



## **CASE TEACHING NOTES for “Morgan: A Case of Diabetes”**

by  
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### **INTRODUCTION**

Today, in the United States, obesity is becoming more prevalent in younger and younger age groups. With this rise in obesity, doctors and nutritionists are also seeing a rise in cases of Type 2 diabetes in younger generations. The overall objective of this case is to teach students about the causes and effects of Type 2 diabetes and to make them familiar with some of the current weight loss trends and nutritional theories. This case can be used in a variety of settings, including nutrition classrooms, herbal drug courses, physiology courses, medical schools and nursing schools, pharmacy schools, diabetes workshops, and even weight loss clinics.

### **Objectives**

When students have completed this case, including the research and debate, they should be able to:

- Compare and contrast aspects of Type 1 and Type 2 diabetes.
- Know the relationship between obesity and Type 2 diabetes.
- Define terms such as thermogenesis, ketosis, triglycerides, etc.
- Outline the main theory behind the Atkin’s Diet and its pros and cons.
- Understand what ephedrine does to the body and its potential side effects.
- Know what major healthcare organizations recommend for good health.

*Editor’s Note:* Elsewhere on our website there is a companion case that deals with Type 1 diabetes. See [“Andrea: The Death of a Diabetic.”](#)

### **CLASSROOM MANAGEMENT**

This case study should ideally be taught in two to three class periods. A Problem-Based Learning method is ideal, in which students working in small permanent groups engage the case. During the first class period the students should be given Part I of the case and asked to analyze the learning issues and research the necessary information so that role playing in the form of a debate can take place during the third class. If Internet access is available in the classroom, some of this research can occur during the class period.

During the second class period the students should have time to discuss their findings in their groups and be prepared to answer the questions at the end of [Part I](#).

It is useful for the instructor to run a general discussion with the entire class about the case. The instructor should first write the facts on the board, one side for Type 1 diabetes and the other for Type 2 diabetes. From time to time, the teacher should introduce important topics (if they aren't addressed) through guiding questions, such as:

- Why does diabetes cause a great risk of cardiovascular disease?
- How do blood triglycerides factor into this?
- Is there a cure for diabetes?
- What are some ways to control insulin resistance?

At the end of the second day, the groups should be given [Part II](#) to read and analyze. They should be told which role they will present during the next class, that of Savannah, Alan, or the grandfather. If there are more than three groups, then several groups may research the same role.

The students' job is to find information that will both show the safety and/or effectiveness of their weight loss approach and downplay the others. As the students research their topics they should:

- Look at Internet sites of major healthcare organizations, such as the American Heart Association, the American Dietetic Association, the National Institutes of Health, etc.
- Be wary of "fanatic" sites. Also, students should realize that the Atkin's site will have beneficial information but will obviously not report any downsides to the diet.
- Try to tie in aspects of each weight loss approach with the risks that Morgan now has with Type 2 diabetes. For example, should her risk for kidney disease and cardiovascular disease affect her choice?
- Note if each approach stresses exercise or just dietary changes? What is the importance of exercise?

The third class period is dedicated to the class debate and a follow-up discussion. Of course, before the debate the groups need time to organize their presentations.

During the debate, each group will be given five minutes to introduce their weight loss approach to the class and stress its potential benefits for Morgan. It is critical they outline what their approach entails in terms of dietary guidelines and major healthcare approval. The remaining debate time will be for groups to question one another, point out the other approaches' weaknesses, and answer audience concerns.

After the debate, the teacher can summarize crucial information on the board.

If important issues aren't raised, the teacher should address them through guiding questions, such as:

- How is following the glycemic index beneficial to diabetics?
- Since Morgan is at risk for kidney disease now, couldn't the Atkin's Diet possibly harm her kidneys even more?
- Will Morgan's cardiovascular disease risk affect her reaction to ephedrine?
- Are any of these approaches long-term "proven"?
- What are the stances of major health care organizations on each issue?
- What if Morgan can't cope with the possible initial side effects of ephedrine, like tremors and insomnia?
- Should Morgan control her saturated fat intake? Why?

Once the debate/discussion has ended, the groups can have a final debriefing of what they have learned. To provide closure, the instructor can ask each group to share their final thoughts.

## FOLLOW-UP ASSIGNMENT

Possible follow-up assignments include asking each student to answer several summary questions provided by the teacher, which will help the teacher see whether this case ultimately met the objectives it was intended to. Alternatively, the students may write a paper evaluating the relative merits of the three approaches.

## ANSWER KEY

Answers to the questions posed in the case study are provided in a separate answer key to the case. Those answers are password-protected. To access the answers for this case, go to [the key](#). You will be prompted for a username and password. If you have not yet registered with us, you can see whether you are eligible for an account by reviewing our [password policy and then apply online](#) or write to [answerkey@sciencecases.org](mailto:answerkey@sciencecases.org).

## REFERENCES

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