

Healthy Life

Lesson 04A: Diet, Exercise May Stave Off Diabetes

Credits: .5 (1/2) Hours: 8

1. General Description of Lesson:

In this lesson students will learn about fending off disease through a simple regimen of exercise and diet.

2. Standards:

Physical Education:
Course 1, Standards #3 & #4

English-Language Arts:

Reading- #1.1, #2.3, #2.5, and #2.6

Written - #1.1, and #2.5

Written and Oral Lang. – #1.3 and #1.4

Listening and Speaking - #1.1, #2.1, #2.2 and #2.5

3. Objectives:

1. Students will define diet.
2. Students will describe how exercise and diet go together
3. Students will explain the importance a good exercise program
4. Students will become the basics of creating a balanced diet.

4. Technology:

1. Word processing
2. Web browser
3. Computer (Mac/win)
4. Internet connection
5. CD-drive
6. Printer

Teacher Competency Level:

1. General Computer Skill: Novice
2. Internet: Novice
3. Word Processing: Novice

5. Procedure:

Teacher Tasks:

- Teachers will assign P.E. packets.
- Teachers will evaluate all assignments.
- Teachers will discuss chapter one-on-one.

6. **Student Tasks/Assignments: Students will...**

Lesson 04A: Diet & Exercise

- ___ Print Lesson from web site
- ___ Read Nutrition Articles #4: Diet & Exercise
- ___ Complete Nutrition Questions 4
- ___ Complete the crossword puzzle & word search
- ___ Complete Physical Education Log - 4 hours of activity
- ___ Find a magazine or newspaper or Internet article on health or fitness. Write a half page summary and a half page opinion or reaction to the article

7. **Assessment:**

Assessment Type(s): demonstrations, interviews, work completed & test.

- Students will submit all exercises, written work, summaries and questions for evaluation.
- Students will be evaluated using the written test, if available.
- Students will be evaluated on one-to-one discussion with the teacher.

8. **Situations/Learning Condition**

- Students will meet one-on-one with their teacher.
- Students will complete all assignments independently at home.
- Students will work, as needed, on the computers at J.E. Young.
- Students will meet weekly with their teacher for discussion and help.

Fresno Unified School District

Physical Education Log

Directions: A total of 4 (four) hours of exercise is required to earn credit for this assignment. The log will not be accepted without the written work that accompanied this assignment.

Day and Date	Exercise	Time Spent
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		
Saturday		
Sunday		
	Total Time	

Student Name: _____

Verified By: _____

Contract Date: from _____ to _____ Grade: _____ Credit: _____

Diet, Exercise May Stave Off Diabetes 4

Chicago Tribune

More than 10 million North Americans at high risk for developing life-threatening diabetes could fend off the disease through a simple regimen of exercise and diet changes, according to a groundbreaking national study recently released.

The clinical trial of more than 3,200 at-risk people—the largest ever diabetes prevention study found that walking as little as half an hour a day and cutting down on dietary fat reduced the chances of getting adult-onset diabetes by 58 percent.

That reduction held among minority groups such as Latinos and African-Americans, who suffer disproportionately from adult-onset, or type 2, diabetes. The adult form accounts for up to 95 percent of people who have diabetes, which is the seventh-leading cause of death in North America. The trial showed such clear benefits from lifestyle changes and drugs that the National Institute of Diabetes and Digestive and Kidney Diseases decided to stop the study early so that patients in the control group, who got no treatment, could be told about the potential advantages.

Doctors have long known that exercise and weight loss can help relieve symptoms in people who have progressed fully to diabetes. But this is the first major study to show that such changes can keep the disease from developing in the first place.

Treatment with the drug metformin also cut the risk, but was less effective than lifestyle changes. The results offer hope for people who are at risk, said Marian Fitzgibbon, a professor of psychiatry at Northwestern University Medical School and a local trial leader.

“This shows that relatively modest lifestyle changes truly can improve your health,” said Fitzgibbon. “You don’t have to go on crash diets, or spend lots of money in a rigorous fitness program that many people cannot sustain. You can do this.”

About 300 Chicago-area volunteers at Northwestern and the University of Chicago took part in the study, which has cost the National Institutes of Health \$174 million. The participants all were overweight and had impaired glucose tolerance—two major risk factors for type 2 diabetes.

After entering the trial two years ago, Dawn Greenwood of Naperville, Illinois started walking about one hour a day and watching her diet. “Exercise would never be my number one activity,” said Greenwood, a 45-year-old quality assurance specialist with the federal General Services Administration.

Greenwood paid monthly visits to a lifestyle coach at the University of Chicago, who helped her make simple diet modifications such as shunning butter, all-you-can-eat buffets, and fatty salad dressing. Such changes helped her lose 35 pounds—and most important, she has not developed the adult-onset diabetes that has plagued many of her family members in later life.

Although the exact causes of type 2 diabetes are unknown, researchers say it stems from the inability of fat cells to respond to insulin, a hormone that lets the body use glucose, or sugar, for energy. “The more obese you are, the fatter you are, the greater your insulin needs,” said Dr. Thomas Pitts, an endocrinology expert at Northwestern and an investigator in the NIH study.

Diabetes can cause blindness, heart disease, and damage to the kidneys and nerves. Experts estimate that more than 16 million North

Americans have diabetes, with at least 10 million more at risk. Other warning signs for type two diabetes are lack of exercise, a family history of the disease, and ethnic background. Compared to non-Latino whites, the risk of diabetes is up to twice as great for Latinos, African-Americans, Asian Americans and American Indians.

Some of the ethnic differences may stem from economic disadvantage—poor people’s diets often are high in fat, Pitts said. The NIH study was the first to examine prevention strategies for a diverse population, with 45 percent of participants from at-risk minority groups.

To the surprise of some researchers, the lifestyle changes were especially helpful for people age 60 and older, which cut their risk of diabetes by 71 percent. “You might think individuals in their 60s or 70s wouldn’t be able to achieve these targets, but hey did,” said Dr. David Ehrmann, a University of Chicago endocrinologist and one of the study’s principal investigators in Chicago.

Lynne Basler of Homewood, a study participant in the Chicago area, said she started to worry about the effects of her weight

problems when she entered her 60s. “It’s really scary,” Basler said. “You become more and more sedentary. When you’re younger you can get away with a lot of that stuff.”

Basler, a retired textbook editor, said the study taught her the basics of how to keep track of the fat in her food and limit servings to a reasonable size. For example, her lifestyle coach suggested that she eat more fiber and vegetables, and have meat helpings no larger than a deck of cards. “My idea of measuring food was just to plop piles of it on my plate,” Basler said. “I wasn’t 200 pounds for nothing.”

In the three years she’s been in the study, Basler dropped 30 pounds.

She walks her dogs every day and rides a stationary bike for half an hour three times a week, she said.

“Many of the problems like blindness don’t begin until you actually develop diabetes,” Pitts said. “Now we think we can prevent those dramatically.”

Although so far the trail has shown only that diabetes can be delayed for a few years, experts hope the help is long-lasting.

“We’re not doomed to seeing this epidemic go on forever if we have the will, collectively, to implement these modest changes,” said Dr. Allen Spiegel, director of the National Institute of Diabetes and Digestive and Kidney Diseases.

Nutrition Questions 4

Name _____

Use the space provided to write answers to each of the questions. Make certain your answers are in complete sentences.

1. How can those people who are at risk for developing diabetes fend off the disease?
2. What can reduce the chances of adult-onset diabetes by fifty-eight percent?
3. This is the first major study to show this finding about diabetes. What is it?
4. Who is Dr. Marian Fitzgibbon?
5. What problems can diabetes cause a person?
6. What did Lynne Basler claim the study taught her?

Nutrition Crossword 4

name _____

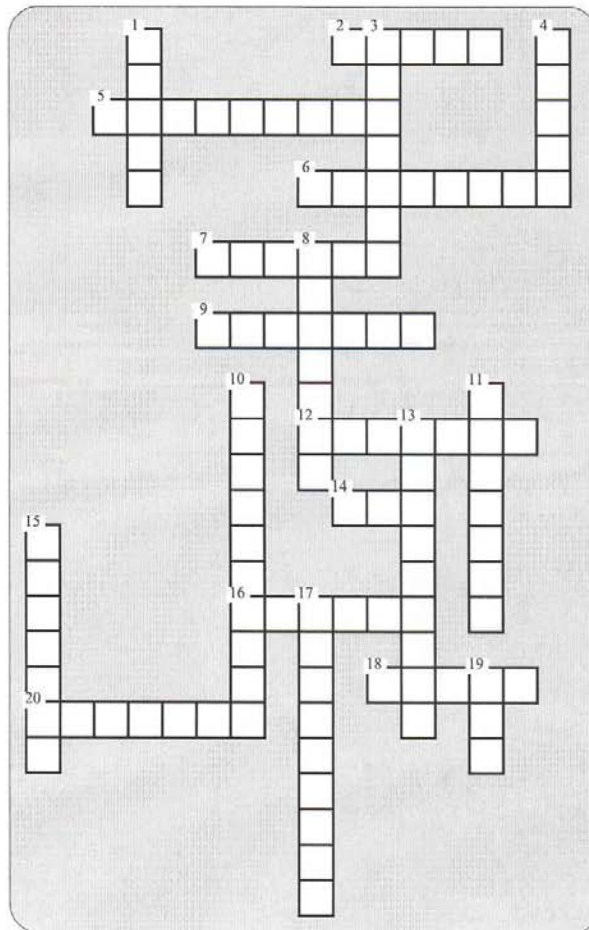
Use the clues provided to complete the crossword puzzle below.

Across:

2. Lifestyle changes are especially helpful to people age _____ and older
5. A participant in the study who started walking about one hour a day and watching her diet
6. The seventh leading cause of death
7. The exact _____ of type 2 diabetes are unknown
9. A minority group in the study
12. A University of Chicago principal investigator in the study
14. Poor people's diets are often high in this
16. A retired textbook editor
18. An endocrinology expert at Northwestern
20. Over _____ million North Americans have diabetes

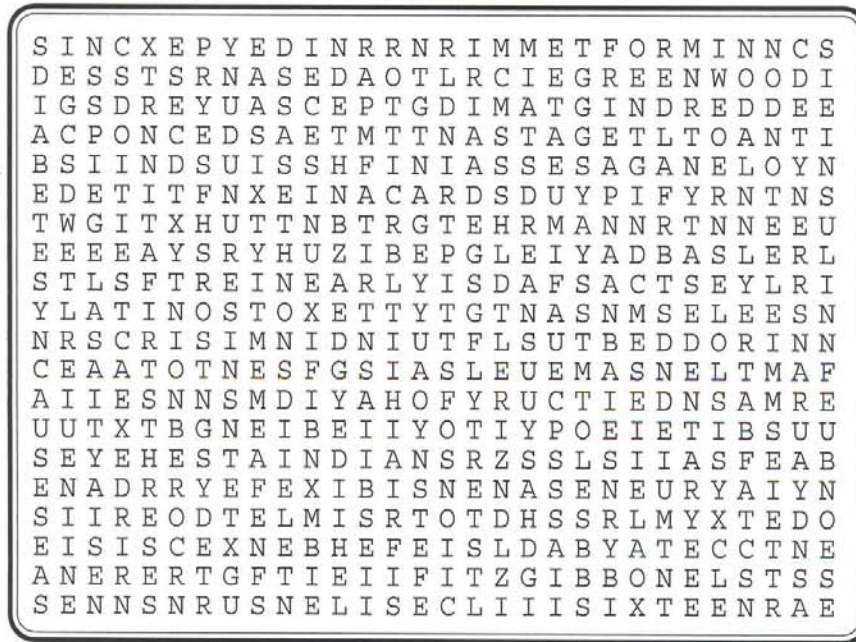
Down:

1. The study was stopped _____ so that patients in the control group could be told about potential advantages
3. This risk of diabetes is up to twice as great for American _____
4. Meat helpings should be no larger than a deck of these
8. Director of the National Institute of Diabetes and Digestive and Kidney Diseases
10. A professor at Northwestern University Medical School
11. The more obese you are, the greater your _____ needs
13. Treatment with the this drug also cut the risk
15. The participants in the study were all overweight and had impaired _____ tolerance
17. Doing a good deal of sitting
19. More than _____ million North Americans are at risk for developing diabetes



Nutrition Wordsearch 4

name _____



Use the clues below to discover words in the above puzzle. Circle the words.

- | | |
|---------------|---------------|
| 1. Basler | 11. diabetes |
| 2. Ehrmann | 12. early |
| 3. Fitzgibbon | 13. fat |
| 4. Greenwood | 14. glucose |
| 5. Indians | 15. insulin |
| 6. Latinos | 16. metformin |
| 7. Pitts | 17. sedentary |
| 8. Spiegel | 18. sixteen |
| 9. cards | 19. sixty |
| 10. causes | 20. ten |