



Lesson Plan

Hoodia Hoodoo

SUMMARY

Many of us have wished we could magically shed a few pounds. So it's no surprise that "miracle" weight-loss products rake in millions of dollars – especially when their advertisements sandwich (so to speak) endorsements by leading news organizations between pictures of impossibly ripped bodies. It's also no surprise that the products rarely live up to their billing. This lesson assesses misleading claims for a weight-loss product called Hoodia that is advertised heavily on the Internet and elsewhere. Students will dig beneath the hype to find the single scientific study on which the marketing is based and analyze whether it can support the claims.

OBJECTIVES

In this lesson students will:

- Assess the credibility of various Internet sites that advertise and review Hoodia weight-loss products.
- Review news stories on Hoodia weight-loss products and compare to the claims made by advertisers of Hoodia.
- Review studies conducted on the effectiveness of Hoodia weight-loss products by the manufacturers of those products and assess their credibility and the significance of their findings.
- Assess whether enough evidence exists to accurately determine the effectiveness of Hoodia as a weight-loss product.
- Review the extent of FDA regulation of "dietary supplements" like Hoodia and take a position on whether there's enough oversight of the products' effectiveness and safety.

BACKGROUND

The Internet is awash with ads for a supposedly miraculous weight-loss supplement called "Hoodia," which marketers claim will suppress a person's appetite for food. They say their products are based on a cactus plant, Gordon's Hoodia (or *Hoodia Gordonii*), that grows only in South Africa's Kalahari Desert.

The Hoodia cactus is indeed eaten by native San tribesmen to reduce hunger, and it is also true that the government of South Africa owns a patent on the chemical P57, which is said to be the appetite-suppressing active ingredient. A British pharmaceutical company has been licensed to develop a safe, marketable and effective diet drug from

the plant. However, as students will discover as they examine the claims and dig for evidence, there is as yet no such drug. There is little or no scientific proof that what's being offered for sale today, often in the form of unregulated "nutritional supplements," will work or is safe.

MATERIALS

1. Examples of Web sites offering Hoodia products for sale. An Internet search for "Hoodia" will bring up multiple sites. Include some "product review" sites that are actually marketing sites posing as consumer sites. Examples:
<http://www.hoodiareviews.com>
<http://www.hoodia-gordonii-diet.com/productreview.htm>
http://www.bestratedhoodia.com/hoodia_reviews.php
2. List of questions for Exercise #1
[http://factchecked.org/Downloads/LessonPlans/HoodiaHoodoo/Hoodia%20Hoodoo_Questions%20Exercise%201\(1\).pdf](http://factchecked.org/Downloads/LessonPlans/HoodiaHoodoo/Hoodia%20Hoodoo_Questions%20Exercise%201(1).pdf)
3. Brief clip from Lesley Stahl's *60 Minutes* report on Hoodia, offered by many Hoodia marketers as part of their sales pitch:
<http://video.cgi.cbsnews.com/video/video.pl?url=/media/2004/11/18/video656472.wmv&sid=3415&ad=/media/2004/11/15/video655798>
4. CBS News story: "African Plant May Help Fight Fat: Lesley Stahl Reports On Newest Weapon In War On Obesity," Nov. 18, 2004. This is a summary of Stahl's broadcast report on *60 Minutes*.
<http://www.cbsnews.com/stories/2004/11/18/60minutes/printable656458.shtml>
5. BBC News story: "Sampling the Kalahari cactus diet," May 30, 2003.
<http://news.bbc.co.uk/2/hi/programmes/correspondent/2947810.stm>
6. *Consumer Reports* story: "Hoodia: Lose weight without feeling hungry?," March 2006 (subscription required).
<http://www.consumerreports.org/cro/health-fitness/drugs-supplements/hoodia-supreme-306/overview/index.htm>
7. Press releases from Phytopharm, the British pharmaceutical company trying to develop a safe and effective appetite suppressant from Hoodia. (See links in Exercises, below)
8. Don't be Fooled" guide to avoiding deception.
<http://factchecked.org/ToolsOfTheTrade.aspx>

PROCEDURE

Before class, determine how many packets of material you will need for small groups of 3 to 5 students each, and make packets of the supporting materials. Pass out the storyboard by itself.

In the full class, ask students some general questions:

- Do they believe what they see and hear in TV commercials and other such advertising? (*To the teacher: It might be worth pushing students on this question. They will often initially answer "no." So ask them some simple questions about commonly advertised products. They'll be surprised how much advertising they accept uncritically.*)

- Do advertisers tell the truth?

- What do they know about weight-loss programs? How about one highly advertised household product: Hoodia supplements? What do they do? Are they effective?
- How many in the class use Hoodia or a similar product? For what reasons did they chose this product over others?

Now explain to the class that they will be examining some claims made about Hoodia weight-loss supplements, along with evidence that may support or contradict those claims. Explain that they should apply the five steps we have outlined in “Don’t Be Fooled: A Process for Avoiding Deception.” Have them refer to their handout on this. Specifically, they should:

- **Keep an open mind.** Don’t fall into the trap of thinking a claim is correct just because it fits your biases.
- **Ask the right questions.** Look for the conclusion of the argument and then ask yourself what reasons you are being given for believing that conclusion. Examine each factual claim and ask what evidence would prove it right or wrong. Then ask whether the premises logically support the conclusions.
- **Cross-check.** Look for more than one source of evidence before making up your mind.
- **Consider the source.** Think about which sources of information are most trustworthy.
- **Weigh the evidence.** Do the facts support the ad’s message?

EXERCISES

Exercise #1 – Keeping an open mind, asking questions

To the teacher: Emphasize to students the need to keep an open mind in their research and analysis. People tend to accept any information that already supports what they believe and reject information that conflicts with those beliefs. Students need to make an effort to listen to all sides to avoid accepting inaccurate information as truth. This can be a take-home assignment, or, if Internet access is available in the classroom, an in-class exercise.

Have students conduct an Internet search for Hoodia to find reviews of Hoodia products. This will bring up page after page of marketing sites, some claiming to be “consumer review” sites rating the “best” Hoodia. Pick a few good examples and briefly present them to the class.

Divide students into small groups of 3 to 5 each. Ask students to consider the following questions, which they’ll also find on their handout:

- What do marketers of this product claim it does? What do you think of those claims?
- What evidence do these Internet sites present to support their assertions? Is solid evidence needed to make people believe a product’s claims? How might

someone's desires or prior experiences influence whether he or she believes the marketing materials?

- How widely is Hoodia being advertised? What does the prevalence of ads tell us about the product? What is the effect of repetition of a message?
- Find examples of testimonials for the product. How much weight should we give these? Are they opinions or statements of fact? If facts are being stated, how do we know they are true? Even if they are genuine, do we know whether or not the effects described really resulted from the product? Could they be coincidental?
- Are the "consumer review" sites that recommend some products over others really independent and trustworthy? How can we tell? Are these sites likely to make money if we buy the product they recommend, and if so, how much should we trust their advice? For the sites that rate products, what criteria do they use? What tests did they conduct?

Have students write up their answers and report back to the class.

Exercise #2 – Cross-Checking

To the teacher: It's important that students review several sources when verifying information. When political ads make statements as fact, these should be verified through different, preferably neutral sources. Two or three reliable sources independently reporting the same fact is a good indication the information is accurate. If two sources report different information, then more investigation will likely be needed.

Note that many Hoodia marketers refer to a CBS News *60 Minutes* report and feature a brief video clip from that program,

<http://video.cbsnews.com/video/video.pl?url=/media/2004/11/18/video656472.wmv&sid=3415&ad=/media/2004/11/15/video655798>.

Watch the clip, then read the full account from CBS News, summarizing correspondent Lesley Stahl's report on Hoodia:

<http://www.cbsnews.com/stories/2004/11/18/60minutes/printable656458.shtml>.

Also read the BBC story on Hoodia at:

<http://news.bbc.co.uk/2/hi/programmes/correspondent/2947810.stm>

And a *Consumer Reports* piece from March 2006:

http://www.factchecked.org/Downloads/LessonPlans/HoodiaHoodoo/Hoodia_Consumer%20Reports%20Article.pdf

Questions for discussion:

- Does the clip make you more or less likely to accept claims for the product? Why?
- Is the clip a full and balanced account? How has your impression of Hoodia changed, if at all, as a result of seeing the full report? What kind of information does the clip leave out?
- Does the BBC story reinforce what you learned from the CBS story? Explain.

- *Consumer Reports* is a magazine that does not accept advertising. It is funded only by subscribers and donations, and conducts independent research on products. Is this a more credible source for information than the marketers of Hoodia products? Why?
- Does having several sources of information make you more confident you're getting a full picture? Why or why not?

Exercise #3 – Consider the source / Weighing the evidence

To the teacher: Students need to understand that not all sources are equal. Physical evidence may be more trustworthy than an eyewitness, for example, because the memory can play tricks. Similarly, an Internet Web site that offers primary source material is more reliable than one that publishes information gained second- or third-hand: Voting returns posted by a state election board are more authoritative than ones reported by a newspaper. To make the best use of the evidence, students need to evaluate the credibility of the relevant sources of information and know the difference between random anecdotes and real scientific data based on credible studies. They should avoid common errors of reasoning, such as assuming that one thing causes another just because the two happen in close succession.

Many Hoodia marketers cite a study by Phytopharm — a British company licensed to develop a diet drug from Hoodia's active ingredient — which is now working with a larger company, Unilever. The study showed that subjects given the ingredient, P57, consumed an average 1,000 calories less per day. Visit the Web site of Phytopharm to read what it says about the company's own research and about Hoodia. Check its news releases and its most recent report of business operations. Note especially its announcement about the study, Successful Completion of Proof of Principle Clinical Study of P57 for Obesity, at

<http://www.phytopharm.co.uk/news/newsreleases/?filterType1=text&dateMode=years&year=2001&filterArg1=P57&y=10&range=today&filterType2=date&id=1749&x=5>

Also be sure to review this portion of the company's "Preliminary Results" released Nov. 9, 2006 (or similar language from any more recent report):

"Phytopharm and Unilever have also become aware of many companies that are selling products over the Internet and in some stores claiming to contain Hoodia and causing weight loss. Analysis of these products has demonstrated that the great majority of them contain little or no Hoodia. Phytopharm and Unilever have made contact with the relevant authorities concerning this development and are satisfied with the progress being made in these key discussions."

Questions for discussion:

- What did the study actually conclude? Should we accept the study's findings? Why or why not?
- How many persons were sampled for the study? Might a larger group have produced different results?

- Was the study published in a scientific journal and scrutinized by other scientists (“peer review”)? Does that influence how much weight we should give to this study?
- What does the study tell us about possible bad side effects? Is Hoodia safe to take? Explain.
- Why isn’t Phytopharm currently selling a weight-loss product to the public? When might a product be available?
- What do Phytopharm and Unilever say about the products now being sold on the Internet?

Exercise #4, wrap-up – Weighing the evidence

To the teacher: Help students understand what all the evidence means. They need to evaluate the credibility of the sources of information presented, the difference between random anecdotes and real scientific data based on credible studies. They also need to examine “cause and effect” relationships to make sure the effects are credibly related to the causes. If your class has completed the FactCheckED.org lesson plan on fallacies, you’ll see that the Hoodia advertisements contain a number of different fallacies and booby traps. The most common problems include the fallacy of false cause (anecdotal evidence of the form, “I took product X and then lost Y pounds” is typically a false cause, as there is no supporting evidence to show that product X actually caused weight-loss Y). Suppressed evidence is another common problem (ads almost never point out that their products are not scientifically tested; those that cite the Phytopharm study do not mention that the product they are selling is not identical to Phytopharm’s product). The Phytopharm study itself is a questionable use of statistics, as the sample size is extremely small.

Choose one of the Internet sites that advertise Hoodia weight-loss products and write a report on its credibility and truth in advertising. Incorporate the findings from this lesson into your report, and include a visual example of the advertisement.

Questions for final discussion:

- What have you learned about how to gauge the truth of advertising?
- What qualities should you look for in a source when seeking unbiased and reliable information on any subject?

OPTIONAL EXERCISES

Optional Exercise #1 (Advanced) – Consider the source / Weighing the evidence

Hoodia products are considered “dietary supplements” rather than drugs. Both are regulated by the Food and Drug Administration but in different ways. Read what the FDA says about its own authority over dietary supplements, as well as other materials about Congress’ role in determining the agency’s powers. Does a dietary supplement manufacturer have to prove its product is safe before it goes to market? What about proving whether the substance is effective? Did politics play a part in congressional decisions about what the FDA could and couldn’t do? Take a position on the following question and write a short essay supporting your view: Should dietary supplements be more tightly regulated by the government or not?

Materials:

- U.S. Food and Drug Administration Dietary Supplement Overview
<http://www.cfsan.fda.gov/~dms/supplmnt.html> (be sure to click on the links under "Frequently Requested Information")
- National & Dietary Recipients: Top Twenty
<http://opensecrets.org/industries/recips.asp?Ind=H4600&Cycle=2006&recipdetail=A&Mem=N&sortorder=U>
- O'Keefe, Michael. "Dirty little secrets: supplement ingredients come under fire." Daily News. 10 Apr. 2005.
http://factchecked.org/Downloads/LessonPlans/HoodiaHoodoo/Hoodia_Attachment2.pdf
- "Follow the Money." Daily News. 25 Dec. 2005.
http://factchecked.org/Downloads/LessonPlans/HoodiaHoodoo/Hoodia_Attachment3.pdf
- Struglinski, Suzanne. "Hatch War Chest Juiced Up." Deseret Morning News. 23 Jan. 2006.
<http://deseretnews.com/dn/view/0,1249,635178407,00.html>
- Weeks, Andrew. "Dietary supplements could become state's first \$10 billion industry," The Enterprise. May 2006.
[http://factchecked.org/Downloads/LessonPlans/HoodiaHoodoo/Hoodia_Attachment%201\(2\).pdf](http://factchecked.org/Downloads/LessonPlans/HoodiaHoodoo/Hoodia_Attachment%201(2).pdf)

Optional Exercise #2 (Advanced) – Weighing the evidence

Write an essay on the history of attempts to create a marketable product from the active ingredient in Hoodia.

Materials:

- Future Development of P57, July 30, 2002:
<http://www.phytopharm.co.uk/news/newsreleases/?filterType1=text&dateMode=years&year=2002&filterArg1=P57&y=9&range=today&filterType2=date&id=1726&x=11>
- Pfizer Returns Rights of P57, July 30, 2003:
<http://www.phytopharm.co.uk/news/newsreleases/?filterType1=text&dateMode=years&year=2003&filterArg1=P57&y=6&range=today&filterType2=date&id=1698&x=6>
- Phytopharm and Unilever enter into a License and Joint Development Agreement for Hoodia gordonii extract, Dec. 15, 2004:
<http://www.phytopharm.co.uk/news/newsreleases/?filterType1=text&dateMode=years&year=2004&filterArg1=hoodia&y=9&range=today&filterType2=date&id=1560&x=9>
- Phytopharm successfully progresses to second stage of Joint Development Agreement for Hoodia gordonii extract with Unilever, April 10, 2006:
<http://www.phytopharm.co.uk/news/newsreleases/?filterType1=text&dateMode=years&year=2006&filterArg1=hoodia&y=10&range=today&filterType2=date&id=1414&x=7>

Be sure to consider where the companies stand in their research, how long it's taken to get there, and how you interpret the actions of the various corporations involved as they relate to the likelihood of getting a product to market.

CORRELATION TO NATIONAL STANDARDS

For a more detailed version of these standards, please click here:

<http://factchecked.org/Downloads/LessonPlans/HoodiaHoodoo/teacher.handout.hoodia.national.standards.pdf>

National Social Studies Standards

VI. Power, Authority, and Governance Social studies programs should include experiences that provide for the study of how people create and change structures of power, authority, and governance.

VII. Production, Distribution, and Consumption Social studies programs should include experiences that provide for the study of how people organize for the production, distribution, and consumption of goods and services.

X. Civic Ideals and Practices Social studies programs should include experiences that provide for the study of the ideals, principles, and practices of citizenship in a democratic republic.

Essential Skills for Social Studies

Acquiring Information

A. Reading Skills

1. Comprehension
2. Vocabulary

B. Study Skills

1. Find Information
2. Arrange Information in Usable Forms

C. Reference & Information-Search Skills

2. Special References
3. Maps, Globes, Graphics

D. Technical Skills Unique to Electronic Devices

1. Computer

Organizing & Using Information

A. Thinking Skills

1. Classify Information
2. Interpret Information
3. Analyze Information
4. Summarize Information

5. Synthesize Information

6. Evaluate Information

B. Decision-Making Skills

C. Metacognitive Skills

Interpersonal Relationships & Social Participation

A. Personal Skills

C. Social and Political Participation Skills

Democratic Beliefs and Values

B. Freedoms of the Individual

C. Responsibilities of the Individual

National Mathematics Standards

Data Analysis and Probability Standard

Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them

Process Standards

Reasoning and Proof Standard

Communication Standard

Connections Standard

National Education Technology Standards

Profiles for Technology Literate Students

Performance Indicators

2. Make informed choices among technology systems, resources, and services

7. Routinely and efficiently use online information resources to meet needs for collaboration, research, publication, communication, and productivity

8. Select and apply technology tools for research, information analysis, problem solving, and decision making in content learning

Information Literacy Standards

Information Literacy

Standard 1 accesses information efficiently and effectively

Standard 2 evaluates information critically and competently

Standard 3 evaluates information critically and competently

Independent Learning

Standard 4 pursues information related to personal interests

Social Responsibility

Standard 7 recognizes the importance of information to a democratic society

Standard 8 practices ethical behavior in regard to information and information technology

Standard 9 participates effectively in groups to pursue and generate information

English Language Arts Standards

Standard 1 Students read a wide range of print and non-print texts to build an understanding of texts, of themselves, and of the cultures of the United States

and the world; to acquire new information to respond to the needs and demands of society and the workplace; and for personal fulfillment.

Standard 3 Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts.

Standard 6 Students apply knowledge of language structure, language conventions (e.g., spelling and punctuation), media techniques, figurative language, and genre to create, critique and discuss print and non-print texts.

Standard 7 Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources (e.g., print and non-print texts, artifacts, people) to communicate their discoveries in ways that suit their purpose and audience.

Standard 8 Students use a variety of technological and information resources (e.g., libraries, databases, computer networks, video) to gather and synthesize information and to create and communicate knowledge.

Standard 12 Students use spoken, written, and visual language to accomplish their own purposes (e.g., for learning, enjoyment, persuasion, and the exchange of information).

National Science Standards

Science as Inquiry

Content Standard A

Science in Personal and Social Perspectives

Content Standard F

History and Nature of Science

Content Standard G

Health Education Standards

Health Education Standard 2 Students will analyze the influence of family, peers, culture, media, technology and other factors on health behaviors.

Health Education Standard 3 Students will demonstrate the ability to assess valid information and products and services to enhance health.

Health Education Standard 5 Students will demonstrate the ability to use decision-making skills to enhance health.

ABOUT THE AUTHOR

Brooks Jackson is a journalist who covered Washington and national politics for 34 years, reporting in turn for The Associated Press, the Wall Street Journal and CNN. At CNN he pioneered the "adwatch" and "factcheck" form of stories debunking false and misleading political statements starting with the presidential election of 1992. His investigative reporting for The AP and the Journal won several national awards. He is the author of two books: Honest Graft: Big Money and the American Political Process (Knopf, 1988) and Broken Promise: Why the Federal Election Commission Failed (Twentieth Century Fund: 1990).