as you continue to do so, this area should not pose a serious health risk. It's likely that you are setting an example for your family and friends to follow. Since you got a very high score on this part of the test, you may want to consider other areas where your scores indicate room for improvement.

Section Scores of 6-8 - Good. Your health practices in this area are good, but there is room for improvement. Look again at the items you answered with a "Sometimes" or "Almost Never." What changes can you make to improve your score? Even a small change can often help you achieve better health.

Section Scores of 3 to 5 - Your health risks are showing! Would you like more information about the risks you are facing and about why it is important to change these behaviors? Perhaps you need help in deciding how to successfully make the changes you desire.

Scores of 1 to 2 - Obviously you were concerned enough about your health to take the test, but your answers show that you may be taking serious unnecessary risks with your health. Perhaps you are not aware of the risks and what to do about them. You can easily get the information and help you need to improve, if you wish.

Adapted from *Healthstyle: A self-test*. DHHS Publication No. (PHS) 81-50155. Washington D.C: U. S. Department of Health and Human Services. Public Health Service.

The American Physiological Society, Bethesda, MD
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