Unit 8 Contemporary Weight Loss Programs

Lesson 3: Alternative Weight Loss Approaches

Habit is habit and not to be flung out of the window by any man, but coaxed downstairs a step at a

Mark Twain: Quotes for Weight Loss Motivation

Introduction

This lesson introduces you to alternative weight-loss approaches other than popular diets. Included
in this lesson are the use of complementary and alternative medicine approaches, prescription
medication, surgery, voluntary weight loss and control programs and worksite programs, weight-
loss enablers and barriers and benefits and risks of weight loss.

Complementary and Alternative Medicine

Schlenker and Long, pages 381 -382 provides us with a list of herb/Supplements used for weight
loss. According to Complementary and Alternative Medicine (CAM) box, “Common Herbs and
Supplements Used for Weight Loss.” page 381, we should examine the safety and effectiveness of
some of these herbs or supplements that we or our friends may have used to achieve weight-loss.

According to the Web site, About.com on Alternative, Holistic and Complementary Thyroid Diagnosis
& Treatment “There is a wealth of alternative, holistic and complementary medical approaches to
diagnosis and treatment of obesity” including the use of herbal supplements. (2008).

If you go into any health food store or look online, you'll find hundreds of weight loss
supplements, many of them claiming to have remarkable benefits. Although it's tempting to
try new supplements, the possible side effects and safety concerns aren't always listed. And
while some of them may be promising, others can do more harm than good. Here's
information about some of the more popular weight loss supplements. (2008).

Weight-loss Supplements

Fucoxanthin

Fucoxanthin is an antioxidant found naturally in edible brown seaweed such as wakame, the
seaweed used in miso soup. Although it has a long way to go before it can be recommended
for weight loss (there haven't been any human studies yet), what's particularly promising
about fucoxanthin is that preliminary studies in animals suggest it may target abdominal fat.
Fat in the abdomen is linked to heart disease and diabetes, and happens to be the problem
area for many people. Fucoxanthin also doesn't appear to be a stimulant like ephedra, bitter
orange or caffeine.

http://quotations.about.com/cs/inspirationquotes/a/WeightLoss2.htm
Retrieved July 15, 2008 from
http://thyroid.about.com/od/alternativeholisticinfo/Alternative_Holistic_and_Complementary_Thyro
id_Diagnosis_Treatment.htm
**Hoodia**

Hoodia is one of the better-known herbal supplements used as a natural appetite suppressant, but there haven't been any clinical trials involving humans yet. If you search online for hoodia, you'll find hundreds of companies selling hoodia and cautioning you not to buy the competitor's useless hoodia pills. Counterfeit or fake hoodia is a real problem – it's been estimated that more than half of all hoodia products aren't actually the real thing.

More: Hoodia

**Guarana**

Guarana is a plant native to parts of the Amazon rain forest. It has black seeds that are rich in caffeine, with approximately double the caffeine of coffee beans. The caffeine is a stimulant and is thought to raise energy expenditure, however, it could also stimulate the central nervous system and heart, and may result in anxiety and rapid heart rate in larger amounts.

More: Guarana

**Chromium**

The mineral chromium is needed for normal carbohydrate, fat and protein metabolism. One of its many functions is to help the hormone insulin move glucose into blood cells where it's needed. Chromium is also promoted as a supplement to lose weight and build muscle. Although it's thought to be particularly helpful for people with insulin resistance or diabetes, it's also used for weight loss by people without these conditions.

Small studies have correlated chromium supplements with weight loss, but a number of recent studies haven't found that chromium has any effect on weight. People taking diabetes medication shouldn't use chromium without consulting a doctor. Chromium may affect neurotransmitter levels, so people with depression, anxiety or psychiatric conditions shouldn't take chromium without consulting a qualified healthcare professional.

More: Chromium Side Effects

**Apple Cider Vinegar**

Apple cider vinegar has become popular as a “fat-burner” and as a natural appetite suppressant. There’s even an apple cider vinegar diet, which involves taking one to three teaspoons of apple cider vinegar or apple cider vinegar pills before each meal. While there's no harm in using some vinegar in cooking (a preliminary study suggests it may promote satiety), there have been reports of adverse effects with the use of apple cider vinegar tablets.

More: Apple Cider Vinegar

**Conjugated Linoleic Acid (CLA)**

Conjugated linoleic acid, or CLA, is a fatty acid found naturally in small amounts in milk. It's also available in nutritional supplement form and is popular for weight loss because it's thought to decrease body fat and increase muscle. A recent analysis of 18 previously published studies found that at a dose of 3.2 grams per day, CLA produced a modest loss in body fat in humans compared to a placebo. The most common side effect of CLA is mild to moderate digestive problems such as diarrhea. Some studies, however, have raised concerns that trans-10,cis-12 CLA, a component of many CLA supplements, may worsen insulin sensitivity and the lipid profile in people who are overweight. More research is needed.

**Chitosan**

Chitosan is a supplement derived from chitin, which is found in crustacean shells such as crabs. It's believed to prevent the absorption of fat by binding to fat molecules in the intestines. Chitosan appears to be relatively safe in the short term, although the more common side effects are constipation, bloating and other digestive complaints.
An analysis of 14 previously published studies found that chitosan supplements resulted in significantly greater weight loss, however, when the researchers only analyzed the high-quality studies, they found that chitosan’s effect on body weight was only minimal.

**Ephedra**

Ephedra sinica is a plant native to Asia that contains compounds called ephedra alkaloids, primarily ephedrine. It is often combined with caffeine or herbs containing caffeine, such as guarana and yerba mate. Although some short-term studies suggest the ephedra-caffeine combination may promote modest weight loss (two or more pounds per month compared to a placebo), ephedra was banned by the U.S. FDA in April 2004 because of serious safety concerns. Ephedra has been linked to a number of adverse events including high blood pressure, irregularities in heart rate, stroke, heart attacks, seizures and death. Although ephedra can still be found online, it should be avoided.

**Bitter Orange**

After ephedra was taken off the market in 2004, bitter orange (Citrus aurantium) a herb similar to ephedra, started to become more popular. It contains compounds similar to ephedrine called synephrine and octopamine. Bitter orange may raise blood pressure, increase heart rate or cause abnormal heart rhythms. There is a case report of ischemic colitis associated with the use of bitter orange. People with heart disease, high blood pressure, other cardiovascular conditions or diabetes should avoid it; however, anyone considering it should consult a qualified healthcare professional first. It shouldn’t be taken with caffeine or herbs containing caffeine (green tea, yerba mate), because it could theoretically increase the risk of adverse effects similar to ephedra. It interacts with many medications and can increase or decrease their effect.

(About, 2008).  

**Medication**

As we learned in Lesson 2, ‘diet pills’ that may be purchased ‘over the counter’ (OTC) are not considered medication by the Food and Drug Administration (FDA). A ‘medication’ that is available only by prescription from a physician is one that must be approved by the FDA for use as a weight-loss medication.

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Medication

- Only four short-term and two long-term medications have been approved by the Food and Drug Administration (FDA) for weight loss
  - Most thought to modify neurotransmitters in the central nervous system
  - To be eligible, a person must have a BMI greater than 30 or have diabetes, heart disease, high blood pressure or other problems that could benefit from weight loss
- New drugs on their way to approval

According to Williams’ page 380,
- Four medications are approved for short-term use
  - (1) Benzphetamine
  - (2) Diethylpropion
  - (3) Phendimetrazine
  - (4) Phentermine
- Two approved for longer-term use
  - (1) Orlistat
  - (2) Sibutramine
- All except orlistat modify neurotransmitters in central nervous system (CNS), related to addictive drugs, cause modest weight loss
- Orlistat blocks lipase in intestines, prevents digestion of one third of dietary fat
- Cannabinoid receptors antagonists being studied

Schlenker and Long point out that a review of the Diet-Medications Interactions box, “Drugs Used To Treat Obesity,” page 380, shows us that the results of these drugs are generally disappointing and are associated with significant side effects.

Surgery

Even with surgical interventions for weight-loss, diet is still a concern both pre and post-surgery. In addition, any surgical procedure involves risks as well as benefits. To help explain the process of

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surgical weight loss procedures, Weight Loss Surgery Info Web site provides the following information:

“How Weight Loss Surgery Reduces Weight” (Weight Loss Surgery Info, 2008)\(^6\)

Bariatric surgeons first began to recognize the potential for surgical weight loss while performing operations that required the removal of large segments of a patient’s stomach and intestine. After the surgery, doctors noticed that in many cases patients were unable to maintain their pre-surgical weight. With further study, bariatric surgeons were able to recommend similar modifications that could be safely used to produce weight loss in morbidly obese patients. Over the last decade these procedures have been continually refined in order to improve results and minimize risks. Today’s bariatric surgeons have access to a substantial body of clinical data to help them determine which weight loss surgeries should be used and why. (Weight Loss Surgery, 2008)\(^7\)

Today, the American Society for Bariatric Surgery describes two basic approaches that weight loss surgery takes to achieve change:

- **Restrictive Procedures** that decrease food intake

The theory is simple. When you feel full, you are more likely to have reduced feelings of hunger and will no longer feel deprived. The result is that you are likely to eat less. Restrictive weight loss surgery works by reducing the amount of food consumed at one time. It does not, however, interfere with the normal absorption (digestion) of food. In a restrictive weight loss procedure, the surgeon creates a smaller upper stomach pouch. The pouch, with a capacity of approximately 1/2 to 1 oz. (15 to 30 ml), connects to the rest of the stomach through an outlet known as a "stoma." In a cooperative and compliant patient, the reduced stomach capacity, along with behavioral changes, can result in consistently lower caloric intake and consistent weight loss. (Weight Loss Surgery, 2008)\(^8\)

During recovery, patients must adhere to the strict specific dietary guidelines and restrictions their bariatric surgeon prescribes. While these guidelines may vary from one surgeon to the next, it is important for each patient to follow the surgeon’s guidelines. When the time comes to resume eating "regular" food, the patient must learn to adapt to a new way of eating. At each meal, they are restricted to consuming approximately 1/2 to a full cup of food before feeling uncomfortably full. Patients who see the best results from a restrictive weight loss procedure are those who learn to eat slowly, eat less, and avoid drinking too many fluids, particularly carbonated beverages. If the patient fails to follow these guidelines, they can stretch the stomach pouch and/or the stoma outlet and defeat the purpose of the surgery. The effectiveness of a restrictive procedure is reduced by constant snacking or by drinking high-calorie, high-fat liquids. Failure to achieve the expected level of weight loss is usually the result of a patient failing to comply with the recommended dietary and behavior modifications, such as increased exercise and regular support group attendance. (Weight Loss Surgery, 2008)\(^9\)


Malabsorptive procedures that alter digestion, thus causing the food to be poorly digested and incompletely absorbed so that it is eliminated in the stool.

It can be said that some of the restrictive approaches discussed above have not always achieved the excess weight loss surgeons and patients anticipated. For this reason, weight loss procedures that alter digestion, known as Malabsorptive procedures, were developed to work in conjunction with restrictive approaches. Some of these techniques involve a bypass of the small intestine, thus limiting the absorption of calories. On balance, Malabsorptive or Malabsorptive/restrictive procedures have resulted in an overall increase in the loss of excess weight. The risk of complications and side effects generally increases with the lengthening of the small intestine bypass. You and your bariatric surgeon must determine the risks and benefits over your lifetime with the type of weight loss surgery you choose.

- Basically, weight loss operations fall into three categories:
- Restrictive procedures make the stomach smaller to limit the amount of food intake.
- Malabsorptive techniques reduce the amount of intestine that comes in contact with food so that the body absorbs fewer calories.
- Combination operations take advantage of both restriction and malabsorption.

Source: (Weight Loss Surgery, 2008)¹⁰


2008. Compiled by K. Cavanaugh

According to our Williams' text in order to be eligible to undergo weight loss surgery, patients must meet the following criteria:

Source: (Weight Loss Surgery, 2008)
2008. Compiled by K. Cavanaugh

If eligibility criteria were not in place for this type of weight-loss surgery, there might be additional risks involved. For example, patients who might otherwise use alternative methods of weight loss might attempt to undergo surgery as a ‘quick fix’ for undesirable weight based on cosmetic and not health-related reasons.

**Risks of Surgery**

According to the ObesityHelp Web site (ObesityHelp, 2008)\(^{12}\) the following risks apply to weight-loss surgery:

**General Bariatric Surgery Risks:**

Bariatric surgery is major surgery, even with minimally invasive surgical techniques. The operation requires general anesthesia, at least two to four days of hospitalization, and several weeks of physical recovery. Furthermore, as with any major operation, there are risks associated with bariatric surgery. (ObesityHelp, 2008)\(^{13}\)

Risks of bariatric surgery include of course the risks associated with any abdominal operation:

- incisions may become infected
- bleeding
- abdominal surgery may cause complications related to your heart and lungs
- hernias may result at incision site
- there is a chance that sutures will be rejected


- adhesions may result in obstructed or blocked intestines
- general anesthesia carries with it various risks, as it does with any surgical procedure where general anesthesia is used

**Early Risks of Bariatric Surgery**

Obesity surgery risks are typically separated into two categories—early and late risks. (ObesityHelp, 2008)\(^{14}\)

- Leakage of fluid from the stomach or intestine through the staples or sutures which results in abdominal infection. This potentially serious (but rare) risk of bariatric surgery usually requires a second operation for drainage of infection.
- Injury to spleen. This is a very uncommon complication which may require removal of the spleen if bleeding cannot be controlled.

(ObesityHelp, 2008)\(^{15}\)

**Late Risks of Bariatric Surgery**

These risks of bariatric surgery occur in later stages after the surgery.

- The formation of ulcers in the stomach or small intestine. This is an uncommon complication which occurs in approximately 4 out of 100 patients after gastric bypass surgery. Ulcers are more common in smokers and patients taking medications for arthritis.
- Dumping. Patients may develop loose stools and/or abdominal cramps shortly after eating certain types of foods. These symptoms can be avoided by not eating the offending foods. Diarrhea is uncommon after gastric restrictive surgery and can be successfully treated with medication. Dumping is occasionally associated with brief periods of light-headedness, sweating or heart palpitations due to low blood sugar. These symptoms can usually be reduced by drinking a sweet liquid like fruit juice.
- Obstruction of the opening of the stoma. This rare complication occurs in less than 1 out of 100 gastric bypass patients and can occur when a piece of food becomes lodged in the stoma. When this happens, the piece of food is removed through a tube (endoscope) passed from the mouth into the stomach. (ObesityHelp, 2008)\(^{16}\)

Vitamin and/or iron deficiency. This may occur in a mild form in as many as 40 percent of patients after gastric bypass. Iron and some vitamins, most notably Vitamin B-12, are primarily absorbed in the stomach and upper part of the small intestine which is bypassed. Both the vitamin and iron deficiencies are easily treated by either oral supplementation or injections. Women who are regularly menstruating will need additional iron supplements.

*Vitamin and iron deficiencies are uncommon after stapled gastroplasty because, with this operation, the food passes through the stomach and small intestine in the normal way.*

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Low calcium and protein levels and deficiencies in fat soluble vitamins (A, D, E) are known to occur after distal gastric bypass. Gas, flatulence and diarrhea may be more prominent after distal gastric bypass.

- Inaccessibility of the lower stomach and upper intestine to diagnostic tests such as upper GI (barium) x-rays and upper GI endoscopy. When the stomach is closed off in a gastric bypass, there is no way for contrast material or an endoscope to reach the bypassed stomach (the part of the stomach below the staples). This would make diagnosis of a problem, such as an ulcer of the lower bypassed stomach, more difficult. The incidence of problems occurring in the bypassed part of the upper GI tract is extremely low.
- Staple disruption can occur at any time after these operations but is uncommon. If staples pull out, the feeling of fullness will probably disappear. A second operation may be required (restapling).
- Hair loss may be a temporary problem for some patients within the first six to twelve months after the operation. This is largely due to vitamin deficiency. There is no specific remedy other than proper nutrition and multivitamin supplements.

It’s important that you discuss these bariatric surgery risks with your surgeon and that you understand properly what your risks are before you decide to undergo bariatric surgery. The risks of bariatric surgery differ slightly depending on the method used—i.e. lap band surgery risks are different from vertical gastrectomy risks—and you and your surgeon can find the method that best mitigates your risks based on your health and weight loss needs. Obesity surgery risks are not to be considered lightly. (ObesityHelp, 2008)\(^\text{17}\)

Voluntary Weight Loss and Control

Gail Frank describes voluntary weight loss as including efforts such as dieting, exercise, behavior modification and drug treatment where clients enter into weight loss programs for non-health related and non-physician related direction. “Data was collected by the National Institutes of Health (NIH) Nutritional Coordinating Committee and the Office of Medical Applications of Research” with data on “…surgery, liposuction, medical devices, the economics and ethics of weight-loss practices, and regulatory issues were not covered” (2008, page 782, ¶1).\(^\text{18}\)

The data revealed “Fewer younger people try to lose weight compared with older persons. Weight-loss attempts increase with higher education, family income, and BMI (Body Mass Index)” (2008, page 782, ¶1).\(^\text{19}\)

A higher percentage of Hispanic men attempt weight loss compare to all ethnic groups; the lowest percentage occurs for African-American men. A higher proportion of African-American and Hispanic women are overweight than are white women, but a similar percentage of all groups try weight-loss regimens. (2008, page 782, ¶1).\(^\text{20}\)

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Forty-four percent of female high school students and 15% of male students reported that they were trying to lose weight; 26% of female and 15% of male students were trying to keep from gaining weight. (2008, page 782, ¶1).  

**Reasons Americans Attempt Voluntary Weight Loss**

- To improve their self-image
- To reduce the risk of weight-related health problems
- To improve their perception of their health
- To increase societal acceptance of their weight

(Frank, 2008, page 782, ¶1).  

**Worksite Programs – UNC Model**

According to the University of North Carolina at Chapel Hill, UNC researchers implemented a worksite weight loss program as a way to address the need for weight-loss among employees.

Researchers at the University of North Carolina at Chapel Hill are recruiting more than 1,200 overweight employees at several North Carolina colleges and universities for a study of workplace weight-loss programs.

The project will test four worksite-based weight-loss programs. Researchers hope to uncover cost-effective ways for employers to help employees lose weight and keep it off.

“The overarching goal is to identify effective and cost-effective weight loss programs that can be easily implemented by employers and help employees keep the weight off,” said Laura Linnan, Sc.D., the study’s principal investigator and associate professor of health behavior and health education in the UNC School of Public Health.

The five-year “WAY to Health” project (WAY is an acronym for Worksite Activities for You) is based at the UNC Center for Health Promotion and Disease Prevention and funded by a $3.4 million grant from the National Heart, Lung, and Blood Institute. The WAY to Health weight-loss programs at each of 14 participating colleges or universities will last 18 months. Weight loss is a primary focus, but will also monitor changes in the campus environment to support employee health.

“More than 60 percent of U.S. adults over age 18 spend a great deal of their waking hours at work,” Linnan said. “Workplace weight-loss programs that are cost-effective have the potential to improve the health of large numbers of people, which is crucial, given that more than 65 percent of Americans are overweight or obese.”

Worksite wellness committees will be organized or partnered with at each college or university. "Our research team will provide technical assistance to the committees over the study period to help them plan, identify, implement and evaluate health promotion programs

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that are tailored to the needs and interests of employees at each institution” said Carolyn Naseer, WAY to Health project manager.

In addition to the wellness committees, 100 overweight employees from each campus will be enrolled in the weight loss portion of the study. All enrolled employees will be randomized to receive one of four programs.

One group will receive a Web-based weight-loss program that has proven effective in producing weight loss. The program offers dietary and physical activity resources and recommendations; behavioral strategies; problem-solving skills; weekly lesson plans; worksheets, recipes and other printable documents; links to information libraries; and message boards where participants can talk to others in the program.

“The Web-based program is based on years of research in helping people acquire the skills and maintain the motivation necessary for weight loss. We know people hear the messages ‘eat less and exercise more’ but figuring out how to do that for a lifetime is very difficult,” said Deborah Tate, Ph.D., who developed the program and is a co-investigator for the study. Tate is assistant professor of nutrition and of health behavior and health education in the UNC School of Public Health.

The second group will receive cash payments for losing weight. Weight will be measured at three, six, 12 and 18 months, and participants will earn cash based on the percentage of weight loss achieved. All employees will be monitored for healthy weight loss over the course of the study.

The third group will receive both the Web-based weight-loss program and cash payments for losing weight. The fourth group will be given information about community-based programs and resources for weight loss, including any programs offered by the worksite wellness committees at their college or university. This group will not receive the Web-based program or cash incentives. These employees will receive access to the online Web-based weight loss program when the study ends.

The researchers are working with a statewide steering committee that includes a group of experts from the UNC School of Public Health, the Center for Health Promotion and Disease Prevention, the N.C. Community College System, the University of North Carolina System, RTI International, the N.C. Department of Health and Human Services, N.C. Prevention Partners, Blue Cross Blue Shield of North Carolina and the State of North Carolina Teachers and State Employees Comprehensive Major Medical Plan.

**Weight-Loss Enablers and Barriers**

According to Gail Frank, “Success appears linked to therapies that promote practical dietary behaviors and to therapies or counselors who assist individuals with high-risk emotional and social situations. Success is also linked to behavioral strategies that employ self-monitoring of progress and encourage stress reduction” (2008, page 782, ¶1).^{23}

**Benefits and Risks of Weight Loss**

Barriers to weight loss include the following:

- Reduced self-efficacy
- Inability to lose weight early in the program, causing individuals to stop their dietary and exercise changes
- Lack of social or professional support
- Deeply rooted social or psychological problems (e.g., depression)
- Cultural issues and mores

**Barriers and Benefits**

Michael Dansinger, MD, from Tufts University, conducted a study to find out which commercial diet plan worked the best. His conclusion is that most commercial diet plans and nutrition programs work equally as long as participants stick with them. Although one plan may appeal more to some people for personal reasons, the overall finding is that weight loss and maintenance is due to more exercise and fewer total calories.

People who stayed on their diet for a full year experienced the most weight loss. Study results showed a 6 percent weight loss for the Ornish program participants, a 5 percent weight loss for those on both Weight Watchers and the Zone diets and a 4 percent weight loss for Atkins dieters.

Even with a moderate weight loss, participants significantly reduced their heart disease risk - by 5 percent to 15 percent on average.

For the study, 160 overweight people were randomly assigned to one of the four diets. They followed a supervised program for two months and were left to continue the diets on their own. After only two months, 22 percent quit the study. After a year, 35 percent dropped out of Weight Watchers and the Zone diets, and 50 percent quit the Atkins and Ornish plans.

The researchers said the study suggests there is no one-size-fits-all diet best for everyone and any diet can work if it helps someone eat less and lose weight.  

So while this study does seem to conclude that any diet can work, the drop-out rate raises other issues. It may be that finding and sticking with a balanced approach to eating for life is still the best long-term solution to maintaining a healthy weight.

**Summary**

Gail Frank points out how “Observational studies of persons who report weight loss and data from clinical trials document the association of weight loss to health. For morbidly obese individuals, weight loss improves functional status, reduces work absenteeism, lessens pain, and increases social interaction.” Many alternatives for weight loss are available to the public including voluntary

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programs, alternative and complementary approaches, medication, and surgery. (2008, page 799, ¶1).²⁵