Nutrition and Exercise Toolkit: A Physician’s Guide to Promoting a Healthy Lifestyle

The American Congress of Obstetricians and Gynecologists

District IX California
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Executive Summary

Obesity has grown into an epidemic in the U.S., affecting approximately 72 million people today. It has become a huge public health concern that is associated with a multitude of medical, social, and economic consequences. On the medical level, obesity is increases the risk for numerous health conditions such as: coronary heart disease, stroke, type 2 diabetes, cancer, high cholesterol, sleep apnea, mental health conditions, and the list goes on. It also has a huge effect on women’s health in particular as it increases risk for miscarriage, gestational hypertension, preeclampsia, and etc. On the social and economic levels, obesity-related issues are associated with increased medical costs, reduced worker productivity, and increased absences at work. In 2008, costs attributed to obesity-related issues were approximately $147 billion and has been estimated to increase up to $956 billion by the year 2030. These are all issues and financial costs that will be attributed to the public if it is not addressed or treated early on.

Some tools that can help address the obesity epidemic are:

- **Motivational Interviewing**
  - Motivational interviewing is a form of treatment that can help with weight management by focusing on behavioral changes rather than medical changes. It has been proven to be effective in helping patients manage their weight. Here are some steps on how to conduct a motivational interview:
    - Conduct a risk assessment on the patient
    - Ask if the patient would like to have a discussion about their weight
    - Assess to see if the patient is ready to take on behavioral modifications to improve their health
    - Follow up with patients and use supportive statements to motivate the individuals

- **Recommendations for Healthy Living**
  - The U.S. Department of Agriculture and U.S. Department of Health and Human Services suggests that it is important to manage weight, reduce consumption in particular foods that are high in fat, and increase consumption in foods that are high in nutrients in order to become healthier.

- **Cultural Competency**
  - With the growing diversity in the U.S., it is important that physicians are aware of the different cultures and backgrounds of their patients in order to better help advise them on culturally appropriate health recommendations. Things to consider are socioeconomic background, culture, ethnicity, and language.

- Additional tools for **patient education**, **research abstracts** on the science of various weight management topics, and **resources for cultural competency** that will provide information that can further assist you in promoting a healthy lifestyle for yourself and your patients.

With these tools, the committee members of the ACOG District IX Physician Work-Life Balance Committee hope that it will assist you elicit positive change and improve the obesity epidemic.
Introduction

Obesity is a growing public health concern affecting a large proportion of the population in the United States. According to the National Center for Health Statistics, obesity rates in the U.S. have doubled for adults and have more than tripled for children and adolescents over the last three decades. Since 1980, the percentage of adult Americans who are obese has increased to a staggering 33%, which is approximately 72 million people. The prevalence of obesity among children aged 6 to 11 years increased from 6.5% in 1980 to 19.6% in 2008. The prevalence of obesity among adolescents aged 12 to 19 years increased from 5% to 18.1%. Figure 1 charts the current and projected rates of obesity among adults in the US. These overwhelming obesity rate increases create enormous public health problems since obesity is associated with a multitude of medical, social, and economic consequences that not only affects the individual, but also the society as a whole.

Figure 1: Observed and Projected Rates of Overweight and Obese Adults in the U.S.


Obesity increases the risk of many health conditions, including but not limited to the following:

- Coronary heart disease, stroke, and high blood pressure
- Type 2 diabetes
- Cancers, such as endometrial, breast, and colon
- Unfavorable cholesterol levels and high levels of triglycerides
- Liver and gallbladder disease
- Sleep apnea and other respiratory problems
- Degeneration of cartilage and joints (osteoarthritis)
- Reproductive health complications such as infertility
- Mental health conditions
Many obstetrician/gynecologists consider obesity as the leading health problem confronting women today and also one of the most widespread and detrimental reversible health problems. Studies consistently link obesity as a risk factor for miscarriage, gestational hypertension, preeclampsia, gestational diabetes, cesarean section, and failed trial of labor after cesarean sections. Obese patients are more likely to be admitted earlier in labor, need labor induction, require more oxytocin, and have longer labors. Obesity may also increase the risk of birth defects especially those related to the neural tube, cardiac system, and facial clefting. There is a link between maternal obesity and the fetus experiencing obesity in his/her future.

Obesity also creates social and economic problems. Obesity-related issues are associated with increased medical costs, reduced worker productivity, and increased absence from work. In 2008, the estimated medical care costs for obesity-related issues were approximately $147 billion. If the obesity crisis is not addressed, studies have projected that by the year 2030 approximately 90% of all Americans will become overweight or obese, resulting in an increase of health-care costs attributed to obesity to approximately $860 to $956 billion.

The overwhelming statistics found in relation to obesity emphasize the importance of establishing an obesity prevention and treatment program. The goal of this toolkit is to educate, assist and encourage the OB/Gyn to counsel their patients about good nutrition, healthy exercise and current weight loss strategies so as to make a positive impact on the current obesity epidemic in the United States. The toolkit also seeks to provide the academic evidence that illustrates the importance for physicians to personally adopt healthy life practices in order to more powerfully role model and counsel their patients. Dr. Vivian M. Dickerson, past president of ACOG, encourages OB/Gyns to ‘walk the talk.’ She states, “It is important that as physicians we set a positive example for our patients by adopting healthy lifestyles, including eating right and exercising regularly.”

The members of the ACOG, District IX Committee on Physician Work-Life Balance encourage you to utilize this toolkit in making progress in our fight against obesity and in maintaining healthy lifestyles for both you and your patients.
Motivational Interviewing

With the rising rates of obesity, it is imperative that we implement preventative and treatment measures to address the health consequences of obesity. Many individuals who are overweight or suffering from obesity often feel a sense of discrimination and stigma in their daily lives. Not only do they suffer from being perceived as less competent, lazy, and lacking self-discipline at work and/or in school, they sometimes also feel stigma in healthcare settings. The impact of weight bias patients experience from health care professionals may make them feel reluctant to seek proper medical attention. This could result in a delay of necessary care, with the consequence of developing more serious illnesses.

Many patients are tired of being told what to do and often have difficulty adhering to the recommendations of their doctors. This ‘noncompliance’ can become very frustrating for both the physician and the patient. Motivational interviewing is a patient-oriented approach that allows the interviewee to openly express their ambivalence about lifestyle changes. Using their ambivalence as a tool, this technique can motivate patients to make healthier choices.

Health care professionals are key players in addressing the problem of obesity and we can maximize our success by being sensitive to the stigma experienced by so many patients. We must take great care to avoid using weight biased language. By doing so, we will create a more comfortable environment for patients seeking medical care regarding weight issues. Instead of a lecture, create a conversation.

Patients may eventually become advocates for their own health if they are cared for in an environment that supports them in expressing their concerns, motivations and the obstacles they face regarding their choice to live a healthier lifestyle.

There are three basic steps that have been proven to be effective in identifying the medical problems associated with patients suffering from obesity and in providing guidance on how to conduct a motivational interview with them.

Step 1: Risk Assessment

It is important to gather valuable information about the patient during their initial visit in order to assess their current health risks. As indicated by George Blackburn, MD, PhD and Belinda Waltman in their article, “Patient-Oriented, Clinician-Guided Weight Management: A Case Study in the Treatment of Obesity,” some important data to gather would include:

- Weight history chart and age at onset
- BMI (kg/m^2): Convert weights to BMI
- Waist circumference for assessment of abdominal fat
- Body fat distribution: abdominal/gluteal
- Weight cycling: yes/no
- Weight related comorbidities, such as cardiovascular disease or risk factors, diabetes mellitus, gout, hypertension, and dyslipidemia
- Presence of an eating disorder, such as binge eating, night eating, anorexia nervosa, and bulimia
Step 2: Motivational Interviewing

A key aspect of motivational interviewing is to make the patient feel comfortable and safe to enable them to more fully discuss their concerns. By doing so, we allow patients to self-reflect and evaluate their behaviors in order to gain the strength necessary to improve their health choices. Here are some ways to conduct a motivational interview (please reference the recommended readings for detailed instructions):

- After assessing the weight and risk factors of the patient, ask if they would like to discuss their weight, and, if so, begin asking open-ended questions. When doing so it is important to make sure sincerity and care is being reflected in your tone
  - Include statements like, “if any”, when asking about any health concerns of patients so they feel less pressure and have more autonomy
  - Express empathy through reflective listening

- Assess to see if the patient is ready to take on behavioral modifications to improve their health.
  - If they are ready, give them advice on the next steps to weight loss management
  - If they are not ready, ask reflective and open-ended questions to address their concerns and figure out what can be done to help prepare them to be ready for such a commitment. Be sure to avoid arguments and from being direct, but be sure to be as non-judgmental and non-condescending as possible.

- Once the patient acknowledges that they are ready, help the patient:
  - Set realistic and measurable goals
  - Design and write out a treatment plan on a prescription notepad that promotes incremental changes in eating and exercise patterns
    - Starting off with small incremental goals may be more motivating and less overwhelming
  - Print out a Diet Comparison Chart for the patient’s reference (also can be found Appendix I)
  - Evaluate the current and goal BMI of the patient by using the customized BMI Chart (also can be found in Appendix I) and specify what their weight goal is for each month
  - Print out and give the patient a Food Diary for them to record their daily meals (also can be found in Appendix I)
  - Print out and give the patient an Exercise Diary for them to record their daily exercises (also can be found in Appendix I)
  - Print out or refer patients to additional resources on how to eat healthy where they can find information on healthy recipes, cookbooks, and advice for healthy living (also can be found in Appendix I)

Examples of Motivational Interviewing Dialog

Precontemplation:
- What do you make of these test results?
- Would you like to know more about [_________]

Contemplation:
- What worries you about your condition?
- How does your condition stop you from doing the things you want to do?
- How do you see yourself in 5 years?
- I’m not going to pressure you to change; I’m here to support you.
- Where do you want to go from here?

Action:
- What [diet approach/type of exercise] appeals to you the most? How can you make that work with your schedule?
- Set simple, very easy goals at first.
- What small thing could you even do today when you go home?
- Are there friends or family members you could ask to help you with your goals?
- Thanks very much for filling out these logs; that’s a big help.
- I’m very happy to see that you are taking on [this issue] to improve your health.
- Look at these [test results, weight, blood pressure]; way to go!

Maintenance:
Making these kinds of life changes can be challenging - be kind to yourself if there are temporary setbacks - they happen to everyone.
Print out or refer patients to additional nutritional information for various cultural backgrounds to find different recipes and nutritional values of different foods from diverse populations (also can be found in Appendix III).

Encourage the patient to use all these resources as the first step to managing their weight management process.

**Step 3: Follow-up**
- Be sure to use plenty of supportive statements and words of encouragement to help motivate the individual on every single (even if it seems little) improvement \(^ {12} \)
- Provide advice and alterations in the treatment plan as needed

Though there is very limited time during each patient visit, it is extremely important to make an effort to adopt some of these techniques to help motivate patients to have the agency to improve their health. It requires more than knowledge to achieve life-changing goals; it requires motivation. An open mind and great words of encouragement can go a long way.

To find more information on how to conduct motivational interviews, please refer to the resources listed below. These are all great resources that provide details on the various approaches of motivational interviewing as well as examples of different types of evaluative questions to ask patients.

**Highly Recommended Readings:**
- Bell, K; Tanabe, T. “Motivational Interviewing: How to Improve your Success in Promoting Health Behavior Change.” <http://www.sgim.org/userfiles/file/AMHandouts/AM05/handouts/wd03.pdf>


Recommendations for Healthy Living

Having the proper tools and resources to learn about nutrition and exercise is essential. The U.S. Department of Agriculture (USDA) and U.S. Department of Health and Human Services (HHS) published the *Dietary Guidelines for Americans, 2010* to provide recommendations to improve health. The below includes information derived from that publication:

**Managing Weight**
- Improve eating and exercise behaviors to reduce chances of becoming overweight or obese\(^{13}\)
- Consume fewer calories to manage body weight\(^{13}\)
- Be more physically active; start off with at least 10 minutes of any physical activity daily\(^{13}\)

**Foods to Reduce in Consumption**
- Sodium; less than 2,300 milligrams (mg) daily\(^{13}\)
- Saturated fatty acids; replace with monounsaturated and polyunsaturated fatty acids\(^{13}\)
- Dietary cholesterol to 300 mg per day\(^{13}\)
- Trans fatty acid, partially hydrogenated oils, and fatty foods\(^{13}\)
- Solid fats and added sugars\(^{13}\)

**Foods and Nutrients to Increase in Consumption**
- Vegetables and fruit\(^{13}\)
- Dark-green, red, and orange vegetables\(^{13}\)
- Whole grains\(^{13}\)
- Fat-free dairy products\(^{13}\)
- Protein foods; seafood, lean meat and poultry, eggs, beans, peas, soy products, and unsalted nuts\(^{13}\)
- Oils in replacement of solid fats\(^{13}\)
- Potassium, dietary fiber, calcium, and vitamin D\(^{13}\)

This publication may be viewed and downloaded from the Internet at [www.dietaryguidelines.gov](http://www.dietaryguidelines.gov).

For additional resources from the USDA and HHS on how to manage weight and how to choose healthy foods, please visit:
- Interactive Menu Planner
- Eat Smart. Play Hard.™ Healthy Lifestyle
- Let’s Eat for the Health of It
- MyPyramid Tracker
For information and resources from other sources, please refer to the following:

**Appendix I – Patient Education Materials**
- Diet Comparison Chart
- BMI Charts: Where You Are And Where You Should Be
- Food Diary Journal
- Exercise Diary Journal
- Additional Patient Resources

**Appendix II - Research Abstracts**
- Nutrition Science
- Exercise Science
- Science of Weight Loss Medications
- Bariatric Surgery
- Advice On Sensitive Weight Management Counseling
- Evidence Behind Healthy Doctors Influencing Patients’ Health

**Appendix III – Cultural Competency Resources**
Cultural Competency

As the U.S. population becomes more diverse, it is important for physicians to be aware of the various cultural backgrounds of their patients to more effectively care for them. Cultural competency improves the quality of care patients receive. Addressing the health disparities of diverse populations will ultimately contribute to improving the health of the nation as whole.

When addressing obesity, it is important to take into account a person’s socioeconomic background, culture, ethnicity and language. Individuals from diverse backgrounds will not necessarily benefit from nutritional and exercise advice from health care professionals that are not well versed in different cultural traditions. Many underserved communities have their own culture of food that will not necessarily be aligned with the nutritional advice that some health care professionals would ordinarily offer. It is important to try to incorporate the diverse lifestyles of the patient to try to meet the dietary guidelines for a healthy individual. In addition, many patients who come from low socioeconomic backgrounds will live in dangerous neighborhoods where it may not be safe to exercise outside.

The following link is an educational PowerPoint produced by Karmeen Kulkarni, MS, RD, BC-ADM, CDE that provides an outline on the importance of cultural competency and some nutritional advice for various populations: Cultural Competency in Nutrition and Diabetes: Food Choices, Physical Activity and Obesity among Ethnic and Cultural Groups in the United States

Additional resources regarding cultural competency can be found at: Appendix III – Cultural Competency Resources.

Conclusion

Obesity is a chronic disease affecting a growing number of individuals in the U.S. Attempts to prevent and to treat obesity are important issues in caring for the health of your patients. In addition to providing medical advice, health care professionals should try to focus on social and behavioral ways to implement change. Healthy weight management requires self-awareness and desire to change from the patient in combination with motivation and health advocacy from the physician. Studies have shown that patients who are exposed to motivational interviewing as part of their treatment were substantially more successful in improving their health. While it is important for patients to learn about healthy eating habits and strategies to engage in adequate amounts exercise, that alone is not enough. Motivating and educating patients and promoting long-term health behavior improvements are essential in addressing the obesity issue. Role modeling or ‘walking the talk’ is an important addition.
Appendix I – Research Abstracts

In an effort to prevent and treat obesity in the U.S., an extensive list of academic journal articles has been compiled to help engage physicians in improving the health of their patients. The abstract of each article has been included to help physicians easily navigate through the background research of each of the following categories:

- **Nutrition Science**
- **Exercise Science**
- **Science of Weight Loss Medications**
- **Bariatric Surgery**
- **Advice on Sensitive Weight Management Counseling**
- **Evidence Behind Healthy Doctors Influencing Patients’ Health**

By understanding the science behind each of these categories, we hope that physicians will be better prepared in counseling their patients regarding their health.

**Nutrition Science**


**A dietary quality comparison of popular weight-loss plans.**

**Ma Y, Pagoto SL, Griffith JA, Merriam PA, Ockene IS, Hafner AR, Olendzki BC.**

**Source**

Division of Preventive and Behavioral Medicine, University of Massachusetts Medical School, Worcester, MA 01655, USA. Yunsheng.Ma@umassmed.edu

**Abstract**

Popular weight-loss plans often have conflicting recommendations, which makes it difficult to determine the most healthful approach to weight loss. Our study compares the dietary quality of popular weight-loss plans. Dietary quality, measured by the Alternate Healthy Eating Index (AHEI), was calculated via sample menus provided in published media for the New Glucose Revolution, Weight Watchers, Atkins, South Beach, Zone, Ornish, and 2005 US Department of Agriculture Food Guide Pyramid (2005 Food Guide Pyramid) plans. The criterion for determining which weight-loss plans were the most popular was their status on the New York Times Bestseller list. Weight Watchers and the 2005 Food Guide Pyramid plan were included because they are the largest commercial weight-loss plan, and the current government recommendation, respectively. Analysis of variance was used to compare nutrient information among the weight-loss plans. The AHEI scores adjusted for energy content were also compared. Of a maximum possible score of 70, the AHEI scores for each weight-loss plan from the highest to the lowest plan were: Ornish (score 64.6), Weight Watchers high-carbohydrate (score 57.4), New Glucose Revolution (score 57.2), South Beach/Phase 2 (score 50.7), Zone (score 49.8), 2005 Food Guide Pyramid (score 48.7), Weight Watchers high-protein (score 47.3), Atkins/100-g carbohydrate (score 46), South Beach/Phase 3 (score 45.6), and Atkins/45-g carbohydrate (score 42.3). Dietary quality varied across popular weight-loss plans. Ornish, Weight Watchers high-carbohydrate, and New Glucose Revolution weight-loss plans have an increased capacity for cardiovascular disease prevention when assessed by the AHEI.


**Comparison of the Atkins, Ornish, Weight Watchers, and Zone diets for weight loss and heart disease risk reduction: a randomized trial.**

**Dansinger ML, Gleason JA, Griffith JL, Selker HP, Schaefer EJ.**
CONTEXT:
The scarcity of data addressing the health effects of popular diets is an important public health concern, especially since patients and physicians are interested in using popular diets as individualized eating strategies for disease prevention.

OBJECTIVE:
To assess adherence rates and the effectiveness of 4 popular diets (Atkins, Zone, Weight Watchers, and Ornish) for weight loss and cardiac risk factor reduction.

DESIGN, SETTING, AND PARTICIPANTS:
A single-center randomized trial at an academic medical center in Boston, Mass, of overweight or obese (body mass index: mean, 35; range, 27-42) adults aged 22 to 72 years with known hypertension, dyslipidemia, or fasting hyperglycemia. Participants were enrolled starting July 18, 2000, and randomized to 4 popular diet groups until January 24, 2002.

INTERVENTION:
A total of 160 participants were randomly assigned to either Atkins (carbohydrate restriction, n=40), Zone (macronutrient balance, n=40), Weight Watchers (calorie restriction, n=40), or Ornish (fat restriction, n=40) diet groups. After 2 months of maximum effort, participants selected their own levels of dietary adherence.

MAIN OUTCOME MEASURES:
One-year changes in baseline weight and cardiac risk factors, and self-selected dietary adherence rates per self-report.

RESULTS:
Assuming no change from baseline for participants who discontinued the study, mean (SD) weight loss at 1 year was 2.1 (4.8) kg for Atkins (21 [53%] of 40 participants completed, P = .009), 3.2 (6.0) kg for Zone (26 [65%] of 40 completed, P = .002), 3.0 (4.9) kg for Weight Watchers (26 [65%] of 40 completed, P < .001), and 3.3 (7.3) kg for Ornish (20 [50%] of 40 completed, P = .007). Greater effects were observed in study completers. Each diet significantly reduced the low-density lipoprotein/high-density lipoprotein (HDL) cholesterol ratio by approximately 10% (all P<.05), with no significant effects on blood pressure or glucose at 1 year. Amount of weight loss was associated with self-reported dietary adherence level (r = 0.60; P<.001) but not with diet type (r = 0.07; P = .40). For each diet, decreasing levels of total/HDL cholesterol, C-reactive protein, and insulin were significantly associated with weight loss (mean r = 0.36, 0.37, and 0.39, respectively) with no significant difference between diets (P = .48, P = .57, P = .31, respectively).

CONCLUSIONS:
Each popular diet modestly reduced body weight and several cardiac risk factors at 1 year. Overall dietary adherence rates were low, although increased adherence was associated with greater weight loss and cardiac risk factor reductions for each diet group.

Comparison of high-fat and high-protein diets with a high-carbohydrate diet in insulin-resistant obese women.
McAuley KA, Hopkins CM, Smith KJ, McLay RT, Williams SM, Taylor RW, Mann JI.
Source
Edgar National Centre for Diabetes Research, Medical and Surgical Sciences, University of Otago, PO Box 56, Dunedin, New Zealand. kirsten.mcauley@stonebow.otago.ac.nz
Erratum in

Abstract

AIMS/HYPOTHESIS:
A diet low in saturated fatty acids and rich in whole grains, vegetables and fruit is recommended in order to reduce the risk of obesity, cardiovascular disease and type 2 diabetes mellitus. However there is widespread interest in high-fat ("Atkins Diet") and high-protein ("Zone Diet") alternatives to the conventional high-carbohydrate, high-fibre approach. We report on a randomised trial that compared these two alternative approaches with a conventional diet in overweight insulin-resistant women.

METHODS:
Ninety-six normoglycaemic, insulin-resistant women (BMI >27 kg/m^2) were randomised to one of three dietary interventions: a high-carbohydrate, high-fibre (HC) diet, the high-fat (HF) Atkins Diet, or the high-protein (HP) Zone Diet. The experimental approach was designed to mimic what might be achieved in clinical practice: the recommendations involved advice concerning food choices and were not prescriptive in terms of total energy. There were supervised weight loss and weight maintenance phases (8 weeks each), but there was no contact between the research team and the participants during the final 8 weeks of the study. Outcome was assessed in terms of body composition and indicators of cardiovascular and diabetes risk.

RESULTS:
Body weight, waist circumference, triglycerides and insulin levels decreased with all three diets but, apart from insulin, the reductions were significantly greater in the HF and HP groups than in the HC group. These observations suggest that the popular diets reduced insulin resistance to a greater extent than the standard dietary advice did. When compared with the HC diet, the HF and HP diets were shown to produce significantly (p<0.01) greater reductions in several parameters, including weight loss (HF -2.8 kg, HP -2.7 kg), waist circumference (HF -3.5 cm, HP -2.7 cm) and triglycerides (HF -0.30 mmol/l, HP [corrected] -0.22 mmol/l). LDL cholesterol decreased in individuals on the HC and HP diets, but tended to fluctuate in those on the HF diet to the extent that overall levels were significantly lower in the HP group than in the HF group (-0.28 mmol/l, 95% CI 0.04-0.52, p=0.02). Of those on the HF diet, 25% showed a >10% increase in LDL cholesterol, whereas this occurred in only 13% of subjects on the HC diet and 3% of those on the HP diet.

CONCLUSIONS/INTERPRETATION:
In routine practice a reduced-carbohydrate, higher protein diet may be the most appropriate overall approach to reducing the risk of cardiovascular disease and type 2 diabetes. To achieve similar benefits on a HC diet, it may be necessary to increase fibre-rich wholegrains, legumes, vegetables and fruits, and to reduce saturated fatty acids to a greater extent than appears to be achieved by implementing current guidelines. The HF approach appears successful for weight loss in the short term, but lipid levels should be monitored. The potential deleterious effects of the diet in the long term remain a concern.

Low-carbohydrate-diet score and risk of type 2 diabetes in women.
Halton TL, Liu S, Manson JE, Hu FB.
Source
Department of Nutrition, Harvard School of Public Health, Boston, MA 02215, USA.

Abstract
BACKGROUND:
Low-carbohydrate weight-loss diets remain popular; however, the long-term effects of these diets are not known.
OBJECTIVE:
The objective was to examine the association between low-carbohydrate-diet score and risk of type 2 diabetes
DESIGN:
We prospectively examined the association between low-carbohydrate-diet score (based on percentage of energy as carbohydrate, fat, and protein) and risk of diabetes among 85,059 women in the Nurses' Health Study.

RESULTS:
During 20 y of follow-up, we documented 4670 cases of type 2 diabetes. The multivariate relative risk (RR) of diabetes, after adjustment for body mass index and other covariates, in a comparison of the highest decile of low-carbohydrate-diet score with the lowest was 0.90 (95% CI: 0.78, 1.04; P for trend = 0.26). The multivariate RR for the comparison of extreme deciles of low-carbohydrate-diet score based on total carbohydrate, animal protein, and animal fat was 0.99 (95% CI: 0.85, 1.16; P for trend = 1.0), whereas the RR for a low-carbohydrate-diet score based on total carbohydrate, vegetable protein, and vegetable fat was 0.82 (95% CI: 0.71, 0.94; P for trend = 0.001). A higher dietary glycemic load was strongly associated with an increased risk of diabetes in a comparison of extreme deciles (RR: 2.47; 95% CI: 1.75, 3.47; P for trend < 0.0001). A higher carbohydrate consumption was also associated with an increased risk of diabetes in a comparison of extreme deciles (RR: 1.26; 95% CI: 1.07, 1.49; P for trend = 0.003).

CONCLUSION:
These data suggest that diets lower in carbohydrate and higher in fat and protein do not increase the risk of type 2 diabetes in women. In fact, diets rich in vegetable sources of fat and protein may modestly reduce the risk of diabetes.

Diet, nutrition and the prevention of excess weight gain and obesity.
Swinburn BA, Caterson I, Seidell JC, James WP.
Source
Physical Activity and Nutrition Research Unit, School of Health Sciences, Deakin University, Melbourne, Australia. swinburn@deakin.edu.au

OBJECTIVES:
To review the evidence on the diet and nutrition causes of obesity and to recommend strategies to reduce obesity prevalence.

DESIGN:
The evidence for potential aetiological factors and strategies to reduce obesity prevalence was reviewed, and recommendations for public health action, population nutrition goals and further research were made.

RESULTS:
Protective factors against obesity were considered to be: regular physical activity (convincing); a high intake of dietary non-starch polysaccharides (NSP)/fibre (convincing); supportive home and school environments for children (probable); and breastfeeding (probable). Risk factors for obesity were considered to be sedentary lifestyles (convincing); a high intake of energy-dense, micronutrient-poor foods (convincing); heavy marketing of energy-dense foods and fast food outlets (probable); sugar-sweetened soft drinks and fruit juices (probable); adverse social and economic conditions-developed countries, especially in women (probable). A broad range of strategies were recommended to reduce obesity prevalence including: influencing the food supply to make healthy choices easier; reducing the marketing of energy dense foods and beverages to children; influencing urban environments and transport systems to promote physical activity; developing community-wide programmes in multiple settings; increased communications about healthy eating and physical activity; and improved health services to promote breastfeeding and manage currently overweight or obese people.
CONCLUSIONS:
The increasing prevalence of obesity is a major health threat in both low- and high income countries. Comprehensive programmes will be needed to turn the epidemic around.

Diet, nutrition and the prevention of type 2 diabetes.
Steyn NP, Mann J, Bennett PH, Temple N, Zimmet P, Tuomilehto J, Lindström J, Louheranta A.
Source
Chronic Diseases of Lifestyle Unit, Medical Research Council (MRC), Tygerberg, South Africa.
nelia.steyn@mrc.ac.za

Abstract
OBJECTIVES:
The overall objective of this study was to evaluate and provide evidence and recommendations on current published literature about diet and lifestyle in the prevention of type 2 diabetes.

DESIGN:
Epidemiological and experimental studies, focusing on nutritional intervention in the prevention of type 2 diabetes are used to make disease-specific recommendations. Long-term cohort studies are given the most weight as to strength of evidence available.

SETTING AND SUBJECTS:
Numerous clinical trials and cohort studies in low, middle and high income countries are evaluated regarding recommendations for dietary prevention of type 2 diabetes. These include, among others, the Finnish Diabetes Prevention Study, US Diabetes Prevention Program, Da Qing Study; Pima Indian Study; Iowa Women's Health Study; and the study of the US Male Physicians.

RESULTS:
There is convincing evidence for a decreased risk of diabetes in adults who are physically active and maintain a normal body mass index (BMI) throughout adulthood, and in overweight adults with impaired glucose tolerance who lose weight voluntarily. An increased risk for developing type 2 diabetes is associated with overweight and obesity; abdominal obesity; physical inactivity; and maternal diabetes. It is probable that a high intake of saturated fats and intrauterine growth retardation also contribute to an increased risk, while non-starch polysaccharides are likely to be associated with a decreased risk. From existing evidence it is also possible that omega-3 fatty acids, low glycemic index foods and exclusive breastfeeding may play a protective role, and that total fat intake and trans fatty acids may contribute to the risk. However, insufficient evidence is currently available to provide convincing proof.

CONCLUSIONS:
Based on the strength of available evidence regarding diet and lifestyle in the prevention of type 2 diabetes, it is recommended that a normal weight status in the lower BMI range (BMI 21-23) and regular physical activity be maintained throughout adulthood; abdominal obesity be prevented; and saturated fat intake be less than 7% of the total energy intake.

The skinny on high-protein, low-carbohydrate diets.
Cunningham W, Hyson D.
Source
Family & Consumer Sciences Department, California State University, Sacramento, CA 95819-6053, USA.
wecunningham@csus.edu

Abstract
Short-term studies of high-protein, low-carbohydrate diets have shown weight loss and improvements in plasma lipid profiles. Studies of greater than 6 months' duration, however, have failed to show continued benefit of high-protein, low-carbohydrate diets on weight loss and cardiovascular risk factors compared with conventional diets. Without concurrent weight loss and caloric restriction, these diets offer no additional benefit to lipids or body weight over other weight-loss regimens. In fact, high-protein, low-carbohydrate diets may add additional risk to individuals with cardiovascular disease due to their high fat and cholesterol content combined with decreased intake of fruits, vegetables, whole grains, and other nutrients related to cardiovascular risk. In addition, high-protein, low-carbohydrate diets have been implicated in other risks, including impaired renal, bone, and gastrointestinal health.

Abstract  
High-protein diets have recently been proposed as a "new" strategy for successful weight loss. However, variations of these diets have been popular since the 1960s. High-protein diets typically offer wide latitude in protein food choices, are restrictive in other food choices (mainly carbohydrates), and provide structured eating plans. They also often promote misconceptions about carbohydrates, insulin resistance, ketosis, and fat burning as mechanisms of action for weight loss. Although these diets may not be harmful for most healthy people for a short period of time, there are no long-term scientific studies to support their overall efficacy and safety. These diets are generally associated with higher intakes of total fat, saturated fat, and cholesterol because the protein is provided mainly by animal sources. In high-protein diets, weight loss is initially high due to fluid loss related to reduced carbohydrate intake, overall caloric restriction, and ketosis-induced appetite suppression. Beneficial effects on blood lipids and insulin resistance are due to the weight loss, not to the change in caloric composition. Promoters of high-protein diets promise successful results by encouraging high-protein food choices that are usually restricted in other diets, thus providing initial palatability, an attractive alternative to other weight-reduction diets that have not worked for a variety of reasons for most individuals. High-protein diets are not recommended because they restrict healthful foods that provide essential nutrients and do not provide the variety of foods needed to adequately meet nutritional needs. Individuals who follow these diets are therefore at risk for compromised vitamin and mineral intake, as well as potential cardiac, renal, bone, and liver abnormalities overall.

Source  
Basel Institute for Clinical Epidemiology, University Hospital Basel, Hebelstrasse 10, CH-4031 Basel, Switzerland. nordmannaa@uhbs.ch  
Erratum in  
•  Arch Intern Med. 2006 Apr 24;166(8):932.  

BACKGROUND:
Low-carbohydrate diets have become increasingly popular for weight loss. However, evidence from individual trials about benefits and risks of these diets to achieve weight loss and modify cardiovascular risk factors is preliminary.

METHODS:
We used the Cochrane Collaboration search strategy to identify trials comparing the effects of low-carbohydrate diets without restriction of energy intake vs low-fat diets in individuals with a body mass index (calculated as weight in kilograms divided by the square of height in meters) of at least 25. Included trials had to report changes in body weight in intention-to-treat analysis and to have a follow-up of at least 6 months. Two reviewers independently assessed trial eligibility and quality of randomized controlled trials.

RESULTS:
Five trials including a total of 447 individuals fulfilled our inclusion criteria. After 6 months, individuals assigned to low-carbohydrate diets had lost more weight than individuals randomized to low-fat diets (weighted mean difference, -3.3 kg; 95% confidence interval [CI], -5.3 to -1.4 kg). This difference was no longer obvious after 12 months (weighted mean difference, -1.0 kg; 95% CI, -3.5 to 1.5 kg). There were no differences in blood pressure. Triglyceride and high-density lipoprotein cholesterol values changed more favorably in individuals assigned to low-carbohydrate diets (after 6 months, for triglycerides, weighted mean difference, -22.1 mg/dL [-0.25 mmol/L]; 95% CI, -38.1 to -5.3 mg/dL [-0.43 to -0.06 mmol/L]; and for high-density lipoprotein cholesterol, weighted mean difference, 4.6 mg/dL [0.12 mmol/L]; 95% CI, 1.5-8.1 mg/dL [0.04-0.21 mmol/L]), but total cholesterol and low-density lipoprotein cholesterol values changed more favorably in individuals assigned to low-fat diets (weighted mean difference in low-density lipoprotein cholesterol after 6 months, 5.4 mg/dL [0.14 mmol/L]; 95% CI, 1.2-10.1 mg/dL [0.03-0.26 mmol/L]).

CONCLUSIONS:
Low-carbohydrate, non-energy-restricted diets appear to be at least as effective as low-fat, energy-restricted diets in inducing weight loss for up to 1 year. However, potential favorable changes in triglyceride and high-density lipoprotein cholesterol values should be weighed against potential unfavorable changes in low-density lipoprotein cholesterol values when low-carbohydrate diets to induce weight loss are considered.

Comparison of 4 diets of varying glycemic load on weight loss and cardiovascular risk reduction in overweight and obese young adults: a randomized controlled trial.
Source
Human Nutrition Unit, University of Sydney, Sydney, Australia.

Abstract
BACKGROUND:
Despite the popularity of low-glycemic index (GI) and high-protein diets, to our knowledge no randomized, controlled trials have systematically compared their relative effects on weight loss and cardiovascular risk.

METHODS:
A total of 129 overweight or obese young adults (body mass index, > or =25 [calculated as weight in kilograms divided by the square of height in meters]) were assigned to 1 of 4 reduced-fat, high-fiber diets for 12 weeks. Diets 1 and 2 were high carbohydrate (55% of total energy intake), with high and low GIs, respectively; diets 3 and 4 were high protein (25% of total energy intake), with high and low GIs, respectively. The glycemic load was highest in diet 1 and lowest in diet 4. Changes in weight, body composition, and blood chemistry profile were studied.

RESULTS:
While all groups lost a similar mean +/- SE percentage of weight (diet 1, -4.2% +/- 0.6%; diet 2, -5.5% +/- 0.5%; diet 3, -6.2% +/- 0.4%; and diet 4, -4.8% +/- 0.7%; P = .09), the proportion of subjects in each group who lost
5% or more of body weight varied significantly by diet (diet 1, 31%; diet 2, 56%; diet 3, 66%; and diet 4, 33%; P = .01). Women on diets 2 and 3 lost approximately 80% more fat mass (-4.5 +/- 0.5 [mean +/- SE] kg and -4.6 +/- 0.5 kg) than those on diet 1 (-2.5 +/- 0.5 kg; P = .007). Mean +/- SE low-density-lipoprotein cholesterol levels declined significantly in the diet 2 group (-6.6 +/- 3.9 mg/dL [-0.17 +/- 0.10 mmol/L]) but increased in the diet 3 group (+10.0 +/- 3.9 mg/dL [+0.26 +/- 0.10 mmol/L]; P = .02). Goals for energy distribution were not achieved exactly: both carbohydrate groups ate less fat, and the diet 2 group ate more fiber.

CONCLUSION:
Both high-protein and low-GI regimens increase body fat loss, but cardiovascular risk reduction is optimized by a high-carbohydrate, low-GI diet.

Comparison of 3 ad libitum diets for weight-loss maintenance, risk of cardiovascular disease, and diabetes: a 6-mo randomized, controlled trial.
Due A, Larsen TM, Mu H, Hermansen K, Stender S, Astrup A.
Source
Department of Human Nutrition, Centre for Advanced Food Studies, Faculty of Life Sciences, University of Copenhagen, Frederiksborg C, Denmark.
Abstract
BACKGROUND:
The optimal dietary content and type of fat and carbohydrate for weight management has been debated for decades.
OBJECTIVE:
The objective was to compare the effects of 3 ad libitum diets on the maintenance of an initial weight loss of >or=8% and risk factors for CVD and diabetes during a 6-mo controlled dietary intervention.
DESIGN:
Nondiabetic overweight or obese [mean +/- SD body mass index (in kg/m²)): 31.5 +/- 2.6] men (n = 55) and women (n = 76) aged 28.2 +/- 4.8 y were randomly assigned to a diet providing a moderate amount of fat (35-45% of energy) and >20% of fat as monounsaturated fatty acids (MUFA diet; n = 54), to a low-fat (20-30% of energy) diet (LF diet; n = 51), or to a control diet (35% of energy as fat; n = 26). Protein constituted 10-20% of energy in all 3 diets. All foods were provided free of charge from a purpose-built supermarket.
RESULTS:
More subjects dropped out of the MUFA (28%) group than out of the LF group (16%) and control group (8%) (MUFA compared with control: P < 0.05). All groups regained weight (MUFA: 2.5 +/- 0.7 kg; LF: 2.2 +/- 0.7 kg; and control: 3.8 +/- 0.8 kg; NS). Body fat regain was lower in the LF (0.6 +/- 0.6%) and MUFA (1.6 +/- 0.6%) groups than in the control group (2.6 +/- 0.5%) (P < 0.05). In the MUFA group, fasting insulin decreased by 2.6 +/- 3.5 pmol/L, the homeostasis model assessment of insulin resistance by 0.17 +/- 0.13, and the ratio of LDL to HDL by 0.33 +/- 0.13; in the LF group, these variables increased by 4.3 +/- 3.0 pmol/L (P < 0.08) and 0.17 +/- 0.10 (P < 0.05) and decreased by 0.02 +/- 0.09 (P = 0.005), respectively; and in the control group, increased by 14.0 +/- 4.3 pmol/L (P < 0.001), 0.57 +/- 0.17 (P < 0.001), and 0.05 +/- 0.14 (P = 0.036), respectively. Dietary adherence was high on the basis of fatty acid changes in adipose tissue.
CONCLUSIONS:
Diet composition had no major effect on preventing weight regain. However, both the LF and MUFA diets produced less body fat regain than did the control diet, and the dropout rate was lowest in the LF diet group, whereas fasting insulin decreased and the homeostasis model assessment of insulin resistance and ratio of LDL to HDL improved with the MUFA diet. This trial was registered at clinicaltrials.gov as NCT00274729.
Atkins and other low-carbohydrate diets: hoax or an effective tool for weight loss?
Astrup A, Meinert Larsen T, Harper A.

Source
Department of Human Nutrition, Centre of Advanced Food Research, RVA University, Copenhagen, 1958 Frederiksberg C, Denmark. ast@kvl.dk

Abstract
CONTEXT: The Atkins diet books have sold more than 45 million copies over 40 years, and in the obesity epidemic this diet and accompanying Atkins food products are popular. The diet claims to be effective at producing weight loss despite ad-libitum consumption of fatty meat, butter, and other high-fat dairy products, restricting only the intake of carbohydrates to under 30 g a day. Low-carbohydrate diets have been regarded as fad diets, but recent research questions this view. STARTING POINT: A systematic review of low-carbohydrate diets found that the weight loss achieved is associated with the duration of the diet and restriction of energy intake, but not with restriction of carbohydrates. Two groups have reported longer-term randomised studies that compared instruction in the low-carbohydrate diet with a low-fat calorie-reduced diet in obese patients (N Engl J Med 2003; 348: 2082-90; Ann Intern Med 2004; 140: 778-85). Both trials showed better weight loss on the low-carbohydrate diet after 6 months, but no difference after 12 months. WHERE NEXT?: The apparent paradox that ad-libitum intake of high-fat foods produces weight loss might be due to severe restriction of carbohydrate depleting glycogen stores, leading to excretion of bound water, the ketogenic nature of the diet being appetite suppressing, the high protein-content being highly satiating and reducing spontaneous food intake, or limited food choices leading to decreased energy intake. Long-term studies are needed to measure changes in nutritional status and body composition during the low-carbohydrate diet, and to assess fasting and postprandial cardiovascular risk factors and adverse effects. Without that information, low-carbohydrate diets cannot be recommended.

The role of energy expenditure in the differential weight loss in obese women on low-fat and low-carbohydrate diets.
Brehm BJ, Spang SE, Lattin BL, Seeley RJ, Daniels SR, D’Alessio DA.

Source
R.D., University of Cincinnati, P.O. Box 210038, Cincinnati, Ohio 45221-0038, USA. bonnie.brehm@uc.edu

Abstract
We have recently reported that obese women randomized to a low-carbohydrate diet lost more than twice as much weight as those following a low-fat diet over 6 months. The difference in weight loss was not explained by differences in energy intake because women on the two diets reported similar daily energy consumption. We hypothesized that chronic ingestion of a low-carbohydrate diet increases energy expenditure relative to a low-fat diet and that this accounts for the differential weight loss. To study this question, 50 healthy, moderately obese (body mass index, 33.2 +/- 0.28 kg/m(2)) women were randomized to 4 months of an ad libitum low-carbohydrate diet or an energy-restricted, low-fat diet. Resting energy expenditure (REE) was measured by indirect calorimetry at baseline, 2 months, and 4 months. Physical activity was estimated by pedometers. The thermic effect of food (TEF) in response to low-fat and low-carbohydrate breakfasts was assessed over 5 h in a subset of subjects. Forty women completed the trial. The low-carbohydrate group lost more weight (9.79 +/- 0.71 vs. 6.14 +/- 0.91 kg; P < 0.05) and more body fat (6.20 +/- 0.67 vs. 3.23 +/- 0.67 kg; P < 0.05) than the low-fat group. There were no differences in energy intake between the diet groups as reported on 3-d food records at the conclusion of the study (1422 +/- 73 vs. 1530 +/- 102 kcal; 5954 +/- 306 vs. 6406 +/- 427 kJ). Mean REE in the two groups was comparable at baseline, decreased with weight loss, and did not differ at 2 or 4 months. The low-fat meal caused a greater 5-h increase in TEF than did the low-carbohydrate meal (53 +/- 9 vs. 31 +/- 5 kcal; 222 +/- 38 vs. 130 +/- 21 kJ; P = 0.017).
Estimates of physical activity were stable in the dieters during the study and did not differ between groups. These results confirm that short-term weight loss is greater in obese women on a low-carbohydrate diet than in those on a low-fat diet even when reported food intake is similar. The differential weight loss is not explained by differences in REE, TEF, or physical activity and likely reflects underreporting of food consumption by the low-fat dieters.


Food prices are associated with dietary quality, fast food consumption, and body mass index among U.S. children and adolescents.

Beydoun MA, Powell LM, Chen X, Wang Y.

Source
Center for Human Nutrition, Department of International Health, Johns Hopkins, Bloomberg School of Public Health, Baltimore, MD 21205, USA.

Abstract
Food prices are expected to affect dietary intakes, however, previous findings are mixed and few are based on nationally representative data. We examined the associations of price indices of fast foods (FF-PI) and fruits and vegetables (FV-PI) with dietary intakes and BMI among U.S. children and adolescents using data from the Continuing Survey of Food Intakes by Individuals (CSFII; 1994-1998) for 6759 children (2-9 y) and 1679 adolescents (10-18 y). FF-PI and FV-PI were linked to individuals' CSFII dietary data through city-level geocodes. Main outcomes included intakes of selected nutrients and food groups, a fast food consumption index (FF-CI), diet quality using the 2005 Healthy Eating Index (HEI), and BMI. Among children (2-9 y), a higher FF-PI (by $1) was associated with intakes of lower FF-CI (β ± SE: -0.9 ± 0.3 count/d), higher HEI (6.6 ± 2.5), higher intakes of fiber (2.7 ± 0.7 g/d), calcium (225.7 ± 52.3 mg/d), dairy (172.5 ± 36.2 g/d), and fruits and vegetables (113.3 ± 23.4 cup equivalents/d). FV-PI was inversely related to fiber intake (β ± SE: -3.3 ± 1.5 g/d) and positively associated with BMI (4.3 ± 1.2 kg/m(2)). Less consistent findings were ascribed to FV-PI and among adolescents (10-18 y). Significant associations were almost equally balanced between low and high family income groups, with some significant interactions between food prices and family income observed, particularly among children (2-9 y). Our findings suggest that among U.S. children aged 2-9 y, higher FF-PI is associated with better dietary quality, whereas higher FV-PI is linked to higher BMI and lower fiber intake. Associations varied by family income in children for many dietary intake variables.


The relationship between child and parent food hedonics and parent and child food group intake in children with overweight/obesity.

Raynor HA, Van Wallegheen EL, Osterholt KM, Hart CN, Jelalian E, Wing RR, Goldfield GS.

Source
Department of Nutrition, University of Tennessee, Knoxville, TN 37996-1920, USA. hraynor@utk.edu

Abstract
Many factors influence children's dietary intake, including children's and parents' food hedonics (liking), and parent intake. This secondary data analysis studied the relationship between child and parent liking, and parent intake and child intake of fruits, vegetables, low-fat dairy, snack foods, and sweetened beverages in 4- to 9-year-old overweight/obese (body mass index ≥85th percentile) children presenting for obesity treatment (September 2005 to September 2007) in Providence, RI. One hundred thirty-five parent-child pairs, with complete baseline dietary (3-day food record) and food group hedonic data were included. Hedonic ratings were mean ratings using a 5-point Likert scale (lower scores represented greater liking of a food group). Children were aged 7.2±1.6 years, 63.0% girls, 12.6% African American, and 17.8% Hispanic, with a mean body mass index z score of 2.3±0.6. Total servings consumed by children over 3 days were: fruits 2.7±3.2, vegetables
3.4±2.5, low-fat dairy 2.4±2.1, snack foods 5.9±4.2, and sweetened beverages 2.7±3.1. After demographic and anthropometric variables were controlled, parent intake was positively related (P<0.05) to child intake of all food groups except sweetened beverages. Child liking was only significantly (P<0.05) related to child intake of vegetables. In young children with obesity/overweight, parent intake was consistently related to child intake. Changing parentintake may be important in helping to change the dietary intake of young children with overweight/obesity.

Comparison of dietary intake of overweight postpartum mothers practicing breastfeeding or formula feeding.
Durham HA, Lovelady CA, Brouwer RJ, Krause KM, Ostbye T.
Source
Division of Human Nutrition and Food, Louisiana State University, Baton Rouge, LA, USA.

Abstract
BACKGROUND:
Weight gain in the postpartum period is a risk factor for long-term obesity. Investigations of dietary intake among lactating and nonlactating overweight women might identify nutritional concerns specific to this population.

OBJECTIVE:
To compare nutrient, meal, and snack intakes, food-group servings and prevalence of dieting among fully breastfeeding (BF), mixed breast and formula feeding (MF), and formula feeding (FF) overweight and obese women. The second aim was to compare nutrient intakes and food-group servings to the Dietary Reference Intake and MyPyramid recommendations, respectively.

DESIGN:
Data were collected from September 2004 through April 2006 in Durham, NC. Infant feeding practices and dietary information were collected on 450 women between 6 and 9 weeks postpartum. Two 24-hour dietary recalls were completed by phone, using Nutrition Data Systems for Research. Analysis of covariance was used to compare infant feeding groups in dietary quality (nutrient intake per 1,000 kcal) and food-group servings, controlling for prepregnancy body mass index, race, age, education, income, and marital status. χ² analysis was performed to determine differences in meal and snack intake and dieting among infant feeding groups.

RESULTS:
BF women consumed more energy (2,107 ± 50 kcal) than MF (1,866 ± 56 kcal) or FF (1,657 ± 50 kcal) women (P < 0.001). Adjusted nutrient intake did not differ between groups. All groups were at risk for inadequate intakes of vitamins A, E, C, and folate and did not meet recommended servings of all food groups. BF women consumed lunch and snacks more frequently, were less likely to diet, and reported higher intakes of grains and desserts than MF and FF women.

CONCLUSIONS:
To help increase intakes of nutrients lacking in the diet and prevent postpartum weight gain, overweight women should be encouraged to increase fruits, vegetables, low-fat dairy, whole grains, legumes, and healthy types of fat, while decreasing refined grains, regular soda, sweetened beverages, and desserts.

Active Mothers Postpartum: a randomized controlled weight-loss intervention trial.
Østbye T, Krause KM, Lovelady CA, Morey MC, Bastian LA, Peterson BL, Swamy GK, Brouwer RJ, McBride CM.

Back to Table of Contents
Abstract

BACKGROUND:
Pregnancy may contribute to overweight and obesity.

PURPOSE:
The primary objective of Active Mothers Postpartum was to promote a reduction in BMI through 24-months postpartum via sustainable lifestyle changes.

DESIGN:
Behavioral intervention RCT to enhance postpartum weight loss.

SETTING/PARTICIPANTS:
A total of 450 overweight or obese women, enrolled 6-weeks postpartum, were recruited through obstetrics clinics and community posters in the Durham NC area.

INTERVENTION:
Intervention participants were offered eight healthy-eating classes, ten physical-activity classes, and six telephone-counseling sessions over 9 months.

MAIN OUTCOME MEASURES:
Changes from baseline (6-weeks postpartum) to 1-month post-intervention (12-months postpartum) in: (1) diet (caloric intake, calories from fat, intake of certain foods); (2) physical activity (self-reported physical activity, television time); and (3) weight (collected 2004-2007, analyzed 2007-2008).

RESULTS:
Mean weight loss was 0.90 kg (+/-5.1 kg) in the intervention group and 0.36 kg (+/-4.9 kg) in the control group; this difference was not significant. There were also no significant group differences in improvement of diet or increased physical activity. In secondary analyses, there was a positive bivariate relationship between classes attended and weight loss (p=0.01).

CONCLUSIONS:
There were no significant differences among the arms in diet, physical activity, or weight change. Home-based interventions via mail, telephone, or Internet/e-mail may be more feasible and successful in this population. The postpartum period is an important phase in women's lives with regard to weight retention, but engaging them during this busy period remains a challenge.

TRIAL REGISTRATION: NCT00212251.
interviews, women felt interventions gave a good foundation for weight loss, but program and situational factors affected participation and weight loss. Control groups (mailed interventions later) were generally more pleased with their assignment than intervention groups.

Preventing excessive weight gain during pregnancy through dietary and lifestyle counseling: a randomized controlled trial.
Asbee SM, Jenkins TR, Butler JR, White J, Elliot M, Rutledge A.
Source
Carolinas Medical Center, Charlotte, North Carolina, USA. drshelly@earthlink.net
Abstract
OBJECTIVE:
To estimate whether an organized, consistent program of dietary and lifestyle counseling prevents excessive weight gain in pregnancy.
METHODS:
This randomized controlled trial assigned women to receive either an organized, consistent program of intensive dietary and lifestyle counseling or routine prenatal care. The primary study outcome was the proportion of patients whose gestational weight gain was within the Institute of Medicine (IOM) guidelines. Secondary outcomes included mode of delivery, rate of operative vaginal delivery, neonatal weight, and the incidence of preeclampsia, gestational diabetes mellitus (GDM), vaginal/perineal lacerations, and shoulder dystocia.
RESULTS:
A total of 100 women were randomized to the study (lifestyle counseling 57, routine prenatal care 43). Baseline demographic characteristics were similar between the study groups. The lifestyle counseling group gained significantly less weight than did the routine prenatal care group (28.7+/−12.5 lb compared with 35.6+/−15.5 lb, P=.01). The routine prenatal care group had significantly more cesarean deliveries due to "failure to progress" (routine prenatal care 58.3% compared with lifestyle counseling 25.0%, P=.02). Across groups, patients who were not adherent to the IOM guidelines had significantly heavier neonates (adherent 3,203.2+/−427.2 g compared with not adherent 3,517.4+/−572.4 g, P<.01). Nulliparous women gained significantly more weight than did parous women (36.5+/−14.5 lb compared with 27.7+/−12.7 lb, P<.01). The most predictive factor of IOM adherence was having a normal prepregnancy body mass index. No statistically significant differences were noted between the groups in adherence to IOM guidelines, rate of cesarean delivery, preeclampsia, GDM, operative vaginal delivery, or vaginal lacerations.
CONCLUSION:
An organized, consistent program of dietary and lifestyle counseling did reduce weight gain in pregnancy.

Managing excessive weight gain during pregnancy and the postpartum period.
Walker LO.
Source
The University of Texas at Austin School of Nursing, Austin, TX 78701-1499, USA. lwalker@mail.nur.utexas.edu
Abstract
Childbearing is a period in the life cycle during which some women may gain weight, become overweight, or become obese. Despite guidelines issued in 1990 for gestational weight gain, many women exceed them. Women who are overweight before pregnancy are most vulnerable to excessive gestational weight gain. Prenatal interventions to prevent excessive gain have had mixed results. During the postpartum period, 14% to 20% of women may retain weight from pregnancy, which elevates risk of later health problems.
postpartum weight loss interventions have been shown to have efficacy, these have been tested primarily with White women. Continued efforts are needed in practice and research to develop effective approaches for managing weight during pregnancy and postpartum, especially for low-income and ethnic minority women.

Interventions to change the behaviour of health professionals and the organisation of care to promote weight reduction in overweight and obese people.
Source
Institute of Health and Society, Newcastle University, 21 Claremont Place, Newcastle upon Tyne, UK, NE2 4AA.
Abstract
BACKGROUND:
The prevalence of obesity is increasing globally and will, if left unchecked, have major implications for both population health and costs to health services.
OBJECTIVES:
To assess the effectiveness of strategies to change the behaviour of health professionals and the organisation of care to promote weight reduction in overweight and obese people.
SEARCH STRATEGY:
We updated the search for primary studies in the following databases, which were all interrogated from the previous (version 2) search date to May 2009: The Cochrane Central Register of Controlled Trials (which at this time incorporated all EPOC Specialised Register material) (The Cochrane Library 2009, Issue 1), MEDLINE (Ovid), EMBASE (Ovid), CINAHL (EBSCO), and PsycINFO (Ovid). We identified further potentially relevant studies from the reference lists of included studies.
SELECTION CRITERIA:
Randomised controlled trials (RCTs) that compared routine provision of care with interventions aimed either at changing the behaviour of healthcare professionals or the organisation of care to promote weight reduction in overweight or obese adults.
DATA COLLECTION AND ANALYSIS:
Two reviewers independently extracted data and assessed study quality.
MAIN RESULTS:
We included six RCTs, involving more than 246 health professionals and 1324 overweight or obese patients. Four of the trials targeted professionals and two targeted the organisation of care. Most of the studies had methodological or reporting weaknesses indicating a risk of bias. Meta-analysis of three trials that evaluated educational interventions aimed at GPs suggested that, compared to standard care, such interventions could reduce the average weight of patients after a year (by 1.2 kg, 95% CI -0.4 to 2.8 kg); however, there was moderate unexplained heterogeneity between their results (I(2) = 41%). One trial found that reminders could change doctors' practice, resulting in a significant reduction in weight among men (by 11.2 kg, 95% CI 1.7 to 20.7 kg) but not among women (who reduced weight by 1.3 kg, 95% CI -4.1 to 6.7 kg). One trial found that patients may lose more weight after a year if the care was provided by a dietitian (by 5.6 kg, 95% CI 4.8 to 6.4 kg) or by a doctor-dietitian team (by 6 kg, 95% CI 5 to 7 kg), as compared with standard care. One trial found no significant difference between standard care and either mail or phone interventions in reducing patients' weight.
AUTHORS' CONCLUSIONS:
Most of the included trials had methodological or reporting weaknesses and were heterogeneous in terms of participants, interventions, outcomes, and settings, so we cannot draw any firm conclusions about the effectiveness of the interventions. All of the evaluated interventions would need further investigation before it was possible to recommend them as effective strategies.
Electronic feedback in a diet- and physical activity-based lifestyle intervention for weight loss: a randomized controlled trial.
Source
Department of Exercise Science, University of South Carolina, 921 Assembly St., Columbia, SC 29208, USA. msui@mailbox.sc.edu.
Abstract
ABSTRACT:
BACKGROUND:
The SenseWear™ Armband (SWA) (BodyMedia, Inc. Pittsburgh, PA) is a physical activity and lifestyle monitor that objectively and accurately measures free-living energy balance and sleep and includes software for self-monitoring of daily energy expenditure and energy intake. The real-time feedback of the SWA can improve individual self-monitoring and, therefore, enhance weight loss outcomes.
METHODS:
We recruited 197 sedentary overweight or obese adults (age, 46.8 ± 10.8 y; body mass index (BMI), 33.3 ± 5.2 kg/m²; 81% women, 32% African-American) from the greater Columbia, South Carolina area. Participants were randomized into 1 of 4 groups, a self-directed weight loss program via an evidence-based weight loss manual (Standard Care, n = 50), a group-based behavioral weight loss program (GWL, n = 49), the armband alone (SWA-alone, n = 49), or the GWL plus the armband (GWL+SWA, n = 49), during the 9-month intervention. The primary outcome was change in body weight and waist circumference. A mixed-model repeated-measures analysis compared change in the intervention groups to the standard care group on weight and waist circumference status after adjusting for age, sex, race, education, energy expenditure, and recruitment wave.
RESULTS:
Body weight was available for 62% of participants at 9 months (52% standard care, 70% intervention). There was significant weight loss in all 3 intervention groups (GWL, 1.86 kg, P = 0.05; SWA-alone, 3.55 kg, P = 0.0002; GWL+SWA, 6.59 kg, P < 0.0001) but not in the Standard Care group (0.89 kg, P = 0.39) at month 9. Only the GWL+SWA group achieved significant weight loss at month 9 compared to the Standard Care group (P = 0.04). Significant waist circumference reductions were achieved in all 4 groups at month 9 (Standard Care, 3.49 cm, P = 0.0004; GWL, 2.42 cm, P = 0.008; SWA-alone, 3.59 cm, P < 0.0001; GWL+SWA, 6.77 cm, P < 0.0001), but no intervention group had significantly reduced waist circumference compared to the Standard Care group.
CONCLUSIONS:
Continuous self-monitoring from wearable technology with real-time feedback may be particularly useful to enhance lifestyle changes that promote weight loss in sedentary overweight or obese adults. This strategy, combined with a group-based behavioral intervention, may yield optimal weight loss.

Active Mothers Postpartum: a randomized controlled weight-loss intervention trial.
Østbye T, Krause KM, Lovelady CA, Morey MC, Bastian LA, Peterson BL, Swamy GK, Brouwer RJ, McBride CM.
Source
Department of Community and Family Medicine, Duke University Medical Center, Durham, North Carolina 27710, USA. truls.ostbye@duke.edu
Abstract
BACKGROUND:
Pregnancy may contribute to overweight and obesity.

PURPOSE:
The primary objective of Active Mothers Postpartum was to promote a reduction in BMI through 24-months postpartum via sustainable lifestyle changes.

DESIGN:
Behavioral intervention RCT to enhance postpartum weight loss.

SETTING/PARTICIPANTS:
A total of 450 overweight or obese women, enrolled 6-weeks postpartum, were recruited through obstetrics clinics and community posters in the Durham NC area.

INTERVENTION:
Intervention participants were offered eight healthy-eating classes, ten physical-activity classes, and six telephone-counseling sessions over 9 months.

MAIN OUTCOME MEASURES:
Changes from baseline (6-weeks postpartum) to 1-month post-intervention (12-months postpartum) in: (1) diet (caloric intake, calories from fat, intake of certain foods); (2) physical activity (self-reported physical activity, television time); and (3) weight (collected 2004-2007, analyzed 2007-2008).

RESULTS:
Mean weight loss was 0.90 kg (+/-5.1 kg) in the intervention group and 0.36 kg (+/-4.9 kg) in the control group; this difference was not significant. There were also no significant group differences in improvement of diet or increased physical activity. In secondary analyses, there was a positive bivariate relationship between classes attended and weight loss (p=0.01).

CONCLUSIONS:
There were no significant differences among the arms in diet, physical activity, or weight change. Home-based interventions via mail, telephone, or Internet/e-mail may be more feasible and successful in this population. The postpartum period is an important phase in women’s lives with regard to weight retention, but engaging them during this busy period remains a challenge.

Weight, physical activity and dietary behavior change in young mothers: short term results of the HeLP-her cluster randomized controlled trial.
Lombard CB, Deeks AA, Ball K, Jolley D, Teede HJ.
Source
Monash University, Australia. catherine.lombard@med.monash.edu.au

Abstract
BACKGROUND:
Preventing weight gain rather than treating established obesity is an important economic and public health response to the rapidly increasing rates of obesity worldwide. Treatment of established obesity is complex and costly requiring multiple resources. Preventing weight gain potentially requires fewer resources to reach broad population groups, yet there is little evidence for successful interventions to prevent weight gain in the community. Women with children are an important target group because of high rates of weight gain and the potential to influence the health behaviors in family members.

METHODS:
The aim of this cluster randomized controlled trial was to evaluate the short term effect of a community-based self-management intervention to prevent weight gain. Two hundred and fifty mothers of young children (mean age 40 years +/- 4.5, BMI 27.9 kg/m2 +/- 5.6) were recruited from the community in Melbourne, Australia. The intervention group (n = 127) attended four interactive group sessions over 4 months, held in 12
local primary schools in 2006, and was compared to a group (n = 123) receiving a single, non-interactive, health education session. Data collection included self-reported weight (both groups), measured weight (intervention only), self-efficacy, dietary intake and physical activity.

RESULTS:
Mean measured weight decreased significantly in the intervention group (-0.78 kg 95% CI; -1.22 to -0.34, p < 0.001). Comparing groups using self-reported weight, both the intervention and comparison groups decreased weight, -0.75 kg (95% CI; -1.57 to 0.07, p = 0.07) and -0.72 kg (95% CI; -1.59 to 0.14 p = 0.10) respectively with no significant difference between groups (-0.03 kg, 95% CI; -1.32 to 1.26, p = 0.95). More women lost or maintained weight in the intervention group. The intervention group tended to have the greatest effect in those who were overweight at baseline and in those who weighed themselves regularly. Intervention women who rarely self-weighed gained weight (+0.07 kg) and regular self-weighers lost weight (-1.66 kg) a difference of -1.73 kg (95% CI; -3.35 to -0.11 p = 0.04). The intervention reported increased physical activity although the difference between groups did not reach significance. Both groups reported replacing high fat foods with low fat alternatives and self-efficacy deteriorated in the comparison group only.

CONCLUSION:
Both a single health education session and interactive behavioral intervention will result in a similar weight loss in the short term, although more participants in the interactive intervention lost or maintained weight. There were small non-significant changes to physical activity and changes to fat intake specifically replacing high fat foods with low fat alternatives such as fruit and vegetables. Self-monitoring appears to enhance weight loss when part of an intervention.

Exercise in obesity management.
Hopps E, Caimi G.
Source
Department of Internal Medicine, Cardiovascular and Nephrological Diseases, University of Palermo, Palermo, Italy - euhopps@libero.it.

Abstract
Obesity is considered a global epidemic by the World Health Organization in both developed and developing countries. It is associated with a higher risk of cardiovascular disease, diabetes mellitus, cancer and other clinical conditions. Visceral fat is the major responsible for metabolic complications, such as insulin-resistance, and it acts as an endocrine organ producing adipokines involved in lipidic and glycaemic metabolism. TNF-α and IL-6, produced by adipose tissue, increase NADPH oxidase activity activating protein kinase C and NFκB leading to an higher oxidative stress. The obesity management includes physical activity: aerobic training improves lipid profile and insulin sensitivity while resistance training increases lean body mass and basal metabolism and has beneficial effects on bone mineral density and glucose tolerance. An exercise program should include 30 to 45 minutes of moderate intensity activity performed 3 to 5 days a week. Weight loss is also associated with lower blood pressure and improved oxidative status, confirmed by reduced oxidative stress markers and increased antioxidant protection. An inverse association between indicators of systemic inflammation and physical activity has been demonstrated, so exercise training may reduce endothelial damage and cardiovascular risk.

Physical activity compliance: differences between overweight/obese and normal-weight adults.
Davis JN, Hodges VA, Gillham MB.
Source
Department of Human Ecology, University of Texas, Austin, Texas, USA. jaimieda@usc.edu
Abstract

OBJECTIVES:
Comparisons of physical activity measured by accelerometers in overweight/obese adults and their normal-weight counterparts are limited. Compliance with the 2002 Institute of Medicine (IOM) exercise recommendations for 60 minutes of moderate-intensity exercise daily has not been reported. The purpose of this study was to compare physical activity, as measured by accelerometers, in overweight/obese adults vs. normal-weight controls and to assess compliance with recommendations for physical activity by the IOM in 2002 and by the Centers for Disease Control and Prevention and American College of Sports Medicine in 1995 for 30 minutes of moderate-intensity activity, preferably all days of the week.

RESEARCH METHODS AND PROCEDURES:
Sixty-two overweight/obese subjects, BMI > or = 25, included 31 adults, 12 men and 19 women, 25 to 69 years old, and their normal-weight controls, BMI 18.5 to 24.9, matched for gender, age, and height. Body composition was assessed using DXA. Physical activity was measured with Actigraph accelerometers (MTI, Fort Walton Beach, FL) worn by each participant for 7 consecutive days.

RESULTS:
Accelerometry data indicated that overweight/obese adults recorded approximately 60 counts per minute less per day and spent 21 minutes less engaged in moderate or greater intensity activity than their normal-weight counterparts. Although 71% to 94% of those studied met 1995 recommendations, only 13% of overweight/obese subjects and 26% of normal-weight participants met 2002 exercise recommendations.

DISCUSSION:
These results suggest that daily minutes spent in moderate-intensity activity or greater are associated with weight status and that the 2002 IOM recommendations may be difficult to meet even for normal-weight individuals.

Moderation of participant characteristics in the relationships of changes in self-regulation for exercise with self-regulation for controlled eating, and self-efficacy for exercise with self-efficacy for controlled eating.
Annesi JJ.
Source
YMCA of Metropolitan Atlanta, 100 Edgewood Avenue NE, Suite 1100, Atlanta, GA 30303, USA.
jamesa@ymcaatlanta.org

Abstract
Research on the relationships of exercise with psychosocial predictors of controlled eating and weight loss may now be capable of informing the development of weight-management treatments. Thus, analysis of moderators of such relationships by personal characteristics is important. Moderation of the expected significant relationships of changes in self-regulation for exercise with self-regulation for controlled eating, and self-efficacy for exercise with self-efficacy for controlled eating was assessed by sex, age, and ethnicity. No significant moderation of the relationships was identified; however, it was suggested that extensions of this research also assess contextual aspects, administration method, and other demographic variables as possible moderators. With continued research, practical treatments based on relationships between exercise- and eating-related variables ultimately may prove to be efficacious, with positive effects that may generalize across participant types and settings.

Relationships between self-regulation skills and physical activity and fruit and vegetable consumption in obese adults: mediation of mood and self-efficacy.
Annesi JJ.
Abstract
In cognitive-behavioral treatments for obesity, self-regulation is thought to be a strong predictor of behavioral change, but it is rarely directly measured in intervention research. Thus, how self-regulation interacts with other psychological variables regarding treatment effects is largely unknown. In this preliminary field study, self-regulatory skills were directly measured and were found to be significantly associated with both volume of exercise and fruit and vegetable consumption in severely obese adults (N=116) enrolled in a behavioral weight management program. Significant partial and complete mediation of the relationship between self-regulation for physical activity and physical activity, and self-regulation for appropriate eating and fruit and vegetable intake, respectively, were found by reported negative mood. Self-efficacy was not found to be a significant mediator of these relationships. The bivariate relationship between baseline scores of self-regulation for physical activity and self-regulation for appropriate eating was significant (r = .46), which supported the premise that self-regulation is a trait-like personal characteristic. Volume of exercise and fruit and vegetable consumption significantly predicted weight loss over 6 months (R2 = .35). Results were consistent with the few laboratory-based findings available and, after replication, may extend theory related to obesity treatment.


Body mass index, physical activity, and dietary behaviors among members of an urban community fitness center: a questionnaire survey.
Kaphingst KA, Bennett GG, Sorensen G, Kaphingst KM, O'Neil AE, McInnis K.

Abstract
BACKGROUND:
Development of effective behavioral interventions to promote weight control and physical activity among diverse, underserved populations is a public health priority. Community focused wellness organizations, such as YMCAs, could provide a unique channel with which to reach such populations. This study assessed health behaviors and related characteristics of members of an urban YMCA facility.

METHODS:
We surveyed 135 randomly selected members of an urban YMCA facility in Massachusetts to examine self-reported (1) physical activity, (2) dietary behaviors, (3) body mass index, and (4) correlates of behavior change among short-term (i.e., one year or less) and long-term (i.e., more than one year) members. Chi-square tests were used to assess bivariate associations between variables, and multivariate linear regression models were fit to examine correlates of health behaviors and weight status.

RESULTS:
Eighty-nine percent of short-term and 94% of long-term members reported meeting current physical activity recommendations. Only 24% of short-term and 19% of long-term members met fruit and vegetable consumption recommendations, however, and more than half were overweight or obese. Length of membership was not significantly related to weight status, dietary behaviors, or physical activity. Most respondents were interested in changing health behaviors, in the preparation stage of change, and had high levels of self-efficacy to change behaviors. Short-term members had less education (p = 0.02), lower household incomes (p = 0.02), and were less likely to identify as white (p = 0.005) than long-term members. In multivariate models, females had lower BMI than males (p = 0.003) and reported less physical activity (p = 0.008). Physical activity was also inversely associated with age (p = 0.0004) and education (p = 0.02).
CONCLUSION:
Rates of overweight/obesity and fruit and vegetable consumption suggested that there is a need for a weight control intervention among members of an urban community YMCA. Membership in such a community wellness facility alone might not be sufficient to help members maintain a healthy weight. The data indicate that YMCA members are interested in making changes in their dietary and physical activity behaviors. Targeting newer YMCA members might be an effective way of reaching underserved populations. These data will help inform the development of a weight control intervention tailored to this setting.

Annesi JJ, Unruh JL.
Source
YMCA of Metropolitan Atlanta, Atlanta, Georgia 30303, USA. jamesa@ymcaatlanta.org
Abstract
BACKGROUND:
Obesity is a prominent modifiable health risk factor. Treatments of severe caloric restrictions and educational interventions have had minimal sustained effects on weight loss. Physical activity may have significant indirect effects on weight reduction associated with changes in psychological variables, although explanatory models are lacking.
METHODS:
Relationships based on Baker and Brownell's model of exercise, self-appraisal, mood change, and weight loss were tested with obese (body mass index > or =30) women initiating a supported exercise and nutrition information program over 6 months.
RESULTS:
Exercise participation was associated with significant improvements in mood, body image, and exercise-related self-efficacy. When changes on measures of these factors were simultaneously entered into a multiple regression equation, a significant portion of the variance in exercise session attendance was accounted for (R2 = 0.26, F(7, 52) = 2.57, P < 0.05), with changes in tension (beta = -0.34) and physical self-concept (beta = 0.33) making significant unique contributions. Exercise session attendance was significantly correlated with weight and body composition changes (r = -0.30 to -0.47). The indirect effect of exercise on weight loss was estimated at 0.23. As hypothesized, less improvement in depression was significantly associated with less improvement in weight and body composition (r values = 0.23 to 0.29).
CONCLUSIONS:
Physical activity and exercise may have positive effects on sustained weight loss due to associated changes in self-appraisal and mood factors. Early incorporation of moderate exercise into weight management treatments may have considerable value beyond just energy expenditure. Continued testing of explanatory models is warranted.

Effect of Diet and Exercise, Alone or Combined, on Weight and Body Composition in Overweight-to-Obese Postmenopausal Women.
Source
Abstract
Lifestyle interventions for weight loss are the cornerstone of obesity therapy, yet their optimal design is debated. This is particularly true for postmenopausal women; a population with a high prevalence of obesity yet toward whom fewer studies are targeted. We conducted a year-long, 4-arm randomized trial among 439 overweight-to-obese postmenopausal sedentary women to determine the effects of a calorie-reduced, low-fat diet (D), a moderate-intensity, facility-based aerobic exercise program (E), or the combination of both interventions (D+E), vs. a no-lifestyle-change control (C) on change in body weight and composition. The group-based dietary intervention had a weight-reduction goal of ≥10%, and the exercise intervention consisted of a gradual escalation to 45-min aerobic exercise 5 day/week. Participants were predominantly non-Hispanic whites (85%) with a mean age of 58.0 ± 5.0 years, a mean BMI of 30.9 ± 4.0 kg/m(2) and an average of 47.8 ± 4.4% body fat. Baseline and 12-month weight and adiposity measures were obtained by staff blinded to participants' intervention assignment. Three hundred and ninety nine women completed the trial (91% retention). Using an intention-to-treat analysis, average weight loss at 12 months was -8.5% for the D group (P < 0.0001 vs. C), -2.4% for the E group (P = 0.03 vs. C), and -10.8% for the D+E group (P < 0.0001 vs. C), whereas the C group experienced a nonsignificant -0.8% decrease. BMI, waist circumference, and % body fat were also similarly reduced. Among postmenopausal women, lifestyle-change involving diet, exercise, or both combined over 1 year improves body weight and adiposity, with the greatest change arising from the combined intervention.

Exercise duration and intensity in a weight-loss program.
Chambliss HO.

Source
The Cooper Institute, Dallas, Texas, USA.

Abstract
OBJECTIVE:
To examine the effect of duration and frequency of exercise on weight loss and cardiorespiratory fitness in previously sedentary, overweight, women.

DESIGN:
Randomized, controlled, 4-arm trial of 12-months duration.

SETTING:
A university-based behavioral weight loss program during the years 2000 and 2001.

PARTICIPANTS:
Eligibility criteria were: women, 21 to 45 years of age, body mass index (BMI) 27 to 40, reporting exercise <3 days/week for <20 minutes/day during the previous 6 months. Exclusion criteria were: a history of myocardial infarction, taking medication that would alter the heart rate response during exercise or that would affect metabolism or weight loss, being treated for psychologic conditions, pregnant, recently pregnant, or planning pregnancy, having a medical condition that could affect metabolism or body weight (eg, diabetes) or that would limit exercise participation.

INTERVENTION:
All 201 participants were assigned to a standard behavioral weight loss program, which included regular group meetings and telephone calls, and caloric and dietary fat restrictions. Participants were given meal plans and kept weekly food diaries. The women were assigned to 1 of 4 exercise groups based on energy expenditure of 1000 kcal/wk or 2000 kcal/wk and exercise intensity (moderate versus vigorous). Exercise intensity was prescribed according to percentage of age-predicted maximal heart rate and rating of perceived exertion. Energy expenditure was converted to minutes of exercise per week. The groups were vigorous intensity/high duration, moderate intensity/high duration, moderate intensity/moderate duration, and vigorous intensity/moderate duration. All 4 groups started the program at moderate intensity and moderate duration
(100 min/week of walking) and increased the vigor and duration of exercise to set targets of 200, 300, 200, and 150 min/week, for the groups respectively. Treadmills were provided to the participants, and feedback on their weekly exercise logs was given.

**MAIN OUTCOME MEASURES:**
At 6 and 12 months, changes in body weight and BMI were measured. Cardiorespiratory fitness was measured by a graded exercise treadmill test and expressed as percent change in oxygen consumption from baseline. Excluding 5 women who left the study (because of pregnancy or death) the data were analyzed by the intention-to-treat method (completion rate 184/196 = 94%).

**MAIN RESULTS:**
Attendance at group sessions and reported dietary intake and exercise adherence suggested that all groups complied similarly with their dietary and exercise prescriptions. Mean weight loss after 1 year was 8.9, 8.2, 6.3, and 7.0 kg, for the vigorous intensity/high duration, moderate intensity/high duration, moderate intensity/moderate duration, and vigorous intensity/moderate duration groups, respectively, but there was no effect of exercise duration or exercise intensity on changes in body weight or in BMI. Cardiorespiratory fitness increased for all groups; 22%, 14.9%, 13.5%, and 18.9%, for the vigorous intensity/high duration, moderate intensity/high duration, moderate intensity/moderate duration, and vigorous intensity/moderate duration groups, respectively, but the groups did not differ in effect of exercise intensity (P = 0.11) or exercise duration (P = 0.35). When participants were divided by their reported average weekly duration of exercise at months 6 and 12, the group which averaged > or =200 min/week at both time points lost more weight than the groups which averaged <150 min/week of physical activity or whose activity duration was inconsistent (difference among groups, P = 0.01). They also had a greater percent increase in cardiorespiratory fitness than those who averaged <150 min/week of physical activity (P = 0.007) and those whose activity was inconsistent (P = 0.003).

**CONCLUSION:**
Sedentary overweight women lost weight and improved cardiorespiratory fitness in a year-long combined dietary and exercise regimen. Duration of exercise (at least 150 min/week of walking) was more important than vigorous versus moderate intensity in achieving these goals.


**Effects of different doses of physical activity on cardiorespiratory fitness among sedentary, overweight or obese postmenopausal women with elevated blood pressure: a randomized controlled trial.**

Church TS, Earnest CP, Skinner JS, Blair SN.

Source
Pennington Biomedical Research Center, Louisiana State University System, Baton Rouge 70808-4124, USA. tim.church@pbrc.edu

Abstract

**CONTEXT:**
Low levels of cardiorespiratory fitness are associated with high risk of mortality, and improvements in fitness are associated with reduced mortality risk. However, a poor understanding of the physical activity-fitness dose response relation remains.

**OBJECTIVE:**
To examine the effect of 50%, 100%, and 150% of the NIH Consensus Development Panel recommended physical activity dose on fitness in women.

**DESIGN, SETTING, AND PARTICIPANTS:**
Randomized controlled trial of 464 sedentary, postmenopausal overweight or obese women whose body mass index ranged from 25.0 to 43.0 and whose systolic blood pressure ranged from 120.0 to 159.9 mm Hg. Enrollment took place between April 2001 and June 2005 in the Dallas, Tex, area.
INTERVENTION:
Participants were randomly assigned to 1 of 4 groups: 102 to the nonexercise control group and 155 to the 4-kcal/kg, 104 to the 8-kcal/kg, and 103 to the 12-kcal/kg per week energy-expenditure groups for the 6-month intervention period. Target training intensity was the heart rate associated with 50% of each woman's peak Vo2.

MAIN OUTCOME MEASURE:
The primary outcome was aerobic fitness assessed on a cycle ergometer and quantified as peak absolute oxygen consumption (Vo2abs, L/min).

RESULTS:
The mean (SD) baseline Vo2abs values were 1.30 (0.25) L/min. The mean (SD) minutes of exercising per week were 72.2 (12.3) for the 4-kcal/kg, 135.8 (19.5) for the 8-kcal/kg, and 191.7 (33.7) for the 12-kcal/kg per week exercise groups. After adjustment for age, race/ethnicity, weight, and peak heart rate, the exercise groups increased their Vo2abs compared with the control group by 4.2% in the 4-kcal/kg, 6.0% in the 8-kcal/kg, and 8.2% in the 12-kcal/kg per week groups (P<.001 for each vs control; P for trend <.001). There was no treatment x subgroup interaction for age, body mass index, weight, baseline Vo2abs, race/ethnicity, or baseline hormone therapy use. There were no significant changes in systolic or diastolic blood pressure values from baseline to 6 months in any of the exercise groups vs the control group.

CONCLUSION:
In this study, previously sedentary, overweight or obese postmenopausal women experienced a graded dose-response change in fitness across levels of exercise training.


Changes in weight, waist circumference and compensatory responses with different doses of exercise among sedentary, overweight postmenopausal women.

Church TS, Martin CK, Thompson AM, Earnest CP, Mikus CR, Blair SN.

Source
Pennington Biomedical Research Center, Louisiana State University System, Baton Rouge, LA, USA.
tim.church@pbrc.edu

Abstract
BACKGROUND:
It has been suggested that exercise training results in compensatory mechanisms that attenuate weight loss. However, this has only been examined with large doses of exercise. The goal of this analysis was to examine actual weight loss compared to predicted weight loss (compensation) across different doses of exercise in a controlled trial of sedentary, overweight or obese postmenopausal women (n = 411).

METHODOLOGY/PRINCIPAL FINDINGS:
Participants were randomized to a non-exercise control (n = 94) or 1 of 3 exercise groups; exercise energy expenditure of 4 (n = 139), 8 (n = 85), or 12 (n = 93) kcal/kg/week (KKW). Training intensity was set at the heart rate associated with 50% of each woman's peak VO(2) and the intervention period was 6 months. All exercise was supervised. The main outcomes were actual weight loss, predicted weight loss (exercise energy expenditure/ 7700 kcal per kg), compensation (actual minus predicted weight loss) and waist circumference. The study sample had a mean (SD) age 57.2 (6.3) years, BMI of 31.7 (3.8) kg/m(2), and was 63.5% Caucasian. The adherence to the intervention was >99% in all exercise groups. The mean (95% CI) weight loss in the 4, 8 and 12 KKW groups was -1.4 (-2.0, -0.8), -2.1 (-2.9, -1.4) and -1.5 (-2.2, -0.8) kg, respectively. In the 4 and 8 KKW groups the actual weight loss closely matched the predicted weight loss of -1.0 and -2.0 kg, respectively, resulting in no significant compensation. In the 12 KKW group the actual weight loss was less than the predicted weight loss (-2.7 kg) resulting in 1.2 (0.5, 1.9) kg of compensation (P<0.05 compared to 4 and 8 KKW groups). All exercise groups had a significant reduction in waist circumference which was independent of changes in weight.

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CONCLUSION:
In this study of previously sedentary, overweight or obese, postmenopausal women we observed no difference in the actual and predicted weight loss with 4 and 8 KKW of exercise (72 and 136 minutes respectively), while the 12 KKW (194 minutes) produced only about half of the predicted weight loss. However, all exercise groups had a significant reduction in waist circumference which was independent of changes in weight.

Exercise prescription for overweight and obese women: pregnancy and postpartum.
Mottola MF.
Source
Department of Anatomy and Cell Biology, Schulich School of Medicine and Dentistry, London, Ontario, Canada N6A 3K7. mmottola@uwo.ca
Abstract
Once a low-risk pregnancy has been established, walking in combination with nutritional control may be effective in preventing excessive weight gain in overweight and obese women. Maternal exercise prescription should use the Frequency, Intensity, Time spent and Type of exercise principle, with a frequency of three to four sessions per week as ideal. Intensity based on a target heart-rate zone of 110 to 131 beats per minute for women 20 to 29 years of age and 108 to 127 beats per minute for women 30 to 39 years of age, coupled with use of the rating of perceived exertion scale and the "Talk Test" is suggested. Dieting and exercise together are most effective in reducing weight retention after childbirth and compliance may be improved by incorporating child-care and children into the exercise routine. After medical consultation, postpartum women should begin exercise slowly, starting from 15 minutes, and building to at least 150 minutes of aerobic activity per week, with this activity spread throughout the week.

Nutrition and exercise prevent excess weight gain in overweight pregnant women.
Source
R. Samuel McLaughlin Foundation-Exercise & Pregnancy Laboratory, School of Kinesiology, Faculty of Health Sciences, The University of Western Ontario, London, Ontario, Canada. mmottola@uwo.ca
Abstract
PURPOSE:
To determine the effect of a Nutrition and Exercise Lifestyle Intervention Program (NELIP) for overweight (OW) and obese (OB) pregnant women on pregnancy weight gain, birth weight, and maternal weight retention at 2 months postpartum.
METHODS:
This is a single-arm intervention matched by prepregnant body mass index, age, and parity to a historical cohort (4:1). Women with a prepregnancy body mass index of > or = 25.0 kg x m(-2) (N = 65) participated in a NELIP starting at 16-20 wk of pregnancy, continuing until delivery. NELIP consisted of an individualized nutrition plan with total energy intake of approximately 2000 kcal x d(-1) (8360 kJ x d(-1)) and 40%-55% of total energy intake from carbohydrate. Exercise consisted of a walking program (30% HR reserve), three to four times per week, using a pedometer to count steps. Matched historical cohort (MC; N = 260) was from a large local perinatal database.
RESULTS:
Weight gained by women on the NELIP was 6.8 +/- 4.1 kg (0.38 +/- 0.2 kg x wk(-1)), with a total pregnancy weight gain of 12.0 +/- 5.7 kg. Excessive weight gain occurred before NELIP began at 16 wk of gestation. Eighty
percent of the women did not exceed recommended pregnancy weight gain on NELIP. Weight retention at 2 months postpartum was 2.2 +/- 5.6 kg with no difference between the OW and the OB women on NELIP. Mean birth weight was not different between NELIP (3.59 +/- 0.5 kg) and MC (3.56 +/- 0.6 kg, P > 0.05).

**CONCLUSIONS:**
NELIP reduces the risk of excessive pregnancy weight gain with minimal weight retention at 2 months postpartum in OW and OB women. This intervention may assist OW and OB women in successful weight control after childbirth.


**Walk-run transition speed training as an efficient exercise adjunct to dietary restriction in the management of obesity: a prospective intervention pilot study.**
Source
Tunisian Research Laboratory Sports Performance Optimisation, National Centre of Medicine and Science in Sports, Tunis, Tunisia.

**Abstract**
**OBJECTIVE:**
The aim of this study was to test the utility of preferred walk-run transition speed (WRTS) in exercise training adjunct to dietary restriction for obesity management in healthy obese women.

**MATERIALS AND METHODS:**
37 obese women (age: 35 ± 9 years, body mass index (BMI): 34.9 ± 4.6 kg/m(2)) were assigned to an intervention pilot study during 6 months of restricted diet alone (RD) followed by 6 months of RD combined with WRTS (RD and WRTS) as a training exercise. Body mass, waist circumference (WC), fat mass (FM), fat free mass (FFM), active cell mass (ACM), fasting glucose, serum lipids (triacylglycerol (TG), total cholesterol (TC), high density lipoprotein cholesterol (HDL-C), apo-lipoproteins A1 (ApoA1) and B (ApoB)), leptin and insulin concentrations, and HOMA-IR were assessed at baseline (T0), at the end of the RD alone (T1), and at the end of the RD and WRTS programme (T2).

**RESULTS:**
Mean weight loss was 8.6 ± 4.9 kg and 2.2 ± 2.9 kg for (T0-T1) and (T1-T2), respectively. Significant BMI and WC reductions were reported at T1 and T2. FM decreased significantly both with RD and with RD and WRTS training whereas FFM and ACM increased with RD and WRTS training only. TG decreased significantly with the two phases of the programme. A significant increase in HDL-C, and a decrease in LDL-C and TC/HDL-C ratio were noticed with RD and WRTS training. Heart rate monitored in training improved significantly after RD and WRTS training. A significant relationship (r = 0.542, p < 0.02) was demonstrated between reductions in serum leptin and insulin concentrations observed with both RD and WRTS training.

**CONCLUSION:**
The addition of WRTS training to RD promoted a greater reduction in body mass, WC, FM, leptin and insulin concentrations, improved metabolic and cardiovascular risk factors, and enhanced cardiovascular fitness.


**Balancing exercise and food intake with lactation to promote post-partum weight loss.**
Lovelady C.

Source
Nutrition Department, The University of North Carolina at Greensboro, PO Box 26170, Greensboro, NC 27402-6170, USA. cheryl_lovelady@uncg.edu

**Abstract**
Excess weight gain during pregnancy and post-partum weight retention are risk factors for obesity. While many studies report average weight retained from pregnancy is only 0.5-3.0 kg; between 14 and 20% of
women are 5 kg heavier at 6-18 months post-partum than they were before pregnancy. Among normal-weight women, lactation usually promotes weight loss to a moderate extent, but not among those with BMI≥35 kg/m². While exercise and energy restriction may promote weight loss during lactation, their effect on milk volume and composition and, consequently, infant growth must be considered. The effect of exercise on lactation performance has been investigated. Moderate aerobic exercise of 45 min/d, 5 d/week improved cardiovascular fitness, plasma lipids and insulin response; however, it did not promote post-partum weight loss. Breast milk volume and composition were not affected. The effect of exercise with energy restriction in overweight women on the growth of their infants has also been studied. At 1 month post-partum, women restricted their energy intake by 2092 kJ/d and exercised 45 min/d, 4 d/week for 10 weeks. Women in the diet and exercise group lost more weight than the control group (4·8 (sd 1·7) kg v. 0·8 (sd 2·3) kg); however, there were no differences in infant growth. Based on the current evidence, it is recommended that once lactation is established, overweight women may restrict their energy intake by 2092 kJ/d and exercise aerobically 4 d/week to promote a weight loss of 0·5 kg/week.


Exercise: it's the real thing!
Hawley JA, Holloszy JO.

Source
School of Medical Sciences, RMIT University, Bundoora, Victoria 3083, Australia. john.hawley@rmit.edu.au

Abstract
The epidemic emergence of modern chronic diseases largely stems from the adoption of a sedentary lifestyle and excess energy intake. However, it has long been known that regular physical activity induces multiple adaptations within skeletal muscle and other organs and these adaptations have positive outcomes for the prevention and treatment of many metabolic disorders. In recognition of such benefits, a recent goal of industry-funded research is to discover orally active compounds that mimic the effects of exercise training, so-called "exercise pills". This article provides an overview of the role of skeletal muscle in health and disease and discusses whether "exercise mimetics" have any potential to combat metabolic diseases.


Exercise in obesity management.
Hopps E, Caimi G.

Source
Department of Internal Medicine, Cardiovascular and Nephrological Diseases, University of Palermo, Palermo, Italy - euhopps@libero.it.

Abstract
Obesity is considered a global epidemic by the World Health Organization in both developed and developing countries. It is associated with a higher risk of cardiovascular disease, diabetes mellitus, cancer and other clinical conditions. Visceral fat is the major responsible for metabolic complications, such as insulin-resistance, and it acts as an endocrine organ producing adipokines involved in lipidic and glycaemic metabolism. TNF-α and IL-6, produced by adipose tissue, increase NADPH oxidase activity activating protein kinase C and NFκB leading to an higher oxidative stress. The obesity management includes physical activity: aerobic training improves lipid profile and insulin sensitivity while resistance training increases lean body mass and basal metabolism and has beneficial effects on bone mineral density and glucose tolerance. An exercise program should include 30 to 45 minutes of moderate intensity activity performed 3 to 5 days a week. Weight loss is also associated with lower blood pressure and improved oxidative status, confirmed by reduced oxidative stress markers and increased antioxidant protection. An inverse association between indicators of systemic inflammation and physical activity has been demonstrated, so exercise training may reduce endothelial damage and cardiovascular risk.
Exercise and the Institute of Medicine recommendations for nutrition.  
Manore MM.

Source
Department of Nutrition and Exercise Sciences, Oregon State University, 108 Milam Hall, Corvallis, OR 97331, USA. melinda.manore@oregonstate.edu

Abstract
The Food and Nutrition Board of the Institutes of Medicine (IOM) recently released energy, macronutrient, and fluid recommendations, which acknowledged for the first time that active individuals have unique nutritional needs. The IOM calculated an acceptable macronutrient distribution range for carbohydrate (45%-65% of energy), protein (10%-35% of energy), and fat (20%-35% of energy; limit saturated and trans fats). These proportions provide a range broad enough to cover the macronutrient needs of most active individuals, but specific carbohydrate and protein recommendations are also typically made based on a g/kg body weight formula. These ranges are 5 to 12 g of carbohydrate/kg body weight and 1.2 to 1.8 g/kg body weight for protein depending on the level of physical activity. The IOM report also gives recommendations for the two essential fatty acids: linoleic acid (men, 14-17 g/d; women, 11-12 g/d) and linolenic acid (men, 1.6 g/d; women, 1.1 g/d). Baseline adequate intakes for fluid (water + other beverages) were set at 3.0 L and 2.2 L for sedentary men and women, respectively, with higher intakes needed to account for physical activity and exposure to extreme environments.

American Dietetic Association; Dietitians of Canada; American College of Sports Medicine, Rodriguez NR, Di Marco NM, Langley S.

Abstract
It is the position of the American Dietetic Association, Dietitians of Canada, and the American College of Sports Medicine that physical activity, athletic performance, and recovery from exercise are enhanced by optimal nutrition. These organizations recommend appropriate selection of foods and fluids, timing of intake, and supplement choices for optimal health and exercise performance. This updated position paper couples a rigorous, systematic, evidence-based analysis of nutrition and performance-specific literature with current scientific data related to energy needs, assessment of body composition, strategies for weight change, nutrient and fluid needs, special nutrient needs during training and competition, the use of supplements and ergogenic aids, nutrition recommendations for vegetarian athletes, and the roles and responsibilities of the sports dietitian. Energy and macronutrient needs, especially carbohydrate and protein, must be met during times of high physical activity to maintain body weight, replenish glycogen stores, and provide adequate protein to build and repair tissue. Fat intake should be sufficient to provide the essential fatty acids and fat-soluble vitamins and to contribute energy for weight maintenance. Although exercise performance can be affected by body weight and composition, these physical measures should not be a criterion for sports performance and daily weigh-ins are discouraged. Adequate food and fluid should be consumed before, during, and after exercise to help maintain blood glucose concentration during exercise, maximize exercise performance, and improve recovery time. Athletes should be well hydrated before exercise and drink enough fluid during and after exercise to balance fluid losses. Sports beverages containing carbohydrates and electrolytes may be consumed before, during, and after exercise to help maintain blood glucose concentration, provide fuel for muscles, and decrease risk of dehydration and hyponatremia. Vitamin and mineral supplements are not needed if adequate energy to maintain body weight is consumed from a variety of foods. However, athletes who restrict energy intake, use severe weight-loss practices, eliminate one or more food groups from their diet, or consume unbalanced diets with low micronutrient density may require supplements. Because regulations specific to nutritional ergogenic aids are
poorly enforced, they should be used with caution and only after careful product evaluation for safety, efficacy, potency, and legality. A qualified sports dietitian and, in particular, the Board Certified Specialist in Sports Dietetics in the United States, should provide individualized nutrition direction and advice after a comprehensive nutrition assessment.


**Physical activity and pregnancy: cardiovascular adaptations, recommendations and pregnancy outcomes.**

*Melzer K, Schutz Y, Boulvain M, Kayser B.*

**Source**

Institute of Movement Sciences and Sports Medicine, Faculty of Medicine, University of Geneva, Geneva, Switzerland.

**Abstract**

Regular physical activity is associated with improved physiological, metabolic and psychological parameters, and with reduced risk of morbidity and mortality. Current recommendations aimed at improving the health and well-being of nonpregnant subjects advise that an accumulation of > or =30 minutes of moderate physical activity should occur on most, if not all, days of the week. Regardless of the specific physiological changes induced by pregnancy, which are primarily developed to meet the increased metabolic demands of mother and fetus, pregnant women benefit from regular physical activity the same way as nonpregnant subjects. Changes in submaximal oxygen uptake (VO₂) during pregnancy depend on the type of exercise performed. During maternal rest or submaximal weight-bearing exercise (e.g. walking, stepping, treadmill exercise), absolute maternal VO₂ is significantly increased compared with the nonpregnant state. The magnitude of change is approximately proportional to maternal weight gain. When pregnant women perform submaximal weight-supported exercise on land (e.g. level cycling), the findings are contradictory. Some studies reported significantly increased absolute VO₂, while many others reported unchanged or only slightly increased absolute VO₂ compared with the nonpregnant state. The latter findings may be explained by the fact that the metabolic demand of cycle exercise is largely independent of the maternal body mass, resulting in no absolute VO₂ alteration. Few studies that directly measured changes in maternal maximal VO₂ (VO₂max) showed no difference in the absolute VO₂max between pregnant and nonpregnant subjects in cycling, swimming or weight-bearing exercise. Efficiency of work during exercise appears to be unchanged during pregnancy in non-weight-bearing exercise. During weight-bearing exercise, the work efficiency was shown to be improved in athletic women who continue exercising and those who stop exercising during pregnancy. When adjusted for weight gain, the increased efficiency is maintained throughout the pregnancy, with the improvement being greater in exercising women. Regular physical activity has been proven to result in marked benefits for mother and fetus. Maternal benefits include improved cardiovascular function, limited pregnancy weight gain, decreased musculoskeletal discomfort, reduced incidence of muscle cramps and lower limb oedema, mood stability, attenuation of gestational diabetes mellitus and gestational hypertension. Fetal benefits include decreased fat mass, improved stress tolerance, and advanced neurobehavioural maturation. In addition, few studies that have directly examined the effects of physical activity on labour and delivery indicate that, for women with normal pregnancies, physical activity is accompanied with shorter labour and decreased incidence of operative delivery. However, a substantial proportion of women stop exercising after they discover they are pregnant, and only few begin participating in exercise activities during pregnancy. The adoption or continuation of a sedentary lifestyle during pregnancy may contribute to the development of certain disorders such as hypertension, maternal and childhood obesity, gestational diabetes, dyspnoea, and pre-eclampsia. In view of the global epidemic of sedentary behaviour and obesity-related pathology, prenatal physical activity was shown to be useful for the prevention and treatment of these conditions. Further studies with larger sample sizes are required to confirm the association between physical activity and outcomes of labour and delivery.
Long-term changes in blood pressure following orlistat and sibutramine treatment: a meta-analysis.
Johansson K, Sundström J, Neovius K, Rössner S, Neovius M.

Source
Obesity Unit, Department of Medicine, Karolinska Institutet, Stockholm, Sweden. kari.johansson@ki.se

Abstract
Previous meta-analyses investigating blood pressure effects of anti-obesity drugs have included studies using non-licensed doses, but not data from head-to-head studies. Furthermore, although diabetes is an important comorbidity in obesity, variation in blood pressure effects across diabetes status has not been investigated. The objective of this study was to estimate the effects on systolic (SBP) and diastolic blood pressure (DBP) of orlistat and sibutramine. Medline, EMBASE, the Cochrane controlled trials register and reference lists of identified articles from 1990 to February 2009 were searched. All placebo-controlled randomized controlled trials of 12-month duration or randomized head-to-head studies of any duration on adults using standard doses were included. Studies/study arms were excluded if they only evaluated weight maintenance after weight loss. Randomized controlled trials were identified, subjected to inclusion and exclusion criteria, and reviewed. Random effects models were used for assessment of weighted mean differences. Eighteen placebo-controlled (12 orlistat, 5540 patients; 6 sibutramine, 1495 patients) and four head-to-head trials (348 patients) met the inclusion criteria. Threearlistat and three sibutramine studies examined overweight subjects with type 2 diabetes (T2DM), as did two head-to-head trials. Mean baseline SBP ranged from 119 to 153 mmHg, and mean DBP from 69 to 98 mmHg. Overall, the placebo-controlled SBP change was -1.9 (95% CI; -2.7, -1.1) mmHg for orlistat, and 0.5 (-1.1, 2.1) mmHg for sibutramine. The corresponding values for DBP were -1.5 (-2.2, -0.8) and 1.7 (0.7, 2.6). Compared with patients without diabetes, diabetic patients treated with orlistat experienced smaller and non-significant reductions of SBP (-0.9; -2.6, 0.7 vs. -2.2; -3.0, -1.3) and DBP (-1.0; -2.4, 0.3 vs. -1.6; -2.4, -0.8). For sibutramine, higher on-treatment elevations in SBP (1.6; -1.3, 4.5 vs. 0.1; -1.8, 2.0) and DBP (2.4; 0.6, 4.1 vs. 1.4; 0.3, 2.5) were seen in patients with vs. without diabetes. In head-to-head trials, the overall differences between sibutramine and orlistat were small and non-significant for both SBP (1.0; -2.3, 4.3) and DBP (-0.2; -2.9, 2.5). In conclusion, in the studies using approved sibutramine doses, the drug caused significant elevations in DBP, while the overall SBP effect was near null. Moreover, absence of a blood pressure-lowering effect of orlistat ad a higher DBP elevation by sibutramine were observed for persons with diabetes. Head-to-head studies indicated that an indirect comparison of placebo-adjusted blood pressure effects may overestimate the adverse effects associated with sibutramine, but these studies were small, of shorter duration and of lower quality.

Long-term pharmacotherapy for obesity and overweight.
Padwal R, Li SK, Lau DC.

Source
Division of Clinical Pharmacology, Sunnybrook and Women's College Health Sciences Center, Room E2-42, 2075 Bayview Avenue, Toronto, Ontario, Canada, M4N 3M5.

Abstract
BACKGROUND:
Worldwide prevalence rates of obesity and overweight are rising and safe and effective treatment strategies are urgently needed. A number of anti-obesity agents have been studied in short-term clinical trials, but long-term efficacy and safety need to be established.

OBJECTIVES:
To assess/compare the effects and safety of approved anti-obesity medications in clinical trials of at least one-year duration.
SEARCH STRATEGY:
MEDLINE, EMBASE, the Cochrane Controlled Trials Register, the Current Science Meta-register of Controlled Trials, and reference lists of original studies and reviews were searched. Date of last search was December 2002. Drug manufacturers and two obesity experts were contacted in to detect unpublished trials. No language restrictions were imposed.

SELECTION CRITERIA:
Double-blind, randomised controlled weight loss and weight maintenance trials of approved anti-obesity agents that 1) enrolled adult overweight or obese patients, 2) included a placebo control group or compared two or more anti-obesity drugs 3) used an intention-to-treat analysis, and 4) had a minimum follow-up period of one year. Abstracts and pseudo-randomised trials were not included.

DATA COLLECTION AND ANALYSIS:
Two reviewers independently assessed all potentially relevant citations for inclusion and methodological quality. The primary outcome measure was weight loss.

MAIN RESULTS:
Of the eight anti-obesity agents investigated, only orlistat and sibutramine trials met inclusion criteria. Eleven orlistat weight loss studies (four of which reported a second year weight maintenance phase) and five sibutramine studies (three weight loss and two weight maintenance trials) were included. Attrition rates averaged 33% during the weight loss phase of orlistat trials and 43% in sibutramine studies. All patients received lifestyle modification as a co-intervention. Compared to placebo, orlistat-treated patients lost 2.7 kg (95% CI: 2.3 kg to 3.1 kg) or 2.9% (95% CI: 2.3 % to 3.4%) more weight and patients on sibutramine experienced 4.3 kg (95% CI: 3.6 kg to 4.9 kg) or 4.6% (95% CI: 3.8% to 5.4%) greater weight loss. The number of patients achieving ten percent or greater weight loss was 12% (95% CI: 8% to 16%) higher with orlistat and 15% (95% CI: 4% to 27%) higher with sibutramine therapy. Weight loss maintenance results were similar. Orlistat caused gastrointestinal side effects and sibutramine was associated with small increases in blood pressure and pulse rate.

REVIEWERS’ CONCLUSIONS:
Studies evaluating the long-term efficacy of anti-obesity agents are limited to orlistat and sibutramine. Both drugs appear modestly effective in promoting weight loss; however, interpretation is limited by high attrition rates. Longer and more methodologically rigorous studies of anti-obesity drugs that are powered to examine endpoints such as mortality and cardiovascular morbidity are required to fully evaluate any potential benefit of such agents.

Blood Pressure and Heart Rate Effects, Weight Loss and Maintenance During Long-Term Phentermine Pharmacotherapy for Obesity.
Hendricks EJ, Greenway FL, Westman EC, Gupta AK.
Source

Abstract
There is a perception that phentermine pharmacotherapy for obesity increases blood pressure and heart rate (HR), exposing treated patients to increased cardiovascular risk. We collected data fromphentermine-treated (PT) and phentermine-untreated (P0) patients at a private weight management practice, to examine blood pressure, HR, and weight changes. Records of 300 sequential returning patients were selected who had been treated with a low-carbohydrate ketogenic diet if their records included complete weight, blood pressure, and HR data from seven office examinations during the first 12 weeks of therapy. The mean time in therapy, time range, and mode was 92 (97.0), 12-624, and 52 weeks. 14% were normotensive, 52% were prehypertensive, and 34% were hypertensive at their first visit or had a previous diagnosis of hypertension. PT subjects systolic
blood pressure/diastolic blood pressure (SBP/DBP) declined from baseline at all data points (SBP/DBP -6.9/-5.0 mm Hg at 26, and -7.3/-5.4 at 52 weeks). P0 subjects' declines of SBP/DBP at both 26 and 52 weeks were -8.9/-6.3 but the difference from the treated cohort was not significant. HR changes in treated/untreated subjects at weeks 26 (-0.9/-3.5) and 52 (+1.2/-3.6) were not significant. Weight loss was significantly greater in the PT cohort for week 1 through 104 (P = 0.0144). These data suggest phentermine treatment for obesity does not result in increased SBP, DBP, or HR, and that weight loss assisted with phentermine treatment is associated with favorable shifts in categorical blood pressure and retardation of progression to hypertension in obese patients.

Science on Weight Loss Medication

1. *Obesity (Silver Spring).* 2011 Apr 28. [Epub ahead of print]

**Blood Pressure and Heart Rate Effects, Weight Loss and Maintenance During Long-Term Phentermine Pharmacotherapy for Obesity.**

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There is a perception that phentermine pharmacotherapy for obesity increases blood pressure and heart rate (HR), exposing treated patients to increased cardiovascular risk. We collected data from phentermine-treated (PT) and phentermine-untreated (P0) patients at a private weight management practice, to examine blood pressure, HR, and weight changes. Records of 300 sequential returning patients were selected who had been treated with a low-carbohydrate ketogenic diet if their records included complete weight, blood pressure, and HR data from seven office examinations during the first 12 weeks of therapy. The mean time in therapy, time range, and mode was 92 (97.0), 12-624, and 52 weeks. 14% were normotensive, 52% were prehypertensive, and 34% were hypertensive at their first visit or had a previous diagnosis of hypertension. PT subjects systolic blood pressure/diastolic blood pressure (SBP/DBP) declined from baseline at all data points (SBP/DBP -6.9/-5.0 mm Hg at 26, and -7.3/-5.4 at 52 weeks). P0 subjects' declines of SBP/DBP at both 26 and 52 weeks were -8.9/-6.3 but the difference from the treated cohort was not significant. HR changes in treated/untreated subjects at weeks 26 (-0.9/-3.5) and 52 (+1.2/-3.6) were not significant. Weight loss was significantly greater in the PT cohort for week 1 through 104 (P = 0.0144). These data suggest phentermine treatment for obesity does not result in increased SBP, DBP, or HR, and that weight loss assisted with phentermine treatment is associated with favorable shifts in categorical blood pressure and retardation of progression to hypertension in obese patients.


**Effects of low-dose, controlled-release, phentermine plus topiramate combination on weight and associated comorbidities in overweight and obese adults (CONQUER): a randomised, placebo-controlled, phase 3 trial.**

Gadde KM, Allison DB, Ryan DH, Peterson CA, Troupin B, Schwiers ML, Day WW.

**Source**

Obesity Clinical Trials Programme, Duke University Medical Center, Durham, NC 27710, USA.
gadde001@mc.duke.edu

**Erratum in**

Abstract

BACKGROUND:
Obesity is associated with a reduction in life expectancy and an increase in mortality from cardiovascular diseases, cancer, and other causes. We therefore assessed the efficacy and safety of two doses of phentermine plus topiramate controlled-release combination as an adjunct to diet and lifestyle modification for weight loss and metabolic risk reduction in individuals who were overweight and obese, with two or more risk factors.

METHODS:
In this 56-week phase 3 trial, we randomly assigned overweight or obese adults (aged 18-70 years), with a body-mass index of 27-45 kg/m(2) and two or more comorbidities (hypertension, dyslipidaemia, diabetes or prediabetes, or abdominal obesity) to placebo, once-daily phentermine 7·5 mg plus topiramate 46·0 mg, or once-daily phentermine 15·0 mg plus topiramate 92·0 mg in a 2:1:2 ratio in 93 centres in the USA. Drugs were administered orally. Patients were randomly assigned by use of a computer-generated algorithm that was implemented through an interactive voice response system, and were stratified by sex and diabetic status. Investigators, patients, and study sponsors were masked to treatment. Primary endpoints were the percentage change in bodyweight and the proportion of patients achieving at least 5% weight loss. Analysis was by intention to treat. This study is registered with Clinical Trials.gov, number NCT00553787.

FINDINGS:
Of 2487 patients, 994 were assigned to placebo, 498 to phentermine 7·5 mg plus topiramate 46·0 mg, and 995 to phentermine 15·0 mg plus topiramate 92·0 mg; 979, 488, and 981 patients, respectively, were analysed. At 56 weeks, change in bodyweight was -1·4 kg (least-squares mean -1·2%, 95% CI -1·8 to -0·7), -8·1 kg (-7·8%, -8·5 to -7·1; p<0·0001), and -10·2 kg (-9·8%, -10·4 to -9·3; p<0·0001) in the patients assigned to placebo, phentermine 7·5 mg plus topiramate 46·0 mg, and phentermine 15·0 mg plus topiramate 92·0 mg, respectively. 204 (21%) patients achieved at least 5% weight loss with placebo, 303 (62%; odds ratio 6·3, 95% CI 4·9 to 8·0; p<0·0001) with phentermine 7·5 mg plus topiramate 46·0 mg, and 687 (70%; 9·0, 7·3 to 11·1; p<0·0001) with phentermine 15·0 mg plus topiramate 92·0 mg; for ≥10% weight loss, the corresponding numbers were 72 (7%), 182 (37%; 7·6, 5·6 to 10·2; p<0·0001), and 467 (48%; 11·7, 8·9 to 15·4; p<0·0001). The most common adverse events were dry mouth (24 [2%], 67 [13%], and 207 [21%] in the groups assigned to placebo, phentermine 7·5 mg plus topiramate 46·0 mg, and phentermine 15·0 mg plus topiramate 92·0 mg, respectively), paraesthesia (20 [2%], 68 [14%], and 204 [21%], respectively), constipation (59 [6%], 75 [15%], and 173 [17%], respectively), insomnia (47 [5%], 29 [6%], and 102 [10%, respectively), dizziness (31 [3%], 36 [7%], 99 [10%], respectively), and dysgeusia (11 [1%], 37 [7%], and 103 [10%], respectively). 38 (4%) patients assigned to placebo, 19 (4%) to phentermine 7·5 mg plus topiramate 46·0 mg, and 73 (7%) to phentermine 15·0 mg plus topiramate 92·0 mg had depression-related adverse events; and 28 (3%), 24 (5%), and 77 (8%), respectively, had anxiety-related adverse events.

INTERPRETATION:
The combination of phentermine and topiramate, with office-based lifestyle interventions, might be a valuable treatment for obesity that can be provided by family doctors.


Phentermine, topiramate and their combination for the treatment of adiposopathy ('sick fat') and metabolic disease.

Bays H.

Source
L-MARC Research Center, 3288 Illinois Avenue, Louisville, KY 40213, USA. hbaysmd@aol.com

Abstract
Positive caloric balance often causes pathologic adipocyte and adipose tissue anatomical and functional changes (termed adiposopathy or 'sick fat'), which may lead to pathogenic adipocyte and adipose tissue...
responses and metabolic disease. Fat weight loss may improve adiposopathy, and thus improve metabolic disease in overweight patients. Unfortunately, the efficacy of non-surgical weight loss therapies is often limited due to redundant physiological systems that help 'protect' against starvation and/or negative caloric balance. One strategy to overcome these limitations is to combine weight loss drug therapies having complementary mechanisms of action, thereby affecting more than one physiologic process influencing body fat accumulation. Phentermine is a noradrenergic sympathomimetic amine approved for short-term treatment of obesity. Topiramate is a sulfamate-substituted monosaccharide derivative of the naturally occurring sugar monosaccharide D-fructose approved as a treatment for migraine headaches and seizure disorders. Although known to facilitate weight loss since its approval, topiramate monotherapy does not have a regulatory indication as an anti-obesity agent. Phentermine HCl/topiramate controlled-release (PHEN/TPM CR) is a combination agent containing immediate-release phentermine and controlled-release topiramate. Clinical trials involving thousands of patients demonstrate PHEN/TPM CR to be effective in improving the weight of patients, and also effective in improving adiposopathy-associated metabolic diseases. This review examines the pathophysiology of adiposopathy as a contributor to metabolic disease, the data supporting phentermine monotherapy, topiramate monotherapy and their combination as anti-obesity and anti-adiposopathy agents, and the preliminary evidence supporting PHEN/TPM CR as a generally well-tolerated and effective agent to improve metabolic disease.

4. **Pharm Res.** 2010 Dec 23. [Epub ahead of print]

**Current and Future Drug Targets in Weight Management.**

**Witkamp RF.**

**Source**

Division of Human Nutrition, Wageningen University, P.O. Box 8129, 6700, EV Wageningen, The Netherlands, renger.witkamp@wur.nl.

**Abstract**

Obesity will continue to be one of the leading causes of chronic disease unless the ongoing rise in the prevalence of this condition is reversed. Accumulating morbidity figures and a shortage of effective drugs have generated substantial research activity with several molecular targets being investigated. However, pharmacological modulation of body weight is extremely complex, since it is essentially a battle against one of the strongest human instincts and highly efficient mechanisms of energy uptake and storage. This review provides an overview of the different molecular strategies intended to lower body weight or adipose tissue mass. Weight-loss drugs in development include molecules intended to reduce the absorption of lipids from the GI tract, various ways to limit food intake, and compounds that increase energy expenditure or reduce adipose tissue size. A number of new preparations, including combinations of the existing drugs topiramate plus phentermine, bupropion plus naltrexone, and the selective 5-HT(2C) agonist lorcaserin have recently been filed for approval. Behind these leading candidates are several other potentially promising compounds and combinations currently undergoing phase II and III testing. Some interesting targets further on the horizon are also discussed.


**Pharmacological management of appetite expression in obesity.**

**Halford JC, Boyland EJ, Blundell JE, Kirkham TC, Harrold JA.**

**Source**

School of Psychology, University of Liverpool, Eleanor Rathbone Building, Bedford Street South, Liverpool L69 7ZA, UK. j.c.g.halford@liverpool.ac.uk

**Abstract**

For obese individuals, successful weight loss and maintenance are notoriously difficult. Traditional drug development fails to exploit knowledge of the psychological factors that crucially influence appetite,
concentrating instead on restrictive criteria of intake and weight reduction, allied to a mechanistic view of energy regulation. Drugs are under development that may produce beneficial changes in appetite expression in the obese. These currently include glucagon-like peptide-1 analogs such as liraglutide, an amylin analog davalintide, the 5-HT(2C) receptor agonist lorcaserin, the monoamine re-uptake inhibitor tesofensine, and a number of combination therapies such as pramlintide and metreleptin, bupropion and naltrexone, phentermine and topiramate, and bupropion and zonisamide. However, the effects of these treatments on eating behavior remain poorly characterized. Obesity is typically a consequence of overconsumption driven by an individual's natural sensitivity to food stimuli and the pleasure derived from eating. Intuitively, these processes should be effective targets for pharmacotherapy, and behavioral analysis can identify drugs that selectively affect desire to eat, enjoyment of eating, satiation or postmeal satiety. Rational interventions designed specifically to modulate these processes could limit the normally aversive consequences of caloric restriction and maximize an individual's capacity to successfully gain control over their appetite.

Rise and fall of anti-obesity drugs.
Li MF, Cheung BM.
Source
Ming-Fang Li, Department of Cardiology, the First Affiliated Hospital with Nanjing Medical University, Nanjing 210029, Jiangsu Province, China.
Abstract
Although it is not generally a life-threatening disease, obesity is becoming a major health problem worldwide. It can be controlled by means of drugs, and, consequently, these are required to be safe as well as effective. In this paper, we summarize the fate of various drugs that have been introduced for clinical use in the treatment of obesity. Fenfluramine and dexfenfluramine were withdrawn because of heart valve damage. Sibutramine suppresses appetite and increases heart rate and blood pressure. In the Sibutramine Cardiovascular OUTcomes trial, an increase in major adverse cardiovascular events prompted its withdrawal in Europe and the United States. Rimonabant is an endocannabinoid receptor antagonist that reduces body weight and ameliorates some cardiovascular risk factors. However, adverse psychiatric side effects led to its withdrawal as well. Orlistat is approved in Europe and the United States for the treatment of obesity, but its use is limited by gastrointestinal side-effects. Ephedrine and caffeine are natural ingredients in foods and supplements that may help the person to lose weight. In the light of several failed attempts, there is a clear need to develop drugs that are effective and safe in the long term in order to successfully combat the phenomenon of obesity.

Glandt M, Raz I.
Source
Department of Endocrinology, Bronx-Lebanon Hospital Center, Bronx, NY 10457, USA.
Abstract
Obesity now presents one of the biggest health problems of our times. Diet and exercise are best for both prevention and treatment; unfortunately, both require much discipline and are difficult to maintain. Medications offer a possible adjunct, but their effect is modest, they are limited by side effects, and the weight loss lasts only as long as the drug is being taken, since as soon as treatment is stopped, the weight is regained. Sibutramine, a sympathomimetic medication which was available for long-term treatment, is the most recent of the drugs to be withdrawn from the market due to side effects; in this case it was an increased risk of cardiovascular events. This paper reviews those medications which are available for treatment of obesity, including many of those recently taken off the market. It also discusses some of the newer treatments that are currently being investigated.
The effect of weight loss and treatment with metformin on serum vaspin levels in women with polycystic ovary syndrome.

Koiou E, Tziomalos K, Dinas K, Katsikis I, Kalaitzakis E, Delkos D, Kandaraki EA, Panidis D.

Source
Division of Endocrinology and Human Reproduction, Second Department of Obstetrics and Gynecology, Aristotle University of Thessaloniki, Hippokration Hospital, Thessaloniki, Greece.

Abstract
Many patients with polycystic ovary syndrome (PCOS) have insulin resistance, obesity (mostly visceral) and glucose intolerance, conditions associated with abnormalities in the production of vaspin, a novel adipokine that appears to preserve insulin sensitivity and glucose tolerance. The aim of the study was to assess serum vaspin levels in PCOS and the effects on vaspin levels of metformin or of weight loss. We studied 79 patients with PCOS and 50 healthy female volunteers. Normal weight patients with PCOS (n=25) were treated with metformin 850 mg bid for 6 months. Overweight/obese patients with PCOS (n=54) were prescribed a normal-protein, energy-restricted diet for 6 months; half of them were also given orlistat 120 mg tid and the rest were given sibutramine 10 mg qd. At baseline and after 6 months, serum vaspin levels and anthropometric, metabolic and hormonal features of PCOS were determined. Overall, patients with PCOS had higher vaspin levels than controls (p=0.021). Normal weight patients with PCOS had higher vaspin levels than normal weight controls (p=0.043). Vaspin levels were non-significantly higher in overweight/obese patients with PCOS than in overweight/obese controls. In normal weight patients with PCOS, metformin reduced vaspin levels non-significantly. In overweight/obese patients with PCOS, diet plus orlistat or sibutramine did not affect vaspin levels. Vaspin levels were independently correlated with body mass index in women with PCOS (p=0.001) and with waist circumference in controls (p=0.015). In conclusion, serum vaspin levels are elevated in PCOS but neither a small weight loss nor metformin affect vaspin levels significantly.

Obesity, weight loss, and the polycystic ovary syndrome: effect of treatment with diet and orlistat for 24 weeks on insulin resistance and androgen levels.

Panidis D, Farmakiotis D, Rousso D, Kourtis A, Katsikis I, Krassas G.

Source
2nd Department of Obstetrics and Gynecology, Division of Human Reproduction, Aristotle University of Thessaloniki, Thessaloniki, Greece.

Abstract
OBJECTIVE:
To investigate the combined effect of diet and orlistat, for 24 weeks, on anthropometric features, hormonal parameters, and indices of insulin resistance in obese women with polycystic ovary syndrome (PCOS) and in obese women without the syndrome.

DESIGN:
Prospective clinical study.

SETTING:
Department of obstetrics and gynecology in a major university in Greece.

PATIENT(S):
Eighteen selected women with PCOS were matched for age and body mass index with 14 obese control women.

INTERVENTION(S):
Subjects were prescribed an energy-restricted diet, and orlistat (120 mg, 3 times per d) was administered to all subjects for 24 weeks.
MAIN OUTCOME MEASURE(S):
At baseline, week 12, and week 24, after an overnight fast, blood samples were collected, and serum levels of FSH, LH, PRL, T, Delta(4)A, DHEAS, 17 alpha-hydroxyprogesterone, sex hormone-binding globulin, glucose, and insulin were measured.

RESULT(S):
Testosterone levels were significantly decreased with treatment in women with PCOS; this decrease was attributed to the first trimester, whereas T levels did not change during the second 12-week period. In women with PCOS, insulin levels and HOMA-IR values were decreased during the first 12 weeks, whereas no significant change was observed during the second trimester.

CONCLUSION(S):
Orlistat administration, combined with diet, for 24 weeks, resulted in significant weight loss and improvement of insulin resistance in obese women, with or without PCOS. Moreover, T levels were significantly decreased in women with PCOS. There appears to be a trend during the first 12-week period for greater improvement of metabolic and hormonal parameters in women with PCOS.

Imported fenproporex-based diet pills from Brazil: a report of two cases.
Cohen PA.
Source
Department of Internal Medicine, Cambridge Health Alliance, Cambridge, MA, USA. pcohen@challiance.org
Abstract
Banned amphetamine-based anorectics are illicitly imported into the United States (US), but little is known regarding the harm these diet pills pose to US residents. A 26-year-old woman using imported diet pills presented with a two-year history of intermittent chest pains, palpitations, headaches and insomnia. Urine toxicology screen detected amphetamines and benzodiazepines. Fenproporex and chlordiazepoxide were detected in her pills. Her symptoms resolved after she stopped using diet pills. A 38-year-old man using imported diet pills presented after his occupational urine screen was significantly positive for amphetamine. Fenproporex and fluoxetine were detected in his pills. These cases illustrate the potential harm from imported prescription diet pills that combine fenproporex with benzodiazepines, antidepressants, diuretics, laxatives and other substances. Increasing physicians' awareness of imported diet pill use may improve care of patients suffering from the pills' many adverse effects.

Major depressive episodes and diet pills.
Patten SB.
Source
Departments of Community Health Sciences and Psychiatry, University of Calgary, 3330 Hospital Drive NW, Calgary, AB, Canada T2N 4N1. patten@ucalgary.ca
Abstract
A variety of medications used to assist with weight loss have been implicated in the precipitation or induction of depressive symptoms and disorders. This is true of a large number of phenylethylamine agents possessing psychostimulant properties, non-phenylethylamine psychostimulants (e.g., caffeine) and the serotonergic agent, fenfluramine. There is, as yet, no substantial evidence linking the more modern weight loss drugs, sibutramine and orlistat, to the aetiology of major depression. Nevertheless, when these drugs are used, major depression will continue to be an important clinical consideration because of the elevated frequency with which major depression occurs in obese patients, the contribution that major depression may make to poor outcomes in non-pharmacological weight loss treatment and because of the interplay between symptoms of depression and weight loss treatment.
Impact of weight-loss medications on the cardiovascular system: focus on current and future anti-obesity drugs.
Drolet B, Simard C, Poirier P.
Source
Institut Universitaire de Cardiologie et de Pneumologie, Laval Hospital, Quebec City, Quebec, Canada.
Abstract
Overweight and obesity have been rising dramatically worldwide and are associated with numerous co-morbidities such as cardiovascular disease (CVD), type 2 diabetes mellitus, hypertension, certain cancers, and sleep apnea. In fact, obesity is an independent risk factor for CVD and CVD risks have also been documented in obese children. The majority of overweight and obese patients who achieve a significant short-term weight loss do not maintain their lower bodyweight in the long term. This may be due to a lack of intensive counseling and support from a facilitating environment including dedicated healthcare professionals such as nutritionists, kinesiologists, and behavior specialists. As a result, there has been a considerable focus on the role of adjunctive therapy such as pharmacotherapy for long-term weight loss and weight maintenance. Beyond an unfavorable risk factor profile, overweight and obesity also impact upon heart structure and function. Since the beginning, the quest for weight loss drugs has encountered warnings from regulatory agencies and the withdrawal from the market of efficient but unsafe medications. Fenfluramine was withdrawn from the market because of unacceptable pulmonary and cardiac adverse effects. Nevertheless, there is extensive research directed at the development of new anti-obesity compounds. The effect of these molecules on CVD risk factors has been studied and reported but information regarding their impact on the cardiovascular system is sparse. Thus, instead of looking at the benefit of weight loss on metabolism and risk factor management, this article discusses the impact of weight loss medications on the cardiovascular system. The potential interaction of available and potential new weight loss drugs with heart function and is reviewed.

Bariatric Surgery

Short-term outcomes of two laparoscopic bariatric procedures.
Angkoolpakdeekul T, Vitoopinyopaab K, Lertsithichai P.
Source
Department of Surgery, Ramathibodi Hospital, Mahidol University, Bangkok, Thailand.
Abstract
OBJECTIVE:
To compare the short term outcomes of laparoscopic Roux-Y gastric bypass (lap RYGB) and laparoscopic gastric banding (lap banding) for morbidly obese patients at a tertiary care hospital.
MATERIAL AND METHOD:
Medical records of patients who underwent laparoscopic bariatric surgery for morbid obesity between November 2003 and November 2008 were reviewed. Baseline data including demographics, anthropometric and biochemical measurements were recorded. Patients were followed postoperatively and the body weight was measured every three to six months. Follow-up biochemical measurements were also recorded. After approximately six months to one year after the initial operation, the Bariatric Analysis and Reporting Outcome System (BAROS) scores were obtained, and re-evaluated every six months.
RESULTS:
There were 65 patients in the series, 31 underwent lap banding and 34 lap RYGB. There were 28 men (43%) and 37 women (57%), with an average age of 31.7 years (SD, 10.5 years). Patients were followed postoperatively for a period between six months and three years. The expected weight loss was 6% greater on
the average for the lap RYGB group during the first two years of follow-up. Biochemical outcomes tended to marginally favor the lap RYGB group. There was no clear difference between groups in terms of the BAROS scores.

CONCLUSION:
Short-term differences between the two laparoscopic operations for morbid obesity tended to marginally favor lap RYGB. However, the BAROS scores were not clearly different between the two groups. These differences seemed to attenuate with time. The effects of the two operations were similar after two years.

Gastric banding or bypass? A systematic review comparing the two most popular bariatric procedures.
Tice JA, Karliner L, Walsh J, Petersen AJ, Feldman MD.
Source
Division of General Internal Medicine, Department of Medicine, University of California, San Francisco, San Francisco, CA 94143-1732, USA. jtice@medicine.ucsf.edu
Abstract
OBJECTIVE:
Bariatric surgical procedures have increased exponentially in the United States. Laparoscopic adjustable gastric banding is now promoted as a safer, potentially reversible and effective alternative to Roux-en-Y gastric bypass, the current standard of care. This study evaluated the balance of patient-oriented clinical outcomes for laparoscopic adjustable gastric banding and Roux-en-Y gastric bypass.
METHODS:
The MEDLINE database (1966 to January 2007), Cochrane clinical trials database, Cochrane reviews database, and Database of Abstracts of Reviews of Effects were searched using the key terms gastroplasty, gastric bypass, laparoscopy, Swedish band, and gastric banding. Studies with at least 1 year of follow-up that directly compared laparoscopic adjustable gastric banding with Roux-en-Y gastric bypass were included. Resolution of obesity-related comorbidities, percentage of excess body weight loss, quality of life, perioperative complications, and long-term adverse events were the abstracted outcomes.
RESULTS:
The search identified 14 comparative studies (1 randomized trial). Few studies reported outcomes beyond 1 year. Excess body weight loss at 1 year was consistently greater for Roux-en-Y gastric bypass than laparoscopic adjustable gastric banding (median difference, 26%; range, 19%-34%; P < .001). Resolution of comorbidities was greater after Roux-en-Y gastric bypass. In the highest-quality study, excess body weight loss was 76% with Roux-en-Y gastric bypass versus 48% with laparoscopic adjustable gastric banding, and diabetes resolved in 78% versus 50% of cases, respectively. Both operating room time and length of hospitalization were shorter for those undergoing laparoscopic adjustable gastric banding. Adverse events were inconsistently reported. Operative mortality was less than 0.5% for both procedures. Perioperative complications were more common with Roux-en-Y gastric bypass (9% vs 5%), whereas long-term reoperation rates were lower after Roux-en-Y gastric bypass (16% vs 24%). Patient satisfaction favored Roux-en-Y gastric bypass (P=.006).
CONCLUSION:
Weight loss outcomes strongly favored Roux-en-Y gastric bypass over laparoscopic adjustable gastric banding. Patients treated with laparoscopic adjustable gastric banding had lower short-term morbidity than those treated with Roux-en-Y gastric bypass, but reoperation rates were higher among patients who received laparoscopic adjustable gastric banding. Gastric bypass should remain the primary bariatric procedure used to treat obesity in the United States.
Short-term outcomes for super-super obese (BMI > or =60 kg/m2) patients undergoing weight loss surgery at a high-volume bariatric surgery center: laparoscopic adjustable gastric banding, laparoscopic gastric bypass, and open tubular gastric bypass.
*Stephens DJ, Saunders JK, Belsley S, Trivedi A, Ewing DR, Iannace V, Capella RF, Wasielewski A, Moran S, Schmidt HJ, Ballantyne GH.*

**Source**
Bariatric Surgery Center, Hackensack University Medical Center, 20 Prospect Avenue, Hackensack, NJ 07601, USA.

**Abstract**
**BACKGROUND:**
We previously reported significantly longer operating room times and a trend toward increased complications and mortality in the super-super obese (body mass index [BMI] > or =60 kg/m(2)) early in our experience with laparoscopic Roux-en-Y gastric bypass. The goal of this study was to re-examine the short-term outcomes for super-super obese patients undergoing weight loss surgery at our high-volume bariatric surgery center well beyond our learning curve.

**METHODS:**
The records for all patients who had undergone weight loss surgery at Hackensack University Medical Center from 2002 to June 2006 were harvested from the hospital's electronic medical database. This population was analyzed as 2 groups (those with a BMI <60 kg/m(2) and those with a BMI > or =60 kg/m(2)), as well as by type of operation. Step-wise and univariate logistic regression analyses assessed the effect of BMI on the outcome variables, including mortality, length of surgery, length of hospital stay, and disposition at discharge.

**RESULTS:**
A total of 3692 patients were studied. Of these patients, 3401 had a BMI <60 kg/m(2) and 291 had a BMI > or =60 kg/m(2). Of the 291 super-super obese patients, 130 underwent vertical banded gastroplasty-Roux-en-Y gastric bypass, 116 laparoscopic Roux-en-Y gastric bypass, and 45 laparoscopic adjustable gastric banding. The proportion of male patients, black patients, and patients with sleep apnea was increased in the BMI > or =60 kg/m(2) group. The number of co-morbid diseases per patient correlated with age but not BMI. The BMI > or =60 kg/m(2) group required a significantly longer total operating room time (136 versus 120 min). Hospital length of stay was significantly longer only in the laparoscopic Roux-en-Y gastric bypass patients (3 d for the BMI > or =60 kg/m(2) group versus 2 d for the BMI <60 kg/m(2) group). A significantly greater percentage of patients in the super-super obese group were discharged to chronic care facilities. The overall in-hospital mortality rate was 0.15% (5 of 3692) but did not significantly differ between the 2 groups: BMI <60 kg/m(2), rate of 0.12% (4 of 3401 patients), and BMI > or =60 kg/m(2), rate of 0.34% (1 of 291 patients). The type of operation did not significantly affect the disposition at discharge or in-hospital mortality.

**CONCLUSION:**
Super-super obese patients required longer total operating room times, a longer hospital length of stay, and were more likely to be discharged to chronic care facilities than were patients with a BMI <60 kg/m(2); however, the in-hospital mortality was similar for both groups.


**Bariatric surgery as a novel treatment for type 2 diabetes mellitus: a systematic review**
*Meijer RI, van Wagensveld BA, Siegert CE, Eringa EC, Serné EH, Smulders YM.*

**Source**
Department of Internal Medicine, VU Medical Center, De Boelelaan Straat, Postbus 7057, 1007 MB Amsterdam, the Netherlands. y.smulders@vumc.nl.
Abstract

OBJECTIVE:
To systematically review the literature pertaining to the reversal of type 2 diabetes mellitus (DM2) after Roux-en-Y gastric bypass and adjustable gastric banding.

DATA SOURCES:
We conducted a review of the literature using PubMed and searched the reference lists of published studies to identify additional studies.

STUDY SELECTION:
We selected all published articles that were relevant with respect to bariatric surgery and its metabolic effects.

DATA EXTRACTION:
Only 9 original articles reporting on DM2 reversal rates after bariatric surgery were identified: 1 randomized controlled trial and 8 observational studies. Other referenced articles serve as background literature.

DATA SYNTHESIS:
Roux-en-Y gastric bypass leads to a reversal rate of DM2 of 83%. Adjustable gastric banding confers a reversal rate of 62%, and this effect is achieved later after surgery.

CONCLUSIONS:
Bariatric surgery leads to marked and long-lasting weight reduction. A large proportion of patients undergoing bariatric surgery have DM2. In fact, the presence of diabetes mellitus is a compelling argument to perform bariatric surgery in those who are eligible according to international criteria. Glycemic control improves in the months after laparoscopic adjustable gastric banding, but it improves more rapidly and completely after laparoscopic Roux-en-Y gastric bypass surgery. Thus, both types of surgery are capable of improving or even curing DM2, but the mechanisms may differ.

Obesity and bariatric surgery: a systematic review of associations with defecatory dysfunction.
Poylin V, Serrot FJ, Madoff RD, Ikrumuddin S, Mellgren A, Lowry AC, Melton GB.
Source
Division of Colon and Rectal Surgery Division of Gastrointestinal/Bariatric Surgery, Department of Surgery, University of Minnesota, Minneapolis, Minnesota, USA.

Abstract

Obesity rates are rapidly growing in the developed world. While upper gastrointestinal disturbances and urinary incontinence are independently associated with obesity, the relationship between obesity and defecatory dysfunction is less well defined. Objectives To summarize the literature on faecal incontinence, diarrhoea and constipation in obese patients and its effects of bariatric surgery. Method Search strategy A Medline search was carried out on articles published from January 1966 to March 2010. Selection criteria Original articles on adult obese or morbidly obese patients were identified, including results following bariatric surgery that reported faecal incontinence, diarrhoea or constipation. Other forms of pelvic floor dysfunction were excluded. Main outcome measures included faecal incontinence, diarrhoea and constipation rates and their severity in obese patients and following bariatric surgery. Results Twenty studies reported defecatory outcomes in obese patients (n = 14) and after bariatric surgery (n = 6). While constipation rates were similar, the rates of faecal incontinence and diarrhoea were higher in obese patients compared with non-obese patients. The exact rates of these conditions, and the correlations between body mass index (BMI) and faecal incontinence, diarrhoea and constipation, were not clear. Faecal incontinence improved after Roux-en-Y gastric bypass in studies with preoperative data. The effects of bariatric surgery on diarrhoea were unclear. Conclusion Few studies have assessed the correlations between obesity and defecatory function and the effect of bariatric surgery. Studies were often not well controlled and used non-uniform instruments to assess bowel function. Obesity appears to be correlated with higher rates of faecal incontinence and diarrhoea. The
effects of bariatric surgery on these conditions are not well defined. Well-controlled studies correlating outcome with physiological pelvic floor function are needed.

The clinical effectiveness and cost-effectiveness of bariatric (weight loss) surgery for obesity: a systematic review and economic evaluation.
Picot J, Jones J, Colquitt JL, Gospodarevskaya E, Loveman E, Baxter L, Clegg AJ.
Source
Southampton Health Technology Assessments Centre, University of Southampton, UK.
Abstract
OBJECTIVES:
To assess the clinical effectiveness and cost-effectiveness of bariatric surgery for obesity.
DATA SOURCES:
Seventeen electronic databases were searched [MEDLINE; EMBASE; PreMedline In-Process & Other Non-Indexed Citations; The Cochrane Library including the Cochrane Systematic Reviews Database, Cochrane Controlled Trials Register, DARE, NHS EED and HTA databases; Web of Knowledge Science Citation Index (SCI); Web of Knowledge ISI Proceedings; PsycInfo; CRD databases; BIOSIS; and databases listing ongoing clinical trials] from inception to August 2008. Bibliographies of related papers were assessed and experts were contacted to identify additional published and unpublished references.
REVIEW METHODS:
Two reviewers independently screened titles and abstracts for eligibility. Inclusion criteria were applied to the full text using a standard form. Interventions investigated were open and laparoscopic bariatric surgical procedures in widespread current use compared with one another and with non-surgical interventions. Population comprised adult patients with body mass index (BMI) > or = 30 and young obese people. Main outcomes were at least one of the following after at least 12 months follow-up: measures of weight change; quality of life (QoL); perioperative and postoperative mortality and morbidity; change in obesity-related comorbidities; cost-effectiveness. Studies eligible for inclusion in the systematic review for comparisons of Surgery versus Surgery were RCTs. For comparisons of Surgery versus Non-surgical procedures eligible studies were RCTs, controlled clinical trials and prospective cohort studies (with a control cohort). Studies eligible for inclusion in the systematic review of cost-effectiveness were full cost-effectiveness analyses, cost-utility analyses, cost-benefit analyses and cost-consequence analyses. One reviewer performed data extraction, which was checked by two reviewers independently. Two reviewers independently applied quality assessment criteria and differences in opinion were resolved at each stage. Studies were synthesised through a narrative review with full tabulation of the results of all included studies. In the economic model the analysis was developed for three patient populations, those with BMI > or = 40; BMI > or = 30 and < 40 with Type 2 diabetes at baseline; and BMI > or = 30 and < 35. Models were applied with assumptions on costs and comorbidity.
RESULTS:
A total of 5386 references were identified of which 26 were included in the clinical effectiveness review: three randomised controlled trials (RCTs) and three cohort studies compared surgery with non-surgical interventions and 20 RCTs compared different surgical procedures. Bariatric surgery was a more effective intervention for weight loss than non-surgical options. In one large cohort study weight loss was still apparent 10 years after surgery, whereas patients receiving conventional treatment had gained weight. Some measures of QoL improved after surgery, but not others. After surgery statistically fewer people had metabolic syndrome and there was higher remission of Type 2 diabetes than in non-surgical groups. In one large cohort study the incidence of three out of six comorbidities assessed 10 years after surgery was significantly reduced compared with conventional therapy. Gastric bypass (GBP) was more effective for weight loss than vertical banded gastroplasty (VBG) and adjustable gastric banding (AGB). Laparoscopic isolated sleeve gastrectomy (LISG) was
more effective than AGB in one study. GBP and banded GBP led to similar weight loss and results for GBP versus LISG and VBG versus AGB were equivocal. All comparisons of open versus laparoscopic surgeries found similar weight losses in each group. Comorbidities after surgery improved in all groups, but with no significant differences between different surgical interventions. Adverse event reporting varied; mortality ranged from none to 10%. Adverse events from conventional therapy included intolerance to medication, acute cholecystitis and gastrointestinal problems. Major adverse events following surgery, some necessitating reoperation, included anastomosis leakage, pneumonia, pulmonary embolism, band slippage and band erosion. Bariatric surgery was cost-effective in comparison to non-surgical treatment in the reviewed published estimates of cost-effectiveness. However, these estimates are likely to be unreliable and not generalisable because of methodological shortcomings and the modelling assumptions made. Therefore a new economic model was developed. Surgical management was more costly than non-surgical management in each of the three patient populations analysed, but gave improved outcomes. For morbid obesity, incremental cost-effectiveness ratios (ICERs) (base case) ranged between 2000 pounds and 4000 pounds per QALY gained. They remained within the range regarded as cost-effective from an NHS decision-making perspective when assumptions for deterministic sensitivity analysis were changed. For BMI \( \geq 30 \) and \( 40 \), ICERs were 18,930 pounds at two years and 1397 pounds at 20 years, and for BMI \( \geq 30 \) and \( < 35 \), ICERs were 60,754 pounds at two years and 12,763 pounds at 20 years. Deterministic and probabilistic sensitivity analyses produced ICERs which were generally within the range considered cost-effective, particularly at the long twenty year time horizons, although for the BMI 30-35 group some ICERs were above the acceptable range.

**CONCLUSIONS:**

Bariatric surgery appears to be a clinically effective and cost-effective intervention for moderately to severely obese people compared with non-surgical interventions. Uncertainties remain and further research is required to provide detailed data on patient QoL; impact of surgeon experience on outcome; late complications leading to reoperation; duration of comorbidity remission; resource use. Good-quality RCTs will provide evidence on bariatric surgery for young people and for adults with class I or class II obesity. New research must report on the resolution and/or development of comorbidities such as Type 2 diabetes and hypertension so that the potential benefits of early intervention can be assessed.

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**Bariatric surgery: a systematic review and network meta-analysis of randomized trials.**


**Source**

Department of Medicine, University of Alberta, Edmonton, Alberta, Canada Department of Surgery, University of Alberta, Edmonton, Alberta, Canada Department of Medicine, University of Calgary, Calgary, Alberta, Canada.

**Abstract**

The clinical efficacy and safety of bariatric surgery trials were systematically reviewed. MEDLINE, EMBASE, CENTRAL were searched to February 2009. A basic PubCrawler alert was run until March 2010. Trial registries, HTA websites and systematic reviews were searched. Manufacturers were contacted. Randomized trials comparing bariatric surgeries and/or standard care were selected. Evidence-based items potentially indicating risk of bias were assessed. Network meta-analysis was performed using Bayesian techniques. Of 1838 citations, 31 RCTs involving 2619 patients (mean age 30-48 \( \text{y} \); mean BMI levels 42-58 \( \text{kg/m}^2 \) ) met eligibility criteria. As compared with standard care, differences in BMI levels from baseline at year 1 (15 trials; 1103 participants) were as follows: jejunoileal bypass \([\text{MD: } -11.4 \text{ kg/m}^2]\), mini-gastric bypass \([-11.3 \text{ kg/m}^2]\), biliopancreatic diversion \([-11.2 \text{ kg/m}^2]\), sleeve gastrectomy \([-10.1 \text{ kg/m}^2]\), Roux-en-Y gastric bypass \([-9.0 \text{ kg/m}^2]\), horizontal gastroplasty \([-5.0 \text{ kg/m}^2]\), vertical banded gastroplasty \([-6.4 \text{ kg/m}^2]\), and adjustable gastric banding \([-2.4 \text{ kg/m}^2]\). Bariatric surgery appears efficacious compared to standard care in reducing BMI. Weight losses are greatest with diversionary procedures, intermediate with
diversionary/restrictive procedures, and lowest with those that are purely restrictive. Compared with Roux-en-Y gastric bypass, adjustable gastric banding has lower weight loss efficacy, but also leads to fewer serious adverse effects.

Long-term prevention of mortality in morbid obesity through bariatric surgery. A systematic review and meta-analysis of trials performed with gastric banding and gastric bypass.
Pontiroli AE, Morabito A.
Source
Dipartimento di Medicina, Chirurgia e Odontoattra, Università degli Studi di Milano, Milano, Italy.
antonio.pontiroli@unimi.it
Erratum in
Abstract
BACKGROUND:
Bariatric surgery has been reported to reduce long-term mortality in operated participants in comparison with nonoperated participants.
METHODS:
We performed a systematic review and meta-analysis of clinical trials published as full articles dealing with cardiovascular (CV) mortality, all-cause mortality (noncardiovascular), and global mortality (sum of CV and all-cause mortality). Pooled-fixed effects of estimates of the risk of mortality in participants undergoing surgery were calculated compared with controls.
RESULTS:
Of 44,022 participants from 8 trials (14,052 undergoing surgery and 29,970 controls), death occurred in 3317 participants (400 in surgery, 2917 in controls); when the kind of death was specified, 321 CV deaths (118 in surgery, 203 in controls), and 523 all-cause deaths (218 in surgery, 305 in controls) occurred. Compared with controls, surgery was associated with a reduced risk of global mortality (OR = 0.55, CI, 0.49-0.63), of CV mortality (OR = 0.58, CI, 0.46-0.73), and of all-cause mortality (OR = 0.70, CI, 0.59-0.84). Data of all-cause mortality were not heterogeneous; heterogeneity of data of CV mortality decreased when studies were grouped according to size (large vs small studies). The reduction of risk was smaller in large than in small studies (OR = 0.61 vs 0.21, 0.63 vs 0.16, 0.74 vs 0.35 for global, CV, and all-cause mortality, respectively). The effect of gastric banding and gastric by-pass (3797 vs 10,255 interventions) was similar for global and all-cause mortality (OR = 0.57 vs 0.55, and 0.66 vs 0.70, respectively), different for CV mortality (OR = 0.71 vs 0.48). At meta-regression analysis, a trend for a decrease of global mortality (Log OR) linked to increasing BMI appeared.
CONCLUSION:
This meta-analysis indicates that (1) bariatric surgery reduces long-term mortality; (2) risk reduction is smaller in large than in small studies; and (3) both gastric banding and gastric by-pass reduce mortality with a greater effect of the latter on CV mortality.

Contraceptive use among women with a history of bariatric surgery: a systematic review.
Paulen ME, Zapata LB, Cansino C, Curtis KM, Jamieson DJ.
Source
Centers for Disease Control and Prevention, Atlanta, GA 30341, USA.
Abstract

BACKGROUND:
Weight loss after bariatric surgery often improves fertility but can pose substantial risks to maternal and fetal outcomes. Women who have undergone a bariatric surgical procedure are currently advised to delay conception for up to 2 years.

STUDY DESIGN:
We conducted a systematic review of the literature, from database (PubMed) inception through February 2009, to evaluate evidence on the safety and effectiveness of contraceptive use among women with a history of bariatric surgery.

RESULTS:
From 29 articles, five met review inclusion criteria. One prospective, noncomparative study reported 2 pregnancies among 9 (22%) oral contraceptive (OC) users following biliopancreatic diversion, and one descriptive study reported no pregnancies among an unidentified number of women taking OCs following laparoscopic adjustable gastric banding. Of two pharmacokinetic studies, one found lower plasma levels of norethisterone and levonorgestrel among women having had a jejunoileal bypass, as compared to nonoperated, normal-weight controls. The other study found no difference in plasma levels of D-norgestrel between women having a jejunoileal bypass of either 1:3 or 3:1 ratio between the length of jejunum and ileum left in continuity, but women with a 1:3 ratio had significantly higher plasma levels of D-norgestrel than extremely obese controls not operated upon.

CONCLUSIONS:
Evidence regarding OC effectiveness following a bariatric surgical procedure is quite limited, although no substantial decrease in effectiveness was identified from available studies. Evidence on failure rates for other contraceptive methods and evidence on safety for all contraceptive methods was not identified.


Bariatric surgery in women of reproductive age: special concerns for pregnancy.
Source
Southern California Evidence-based Practice Center, Santa Monica, CA, USA.

Abstract

CONTEXT:
The use of bariatric surgery for treating severe obesity has increased dramatically over the past 10 years; about half of patients who undergo these procedures are women of reproductive age. This report was commissioned to measure the incidence of bariatric surgery in this population and review the evidence on the impact of bariatric surgery on fertility and subsequent pregnancy.

OBJECTIVES:
To measure the incidence of contemporary bariatric surgery procedures in women age 18-45 and to assess its impact on fertility, contraception, prepregnancy risk factors, and pregnancy outcomes, including those of neonates.

DATA SOURCES AND STUDY SELECTION:
Nationwide Inpatient Sample (NIS), a national sample of over 1,000 hospitals, to measure the trend in the number of women of reproductive age who underwent bariatric procedures from 1998-2005. We searched numerous electronic databases, including MEDLINE and Embase, for potentially relevant studies involving bariatric surgery (gastric bypass, laparoscopic adjustable gastric band, vertical-banded gastroplasty, biliopancreatic diversion), and consequent fertility, contraception, pregnancy, weight management, maternal and neonatal outcomes, and nutritional deficiencies. We scanned reference lists for additional relevant articles and contacted experts in the fields of bariatric surgery and obstetrics/gynecology (OB/GYN). Of 223
screened articles, we accepted 57 that reported on fertility following surgery (19 articles), contraception use/recommendations (11), maternal weight or nutrition management (28), maternal outcomes including morbidity and mortality (48), cesarean-section rates (16), and neonatal outcomes (44). These articles included reports on gastric bypass, both open and laparoscopic (27 articles), laparoscopic adjustable band (15), biliopancreatic diversion (16), and vertical-banded gastroplasty (6). Studies could contribute to one or more analyses. We found one case-control study and the observational data accepted included 12 cohort studies, 21 case series, and 23 individual case reports.

DATA EXTRACTION:
We abstracted information about study design, fertility history, fertility outcomes, prepregnancy weight loss, nutritional management, outcomes following pregnancy, and adverse events (during pregnancy) related to surgery.

DATA SYNTHESIS:
Nationally representative data showed a six-fold increase in bariatric surgery inpatient procedures from 1998 to 2005. Women age 18-45 accounted for about half of the patients undergoing bariatric surgery; over 50,000 have these procedures as inpatients annually. An unknown number have outpatient bariatric procedures. We identified one case-control study that directly addressed some of the key questions, but no randomized controlled trials or prospective cohort studies, which would be the strongest study designs to answer questions about effectiveness, risk and prognosis. Consequently, all of our conclusions are limited by the available data, and are cautious. The evidence suggests that bariatric surgery results in improved fertility; the strongest evidence is in women with the polycystic ovarian syndrome, where biochemical studies showing normalization of hormones after surgery support case series data. Observational studies (retrospective cohorts and case series) suggest that fertility improves following bariatric procedures and weight loss; similar to that seen when obese women lose weight through nonsurgical means. There is almost no evidence on post-surgical contraceptive efficacy or use. Research is needed to determine whether differences in absorption, particularly for oral contraceptives, affect contraceptive efficacy. Nutrient deficiencies were reported in infants born to women who underwent procedures that resulted in malabsorption, as well as women who did not take prenatal vitamins or had difficulty with their own nutrition (i.e., from chronic vomiting). Literature suggests that gastric bypass and laparoscopic adjustable band procedures confer only minimal, if any, increased risk of nutritional or congenital problems if supplemental vitamins are taken and maternal nutrition is otherwise adequate. Biliopancreatic diversion has an appreciable risk for nutritional problems in some patients. Women who have undergone bariatric surgery may have less risk than obese women for certain pregnancy complications such as gestational diabetes, preeclampsia, and pregnancy induced hypertension. There is no evidence that cesarean section rates and delivery complications are higher in the post-surgery group, but data are limited.

CONCLUSIONS:
Weight loss procedures are being performed more frequently to treat morbid obesity, with a six-fold increase over a recent 7-year time span; almost half of all patients are women of reproductive age. The level of evidence on fertility, contraception, and pregnancy outcomes is limited to observational studies. Data suggest that fertility improves after bariatric surgical procedures, nutritional deficiencies for mother and child are minimal, and maternal and neonatal outcomes are acceptable with laparoscopic adjustable band and gastric bypass as long as adequate maternal nutrition and vitamin supplementation are maintained. There is no evidence that delivery complications are higher in post-surgery pregnancies.

Metabolic and nutritional changes after bariatric surgery.
Salameh BS, Khoukaz MT, Bell RL.
Source
Resident in General Surgery, Yale University School of Medicine, New Haven, CT 06510, USA.
Erratum in

Abstract
Bariatric surgery is the most durable intervention for severe obesity. Appropriate candidates for surgery include those with a body mass index over 40 kg/m(2), or those with a BMI over 35 kg/m(2) who also have weight-related comorbidities. Bariatric procedures are categorized as restrictive, where food intake is limited by a small gastric 'pouch'; malabsorptive, where the length of intestine available for nutrient absorption is decreased; or a combination of both. Although pure malabsorptive procedures, such as the now-historical jejunoileal bypass, achieve greater weight loss than restrictive procedures, they are generally associated with more postoperative metabolic problems. The Roux-en-Y gastric bypass is currently considered the gold standard bariatric procedure for most patients. It results in excellent weight loss with minimal complications, but does require life-long vitamin supplementation. Compliance with vitamins and supplements is also mandatory after malabsorptive procedures. With these procedures, decreased oral intake, as well as altered absorption of nutrients from the GI tract, results in potentially low blood levels of a variety of micronutrients, especially iron, vitamin B12 and folate. Bariatric surgery also improves the comorbid conditions that are associated with obesity, such as diabetes, hypertension, dyslipidemia, obstructive sleep apnea, obesity hypoventilation, gastroesophageal reflux disease, asthma, venous stasis, polycystic ovary syndrome and pseudotumor cerebri. The resolution of diabetes is secondary to weight loss and may also be due to alteration of the enteroinsular axis.

Nutritional and metabolic complications of bariatric surgery.
Malinowski SS.
Source
Department of Pharmacy Services, Division of Digestive Health and Nutrition, University of Mississippi Medical Center, Jackson, Mississippi 39216-4505, USA. SMalinowski@pharmacy.umsmed.edu

Abstract
Bariatric surgery is an effective treatment for patients with clinically severe obesity. In addition to significant weight loss, it is also associated with improvements in comorbidities. Unfortunately, bariatric surgery also has the potential to cause a variety of nutritional and metabolic complications. These complications are mostly due to the extensive surgically induced anatomical changes incurred by the patient's gastrointestinal tract, particularly with roux-en-Y gastric bypass and biliopancreatic diversion. Complications associated with vertical banded gastroplasty are mostly due to decreased intake amounts of specific nutrients. Macronutrient deficiencies can include severe protein-calorie malnutrition and fat malabsorption. The most common micronutrient deficiencies are of vitamin B12, iron, calcium, and vitamin D. Other micronutrient deficiencies that can lead to serious complications include thiamine, folate, and the fat-soluble vitamins. Counseling, monitoring, and nutrient and mineral supplementation are essential for the treatment and prevention of nutritional and metabolic complications after bariatric surgery.

Pregnancy following gastric bypass surgery: what is the expected course and outcome?
Sapre N, Munting K, Pandita A, Stubbs R.
Source
Wakefield Gastroenterology Centre, Private Bag 7909, Wellington, New Zealand.

Abstract
AIM:
To examine the course of pregnancy, labour, and the neonatal period in a group of women who have become
pregnant following gastric bypass surgery for severe obesity.

METHODS:
Women who had experienced pregnancy following gastric bypass surgery were identified by an initial questionnaire. A second questionnaire was sent to those identified by the first questionnaire, who were willing to provide details concerning such pregnancies.

RESULTS:
Seventeen women experienced a total of 24 pregnancies and 25 live births. Five had experienced difficulties with conception or pregnancy prior to surgery. The average maternal weight gain was 6.13 kg. No major problems with fetal growth were observed. Babies were delivered at a mean gestational age of 37.5 weeks and with a mean birth weight of 3038 g. Six women reported a complication during pregnancy (25%) and five a complication in labour (20%). Two babies born to the same mother had congenital abnormalities attributable to a rare genetic disorder.

CONCLUSION:
The course of pregnancy and labour appears normalised for severely obese women following gastric bypass surgery. The weight loss and marked reduction in food intake following gastric bypass surgery does not lead to growth or development problems for offspring. Careful monitoring of expectant mothers who have undergone gastric bypass surgery is nevertheless to be recommended.

Reproductive outcome after bariatric surgery: a critical review.
Guelinckx I, Devlieger R, Vansant G.
Source
Department of Nutrition-Preventive Medicine, Leuven Food Science and Nutrition Research Centre, University Hospital Gasthuisberg, Catholic University Leuven, Belgium. isabelle.guelinckx@med.kuleuven.be

Abstract
BACKGROUND:
After many cycles of weight loss and weight gain, more and more morbidly obese patients undergo bariatric surgery, like gastric banding or gastric bypass, as the ultimate treatment for their obesity-problem. Since women of reproductive age are candidates for bariatric surgery, concerns arise regarding the potential impact on future pregnancy.

METHODS:
English-language articles were identified in a PUBMED search from 1982 to January 2008 using the keywords for pregnancy and bariatric surgery or gastric bypass or gastric banding.

RESULTS:
The few reported case-control and cohort studies clearly show improved fertility and a reduced risk in obstetrical complications, including gestational diabetes, macrosomia and hypertensive disorders of pregnancy, in women after operatively induced weight loss when compared with morbidly obesity women. The incidence of intrauterine growth restriction (IUGR) appears to be increased, however. No conclusions can be drawn concerning the risk for preterm labour and miscarriage, although these risks are probably increased compared with controls matched for body mass index. Operative complications are not uncommon with bariatric surgery and several cases have pointed to the increased risk for intestinal hernias and nutritional deficiencies in subsequent pregnancy. Deficiencies in iron, vitamin A, vitamin B(12), vitamin K, folate and calcium can result in both maternal complications, such as severe anaemia, and fetal complications, such as congenital abnormalities, IUGR and failure to thrive.

CONCLUSIONS:
Close supervision before, during and after pregnancy following bariatric surgery and nutrient supplementation adapted to the patient's individual requirements can help to prevent nutrition-related complications and improve maternal and fetal health, in this high-risk obstetric population.

**Pregnancy after bariatric surgery: implications for mother and newborn.**

**Dell'Agnolo CM, Carvalho MD, Pelloso SM.**

**Source**

Department of Nursing, Postgraduate Nursing Program, Maringá State University (UEM), Rua Nossa Senhora da Glória, n. 56-A Jardim São Jorge, Maringá, Paraná, Brazil. cmdagnolo@uem.br

**Abstract**

**BACKGROUND:**

The present study aimed to identify the implications for the mother and the newborn in pregnancies occurring after the bariatric surgery.

**METHODS:**

The present retrospective, exploratory cohort study was conducted to analyze the implications for the mother and the newborn in women of childbearing age (10 to 49 years) who became pregnant after undergoing bariatric surgery in Maringá, Paraná, Brazil, during the period from 1999 through 2008.

**RESULTS:**

The study identified 32 women with the following characteristics: the majority of the women were Caucasian, slightly more than half were living with a partner, had some higher education, and most of them were without surgical complications. In addition, the mean weight loss post-surgery was 44.09 lbs, with an average interval of 40 months between the surgery and the pregnancy, with improvement of various comorbidities post-surgery. Conversely, they presented more neuropsychiatric disorders, post-surgery anemia, and higher prevalence of cesarean delivery. The majority of children were born at term with normal birth weight and no history of anemia. Hospitalization was required for 36.58% of the post-surgery pregnant women, while 17.07% of such cases required blood transfusion due to anemia. Lastly, there were fewer pregnancy-related hypertension cases than before the surgery.

**CONCLUSIONS:**

Pregnancy after bariatric surgery has proven to be safe for both the mother and the newborn. The newborn birth weight was not compromised even though some of the pregnant women were anemic.


**Pregnancy and fertility following bariatric surgery: a systematic review.**

**Maggard MA, Yermilov I, Li Z, Maglione M, Newberry S, Suttorp M, Hilton L, Santry HP, Morton JM, Livingston EH, Shekelle PG.**

**Source**

Rand Corporation, Santa Monica, California, USA. mmaggard@mednet.ucla.edu

**Abstract**

**CONTEXT:**

Use of bariatric surgery has increased dramatically during the past 10 years, particularly among women of reproductive age.

**OBJECTIVES:**

To estimate bariatric surgery rates among women aged 18 to 45 years and to assess the published literature on pregnancy outcomes and fertility after surgery.

**EVIDENCE ACQUISITION:**

Search of the Nationwide Inpatient Sample (1998-2005) and multiple electronic databases (Medline, EMBASE, Controlled Clinical Trials Register Database, and the Cochrane Database of Reviews of Effectiveness) to identify articles published between 1985 and February 2008 on bariatric surgery among women of reproductive age. Search terms included bariatric procedures, fertility, contraception, pregnancy, and nutritional deficiencies. Information was abstracted about study design, fertility, and nutritional, neonatal, and pregnancy outcomes after surgery.
EVIDENCE SYNTHESIS:
Of 260 screened articles, 75 were included. Women aged 18 to 45 years accounted for 49% of all patients undergoing bariatric surgery (>50,000 cases annually for the 3 most recent years). Three matched cohort studies showed lower maternal complication rates after bariatric surgery than in obese women without bariatric surgery, or rates approaching those of nonobese controls. In 1 matched cohort study that compared maternal complication rates in women after laparoscopic adjustable gastric band surgery with obese women without surgery, rates of gestational diabetes (0% vs 22.1%, P < .05) and preeclampsia (0% vs 3.1%, P < .05) were lower in the bariatric surgery group. Findings were supported by 13 other bariatric cohort studies. Neonatal outcomes were similar or better after surgery compared with obese women without laparoscopic adjustable gastric band surgery (7.7% vs 7.1% for premature delivery; 7.7% vs 10.6% for low birth weight, P < .05; 7.7% vs 14.6% for macrosomia, P < .05). No differences in neonatal outcomes were found after gastric bypass compared with nonobese controls (26.3%-26.9% vs 22.4%-20.2% for premature delivery, P = not reported [1 study] and P = .43 [1 study]; 7.7% vs 9.0% for low birth weight, P = not reported [1 study]; and 0% vs 2.6%-4.3% for macrosomia, P = not reported [1 study] and P = .28 [1 study]). Findings were supported by 10 other studies. Studies regarding nutrition, fertility, cesarean delivery, and contraception were limited.

CONCLUSION:
Rates of many adverse maternal and neonatal outcomes may be lower in women who become pregnant after having had bariatric surgery compared with rates in pregnant women who are obese; however, further data are needed from rigorously designed studies.

Pregnancy after bariatric surgery.
Kominiarek MA.
Source
Department of Obstetrics and Gynecology, University of Illinois at Chicago, 840 South Wood Street, M/C 808, Chicago, IL 60612, USA. Mkomin1@uic.edu
Abstract
The incidence of obesity is increasing rapidly, and it affects a greater proportion of women than men. Unfortunately, obesity has a negative impact on women's reproductive health, including increased adverse perinatal outcomes. Weight loss surgery, also known as bariatric surgery, is performed in many hospitals, and can allow for significant weight loss and improvement in medical comorbidities such as diabetes and hypertension. A woman who becomes pregnant after bariatric surgery usually has an uncomplicated pregnancy but requires special attention to some complications that can occur after these procedures. This article reviews the perinatal outcomes and provides recommendations for care regarding the unique issues that arise during a pregnancy after bariatric surgery.

Pregnancy outcomes after bariatric surgery: maternal, fetal, and infant implications.
Abodeely A, Roye GD, Harrington DT, Cioffi WG.
Source
Department of Surgery, Brown Medical School, Rhode Island Hospital, Providence, RI, USA.
Abstract
Obese women who become pregnant face many health risks, including gestational diabetes, pregnancy-induced hypertension, and pre-eclampsia. These women also have a greater incidence of preterm labor, cesarean sections, and perioperative morbidity. Infants born to obese women have increased rates of macrosomia and congenital anomalies, as well as life-long complications such as obesity and its associated morbidities. With the increase in numbers of weight loss operations being performed in women of childbearing age, physicians will have to address patient concerns regarding the safety of pregnancy after surgery.
Many of the proposed health benefits of weight loss after surgery could translate to decreased rates of complications experienced by obese pregnant women. Case reports and small series have emerged documenting pregnancy courses after bariatric surgery. We reviewed the studies that reported pregnancy outcomes compiled from PubMed and Ovid databases to help draw conclusions regarding the maternal, fetal, and infant safety in women after bariatric surgery. The observations from these studies have shown that the health risks experienced by obese women during pregnancy are reduced after weight loss surgery. Additionally, there does not appear to be any increased risk regarding fetal or infant outcome.

Pregnancy after bariatric surgery: a comprehensive review. 
Karmon A, Sheiner E. 
Source 
Department of Obstetrics and Gynecology, Faculty of Health Sciences, Soroka University Medical Center, Ben-Gurion University of the Negev, Beer-Sheva, Israel. 
Abstract 
BACKGROUND: 
Obesity continues to be a global epidemic, and strong evidence exists linking it with gestational complications such as macrosomia, hypertensive disorders of pregnancy, gestational diabetes, and cesarean section. Bariatric surgery, a highly effective treatment for obesity, may prevent such complications in subsequent pregnancies. 
OBJECTIVE: 
This review seeks to describe the risks and benefits of post-bariatric procedure pregnancies, in comparison to both community and obese cohorts. 
RESULTS: 
A thorough review of the literature suggests that post-surgery women are not at increased risk for poor perinatal outcomes, and moreover their risks for many obesity-related gestational complications are reduced after bariatric surgery. Data regarding fertility after bariatric surgery are quite ambiguous, however, and studies exist demonstrating both positive and negative associations between weight loss procedures and fertility. 
CONCLUSIONS: 
Clinicians should be aware that data collected on this subject were often gathered from post-op pregnant women provided with good prenatal care and screening for nutritional deficiencies. Although pregnancy after bariatric surgery appears to be safe, providers should take extra care to properly monitor their post-op pregnant patients for appropriate weight gain and nourishment.

Improvement in infertility and pregnancy outcomes after weight loss surgery. 
Patel JA, Colella JJ, Esaka E, Patel NA, Thomas RL. 
Source 
Department of Surgery, Allegheny General Hospital, 320 East North Avenue, Pittsburgh, PA 15212, USA. 
Abstract 
The majority of bariatric surgical procedures are performed in young women. There is a concern about safety and outcomes of pregnancies after weight loss surgery. Pregnancy after weight loss surgery is not only safe, but is associated with more favorable outcomes in comparison to obese populations who do not undergo weight loss surgery. An interval of 2 years is recommended from surgery to pregnancy. This delay helps avoid most of the potential nutritional complications. Optimal patient care is achieved in an experienced, multidisciplinary center. Early involvement of the bariatric surgeon in evaluating abdominal pain is critical because the underlying pathology may relate to the previous weight loss surgery. Although infertility is
improved after weight loss surgery, reliable modes of contraception may be limited in this population.

**Reproductive considerations and pregnancy after bariatric surgery: current evidence and recommendations.**
**Beard JH, Bell RL, Duffy AJ.**

**Source**
Section of Gastrointestinal Surgery, Department of Surgery, Yale University School of Medicine, 40 Temple Street, New Haven, CT 06510, USA.

**Abstract**
Obesity has reached epidemic proportions in the USA. Bariatric surgery is an important and increasingly utilized treatment option for morbid obesity refractory to medical therapy. Approximately half of all bariatric surgery patients are reproductive-aged women and, thus, represent a unique patient population with specific concerns. This manuscript focuses on issues of increased postoperative fertility, nutritional monitoring and supplementation, safety of pregnancy after bariatric surgery, and effect of pregnancy on postoperative weight loss. Current recommendations regarding management of patients both before and during pregnancy are provided. In addition, we highlight areas where more research on this issue is needed and advocate for a multidisciplinary approach to patient care.

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**Advice On Sensitive Weight Management Counseling**

**From the patient's perspective: the impact of training on resident physician's obesity counseling.**
**Jay M, Schlair S, Caldwell R, Kalet A, Sherman S, Gillespie C.**

**Source**
Division of General Internal Medicine, New York University School of Medicine, VA New York Harbor, 423 E 23rd Street, New York, NY 10010, USA. Melanie.jay@nyumc.org

**Abstract**
**BACKGROUND:**
It is uncertain whether training improves physicians' obesity counseling.

**OBJECTIVE:**
To assess the impact of an obesity counseling curriculum for residents.

**DESIGN:**
A non-randomized, wait-list/control design.

**PARTICIPANTS:**
Twenty-three primary care internal medicine residents; 12 were assigned to the curriculum group, and 11 were assigned to the no-curriculum group. Over a 7-month period (1-8 months post-intervention) 163 of the residents' obese patients were interviewed after their medical visits.

**INTERVENTION:**
A 5-hour, multi-modal obesity counseling curriculum based on the 5As (Assess, Advise, Agree, Assist, Arrange) using didactics, role-playing, and standardized patients.

**MAIN MEASURES:**
Patient-report of physicians' use of the 5As was assessed using a structured interview survey. Main outcomes were whether obese patients were counseled about diet, exercise, or weight loss (rate of counseling) and the quality of counseling provided (percentage of 5As skills performed during the visit). Univariate statistics (t-tests) were used to compare the rate and quality of counseling in the two resident groups. Logistic and linear regression was used to isolate the impact of the curriculum after controlling for patient, physician, and visit characteristics.
KEY RESULTS:
A large percentage of patients seen by both groups of residents received counseling about their weight, diet, and/or exercise (over 70%), but the quality of counseling was low in both the curriculum and no curriculum groups (mean 36.6% vs. 31.2% of 19 possible 5As counseling strategies, p = 0.21). This difference was not significant. However, after controlling for patient, physician and visit characteristics, residents in the curriculum group appeared to provide significantly higher quality counseling than those in the control group (std beta = 0.18; R(2) change = 2.9%, P < 0.05).

CONCLUSIONS:
Residents who received an obesity counseling curriculum were not more likely to counsel obese patients than residents who did not. Training, however, is associated with higher quality of counseling when patient, physician, and visit characteristics are taken into account.

Management of obesity: a challenge for medical training and practice.
Thande NK, Hurstak EE, Sciacca RE, Giardina EG.
Source
Department of Medicine, NewYork Presbyterian Hospital, Columbia University Medical Center, New York, New York, USA. nthande@umich.edu

Abstract
Health-care providers are in a unique position to encourage people to make healthy lifestyle choices. However, lifestyle modification counseling is a complex task, made even more so by the cultural and socioeconomic diversity of patient populations. The objective of this study is to evaluate the prevalence and predictors of attending and physician-in-training weight control counseling in an urban academic internal medicine clinic serving a unique low-income multiethnic high-risk population. In 2006, patients (n = 256) from the Associates in Internal Medicine clinic (Division of General Medicine at the New York Presbyterian Hospital, Columbia University Medical Center, New York, NY) were recruited and completed a questionnaire, which assessed demographic variables, health conditions, access to health-care services, physician weight control counseling, and weight loss attempts. Seventy-nine percent of subjects were either overweight or obese. Only 65% of obese subjects were advised to lose weight. Attending physicians were more likely than physicians-in-training to counsel subjects on weight control (P < 0.01). Factors that were significantly (P < 0.05) associated with different types of weight control counseling included obesity, cardiovascular disease (CVD) risk factors, female gender, nonblack race, college education, married status, and attending physician. Subjects advised to lose weight were more likely to report an attempt to lose weight (P < 0.01). Rates of weight control counseling among physicians are suboptimal, particularly among physicians-in-training. Training programs need to promote effective clinical obesity prevention and treatment strategies that address socioeconomic, linguistic, and cultural factors.

Obesity management: physician practice patterns and patient preference.
Davis NJ, Emerenini A, Wylie-Rosett J.
Source
Albert Einstein College of Medicine, Montefiore Medical Center, 1300 Morris Park Avenue, Mazer Building 216, Bronx, NY 10461, USA. ndavis@montefiore.org

Abstract
PURPOSE: The purpose of this study was to assess inner-city clinic patient attitudes about weight loss counseling and to assess practice behaviors of primary care physicians in residency training.
**METHODS:**
This is a cross-sectional survey of consecutive patients attending an outpatient internal medicine resident continuity clinic in the Bronx, New York. Participants completed a 30-item questionnaire; a 17-item Quick Weight, Activity & Excess Screener (WAVE); and 13 items to assess patients’ attitudes about the physician’s role in weight management. A chart review was conducted to ascertain resident practice patterns. Relationships of categorical data were evaluated using chi(2) analyses and odds ratios.

**RESULTS:**
Chart reviews (n = 84) indicated that 80% of patients were either obese or overweight; 21% of obese patients and 11% of overweight patients had the diagnosis documented. Of the obese patients (n = 42), 17% had dietitian referrals and 36% had an indication of physician weight loss recommendation. A patient survey indicated that 86% of obese patients wanted to lose weight, 64% wanted a dietitian referral, and 62% felt that their physician could help with weight loss. Obese patients were significantly more likely to receive weight loss recommendations than were overweight patients, but frequency of visits and the diagnosis of diabetes did not increase the likelihood that weight would be addressed.

**CONCLUSIONS:**
Physicians need to address how to manage obesity including assessing patient attitudes about making lifestyle changes and using dietitian and other referrals for weight reduction counseling.

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   Primary care weight management counseling: physician and patient perspectives.
   **Martin PD, Rhode PC, Howe JT, Brantley PJ.**
   **Source**
   Division of Primary Care Studies, Pennington Biomedical Research Center, USA.
   **Abstract**
   This paper examines the use of the Guide to Clinical Preventive Services for behavioral counseling for overweight patients in the primary care setting.

   **METHODS:**
   Study 1 assessed counseling practices of family physicians with a 13-item physician questionnaire based on the Guide to Clinical Preventive Services. Study 2 assessed the perception of weight loss recommendations made to obese primary care patients attending a family practice clinic.

   **RESULTS:**
   46% of the family physicians responded. The most common referrals were made to dieticians and exercise programs. The patient survey indicated that 80.3% had received weight loss recommendations, and 68.9% had received counseling on diet change or exercise.

   **CONCLUSIONS:**
   This study found adequate rates of compliance with the Guide to Clinical Preventive Services. However, these results have highlighted the need to expand the guidelines to counsel patients more specifically with regard to weight loss recommendations and to focus on improving patient compliance and motivation.

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   Practical approaches to office-based physical activity promotion for children and adolescents
   **Joy EA.**
   **Source**
   Department of Family and Preventive Medicine, University of Utah, Salt Lake City, UT 84108, USA.
   eajslic@aol.com
   **Abstract**
   Child and adolescent obesity is increasing at a rapid pace. A significant contributing factor relates to the overall decline in physical activity for both children and adults. It will take efforts by many to reverse this...
trend. Primary care and sports medicine providers are poised optimally to counsel patients on the benefits of regular physical activity. However, only a minority of patients are counseled regarding physical activity at any given office visit. To improve upon this, providers need to understand current recommendations regarding physical activity, have available clinical tools that help in the diagnosis of physical inactivity, and develop office systems to ensure consistency in addressing physical activity at every office visit.

Advising overweight persons about diet and physical activity in primary health care: Lithuanian health behaviour monitoring study.
Klumbiene J, Petkeviciene J, Vaisvalavicius V, Miseviciene I.
Source
Institute for Biomedical Research, Kaunas University of Medicine, Eiveniu str, 4, 50009 Kaunas 7, Lithuania.
jurklumb@vector.kmu.lt
Abstract
BACKGROUND:
Obesity is a globally spreading health problem. Behavioural interventions aimed at modifying dietary habits and physical activity patterns are essential in prevention and management of obesity. General practitioners (GP) have a unique opportunity to counsel overweight patients on weight control. The purpose of the study was to assess the level of giving advice on diet and physical activity by GPs using the data of Lithuanian health behaviour monitoring among adult population.
METHODS:
Data from cross-sectional postal surveys of 2000, 2002 and 2004 were analysed. Nationally representative random samples were drawn from the population register. Each sample consisted of 3000 persons aged 20-64 years. The response rates were 74.4% in 2000, 63.4% in 2002 and 61.7% in 2004. Self-reported body weight and height were used to calculate body mass index (BMI). Information on advising in primary health care was obtained asking whether GP advised overweight patients to change dietary habits and to increase physical activity. The odds of receiving advice on diet and physical activity were calculated using multiple logistic regression analyses according to a range of sociodemographic variables, perceived health, number of visits to GPs and body-weight status.
RESULTS:
Almost a half of respondents were overweight or obese. Only one fourth of respondents reported that they were advised to change diet. The proportion of persons who received advice on physical activity was even lower. The odds of receiving advice increased with age. A strong association was found between perceived health and receiving advice. The likelihood of receiving advice was related to BMI. GPs were more likely to give advice when BMI was high. More than a half of obese respondents (63.3%) reported that they had tried to lose weight. The association between receiving advice and self-reported attempt to lose weight was found.
CONCLUSION:
The low rate of dietary and physical activity advice reported by overweight patients implies that more lifestyle counseling should be provided in primary health care. There is an obvious need for improved training and education of GPs in counseling of overweight patients focusing on methods of giving dietary and physical activity advice.

7. BMC Health Serv Res. 2010 Jun 9;10:159.
Physicians' use of the 5As in counseling obese patients: is the quality of counseling associated with patients' motivation and intention to lose weight?
Jay M, Gillespie C, Schlair S, Sherman S, Kalet A.
Source
New York University School of Medicine, Division of General Internal Medicine, New York, NY, USA.
Jaym01@med.nyu.edu

Abstract

BACKGROUND:
Physicians are encouraged to counsel obese patients to lose weight, but studies measuring the quality of physicians’ counseling are rare. We sought to describe the quality of physicians' obesity counseling and to determine associations between the quality of counseling and obese patients' motivation and intentions to lose weight, key predictors of behavior change.

METHODS:
We conducted post-visit surveys with obese patients to assess physician's use of 5As counseling techniques and the overall patient-centeredness of the physician. Patients also reported on their motivation to lose weight and their intentions to eat healthier and exercise. One-way ANOVAs were used to describe mean differences in number of counseling practices across levels of self-rated intention and motivation. Logistic regression analyses were conducted to assess associations between number of 5As counseling practices used and patient intention and motivation.

RESULTS:
137 patients of 23 physicians were included in the analysis. While 85% of the patients were counseled about obesity, physicians used only a mean of 5.3 (SD = 4.6) of 18 possible 5As counseling practices. Patients with higher levels of motivation and intentions reported receiving more 5As counseling techniques than those with lower levels. Each additional counseling practice was associated with higher odds of being motivated to lose weight (OR 1.31, CI 1.11-1.55), intending to eat better (OR 1.23, CI 1.06-1.44), and intending to exercise regularly (OR 1.14, CI 1.00-1.31). Patient centeredness of the physician was also positively associated with intentions to eat better (OR 2.96, CI 1.03-8.47) and exercise (OR 26.07, CI 3.70-83.93).

CONCLUSIONS:
Quality of physician counseling (as measured using the 5As counseling framework and patient-centeredness scales) was associated with motivation to lose weight and intentions to change behavior. Future studies should determine whether higher quality obesity counseling leads to improved behavioral and weight outcomes.


U.S. Primary care physicians' diet-, physical activity-, and weight-related care of adult patients.

Source
Division of Cancer Control and Population Sciences National Cancer Institute, NIH, Bethesda, Maryland.

Abstract

BACKGROUND:
Overweight and obesity are substantial problems in the U.S., but few national studies exist on primary care physicians' (PCPs’) clinical practices regarding overweight and obesity.

PURPOSE:
To profile diet, physical activity, and weight control practice patterns of PCPs who treat adults.

METHODS:
A nationally representative survey of 1211 PCPs sampled from the American Medical Association's Master file was conducted in 2008 and analyzed in 2010. Outcomes included PCPs' assessment, counseling, referral, and follow-up of diet, physical activity, and weight control in adult patients with and without chronic disease and PCPs' use of pharmacologic treatments and surgical referrals for overweight and obesity.
RESULTS:
The survey response rate was 64.5%. Half of PCPs (49%) reported recording BMI regularly. Fewer than 50% reported always providing specific guidance on diet, physical activity, or weight control. Regardless of patients' chronic disease status, <10% of PCPs always referred patients for further evaluation/management and <22% reported always systematically tracking patients over time concerning weight or weight-related behaviors. Overall, PCPs were more likely to counsel on physical activity than on diet or weight control (p's<0.05). More than 70% of PCPs reported ever using pharmacologic treatments to treat overweight and 86% had referred for obesity-related surgery.

CONCLUSIONS:
PCPs' assessment and behavioral management of overweight and obesity in adults is at a low level relative to the magnitude of the problem in the U.S. Further research is needed to understand barriers to providing care and to improve physician engagement in tracking and managing healthy lifestyles in U.S. adults.


**Do the five A's work when physicians counsel about weight loss?**

*Alexander SC, Cox ME, Boling Turer CL, Lyna P, Østbye T, Tulsky JA, Dolor RJ, Pollak KI.*

**Source**

Durham VA Medical Center, Durham, NC 27705, USA. alexa045@mc.duke.edu

**Abstract**

**BACKGROUND AND OBJECTIVES:**

More than two thirds of Americans are overweight or obese. Physician counseling may help patients lose weight; however, physicians perceive these discussions as somewhat futile and time-consuming. An effective and efficient tool for smoking cessation is the Five A's (Ask, Advise, Assess, Assist, and Arrange). We studied the effectiveness of the Five A's in weight-loss counseling.

**METHODS:**

We audio recorded primary care encounters between 40 physicians and 461 of their overweight or obese patients. All were told the study was about preventive health, not weight specifically. Encounters were coded for physician use of the Five A's. Patients' motivation and confidence were assessed before and immediately after the encounter. Three months later, we assessed patient change in dietary fat intake, exercise, and weight.

**RESULTS:**

Generalized linear models were fit adjusting for patient clustering within physician. Physicians used at least one of the Five A's often (83%). Physicians routinely Ask and Advise patients to lose weight; however, they rarely Assess, Assist, or Arrange. Assist and Arrange were related to diet improvement, whereas Advise was associated with increases in motivation and confidence to change dietary fat intake and confidence to lose weight.

**CONCLUSIONS:**

Similar to smoking cessation counseling, physicians routinely Asked and Advised patients to lose weight; however, they rarely Assessed, Assisted, or Arranged. Given the potential impact of using all of these counseling tools on changing patient behavior, physicians should be encouraged to increase their use of the Five A's when counseling patients to lose weight.


**Physician communication techniques and weight loss in adults: Project CHAT.**

*Pollak KI, Alexander SC, Coffman CJ, Tulsky JA, Lyna P, Dolor RJ, James IE, Brouwer RJ, Manusov JR, Østbye T.*

**Source**

Cancer Prevention, Detection and Control Research Program, Duke University Medical Center, Durham, North Carolina, USA. kathryn.pollak@duke.edu
Abstract

BACKGROUND:
Physicians are encouraged to counsel overweight and obese patients to lose weight.

PURPOSE:
It was examined whether discussing weight and use of motivational interviewing techniques (e.g., collaborating, reflective listening) while discussing weight predicted weight loss 3 months after the encounter.

METHODS:
Forty primary care physicians and 461 of their overweight or obese patient visits were audio recorded between December 2006 and June 2008. Patient actual weight at the encounter and 3 months after the encounter (n=426); whether weight was discussed; physicians' use of motivational interviewing techniques; and patient, physician, and visit covariates (e.g., race, age, specialty) were assessed. This was an observational study and data were analyzed in April 2009.

RESULTS:
No differences in weight loss were found between patients whose physicians discussed weight or did not. Patients whose physicians used motivational interviewing-consistent techniques during weight-related discussions lost weight 3 months post-encounter; those whose physician used motivational interviewing-inconsistent techniques gained or maintained weight. The estimated difference in weight change between patients whose physician had a higher global motivational interviewing-Spirit score (e.g., collaborated with patient) and those whose physician had a lower score was 1.6 kg (95% CI=-2.9, -0.3, p=0.02). The same was true for patients whose physician used reflective statements: 0.9 kg (95% CI=-1.8, -0.1, p=0.03). Similarly, patients whose physicians expressed only motivational interviewing-consistent behaviors had a difference in weight change of 1.1 kg (95% CI=-2.3, 0.1, p=0.07) compared to those whose physician expressed only motivational interviewing-inconsistent behaviors (e.g., judging, confronting).

CONCLUSIONS:
In this observational study, use of motivational interviewing techniques during weight loss discussions predicted patient weight loss.


Addressing obesity in the hospitalized patient: a needs assessment.
Howe EE, Wright SM, Landis R, Kisuule F.
Source
Division of Hospital Medicine, Johns Hopkins University, Johns Hopkins Bayview Medical Center, Baltimore, MD, USA. ehowe3@jhmi.edu

Abstract

OBJECTIVE:
To perform a needs assessment to determine the extent to which hospitalist providers recognize and intervene upon obese patients in the hospital setting.

METHODS:
A chart review was performed for patients admitted to the hospitalist service at Johns Hopkins Bayview Medical Center between September 1 and October 1, 2008. Patient charts were reviewed for documentation of obesity and treatment plans were ordered and implemented. Demographic data for patients and hospitalist providers was also collected. Providers were also surveyed about their documentation practices related to obesity and any perceived barriers.

RESULTS:
Forty-nine percent (136/276) of admitted patients were obese. Obesity was documented in 19% (26/136) of admission notes and a discrete plan was made to address obesity 7% (10/136) of the time. Hospitalist providers were more likely to document obesity in patients <60 years old (85% versus 55% respectively, P <0.007), and in patients with body mass indices (BMI) >or= 35 (77% versus 44% respectively, P < 0.004).
Provider survey results suggest that providers do not document obesity because it is not considered to be an acute issue (67%), and they elect not to address obesity because they lack the time (63%), skill (37%), and they believe that their efforts will be unsuccessful (33%).

CONCLUSION:
Documentation of obesity by hospitalist providers is poor. Because an inpatient admission has been characterized as a teachable moment when patients are willing to reflect on behavior change, this may be an ideal time to counsel and educate obese patients.

Physician counseling of young adults with rapid weight gain: a retrospective cohort study.  
Tang JW, Kushner RF, Thompson J, Baker DW.  

Source  
Division of General Internal Medicine, Northwestern University Feinberg School of Medicine, Chicago, USA.  
joyce-tang@northwestern.edu  

Abstract  
BACKGROUND:  
The incidence of weight gain is highest during young adulthood. Our study aims to describe weight gain patterns among young adults and to evaluate physician recognition of and counseling for rapid weight gain.  
METHODS:  
This retrospective cohort study included patients ages 18-35 at an academic internal medicine clinic between 2004-2008. We conducted chart reviews to determine weight change over time, whether weight gain greater than 3 lbs/year was documented, whether counseling was provided, and whether patients became overweight. We categorized weight gain documentation by location on the problem list, encounter diagnosis, or note text. We categorized counseling as weight-specific or general diet and exercise counseling. We used Chi-square tests to evaluate the relationship between weight change over time and the following variables: gender, diagnosis of weight gain, and counseling for weight gain. Fisher's Exact test was used to test for an association between diagnosis and counseling category.  
RESULTS:  
The study included 365 patients. Weight gain was greater than 3 lbs/year for 24% (90/365) of patients, of whom 56 (15%) gained 3-5.9 lbs/year, and 34 (9%) gained more than 6 lbs/year. Among patients gaining more than 3 lbs/year, physicians documented weight gain as a problem in only 10% (9/90). Of the 9 patients for whom weight gain was documented, physicians provided weight-specific counseling in three, and general diet and exercise counseling in four. Of the 81 individuals with no documented diagnosis of weight gain, 63% had no documented counseling, but 34% received general diet and exercise counseling. Among patients with over 180 days of follow-up, 8% (10/126) became overweight.  
CONCLUSIONS:  
Physicians infrequently recognize or counsel for weight gain among young adult patients. Improving identification of patients with rapid weight gain can provide an opportunity for tailored weight-related counseling.

13. Weight counseling for elderly patients in primary care: how often and how much time.  
Tai-Seale T, Tai-Seale M, Zhang W.  

Source  
Department of Social and Behavioral Health, Texas A&M, School of Rural Public Health, USA.  

Abstract  
Some 20 million Americans over the age of 60 will soon be obese. As a result, they will likely suffer lower life-expectancy, higher disability, and higher health care costs. How much time do physicians spend with elders, especially obese elders, in helping them plan weight loss? This study, which analyzed 352 videotaped visits
with elderly patients and their provider, has found that only a third of the visibly obese patients were counseled, and that the average time spent discussing the subject--if discussed--was 103 seconds. This is probably less than a fifth of the time needed to adequately counsel patients about weight loss. In addition, the study has found that both provider and patient characteristics determine if and how long discussion lasts.

Evidence Behind Healthy Doctors Influencing Patients’ Health

Physician disclosure of healthy personal behaviors improves credibility and ability to motivate.
Frank E, Breyan J, Elon L.
Source
Department of Family and Preventive Medicine, Emory University School of Medicine, Atlanta, Ga., USA.
efrank@fpm.eushc.org
Abstract
CONTEXT:
While some studies have shown that physicians with healthy personal habits are especially likely to discuss prevention with their patients, to our knowledge no one has published information testing whether physician credibility and patient motivation to adopt healthier habits are enhanced by physician's disclosures of their own healthy behaviors.
DESIGN:
Two brief health education videos about improving diet and exercise were produced and shown to subjects (n1 = 66, n2 = 65) in an Emory University general medical clinic waiting room in Atlanta, Ga. In one video, the physician revealed an additional half minute of information about her personal healthy dietary and exercise practices and had a bike helmet and an apple visible on her desk (physician-disclosure video). In the other video, discussion of personal practices and the apple and bike helmet were not included (control video).
RESULTS:
Viewers of the physician-disclosure video considered the physician to be generally healthier, some-what more believable, and more motivating than did viewers of the control video. They also rated this physician to be specifically more believable and motivating regarding exercise and diet (P < or = .001).
CONCLUSION:
Physicians' abilities to motivate patients to adopt healthy habits can be enhanced by conveying their own healthy habits. Educational institutions should consider encouraging health professionals-in-training to practice and demonstrate healthy personal lifestyles.

Patient-related diet and exercise counseling: do providers' own lifestyle habits matter?
Source
Department of Internal Medicine, Division of Cardiovascular Medicine, University of Michigan Health System, Ann Arbor, MI, USA.
Abstract
The goal of this research was to evaluate the personal health behaviors of physicians in training and attending physicians in association with patient-related lifestyle counseling. Physicians at a major teaching hospital were surveyed regarding their personal lifestyle behavior, perceived confidence, and frequency of counseling patients regarding lifestyle behaviors. One hundred eighty-three total responses were received. Trainees were more likely to consume fast food and less likely to consume fruits and vegetables than attendings. Attending
physicians were more likely to exercise 4 or more days per week and more than 150 minutes per week. Attending physicians were more likely to counsel their patients regarding a healthy diet (70.7% vs 36.3%, P<.0001) and regular exercise (69.1% vs 38.2%, P<.0001) compared with trainees. Few trainees or attendings were confident in their ability to change patients' behaviors. Predictors of confidence in counseling for exercise included the provider's own exercise time of > 150 minutes per week, being overweight, and reported adequate training in counseling. Only adequate training in counseling was a predictor of strong self-efficacy for counseling in diet. Many physicians lack confidence in their ability to counsel patients regarding lifestyle. Personal behaviors including regular exercise and better training in counseling techniques may improve patient counseling.


Evaluation of internal medicine residents as exercise role models and associations with self-reported counseling behavior, confidence, and perceived success.

Rogers LQ, Gutin B, Humphries MC, Lemmon CR, Waller JL, Baranowski T, Saunders R.

Source
Department of Medicine, Medical College Georgia, Augusta, Georgia, USA. lrogers@siumed.edu

Abstract
BACKGROUND:
Patients perceive physicians who practice healthy personal behaviors as more credible and better able to motivate patients to make healthy lifestyle choices.

PURPOSES:
To evaluate internal medicine resident physicians as role models for promoting exercise by an assessment of physician physical activity behavior, cardiovascular fitness, physical activity knowledge, personal use of behavior modification techniques, attitudes toward personal physical activity practice, and confidence (i.e., self-efficacy) in the knowledge and personal utilization of behavior modification techniques and to explore the associations with self-reported patient counseling behavior, confidence, and perceived success.

METHODS:
Cross-sectional study of internal medicine resident physicians with a self-administered survey, treadmill fitness testing, and a 7-day physical activity recall.

RESULTS:
Fifty-one resident physicians agreed to participate (response rate = 81%). Fitness levels were below average for 60%, average for 25%, and above average or excellent for 15%. The mean energy expenditure was 234 kcal/kg/week, with 41% of physicians meeting recommended physical activity guidelines. Few reported high self-efficacy (33%) or perceived success (25%) in the ability to be regularly active. Few demonstrated adequate knowledge useful for patient counseling (e.g., listing 3 ways to integrate physical activity into daily life [27%], calculating target heart rate [29%], and identifying personal exercise stages of change [25%]). Personal use of behavior modification techniques was reported infrequently. Although 88% reported confidence in the knowledge of exercise benefits, less than half reported confidence in the knowledge of local facilities, American College of Sports Medicine (ACSM) guidelines, and behavior modification techniques. Multiple linear regression demonstrated that a higher level of training (p = .02) and a greater confidence in the knowledge of ACSM guidelines (p = .048, total R2 = .21) independently predicted more frequent self-reported counseling. Sex (i.e., male; p = .01) and greater physical activity self-efficacy (p = .017, total R2 = .23) independently predicted greater perceived counseling success. Greater physical activity enjoyment (p = .03) and greater perceived success at engaging in regular physical activity (p = .028, total R2 = .28) independently predicted greater counseling self-efficacy.

CONCLUSIONS:
Most internal medicine resident physicians may not be adequate role models for promoting exercise
adherence. Confidence in the knowledge of current guidelines, personal physical activity enjoyment, and perceived success and self-efficacy in engaging in regular physical activity may be useful targets for enhancing resident physician physical activity counseling for their patients.

A physician fitness program: enhancing the physician as an "exercise" role model for patients.
Rogers LQ, Gutin B, Humphries MC, Lemmon CR, Waller JL, Baranowski T, Saunders R.
Source
Department of Medicine, Medical College of Georgia, Augusta, Georgia, USA. lrogers@siumed.edu
Abstract
BACKGROUND:
Physically active physicians are more apt to counsel patients about exercise.
PURPOSES:
The purpose of this study was to determine the effect of a physician fitness program on resident physician cardiovascular fitness, physical activity behavior/stage of change, and physical activity counseling behavior/attitudes.
METHODS:
A prospective, intervention study with measurements at baseline (before intervention), 3 months (immediately after intervention), and 6 months (3 months after intervention) evaluated a multifaceted exercise program for 48 internal medicine residents. Resident physician cardiovascular fitness, energy expenditure, physical activity stage of change, knowledge, attitudes, and counseling behavior were measured.
RESULTS:
Resident physician fitness significantly declined over time (baseline VO\(_2\)-170 = 29.1 ml/kg/min, first follow-up VO\(_2\)-170 = 27.3 ml/kg/min, and second follow-up VO\(_2\)-170 = 26.2 ml/kg/min; p = .001). Although there was no change in overall energy expenditure, the number of resident physicians in the precontemplation or contemplation stage of change significantly declined with a corresponding increase in the number in a "higher" stage of change at first (p = .0034) and second follow-up (p = .024). There was a nonsignificant increase in self-reported patient counseling. Resident physician counseling confidence and perceived success significantly improved at first follow-up only (p = .01 and p = .03, respectively).
CONCLUSION:
Although resident physician fitness and energy expenditure did not improve after intervention, a significant improvement in resident physician physical activity stage of change and attitudes toward patient counseling was noted. Randomized controlled trials are needed to confirm whether these changes are attributable to the intervention.

Physical activity habits of doctors and medical students influence their counseling practices.
Lobelo F, Duperly J, Frank E.
Source
Centers for Disease Control and Prevention, Physical Activity and Health Branch, 4770 Bufford Highway Mailstop K-46, Atlanta, GA 30341, USA. hgn0@cdc.gov
Abstract
Doctors are well positioned to provide physical activity (PA) counseling to patients. They are a respected source of health-related information and can provide continuing preventive counseling feedback and follow-up; they may have ethical obligations to prescribe PA. Several barriers to PA counseling exist, including insufficient training and motivation of doctors and improvable, personal PA habits. Rates of exercise counseling by doctors remain low; only 34% of US adults report exercise counseling at their last medical visit. In view of this gap, one of the US health objectives for 2010 is increasing the proportion of patients
appropriately counseled about health behaviors, including exercise/PA. Research shows that clinical providers who themselves act on the advice they give provide better counseling and motivation of their patients to adopt such health advice. In summary, there is compelling evidence that the health of doctors matters and that doctors' own PA practices influence their clinical attitudes towards PA. Medical schools need to increase the proportion of students adopting and maintaining regular PA habits to increase the rates and quality of future PA counseling delivered by doctors.

Physician wellness: a missing quality indicator.
Wallace JE, Lemaire JB, Ghali WA.
Source
Department of Sociology, Faculty of Social Sciences, University of Calgary, Calgary, AB, Canada.
jwallace@ucalgary.ca
Abstract
When physicians are unwell, the performance of health-care systems can be suboptimum. Physician wellness might not only benefit the individual physician, it could also be vital to the delivery of high-quality health care. We review the work stresses faced by physicians, the barriers to attending to wellness, and the consequences of unwell physicians to the individual and to health-care systems. We show that health systems should routinely measure physician wellness, and discuss the challenges associated with implementation.

Physician factors affecting patient willingness to comply with exercise recommendations.
Harsha DM, Saywell RM Jr, Thygerson S, Panozzo J.
Source
Department of Family Medicine, School of Public and Environmental Affairs, Indiana University, Indianapolis 46202-5102, USA.
Abstract
OBJECTIVE:
To evaluate how physician factors such as weight, exercise habits, and humanistic traits could influence patient willingness to comply with exercise recommendations.

DESIGN:
Survey questionnaire.

SETTING:
University-based Family Medicine Clinic.

PATIENTS:
411 consecutive established patients of the Family Medicine Clinic.

MAIN OUTCOME MEASURES:
Selected Physician characteristics that patients believed would increase their willingness to comply with exercise recommendations. Results were compared with patient demographics to determine possible effects of physician characteristics on patients acceptance of exercise recommendations.

RESULTS:
Patients with higher education levels could be positively influenced by a physician being of appropriate weight, a regular exerciser, and a nonsmoker, and enlisting use of other experts, negotiating an exercise program, providing exercise counseling, and being their primary provider. Patients with higher income levels could be positively related to a physician's being of appropriate weight, and a nonsmoker, negotiating an exercise program, and enlisting use of other experts. Female patients could be positively influenced by physicians being well groomed, well dressed, accessible, and good listeners. Patients who regularly exercise could be positively influenced by a physician's appropriate weight and exercise regimen.
CONCLUSIONS:
Physicians may have a positive impact on patient willingness to comply by prescribing exercise and providing education and detailed guidance for all candidates. The study also showed that physicians' negotiating exercise programs and being good "exercise" role models is very important.

8. Physicians' health practices strongly influence patient health practices
EB Oberg¹ and E Frank²
¹Senior Fellow, School of Public Health and Community Medicine, University of Washington, Seattle, USA
²Professor and Canada Research Chair, School of Population and Public Health and Department of Family Practice in the Faculty of Medicine, University of British Columbia, Vancouver, Canada
Correspondence to E Frank, School of Population and Public Health and Department of Family Practice, University of British Columbia, 5804 Fairview Ave., Vancouver, BC V6T 1Z3, Canada, Email: erica.frank@ubc.ca
Keywords: Counseling, health promotion, physician health, prevention, role modeling

Physicians who practice healthy habits play a key role by helping their patients to adopt healthy lifestyles for primary prevention of chronic diseases. The health of general practitioners (GPs) is important because they serve as health role models and because they are more likely to counsel their patients about health behavior change if they practice healthy habits themselves. One of the strongest predictors of health promotion counseling by primary care physicians is practicing a healthful behavior oneself – it is clear that many physicians report difficulty counseling patients about behaviors they themselves do not practise.¹²
Appendix II – Patient Education Materials

This section provides patient education resource materials to help patients become better advocates of their own health. Resources available include:

- **Fad Diet Comparison Chart**
- **BMI Chart**
- **Food Diary**
- **Exercise Diary**
- **Additional Patient Resources**

These resources provide patients with a better understanding of the importance of taking control of their own health and how daily life activities may impact long-term health.

**Diet Comparison Chart**

Zonya’s Diet Comparison Chart © was created by Zonya Foco, a Registered Dietitian and Certified Health and Fitness Instructor, to visually compare the pros and cons to eight of the most popular diets in the U.S. The names of diets being compared are: Atkin’s, Carbohydrate Addict’s, Sugar Busters!, Enter The Zone, Suzanne Somer’s Get Skinny Diet, Body for Life, South Beach, and Water with Lemon: Diet-Free, Guilt-Free Weight Loss Diet. The chart provides a great description of what the diet is, how it works, the pros, the cons, and critical questions about the diet. See below for the chart.

*To download a PDF version, [click here](#).*

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**Zonya’s Diet Comparison Chart**

<table>
<thead>
<tr>
<th>NAME OF DIET</th>
<th>WHAT IT IS</th>
<th>HOW IT WORKS</th>
<th>PROS</th>
<th>CONS</th>
<th>QUESTIONS</th>
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<td>Dr. Atkin’s Diet Revolution AND Protein Power</td>
<td>An extreme deprivation of carbohydrate-containing foods (limiting to 20 to 90 grams per day), coupled with an unlimited allowance of meats, fish, poultry, and fats. Claims that although you can eat 3,000 plus calories/day, that ketosis “unleashes” the fat off your body, and the excess calories go unused.</td>
<td>Although the dieter is allowed to eat unlimited calories of protein and fat, in all reality, they are successfully self-limiting their calorie intake to 1,200 to 1,700 calories per day. Claims about ketosis burning 700-900 calories per day are grossly exaggerated. Science confirms that the calorie benefit from ketosis is only 45 calories per day.</td>
<td>The elimination of simple sugars and a drastic drop in carbohydrate consumption can bring about an immediate reduction in circulating glucose. In terms of reducing empty-calorie, high-sugar foods and gluten-sized portions of potatoes, pasta and pretzels in one’s diet, this is a positive.</td>
<td>Increased heart disease risk due to high saturated fat. Higher cancer risk due to constipation and low fiber. Increased risks of osteoporosis, gout, kidney stones, orthostatic hypotension, and high blood pressure. Horrible breath due to unnecessary ketosis. Impossible to comply with long-term.</td>
<td>“Knowing that the Atkins ketogenic metabolic advantage is only 45 calories per day, is it still worth the extreme diet regimen, horrible breath, and known health risks?”</td>
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| The Carbohydrate Addict’s Diet | A low-carbohydrate diet all day, except for a single, 1-hour “reward” meal, which must be a salad and 2 include a balance of protein, starch and vegetables. | Calories are effectively limited by 1) avoiding carbs at every meal except one. 2) Reward meal lasts only 1 hour and always begins with a salad and 3) requiring every starchy or sweet to be eaten in a serving of vegetable & protein. | People who have been overeating fat-free pretzels, bagels, jelly beans, etc., view these calorie rich foods with new respect. The “rules” do effectively limit calorie intake, as long as you can follow and live within “the rules”. | Since you can only eat fruit and whole grains during the one hour reward meal, one is not likely to get in the recommended 3 fruits and 4 whole grains per day. So fiber intake is compromised, as well as numerous vitamins, minerals, and phytochemicals. | “Can you really live the rest of your life, never having any fruit for breakfast, lunch, or a snack?”
| “How long can you make it never having cereal, pancakes, toast, or sandwiches?”

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<tr>
<th>NAME OF DIET</th>
<th>WHAT IT IS</th>
<th>HOW IT WORKS</th>
<th>PROS</th>
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<th>QUESTIONS</th>
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<tr>
<td>Sugar Busters!</td>
<td>An elimination of carbohydrates that cause an intense insulin secretion, i.e. potatoes, corn, white rice, refined flour, breads, beans, carrots, and of course, refined sugar, corn syrup, molasses, honey, sugared colas, and beer. Specifies to eat fruit alone.</td>
<td>Cutting out sugars and high glycemic starchy foods successfully cuts calorie intake for most people, prompting weight loss. To this book’s menu, I have witnessed readers tossing their jellybeans and entire box-size servings of Snackwell’s cookies, opting for whole-wheat pasta and brown rice for the first time in their lives. The inaccuracies are troubling. The strict avoidance of all sweet foods is unnecessary, since moderate consumption of sugar does not compromise blood sugar control. Recommend well-researched books like Syndrome X by Reaven and The Glycemic Revolution by Wolney, et al. regarding practical applications of the glycemic index.</td>
<td>“The book tells you not to eat carrots. Do you really think carrots are causing diabetes and obesity in the world today?”</td>
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<td>Enter the Zone</td>
<td>Sears bases his book on eating six small meals per day of low-glycemic carbohydrates, balanced with a protein via the combination of 40% carbohydrate, 30% fat, 30% protein. (40:30:30).</td>
<td>This diet reduces carbohydrate intake and therefore calories (to roughly 1,400 calories a day), thus prompting weight loss. It is very much like the recommended diet for hypoglycemia. The heightened awareness of the health threats of high-glycemic index carbohydrates eliciting higher insulin levels is important. 30% of calories from protein becomes dangerously high for diets over 2,200 calories. Low in fiber and marginal in some nutrients. Gross misapplication of the glycemic index (portraying carrots, orange juice, bagels, bananas, rice, potatoes, lima beans, and pasta as dangerous foods). See recommended books above.</td>
<td>“The quantity of carrots required for the GI test is 50 grams of carbohydrate, otherwise 1.8 pounds of carrots. Even with a glycemic index of 93, a normal serving of carrots would contribute only a small rise in blood sugar. When a book overlooks this practical application, does it make you wonder about its accuracy overall?”</td>
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<td>Suzanne Somers’ Eat Great, Lose Weight and Get Skinny on Fabulous Food</td>
<td>A unique blend of two diets: low carb, high protein, mixed with food combining. This allows carbohydrates to be eaten, however never at the same time that proteins are consumed. Based on the premise that protein and carbohydrates digest at different rates.</td>
<td>Follow Suzanne’s 7 Steps: 1) eliminate all fatty foods (i.e., sweets, alcohol, caffeine starchy) and carbohydrates are “self-limited”; 2) eat fruit alone on an empty stomach; 3) eat protein and fats with veggies; 4) eat carbs with veggies; 5) keep protein and fats separate from carbs; 6) wait 3 hours between meals; 7) Do not skip meals. Eliminating all sugars and high caloric starches, while eating low calorie vegetables a minimum of twice a day, can effectively drop a person’s calorie intake by almost one-half and may provide blood sugar improvement for people with diabetes. Food combining is not based on scientific fact. Saturated fats are described as good for your heart and are not limited. Exotic blood sugars could arise for people with diabetes. Since meat and fish can range from 5 grams of carbohydrate at one meal, to 100 grams at another. The glycemic index is once again inaccurate to portray healthy foods as dangerous.</td>
<td>“If the human stomach was not designed to digest carbohydrates and proteins at the same time, why then are there so many mixed carb/protein foods in nature like potato beans, kidney beans, garbanzo, beans and milk?”</td>
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<td>Body For Life</td>
<td>A motivating 12-week “transformation challenge.” A simple eating plan with specific aerobic and resistance exercises. Eat six small meals a day every 2 to 3 hours, eat a portion of protein and carbs with each meal, add a portion of veggies to at least two meals daily. Drink 10 cups of water. Use performance nutrition shakes if necessary (which he just happens to sell).</td>
<td>• A+ for inspiring 12-week “transformation” stories from what appears to be “real people” like you and me. • A+ instructional exercise, specifically illustrated resistance exercises. • A realistic and motivating plan for both aerobic and resistance exercise.</td>
<td>• D+ over-simplified eating instructions. • Too high in protein. • Only 20 pages on what and how to eat.</td>
<td>“Excellent motivation and instruction to exercise, with easy-to-grasp instructions, for eating right, but isn’t eating a serving of protein the size of the palm of your hand for six meals a day be a bit much?”</td>
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<tr>
<td>NAME OF DIET</td>
<td>WHAT IT IS</td>
<td>HOW IT WORKS</td>
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<td>The South Beach Diet</td>
<td>A low-fat Atkins, with just enough carbohydrates to prevent ketosis. Two weeks of NO bread, rice, potatoes, pasta, fruit, candy, cake, cookies, ice cream, or sugar, followed by a gradual “add back” of fruits and grains. Claims to “turn off” the switch inside you that made you overweight. After 2 weeks, you slowly add back fruits and starchy until you start gaining weight—now you know your personal limit.</td>
<td>By eliminating carbs and fats (allowing only protein) calories are naturally decreased to between 1,000-1,500. During the “add back” phase 2 and 3, in theory, calorie intake should increase from phase to phase. However... according to outside nutrition analysis of the menus, the first phase is no more effective at weight loss than the 2nd and 3rd phase. (Calories are the same.)</td>
<td>• Lots of vegetables (breakfast event!) • People “GET” the dangers of sugars/carbohydrates. (Insulin resistance, high triglycerides, excess calories) • An expose on the AHA step 2 diet which provides little carbohydrate control. • People “GET” a new handle on controlling carbohydrates.</td>
<td>8 to 14 lbs. weight loss promised in the first 2 weeks is completely false. (His own study reported on page 37 provided only 13.7 lbs. lost after 12 weeks.) Incorrectly uses the glycemic index to exclude healthful foods like carrots, beets, watermelon, and bananas. Promotes “pseudohunger swing” of denying/bingeing. Much use of artificial sweeteners Some day’s saturated fat intake is 40 grams! (cheese daily)</td>
<td>Can we get to moderate consumption of sweets and starches without having to swing all the way to nothing for 2 weeks first? Does the value of this first 2 weeks outweigh the pseudohunger swing so common to denying/bingeing? Getting yourself to a “moderate” lifestyle that you can live with is the goal. How do you want to get there?</td>
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<tr>
<td>Water with Lemon: Diet-Free, Guilt-Free Weight Loss</td>
<td>Nutritionist meets novelist creating a new genre—a weight-loss novel. It’s a page-turning story of personal transformation that teaches you how to lose weight and keep it off—without dieting or feeling guilty—through the Power of One Good Habit.</td>
<td>Replaces countless number counting with 8 simple, core lifestyle HABITS that become who you are and work as an invisible force for managing weight the rest of your lifestyle. Water with Lemon provides the action plan for turning knowing into doing.</td>
<td>Ends the on-off diet mentality by modeling a new mindset through the actions of characters that we can all relate to. Readers walk away with the knowledge and inspiration to conquer their own weight struggles as a way no previous book has ever delivered.</td>
<td>For the Weigh you Want to Live! Read the first few chapters at WaterWithLemon.com</td>
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BMI Chart

The range of obesity is determined by using weight and height to calculate a number called the “body mass index” (BMI) which is correlated to a person’s amount of body fat. The BMI cutoff point for normal weight adults is set at 25. For children and adolescents, their BMI is calculated on a sex-age specific percentile scale; where children with a BMI greater than the 95th percentile are considered obese, and those between the 85th to 95th percentiles are considered overweight. 4,15

This BMI chart allows you to indicate an adult patient’s current BMI and indicate where their goal BMI and weight should be:

To download a PDF version, click here.

![BMI Chart](Image)

Source: Adapted from Clinical Guidelines in the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report

<table>
<thead>
<tr>
<th>Height (inches)</th>
<th>Body Weight (pounds)</th>
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<tbody>
<tr>
<td>58</td>
<td>81 96 100 105 112 115 119 124 129 134 138 143 148 153 158 162 167 172 177 181 186 191 196 201 206 210 215 220 224 229 234 239 244 249 251 253 258</td>
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<td>176 181 186 191 196 201 206 211 216 221 226 231 236 241 246 251 256 261 266 271 276 281 286 291 296 301 306 311 316</td>
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<td>67</td>
<td>204 209 214 219 224 229 234 239 244 249 254 259 264 269 274 279 284 289 294 299 304 309 314 319 324 329 334 339 344</td>
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Please circle the current BMI corresponding to the patient’s current weight and height. Then draw a line and an arrow toward the goal BMI and place a square around it. Please also underline the goal weight corresponding to the patient’s height.
Food Diary
This food diary will allow patients to actively engage in the quality of their health by becoming aware of their daily caloric and fat intake.

To download a PDF version, click here.

<table>
<thead>
<tr>
<th></th>
<th>Calories</th>
<th>Fat [gms]</th>
<th>Carbohydrates [gms]</th>
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<td>Breakfast (Time: __________)</td>
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<td>Snack (Time: __________)</td>
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<td>Snack (Time: __________)</td>
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<tr>
<td>Water [please tally how many cups/intakes you’ve had]:</td>
<td>Total</td>
<td>Total</td>
<td>Total</td>
</tr>
</tbody>
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Notes

Additional Information

Calories Consumed Today: Overall Calorie Goal:

***If you are uncertain on the amount of calories there are in a particular food, you can look up that information free online at http://www.myfooddata.gov/Default.aspx or http://www.nal.usda.gov/fnic/foodcomp/search/ or other calorie tracking resources.
Exercise Diary
This exercise diary will allow patients to track the amount of calories they burned after each exercise. Having this, in combination with the food diary, will help patients understand the relationship between exercise and food intake.

To download a PDF version, click here.

<table>
<thead>
<tr>
<th>Day</th>
<th>Type of Exercise</th>
<th>Duration</th>
<th>Calories Burned</th>
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</tbody>
</table>

Total

***To look up the amount of calories burned during each exercise, you can go to: [http://www.myplatefoodtracker.gov/](http://www.myplatefoodtracker.gov/) or other calorie tracking resources.
Bariatric Surgery Fact Sheet

This fact sheet provides information on three different bariatric procedures and includes a list of risks, complications, and postop nutritional recommendations.

To download a PDF version, click here.

---

<table>
<thead>
<tr>
<th>Name</th>
<th>Mechanism of effect</th>
<th>Lbs. lost 1 yr</th>
<th>Lbs. lost 2 yrs</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roux-en-Y gastric bypass (RYGB)</td>
<td>Malabsorptive</td>
<td>32</td>
<td>43</td>
<td>The proximal portion of the stomach is removed from the rest of the stomach distally and reconsected to the small intestine, bypassing most of the small intestine.</td>
</tr>
<tr>
<td>Sleeve gastrectomy (SG)</td>
<td>Restrictive</td>
<td></td>
<td></td>
<td>The stomach is removed and a sleeve is placed over the remaining functional stomach with a reduced capacity of 50-120 cc. This was originated in 1997 and was originally hoped to show less mortality than RYGB. The portion that is removed includes the stomach producing cells, a hormone that is involved in appetite. Decreasing the food results in decreased hunger and improved satiety.</td>
</tr>
<tr>
<td>Adjustable Gastric Band (AGB)</td>
<td>Restrictive</td>
<td>20</td>
<td>35</td>
<td>Laparoscopic insertion of an adjustable silicone gastric band at the upper end of the stomach, creating a small proximal gastric pouch when the band is expanded. A sleeve from the band is sewn into the subcutaneous tissues in order to control and customize the device by infusing with saline solution or deflating to expand the pouch, thereby sufficiently narrowing the pouch to create early satiety.</td>
</tr>
</tbody>
</table>

Risks:
- Mortality rates depend on age, BMI, and experience of the surgeon.
- Age < 55 and BMI ≤ 55 have a 1% mortality rate.
- BMI > 50 plus comorbidities have a 4-6% mortality rate.
- Morbidity rates are higher with obese patients and often more severe due to the difficulty of exam and diagnosis because of obesity itself. Furthermore, obese patients can decline more rapidly due to their poor health and decreased reserve.

Early complications:
- Anastomotic or staple line leak
- RVGB approximately 2%
- Postop bleeding
- Approximately 3% of which half require transfusion and 25% require re-operation

Late complications:
- Nausea or vomiting
- Excess loose skin
- Common complaints following weight loss
- Dehydration
- Ulcers of stomach or anastomosis or malnutrition
- Erosion of staple line
- Leakage from banding port
- In LAUG procedure
- Anastomotic stenosis, gastroschisis, and dumping syndrome are less common late complications

Success can be evaluated by percentage of excess weight loss or by reduction of comorbidities

Nutritional Recommendations following surgery:
- Eat 4-5 times a day (3 small meals plus 1-2 small snacks)
- Choose mostly solid food for meals and snacks
- Limit intake of solid food to approximately 1 cup
- Make time for meals and snacks to eat slowly (15 to 30 minutes) and chew food well
- Avoid textures that are difficult to chew including tough meats, stringy vegetables, soft breads
- Avoid consuming fluids within 30 minutes of eating any solid foods
- Consume beverages between meals and snacks
- Avoid carbonated beverages
- Avoid high-sugar foods

Follow up needs to include surgeon, dietician, and primary care doctor.
Additional Patient Resources
Specialists from the Food and Nutrition Information Center has compiled an extensive list of valuable references on nutrition to assist in educating patients and consumers about ways to improve their health through healthy eating, food planning, nutritional books, healthy cookbooks and much more.

To access the official PDF version, click here.

**Disclaimer: ACOG District IX does not own the copyright to the following section, “Eating Smart: A Nutrition Resource List for Consumers.” It belongs to and was compiled by experts from the Food and Nutrition Information Center of the United States Department of Agriculture.

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“Eating Smart: A Nutrition Resources List for Consumers.” September 2010. FNIC.

This publication is a compilation of resources addressing general nutrition and healthy eating for the consumer. The resources are in a variety of formats: books, newsletters, and materials on the World Wide Web.

The resources listed contain accurate nutrition information and are available nationwide. Opinions expressed in the publication do not necessarily reflect the views of the U.S. Department of Agriculture. Contact information is provided for Web sites, organizations, and for government publications. Your local library or bookstore can help you locate books and print newsletters. Materials cannot be purchased from the National Agricultural Library (NAL).

This resource list is available from the Food and Nutrition Information Center’s (FNIC) web site at http://www.nal.usda.gov/fnic/pubs/bibs/gen/eatsmart.pdf. A complete list of FNIC publications can be found at http://fnic.nal.usda.gov/resourcelists.

I. General Nutrition Information Resources

a. Books

American Dietetic Association Complete Food and Nutrition Guide, 3rd Edition
Roberta Larson Duyff , MS, RD, FADA, CFCS

NAL Call Number: RA784.D89 2006
ISBN: 9780470048429

Description: Addresses healthy eating guidelines and practical strategies for adults, teens, and children. Includes chapters on food intolerance and allergies, vegetarian eating, athletics and nutrition, and dietary supplements. Discusses how to identify poor health advice and when to seek the advice of a professional regarding nutrition.

Bowes & Church’s Food Values of Portions Commonly Used, 19th Edition
Jean A. T. Pennington, PhD, RD and Judith Spungen, MS, RD

NAL Call Number: TX551.P385 2010
ISBN: 9780781781343

Description: Contains tables of the nutritional content (calories, protein, fat, carbohydrate, and 26 other nutrients) of over 6,300 foods grouped by food group. In addition, there are supplementary tables for other substances such as alcohol, amino acids, caffeine, gluten, and sugars.
Joy Bauer, MS, RD, CDN
NAL Call Number: RA784.B354 2005
ISBN: 1592574394
Description: Provides general nutrition information for families, including the fundamentals of healthful eating based on the Dietary Guidelines, a review of the basic nutrients, and specific chapters on shopping, cooking, nutrition for special health needs, and weight management. Includes recipes.

The Dish on Eating Healthy and Being Fabulous
Carolyn O’Neil, MS, RD and Denise Webb, PhD, RD
ISBN: 0743476891
Description: Features nutrition advice for women—aka “the dish”—on diet and nutrition topics including eating in, dining out, entertaining, and looking good. Provides tips and tricks for thinking about eating healthfully, along with an occasional recipe or chef sidebar.

Hope Warshaw, MMSc, RD, CDE
NAL Call Number: RA784.W364 2008
ISBN: 1572840927
Description: Portable book that provides an overview of restaurant eating habits and introduces skills and strategies that can be used at any restaurant to make healthier choices. Includes nutrition information for a variety of restaurant foods and cuisines, and offers tips for decoding “menu lingo.”

A Healthier You: Based on the Dietary Guidelines for Americans
U.S. Department of Health and Human Services
NAL Call Number: TX360.U6 H43 2005
ISBN: 0160725259
Description: Reviews key concepts from the Dietary Guidelines for Americans 2005 and provides user-friendly tips for following the Dietary Guidelines recommendations. Also contains worksheets, sample eating plans, shopping lists, and recipes. The Dietary Guidelines for Americans, 2005 is re-printed in full at the end of the book.
Ordering Information:
U.S. Government Printing Office
P.O. Box 979050
St. Louis, MO 63197-9000
Phone: 866-512-1800

Nutrition For Dummies, 4th Edition
Carol Ann Rinzler, MA
NAL Call Number: TX355.R535 2006
**ISBN:** 9780471798682  
**Description:** Takes a simple approach to explaining the basics of nutrition, including how the body uses food, the nutrient content of foods and how to eat a balance of foods to improve health.

**Nutrition for Life: The Definitive Guide to Eating Well for Good Health**  
Lisa Hark, PhD, RD and Darwin Deen, MD  
**NAL Call Number:** RA784.H367 2005 (2005 hardcover edition)  
**ISBN:** 1405328355  
**Description:** Guides healthful eating practices throughout the lifespan using case studies. Discusses food and nutrient basics, use of diet to prevent disease, food shopping and storage; also decodes several popular diet myths in the “Diet Directory” section.

**Pocket Supermarket Guide, 3rd Edition**  
American Dietetic Association  
**ISBN:** 0880914076  
**Description:** Designed to reflect consumer shopping trends, this pocket-sized guide is arranged by food type for easy reference and is packed with nutrition information and healthful shopping tips. A very helpful tool for making smart food choices based on personal dietary needs.

### b. Newsletter Subscriptions

**American Institute for Cancer Research (AICR) Newsletter**  
**Web site:** [http://www.aicr.org/site/PageServer?pagename=aicr_publications](http://www.aicr.org/site/PageServer?pagename=aicr_publications)  
**Description:** Offers three e-mail-based newsletters, including a weekly Health-eRecipes, a bi-weekly Cancer Research Update, and a monthly e-newsletter; also, a quarterly AICR Newsletter by mail. Sign up on the Web site to subscribe to the e-mail newsletters, or request a free subscription to the print newsletter using the contact information below.  
**Ordering Information:**  
American Institute for Cancer Research  
1759 R Street, NW  
Washington, DC 20009  
Phone: 800-843-8114  
E-mail: aicrweb@aicr.org

**Environmental Nutrition Newsletter**  
**Web site:** [http://www.environmentalnutrition.com/](http://www.environmentalnutrition.com/)  
**Description:** Provides bottom-line guidance on food and nutrition based on monthly editorial team reviews of research reports and expert and regulator input. A free online trial is available prior to opening a paid subscription. Subscribe online or request a print subscription at [http://www.environmentalnutrition.com/subscribe/](http://www.environmentalnutrition.com/subscribe/)  
**Ordering Information:**  
Environmental Nutrition  
P.O. Box 5656  
Norwalk, CT 06856-5656  
Phone: 800-424-7887  
Fax: 203-857-3103  
E-mail: Customer_Service@belvoir.com
Feeding Kids Newsletter
Web site: http://nutritionforkids.com/Feeding_Kids.htm
Description: An e-mail newsletter for caregivers, providing hints and tips on how to feed kids healthfully. Articles focus on basic nutrition and meal planning. Subscribe for free on the Web site.

Food and Drug Administration (FDA) Consumer E-mail Updates
Web site: http://www.fda.gov/ForConsumers/ConsumerUpdates/default.htm
Description: Offers consumer health updates that are posted on FDA’s Consumer Updates Web page via e-mail. These timely consumer updates cover product approvals, safety warnings, and other health information. Subscribe at http://www.fda.gov/consumer/consumerenews.html

Food Insight
International Food Information Council Foundation
Description: Features monthly articles and news bites on interesting and important nutrition and food safety issues. View the newsletter archives or sign up to receive this free monthly e-newsletter by clicking on “Newsletter Sign-up.”

Food Reflections E-mail Newsletter
University of Nebraska-Lincoln Extension-Lancaster County
Web site: http://lancaster.unl.edu/food/food-reflections.shtml
Description: Provides practical messages on food, nutrition, and food safety via a free monthly e-mail newsletter. Print or view past issues online, or subscribe to have the newsletter delivered to your e-mail account.

Harvard Health Publications
Harvard Medical School
Web site: http://www.health.harvard.edu/newsletters
Description: A variety of newsletters focusing on all areas of health, including women’s health, men’s health, heart health, and mental health. Purchase subscriptions online by clicking on the newsletter of your choice, or sign up for the weekly HEALTHBeat, a free email newsletter.

Nutrition Action Healthletter
Center for Science in the Public Interest
Web site: http://www.cspinet.org/nah/
Description: Reports on nutrition and food safety issues with practical tips and recipes. A selection of past feature articles can be viewed online. Open a paid subscription online or mail a subscription request to the following address:
Ordering Information:
Nutrition Action Circulation Department
1875 Connecticut Avenue, N.W., Suite 300
Washington, DC 20009
Phone: 202-332-9110, ext. 393
Fax: 202-265-4954
E-mail: circ@cspinet.org
Nutrition and Your Child
United States Department of Agriculture/Agricultural Research Service, Children's Nutrition Research Center at Baylor College of Medicine
Web site: http://www.bcm.edu/cnrc/index.cfm?PMID=9883
Description: Geared to parents and professionals who work with kids, this quarterly newsletter provides practical feeding advice and tips as well as updates on nutrition research. Available in PDF format on the Web site at no charge.

Tufts Health & Nutrition Letter
Tufts University Friedman School of Nutrition Science and Policy
Web site: http://healthletter.tufts.edu
Description: Translates nutrition research into practical health guidance. Articles focus on the latest 'trends' in food and nutrition providing researched health information. Purchase a subscription or sign up for free Tufts Health & Nutrition e-mail updates online or by mail.
Ordering Information:
Tufts University Health & Nutrition Letter
P.O. Box 8517
Big Sandy, TX 75755
Phone: 800-274-7581
E-mail: healthletterhelp@tufts.edu

UC Berkeley Wellness Letter
Description: Provides practical information on nutrition and fitness as well as other health topics. Requires a paid subscription to view full articles online or receive them by mail. Subscribe online (or by mail), or sign up for free Wellness Alerts on the Web site.
Ordering Information:
University of California, Berkeley Wellness Letter
Subscription Department
P.O. Box 420148
Palm Coast, FL 32142
Phone: 800-829-9170

C. Magazines
Cooking Light Magazine
Web site: http://www.cookinglight.com/magazine
Description: Features healthy recipes as well articles devoted to general health and fitness. Recipes are accompanied by step-by-step instructions, as well as nutritional content and color photographs. Subscribe online or see below for subscription address:
Ordering Information:
Cooking Light Customer Service
3000 University Center Drive
Tampa, FL 33612
Phone: 800-336-0125
E-mail: CookingLight@customersvc.com
*Note: There are several other free e-mail newsletters from Cooking Light and its sister sites at http://ebm.cheetahmail.com/r/regf2?a=0&aid=1078532528&n=1

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EatingWell Magazine
Web site: http://www.eatingwell.com
Description: Features healthy recipes, each with nutritional content, preparation time, and difficulty ratings (easy, moderate, or challenging – most being easy or moderate). Includes articles on food preparation, ingredients, and health and nutrition topics. Subscribe online or via mail; may also sign up online for free e-mail newsletters.

Ordering Information:
EatingWell, Inc.
823A Ferry Rd
P.O. Box 1010
Charlotte, VT 05445
Phone: 802-425-5700
E-mail form: https://www.kable.com/pub/etgw/cs.asp

Today’s Diet & Nutrition
Description: Offers articles for consumers on health, nutrition, fitness, lifestyle, diet & weight, and provides cuisine advice and cooking tips. This digital, interactive (online only) monthly magazine requires a paid subscription, but the Web site offers a free e-newsletter.

d. Web sites

2005 Dietary Guidelines for Americans
U.S. Department of Agriculture and U.S. Department of Health and Human Services
Web site: http://www.health.gov/dietaryguidelines/
Printable PDF:
Finding Your Way to a Healthier You (consumer brochure):
Description: The Dietary Guidelines are the government's science-based advice for a healthy lifestyle. The Guidelines discuss food intake related to physical activity and healthy weight goals. The Web site also includes information on food safety, wellness promotion and diet and disease.

American Dietetic Association (ADA)
Web site: http://www.eatright.org
Description: A professional organization for Registered Dietitians (RDs) and nutrition professionals, this site provides consumers with free updated information on food and nutrition. Visitors can “Shop ADA” to purchase nutrition education materials, and can “Find a Registered Dietitian” in their community by clicking the button near the top of the page.

American Institute for Cancer Research (AICR)
Web site: http://www.aicr.org
Description: Provides information on healthy eating, including recipes, with special emphasis on cancer prevention. While the site has materials for both professionals and consumers, the Publications section is especially rich in information geared to consumers.

Center for Science in the Public Interest (CSPI)
Web site: http://www.cspinet.org
Description: Includes a variety of features on nutrition and food safety including quizzes, a kids’ section, and research articles. Provides a forum for governmental nutrition policy reporting and discussion.

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Consumer Corner
U.S. Department of Agriculture (USDA), National Agricultural Library, Food and Nutrition Information Center


**Description:** Provides access to a variety of food and nutrition resources that are mostly full-text and specifically geared to answer the questions consumers most often ask. Resources are organized into the major categories of “All About Food” (including cooking, recipes, and food storage guidelines), “Eating for Health,” “Ages & Stages,” and “DIY – Do It Yourself.” The section entitled “Can't Find What You Want?” guides users to additional sources of information.

Cooperative Extension System Offices
USDA, National Institute of Food and Agriculture


**Description:** Clickable map helps users locate their state or local Cooperative Extension office. Cooperative Extension experts can provide useful health and nutrition resources, such as educational materials or preventative health information, and can direct consumers to nutrition and food assistance programs.

eXtension: Families, Food and Fitness

Web site: [http://www.extension.org/families_food_fitness](http://www.extension.org/families_food_fitness)

**Description:** Provides resources for families related to food and nutrition, including interactive tools, instructional videos, recipes, and expert answers. Find a U.S. Extension Institution by clicking on the link to “Find a U.S. Institution” at the top of the page.

Federal Citizen Information Center


**Description:** Provides access to numerous health publications which can be ordered (for free or at low cost) or viewed online. The “Food” and “Health” sections feature a list of materials on nutrition, fitness, and food safety.

**Ordering Information:**
Federal Citizen Information Center
Dept. WWW
Pueblo, CO 81009
Phone: 888-8 PUEBLO (888-878-3256)

Food and Nutrition Information Center (FNIC)
USDA, National Agricultural Library


**Description:** A leader in providing online professional and consumer food and nutrition information, the FNIC Web site has a large range of information for both consumers and health professionals. The Topics A-Z feature organizes an extensive amount of information alphabetically into more than 90 topics including Breastfeeding, Child Nutrition and Health, Dietary Guidelines, Dietary Supplement and Herbal Information, Ethnic and Cultural Resources, Food Security/Hunger, General Nutrition and Health Information, Heart Health, and Older Americans.

Go Ask Alice! Fitness and Nutrition Section
Columbia University Health Services
Description: Discusses a variety of nutrition and fitness topics based on personal questions. Responses are written in a casual form to relate basics of good health.

Healthfinder.gov
U.S. Department of Health and Human Services
Description: Offers an encyclopedia of health topics from A to Z. Access nutrition and fitness information in the “Quick Guide to Healthy Living” section, and find tips on eating healthfully, staying active, and getting enough calcium or folic acid, among others.

International Food Information Council (IFIC)
Description: Covers a wide range of food and nutrition information from diet and health to weight management to food safety and biotechnology for professionals and consumers. Features a news room, Food Insight blog, and a video channel (FoodInsightTV) that offers videos from academic experts as well as consumer insights into food and nutrition.

Mayo Clinic “Nutrition and Healthy Eating”
Mayo Clinic
Description: Includes multiple types of nutrition and health information: interactive graphics and videos, expert answers to food and nutrition questions, an expert blog written by Registered Dietitians, and other resources.

NHLBI Publications for Patients and the Public
U.S. Department of Health and Human Services, National Institutes of Health, National Heart, Lung, and Blood Institute (NHLBI)
Description: Provides access to NHLBI’s publications dealing with weight control, women's health, cholesterol, and other heart health issues. This site has an extensive grouping of interactive tools for learning about nutrition and healthy eating. Some materials are available in Spanish.

Ordering Information:
NHLBI Health Information Center
Attention: Web site
P.O. Box 30105
Bethesda, MD 20824-0105
Phone: 301 592 8573 TTY: 240 629 3255
Fax: 240 629 3246
E-mail: nhlbiinfo@nhlbi.nih.gov

Nutrition.gov
USDA, National Agricultural Library, Food and Nutrition Information Center
Web site: [http://www.nutrition.gov](http://www.nutrition.gov)
Description: Provides easy access to the best food and nutrition information from across the federal government. Users can find practical information on healthy eating, dietary supplements, fitness, and shopping and meal planning tips, or can sign up to receive the latest food and nutrition news via e-mail with the RSS News Feed featured on the homepage. Features an “En Español” section created especially for Spanish-speaking consumers at [http://www.nutrition.gov/espanol](http://www.nutrition.gov/espanol)
Vegetarian Resource Group

Web site: http://www.vrg.org

Description: Collection of resources for a vegetarian diet to include meal ideas, recipes, children and teen nutrition, and meat substitutions items. Some materials are available in Spanish. Offers a free e-mail newsletter.

II. Healthy Cooking Resources

a. Cookbooks

American Dietetic Association Cooking Healthy Across America
American Dietetic Association, Food and Culinary Professionals Dietetic Practice Group; Kristine Napier, MPH, RD, Ed.

NAL Call Number: TX715.C78355 2005
ISBN: 0471686824

Description: Drawing on the unique flavors, history and culinary traditions from all corners of the U.S., this cookbook offers over 350 region-specific recipes that are nutritious and easy to prepare. Written by a panel of experienced Registered Dietitians and distinguished culinary professionals, each recipe provides easy-to-follow instructions and helpful cooking tips. Nutrition facts per serving are included.

American Heart Association Healthy Family Meals: 150 Recipes Everyone Will Love
American Heart Association
ISBN: 0307450597

Description: Offers 150 heart healthy recipes ranging from snacks and appetizers to “Cook Once, Eat Twice” meals and more. Each recipe contains nutrition facts and proper portion sizes per serving. The book also provides nutrition, cooking, and meal tips, and encourages family dining while also involving children in the cooking process.

Cooking Light Complete Cookbook: A Fresh New Way to Cook
Editors of Cooking Light Magazine

NAL Call Number: RM237.7.C6573 2008
ISBN: 0848731972

Description: Presents 1,200 nutritious and tasty recipes in a ring-bound format that includes tabbed dividers and a bonus interactive DVD. Cookbook also boasts kitchen shortcuts, menus for everyday and holiday entertaining, and an “In Season” chapter that features seasonal foods and recipes. Nutrition facts per serving are included.

The New Mayo Clinic Cookbook: Eating Well for Better Health
Cheryl Forberg, RD, Maureen Callahan, RD, Jennifer Nelson, RD, and Donald Hensrud, MD
ISBN: 1740899725

Description: Encourages healthy eating habits using recipes that adhere to the Mayo Clinic Healthy Weight Pyramid. Offers sample menus based on the recipes, and provides per serving nutrition facts along with the Mayo Clinic pyramid servings.
So Easy: Luscious, Healthy Recipes for Every Meal of the Week
Ellie Kreiger, RD
ISBN: 0470423544
Description: Over 150 quick and healthy recipes ranging from breakfast at the ready, to lunch on-the-go, and even dinner rush-hour recipes for those who are in a hurry. Nutrition facts are provided for each recipe as part of a suggested meal, and also at the end of the book in the “recipe nutritional data index.”

b. Recipes on the Web
The AICR Test Kitchen
American Institute for Cancer Research
Web site: http://www.aicr.org/site/PageServer?pagename=reduce_diet_recipes_test_kitchen
Description: Click on links to recipes as well as meal courses including appetizers, soups, salads, and desserts. Each category has dozens of healthy menu options, each with nutrition facts included.

Consumer Corner: Recipes and Cooking Tips
USDA, National Agricultural Library, Food and Nutrition Information Center
Description: Links to recipes and cooking tips from a wide variety of online sources, including some that are included here. This page also includes sections on cooking with kids and ingredient substitutions.

Delicious Decisions
American Heart Association
Web site: http://www.deliciousdecisions.org
Description: Features heart-healthy recipes, including their nutritional content, in an online searchable database. Multiple search features allow users to browse recipes by category, or find recipes by main ingredient, cooking method, cuisine, or a combination of approaches.

Keep the Beat: Deliciously Healthy Eating
U.S. Department of Health and Human Services, National Institutes of Health, National Heart Lung and Blood Institute (NHLBI)
Web site: http://hp2010.nhlbihin.net/healthyeating/
Description: Provides heart healthy recipes created for NHLBI by a chef and Registered Dietitian that can be accessed by ingredient or category search, or by links on the homepage. Site includes a Food Preparation Glossary, safe cooking rules, healthy eating video clips, and more. The Keep the Beat Recipes: Deliciously Healthy Dinners cookbook can be ordered from NHLBI.

Ordering Information:
NHLBI Health Information Center
P.O. Box 30105
Bethesda, MD 20824-0105
Phone: 301-592-8573 TTY: 240-629-3255
Fax: 301-592-8563

Fruits & Veggies – More Matters
U.S. Department of Health and Human Services, Centers for Disease Control and Prevention
Description: Offers searchable recipes with fruits and vegetables as the main ingredient for every course including beverages and desserts. Nutrition facts per serving are included.

**Mayo Clinic Healthy Recipes Center**
Mayo Clinic
Web site: http://www.mayoclinic.com/health/healthy-recipes/RecipeIndex
Description: Features recipes organized by preparation method, ingredients, number of servings, and special nutrition modifications (such as low-sodium). All recipes include a "Dietitian's Tip" on preparation techniques and food safety. Nutrition facts per serving are included.

**Meals Matter**
Dairy Council of California
Web Site: http://www.mealsmatter.org
Spanish: http://www.mealsmatter.org/En-Espanol
Description: Offers recipes and meal planning tools from shopping lists to cookbooks. Also found on this Web site are various interactive tools, educational materials, and a blog at http://www.mealsmatter.org/Blog

**Nutrition.gov Cooking Methods and Recipes**
USDA, National Agricultural Library, Food and Nutrition Information Center
Web site: http://www.nutrition.gov/recipes
Description: Links to cooking and recipe resources from various federal government agencies. Also links to FNIC’s Vegetarian Recipes and Meal Planning page.

**SNAP-Ed Connection Recipe Finder Database**
USDA, National Agricultural Library, SNAP-Ed Connection
Description: A searchable database of recipes submitted by Supplemental Nutrition Assistance Program (SNAP) nutrition educators. Each recipe provides cost per recipe, cost per serving, nutrition facts, a printable shopping list, and an option to print a 3”x5” recipe card. The search page also offers links to food demo and food safety tips, MyPyramid.gov, and tips for involving kids in the kitchen. Recipes are also translated into Spanish.

**USA.gov American Recipes**
USA.gov for Citizens
Description: Lists links to different types of recipe pages with topics to include kids’ recipes, cooking for a crowd, and special recipe collections and publications. This unique government site also lists recipes “From Famous Americans” for some historical American cooking ideas.
*Note: Most of the above materials contain some vegetarian recipes; for additional resources on vegetarian cooking and nutrition, see FNIC’s Vegetarian Nutrition Resource List at http://www.nal.usda.gov/fnic/pubs/bibs/gen/vegetarian.pdf*
III. Online Tools You Can Use

a. Food and Meal Planning

American Heart Association Tips for Eating Out
American Heart Association
Web site: http://www.americanheart.org/presenter.jhtml?identifier=531
Description: Offers tips for choosing heart healthy menu items when eating out organized by various cuisines ranging from Cajun to Vietnamese. Also has options for choosing a healthy breakfast, vegetarian items, family restaurants, and even fast food.

Calcium Quiz - What's your Calcium Intake?
Dairy Council of California
Web site: http://www.dairycouncilofca.org/Tools/CalciumQuiz/
Description: This interactive website allows you to enter your food choices for the day to determine how much calcium you are getting in your diet. Calcium-rich foods are listed and recommended based on your calculated intake.

Consumer Corner: Shopping and Meal Planning Tips
USDA, National Agricultural Library, Food and Nutrition Information Center
Description: Links to a variety of resources for that can help with shopping and meal planning, including tips to stretch the food budget, and searchable tools for finding “What’s Fresh Near You.”

Farmers Market Search
USDA, Agricultural Marketing Service
Description: Search for a Farmers Market in your state based on specific criteria such as city, county, or zip code.

Fruits & Veggies – More Matters Interactive Tools
U.S. Department of Health and Human Services, Centers for Disease Control and Prevention
Description: Includes “Analyze My Plate,” which allows the user to drag food items onto a plate to get a nutritional analysis of the selections, and “Recipe Remix,” which provides helpful tips for reducing fat, calories and sodium in recipes.

Healthy Dining Finder
Web site: http://www.healthydiningfinder.com
Description: Online search tool helps users find healthier menu selections and corresponding nutrition information at restaurants ranging from fast food to fine dining.

HELP: Healthy Eating Life Plan and Healthy Body Calculator
Joanne Larsen, MS, RD, LD / Ask the Dietitian
Description: Free online program that helps users create a daily meal plan based on self-determined calorie goals and eating preferences. For a custom calorie goal, users should try the Healthy Body Calculator to establish calorie needs based on whether the goal is to lose, maintain, or gain weight.
MyPyramid.gov
USDA, Center for Nutrition Policy and Promotion
Web site: http://www.mypyramid.gov
Spanish: http://www.mypyramid.gov/sp-index.html
Description: Replaces the old Food Guide Pyramid; MyPyramid incorporates recommendations from the Dietary Guidelines for Americans, 2005, and offers personalized eating plans, interactive tools to help users plan food choices, and advice on how to balance food and physical activity. The following resources are also included:
Receive a customized food guide based on age, sex, weight, height and physical activity.
• MyPyramid Menu Planner:
An interactive Web tool where users can plan food choices and menu items to meet MyPyramid goals.
• MyPyramid Tracker: http://www.mypyramidtracker.gov/
An online dietary and physical activity assessment tool.
• MyFood-a-Pedia: http://www.myfoodapedia.gov/
Provides quick access to calorie amounts and MyPyramid food groups for a food; allows comparison between two foods.

Nutrition.gov: Shopping, Cooking & Meal Planning
USDA, National Agricultural Library, Food and Nutrition Information Center
Web site: http://www.nutrition.gov/mealplanning
Description: Features topics such as “Food Shopping and Meal Planning,” “Food Labels,” “Food Storage and Preservation,” among others with links that help make meal planning easier. Particularly, see the spotlight article on how to “Build a Healthy Diet with Smart Shopping”: http://www.nutrition.gov/shopping

Personal Nutrition Planner From Meals Matter
Dairy Council of California
Web site: http://www.mealsmatter.org/EatingForHealth/Tools/PNP/
Description: Helps adults determine recommended amounts of foods from each food group (based on USDA's MyPyramid tool) and provides recommendations based on a person’s disease risk and other factors. Requires free registration.

USDA National Nutrient Database for Standard Reference
USDA, Agricultural Research Service, Nutrient Data Laboratory
Description: Online searchable database that provides nutrient content, including calories, water, protein, carbohydrate, fat, and vitamin and minerals, for over 7,500 foods.

b. Search Engines for Nutrition and Health Information
Food and Nutrition Information Center Custom Search
USDA, National Agricultural Library, Food and Nutrition Information Center
Web site: http://fnic.nal.usda.gov/contact
Description: Custom search tool that allows for a detailed search of the FNIC website, USDA National Nutrient Database, as well as other relevant and credible nutrition and health information sources that have been pre-selected by FNIC staff.
Healthfinder.gov
U.S. Department of Health and Human Services
Spanish: [http://www.healthfinder.gov/espanol](http://www.healthfinder.gov/espanol)
Description: Allows users to search for health information from government agencies and other reputable sources. Alternatively, users can select a topic in “Health A to Z” or find a doctor, health center or organization, or public library. Available in Spanish.

MedlinePlus
U.S. Department of Health and Human Services, National Institutes of Health, National Library of Medicine
Web Site: [http://medlineplus.gov](http://medlineplus.gov)
Spanish: [http://medlineplus.gov/spanish](http://medlineplus.gov/spanish)
Description: Allows user to search for health information or browse by topic. Features include medical dictionaries and directories. Available in Spanish.

c. Guides to Choosing Reliable Health Information on the Web

Consumer Corner: Online Health Information
USDA, National Agricultural Library, Food and Nutrition Information Center
Description: Links to guides, tutorials, and tips for evaluating nutrition and health information on the internet.

Fraud and Nutrition Misinformation
USDA, National Agricultural Library, Food and Nutrition Information Center
Description: Links to resources and information, including online tutorials, for spotting suspicious health claims, and identifying nutrition myths and misinformation. Includes resources specific to weight loss diets and products.

How to Evaluate Health Information on the Internet
U.S. Department of Health and Human Services, Food and Drug Administration
Description: Discusses ways to spot online health quackery and guidelines for judging the reliability of a Web site. Also has Web links to a number of reputable related resources.

This resource list was compiled by:
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Sara Wilson, MS, RD, Nutrition Information Specialist

Acknowledgement is given to the following reviewers:
Cathy Alessi, RD, Nutrition Information Specialist
Shirley King Evans, MEd, RD, Acting Nutrition and Food Safety Program Leader

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Food and Nutrition Information Center
Agricultural Research Service, USDA
National Agricultural Library, Room 105
10301 Baltimore Avenue
Beltsville, MD 20705-2351
Phone: 301-504-5414
Fax: 301-504-6409
Contact: http://fnic.nal.usda.gov/contact
Web site: http://fnic.nal.usda.gov/
Appendix III – Cultural Competency Resources

Below is an informative set of resources compiled by the Food and Nutrition Information Center that provides cultural and ethnic food education materials:

To access official PDF file, click here.

**Disclaimer:** ACOG District IX does not own the copyright to the following section, “Cultural and Ethnic Food and Nutrition Materials: A Resource List for Educators.” It belongs to and was compiled by experts from the Food and Nutrition Information Center of the United States Department of Agriculture.

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Cultural and Ethnic Food and Nutrition Education Materials: A Resource List for Educators
April 2011

This publication is a collection of resources on the topic of cultural and ethnic food and nutrition education materials. Resources include books, pamphlets and audiovisuals and are limited to those published in 2005 or later. Many of the pamphlets are available in single copies and some may also be purchased in bulk from the organization listed (Web addresses are provided for materials available online). The books and audiovisuals can be either borrowed from your local library or purchased from your local book store.

Materials included in this list may also be available to borrow from the National Agricultural Library (NAL). Lending and copy service information is provided at the end of this document. If you are not eligible for direct borrowing privileges, check with your local library on how to borrow through interlibrary loan. Materials cannot be purchased from NAL. Contact information is provided if you wish to purchase any materials on this list.

This Resource List is available from the Food and Nutrition Information Center’s (FNIC) Web site at: http://www.nal.usda.gov/fnic/pubs/ethnic.pdf

A complete list of FNIC publications can be found at http://fnic.nal.usda.gov/resourcelists.

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I. Books, Book Chapters, and Booklets
II. Full-Text Online Information
III. Videos, Kits, Models, and Graphics
IV. Resources in Spanish
V. Additional Contacts and Sources of Information

I. Books, Book Chapters, and Booklets

50+ Web-Based Lesson Plans for Ethnic Foods
Learning ZoneXpress
Owatonna, MN. 2006.

NAL Call Number: TX66.A53 2000

Description: Provides ways to explore ethnic foods using the Web. It includes worksheets and exercises about holidays, spices, and unique foods in over 30 different countries. Students can follow the instructions provided to complete the assignments and exercises on their own.
American Indian Food
Linda Murray Berzok
ISBN: 0313329893
NAL Call Number: E98.F7 B47 2005
Description: Chapters on the food ways history, foodstuffs, food preparation, preservation, and storage, food customs, food and religion, and diet and nutrition reveal the American Indians’ heritage.

Counseling the Culturally Diverse: Theory and Practice, 5th edition
Derald Wing Sue and David Sue
ISBN: 0470086322
NAL Call Number: BF637.C6 S85
Description: Primarily geared to mental health professionals, this book discusses multicultural counseling and therapy, culturally appropriate intervention strategies and multicultural family counseling and therapy. This book contains sections on counseling African Americans, Asian Americans, American Indians, Alaskan Natives, Hispanic Americans, gays and lesbians, women, the elderly, and persons with disabilities.

Cultural Food Practices
Cynthia M. Goody, PhD, MBA, RD and Lorena Drago, MS, RD, CDN, CDE
Diabetes Care and Education Dietetic Practice Group
ISBN: 978-0880914338
Description: Chapters focus on food practices of 15 different cultures (American Indian, Alaska Native, African American, Central American, Caribbean Hispanic, South American, Asian Indian and Pakistani, Chinese American, Hmong American, Filipino American, Korean American, Cajun and Creole, Jewish, and Islamic). Food practices include: cuisine; special holiday foods; traditional health beliefs; current food practices; and culturally appropriate counseling recommendations. Also includes culturally specific client education handouts available on CD-ROM.

Diabetes Education in Tribal Schools (DETS) Curriculum
Indian Health Service, U.S. Department of Health and Human Services
Description: This curriculum is designed for teachers and other health educators working with students in grades K-12. The lesson plans focus on nutrition and healthy lifestyle choices to prevent diabetes in American Indian and Alaska Native communities. Materials include DVDs, posters, handouts, dance audio samples and for grades 5 and older, test bank questions. Curriculum may be viewed and downloaded from their Web site or a printed copy may be requested.

Food and Culture, 5th edition
Pamela Kittler and Kathryn Sucher
ISBN: 049511541X
NAL Call Number: TX357.K58
Description: Gives information on the different ethnicities, religions and cultures that have become part of food culture in the United States. This textbook is targeted at chefs, health professionals, and others in the food service industry and discusses how to work effectively with members of different ethnic and religious groups.
Food Culture Around the World
Description: This series of books explores food cultures around the world by describing regional culinary delights and customs. Special attention is paid to historical and religious perspectives as well as the positions held by tradition. Areas of the world covered in the series include:

Food Culture in the Caribbean by Lynn Marie Houston

Food Culture in China by Jacqueline M. Newman
ISBN: 0313325812 NAL Call Number: TX724.5.C5 N45

Food Culture in France by Julia Abramson

Food Culture in Great Britain by Laura Mason
ISBN: 031332798X NAL Call Number:

Food Culture in India by Colleen Taylor Sen
ISBN: 0313324875 NAL Call Number: TX724.5.I4 S38

Food Culture in Italy by Fabio Parasecoli
ISBN: 0313327262 NAL Call Number: GT2853.I8 P37

Food Culture in Japan by Michael Ashkenazi and Jeanne Jacob
ISBN: 0313324387 NAL Call Number: TX724.5.J3 A88

Food Culture in Mexico by Janet Long-Solis and Luis Alberto Vargas
ISBN: 031332431X NAL Call Number: GT2853.M6 L66

Food Culture in Near East, Middle East and North Africa by Peter Heine

Food Culture in Russia and Central Asia by Glenn Randall Mack
ISBN: 0313327734 NAL Call Number: TX723.3 .M2356

Food Culture in South America by José Rafael Lovera
ISBN: 0313327521 NAL Call Number: TX716.A1 L68

Food Culture in Spain by F. Xavier Medina
ISBN: 0313328196 NAL Call Number: TX723.5.S7 M43

Food Culture in Sub-Saharan Africa by Fran Osseo-Asare
ISBN: 0313324883 NAL Call Number: TX725.A4 O78

Handbook of Multicultural Counseling
Joseph G. Ponterotto, J. Manuel Casas, Lisa A. Suzuki, Charlene M. Alexander
ISBN: 978-1412964326
Description: Features latest advances in theory, ethics, research, measurement, and clinical practice and assessment in multicultural counseling and therapy.

The Oxford Companion to American Food and Drink
Andrew Smith
ISBN: 978-0195307962
NAL Call Number: TX349.094.2007
Description: Aims to educate those interested in learning the history and culture of American food and drink. Entries highlight specific foods, restaurants, companies, diets, health trends, holidays and customs.
The New Food Lover’s Companion
Sharon Tyler Herbst and Ron Herbst
**NAL Call Number:** TX349.H533 2007
**ISBN:** 978-0764135774
**Description:** Serves as an encyclopedia of more than 6,700 entries describing culinary terms, cooking techniques and ingredients from herbs and spices to wines and desserts.

Spanish for the Nutrition Professional, 2nd Edition
Peggy A. Batty and Mary Jo Kurko, MPH, RD
**Online Ordering Information:** [http://www.eatright.org/Shop/Product.aspx?id=5013](http://www.eatright.org/Shop/Product.aspx?id=5013)
**Description:** This pocket guide is designed to assist the dietetics professional in communicating with and counseling Spanish-speaking clients. This resource contains illustrations for basic food items, English-to-Spanish translations of measurements, numbers, phrases, and common foods, as well as sections on culture-sensitive interviewing, working with interpreters and choosing culturally appropriate materials.

What I Eat: Around the World in 80 Diets
Peter Menzel and Faith D’Aluisio
**ISBN:** 978-0984074402
**Description:** Offers a photographic study of people and their diets from around the world, revealing what people eat during the course of their day.

II. Full-Text Online Information

American Indian Health
U.S. National Library of Medicine, National Institutes of Health
**Description:** Serves as an information portal to information on issues affecting the health and well-being of American Indians. Health topics include: diabetes; children’s health; elder’s health; and heart diseases. Also provides information on: culture and traditions; research and statistics; and links to programs, services, and organizations.

American Indians and Alaska Natives and Diabetes
National Diabetes Information Clearinghouse, National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health
**Description:** Provides a list of publications, press releases, statistics and resources addressing diabetes among American Indians and Alaska Natives.

Asian Diet Pyramid
Oldways Preservation Trust
**Full text:** [http://www.oldwayspt.org/asian-diet-pyramid](http://www.oldwayspt.org/asian-diet-pyramid)
**Description:** Illustrates the traditional Asian diet. Provide a list of common and uncommon foods and flavors from Asian cuisine.
Asian Language Nutrition and Physical Activity Brochures
Center for Weight and Health, University of California, Berkeley
Full text: http://cwh.berkeley.edu/resource/asian-language-nutrition-and-physicalactivity-brochures-cambodian-chinese-hmong-korean-la-0
Description: Series of five culturally-sensitive and relevant educational pamphlets developed to reduce the risk of adult and child obesity among specific Asian immigrant populations. Topics include: Healthy food options; healthier fast food and soft drinks choices; healthy weight for children; daily physical activity; and balancing TV and computer time with play time. Materials are available in Cambodian, Hmong, Vietnamese, Korean, Laotian and Chinese.

Chinese Language Food and Nutrition Resources
American Dietetic Association and Chinese Americans in Dietetics and Nutrition Member Interest Group
Full text: http://www.eatright.org/Public/content.aspx?id=5691
Description: Offers Chinese language food and nutrition information handouts.
Topics include: MyPyramid; basic guidelines for high blood pressure; cholesterol content in food; diabetic diet; low-fat diet; iron; and tips for weight control.

Food Distribution Program on Indian Reservations Fact Sheet
Food and Nutrition Service, U.S. Department of Agriculture
Description: Explains USDA's Food Distribution Program on Indian Reservations (FDPIR) including eligibility, participation, and types of foods and services provided.

Animal and Plant Health Inspection Service, U.S. Department of Agriculture
Description: Manual covers fruits, vegetables and herbs imported into the U.S. from other countries. Descriptions contain common and scientific names, as well as pictorial identification guides.

Kosher Q&A
Orthodox Union
Full text: http://www.ou.org/kosher/kosherqa/
Description: Information on Kosher food and explanation of Kosher supervision and certification of foods.

Maintaining a Healthy Weight on the Go: A Pocket Guide
National Heart, Lung, and Blood Institute, National Institutes of Health
Description: Provides tips for choosing lower-fat and lower-calorie options when dining out or ordering take-out at Chinese, French, Italian, Middle Eastern, Japanese, Indian, Mexican and Thai restaurants.

Making Health Communication Programs Work: Pink Book
National Cancer Institute, National Institutes of Health
Full text: http://www.cancer.gov/cancertopics/cancerlibrary/pinkbook/page1
Description: Offers health professionals guidance in producing and implementing health communication programs. Tips suggest ways to tailor process to various communication needs.

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Mediterranean Foods Alliance  
Oldways Preservation Trust  
**Full text:** [http://www.mediterraneanmark.org/](http://www.mediterraneanmark.org/)  
**Description:** Guides consumers in how to shop for, prepare, and enjoy foods, drinks and dishes of the Mediterranean diet. Includes: Mediterranean Diet Pyramid; recipes; “Make Each Day Mediterranean” toolkit; menu ideas and shopping tips.

Menus and Menu Planner  
National Heart, Lung, and Blood Institute, National Institutes of Health  
**Description:** Provides examples of reduced calorie menus for traditional American meals as well as ethnic meals.

Asian-American Cuisine  

Southern Cuisine  

Mexican-American Cuisine  

Minority Women’s Health  
Office on Women’s Health, U.S. Department of Health and Human Services  
**Full text:** [http://www.4woman.gov/minority/](http://www.4woman.gov/minority/)  
**Description:** Gives women’s health information on various topics, including general nutrition, diabetes, heart disease, and osteoporosis, geared to African American, American Indian/Alaskan Native, Asian Pacific Islander, and Hispanic/Latina women.

Northern California Indian Development Council’s California Native Food & Nutrition Program  
Northern California Indian Development Council  
**Full text:** [http://www.ncidc.org/food/index.html](http://www.ncidc.org/food/index.html)  
**Description:** Describes the California Food and Nutrition Program (CFNP) which helps assist Tribal communities identify local, state, and federal resources to meet the nutrition needs of low-income Indian people. The CFNP compiles and distributes food and nutrition monthly newsletters and information to California Tribes and community-based organizations. Past newsletters are available for download on their Web site as well as two cookbooks containing recipes using native foods (and many using commodity foods). The Web site also provides general information about several federal child nutrition programs.

On the Move to Better Heart Health for African Americans  
National Heart, Lung, and Blood Institute, National Institutes of Health  
**Description:** Covers heart healthy living including information on heart disease, high blood pressure, blood cholesterol, diabetes, weight management and smoking cessation.

Profiles of Latino Health: A Closer Look at Latino Child Nutrition  
National Council of La Raza
**Full text:**
http://www.nclr.org/index.php/issues_and_programs/health_and_nutrition/health_care_reform/hcrarchive/healthprofiles/nutritionprofiles/

**Description:** Third in a series of reports addressing health needs of the U.S. Latino population. Examines the latest research and data on twelve issues affecting Latino child nutrition.

**Sisters Together: Move More, Eat Better**  
National Institute of Diabetes & Digestive & Kidney Diseases, National Institutes of Health  
**Full text:** http://win.niddk.nih.gov/sisters/index.htm  
**Description:** This program is designed to encourage African American women aged 18 and older to control their weight by increasing physical activity and eating healthy foods. Program guide and materials are available on the Web site.

**What Is Halal?**  
The Islamic Food and Nutrition Council of America (IFANCA)  
http://www.ifanca.org/  
**Description:** Explains principles of Halal, the foods appropriate under Muslim law. Includes a shopper’s guide, glossary and frequently asked questions.

**III. Videos, Kits, Models, and Graphics**

**American Foods of the South Set**  
Life/form replicas; 10 plastic models  
Ft. Atkinson, WI: NASCO.  
**NAL Call Number:** Model no. 6  
**Description:** Contents: barbecued chicken, black-eyed peas, collard greens with salt pork, corn bread, diced turnips, grits, hush puppies, lima beans with salt pork, pan-fried catfish, and roasted spareribs.

**Cooking Demo II**  
Food and Health Communications, 2005.  
**NAL Call Number:** Kit no. 469  
**Description:** Contains food demonstration lessons that emphasize the use of fruit, vegetables, whole grains and beans. While mostly for use with consumers, one lesson addresses training staff on food safety during food demonstrations. Ethnic Cooking lessons are also included. Lesson leader guides feature objectives, rationale, materials needed, preparation required, activity ideas, recipes, make-ahead options and garnish/presentation tips.

**Cooking With Kids: Integrated Curriculum Guide / Cocinando Con Niños: Guía del Plan de Estudios Integrado**  
Lynn Walters and Jane Stacey  
Cooking with Kids, 2005.  
**NAL Call Number:** TX661 .W343 2005  
**Description:** Engages elementary school children in hands-on learning with fresh, affordable foods from diverse cultures. Students are encouraged to explore a variety of foods using all of their senses, in an interactive, fun way that allows them to make their own healthy diet choices. Grade divisions within lessons for K-1, 2-3 and 4-6.

**Fit Kids = Happy Kids/Niños Saludables = Niños Felices**  
Southwest Region Educating Communities on Healthy Options, Southwest Region WIC Programs, 2005.
NAL Call Number: Kit no. 495
Description: The kit can be customized by state agencies and culturally specific graphics and illustrations can be inserted. The kit may be used to support current state activities or, along with the 12 vignettes on DVD, to train staff. Features of the tool kit include: “Healthy Habits for Healthy Weights/Hábitos sanos para un peso sano” flip chart designed to reinforce positive eating, activity and TV behaviors and answer parents’ questions about how they can help their children develop healthy habits. Also includes “Jump for Joy/Brinca con Blanca,” a children’s physical activity and nutrition book, and a poster, “Help your child build healthy habits for a lifetime./Las costumbres saludables de hoy duran toda la vida.” Also included is an educator-focused training manual which contains six modules.

Food and Fitness Matter: Raising Healthy, Active Kids
1 DVD (24 min.)
NAL Call Number: DVD no. 124 English, DVD no. 119 Spanish
Description: DVD provides parents the information and support they need to make changes at home and in their local schools. In the video, health and nutrition experts, including former U.S. Surgeon General Dr. David Satcher, explain the causes for the dramatic increase in overweight kids and the health problems associated with childhood obesity. The video also presents practical tips for parents to improve diet and fitness at home and profiles of schools and districts that successfully switched to healthier foods.

Food Replica Package No. 3
Life/form replicas; 26 plastic models
Ft. Atkinson, WI: NASCO.
NAL Call Number: Model no. 5
Description: Along with various replicas of food from different food groups, includes the following Mexican-American foods: enchiladas, flour tortilla, refried beans, taco and Spanish rice.

International Foods 2: Africa and the Middle East Powerpoint
Description: Covers: North (Egypt & Morocco); West (Senegal & Nigeria); East (Ethiopia & Kenya); South Africa and the Middle East. Contains 25-30 content slides on CD plus activities, assignments, web resources, copy-ready handouts, and a quiz.

International Foods 3: Asia Powerpoint
Description: Covers: China, Japan, Korea, Indonesia, Thailand, India, and Russia. Contains 25-30 content slides on CD plus activities, assignments, web resources, copy-ready handouts, and a quiz.

Italian Food Model Kit
Life/form replicas; 10 plastic models and 1 booklet
Ft. Atkinson, WI: NASCO.
NAL Call Number: Model no. 8
Description: Contains 10 models of Italian foods. The accompanying booklet contains recipes and food exchanges.
Latin American Food Model Kit
Life/form replicas; 25 plastic models and 1 booklet
Ft. Atkinson, WI: NASCO.
**NAL Call Number:** Model no. 31
**Description:** Contains 25 replicas of commonly eaten foods listed within the Latin American Diet Pyramid. Replicas include: corn tortilla, flour tortilla, corn bread, brown rice, baked potato, white rice, yam, refried beans, red beans, peanuts, avocado slice, kiwi, orange, broccoli, spinach, tomato, salmon, perch, chicken leg, chicken breast, skim milk, cheese cubes, fried egg, beef roast, and vanilla ice cream.

Mediterranean Food Model Kit
Life/form replicas; 20 plastic models and 1 booklet
Ft. Atkinson, WI: NASCO.
**NAL Call Number:** Model no. 30
**Description:** Contains 20 food replicas of commonly eaten foods listed on the Mediterranean Food Pyramid. Replicas include: slice of whole wheat bread, avocado slice, yogurt, brown rice, red beans, peanuts, broiled fish, spaghetti, tomato slice, chicken leg, baked potato, lettuce, leaf, fried egg, slice of rye bread, cheese cubes, chocolate ice cream, peach, salmon, red wine, and strawberries.

Mexican-American Ethnic Food Set
Life/form replicas; 12 plastic models and 1 booklet
Ft. Atkinson, WI: NASCO.
**NAL Call Number:** Model no. 7
**Description:** Contains: Hot chili pepper (jalapeño), avocado, beef cubes in brown gravy (carne guisada), enchiladas, flour tortilla, corn tortilla, Mexican-style beans in a bowl (plato de frijoles), refried beans (frijoles refritos), tamales (2), rice with chicken (arroz con pollo), Spanish rice, and crisp taco.

Vegetarian Diet Supplement Food Package
Life/form replicas; 11 plastic models
Ft. Atkinson, WI: NASCO.
**NAL Call Number:** Model no. 12
**Description:** Contains: Oatmeal, tossed salad, French dressing (3), whole wheat bread, orange, graham crackers, and chocolate chip cookie.

Vegetarian Food Package
Life/form replicas; 34 plastic models
Ft. Atkinson, WI: NASCO.
**NAL Call Number:** Model no. 10
**Description:** Contains: Oatmeal, whole milk, whole banana, whole wheat bread, butter pats, American cheese, orange, orange juice, graham crackers, tossed salad, French dressing, cheese pizza, yogurt, chocolate chip cookie, vegetable soup, saltine crackers, peanut butter on bread, brown rice, broccoli, carrots, yam, bran muffin, and apple.
IV. Resources in Spanish

American Diabetes Association
La Diabetes Entre los Latinos
(Spanish language Diabetes in Latinos)
1701 North Beauregard St.
Alexandria, VA 22311
Phone: 1-800-DIABETES
Description: Web site for Spanish-language diabetes education materials.

Centers for Disease Control and Prevention (CDC)
1600 Clifton Rd.
Atlanta, GA 30333
Phone: 1-800-CDC-INFO (800-232-4636)
Web site: http://www.cdc.gov/spanish
Description: CDC's Spanish-language Web site covers health issues of relevance to Latino communities. See also CDC's National Hispanic/Latino Diabetes Initiative for Action at http://www.cdc.gov/diabetes/projects/latino.htm

Food Insight in Spanish
International Food Information Council Foundation (IFIC)
Web site: http://www.foodinsight.org/EnEspanol/
Description: Spanish-language version of IFIC's Web site. Provides Spanish language resources on topics including diet and health, weight management, food production, food components and food safety.

Latino Nutrition Coalition
Oldways Preservation Trust
Full text: http://www.latinonutrition.org/index.htm
Description: Collection of nutrition education materials designed for Latin American audiences. Includes: toolkit for health professionals; supermarket shopping guide; sample seasonal Latino meal plans; whole grain fact sheets; and the Latin American Diet Pyramid. Materials are available in English and Spanish.

Más Vale Prevenir: Que Lamentar/An Ounce of Prevention: A Guide To Heart Health
National Heart, Lung, and Blood Institute, National Institutes of Health
Description: Uses stories to discuss tips for preventing heart disease. Each story includes a workbook segment to help the readers write down their personal pledges to improve their heart health and chart their own progress. Print copies in Spanish can also be ordered (see Web site).

MiPirámide (MyPyramid)
Center for Nutrition Policy and Promotion, U.S. Department of Agriculture
Web site: http://www.mypyramid.gov/sp-index.html
National Diabetes Information Clearinghouse, National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health
1 Information Way
Bethesda, MD 20892-3560
Phone: (800) 860-8747
Fax: (703) 738-4929
Description: Provides list of Spanish-language publications covering a range of diabetes-related health topics including prevention, symptoms, treatment, nutrition, and management.

Nutrition.gov En Español
Food and Nutrition Information Center, National Agricultural Library
Web site: http://www.nutrition.gov/espanol
Description: Provides links to a variety of Spanish-language resources from the Federal government on food and nutrition topics such as healthy eating, weight management, diet and disease, food preparation, and the Federal food assistance programs.

¡Podemos! (We Can!) Ways to Enhance Children’s Activity and Nutrition
Resources in Spanish
National Heart, Lung, and Blood Institute, National Institutes of Health
Description: A national childhood obesity prevention program provides tools and resources in English and Spanish to help families and communities better understand the basics of nutrition and how it relates to maintaining a healthy weight.

SNAP Outreach and Nutrition Education Materials in Spanish
Food and Nutrition Service, U.S. Department of Agriculture
Web site: http://snap.ntis.gov/Default.aspx (for Ordering Center)
Description: Provides nutrition education materials designed to educate low income people about the nutrition benefits of the federal Supplemental Nutrition Assistance Program and encourage participation. Materials available in Spanish include brochures, handouts, and activity sheets.

Spanish Language Food and Nutrition Resources
American Dietetic Association and Latinos and Hispanics in Dietetics and Nutrition Member Interest Group
Full text: http://www.eatright.org/espanol/
Description: Offers Spanish-language food and nutrition information resources. Handouts are free to download. The brochures and other products can be ordered online.

Spanish Language Food and Nutrition Materials
NOAH: New York Online Access to Health
Description: Over 100 educational materials covering a wide variety of basic and therapeutic nutrition and food safety topics. Materials include those developed by NOAH.
Su Corazón Su Vida: Manual Del Promotor Y Promotora De Salud
(Spanish language "Your Heart, Your Life: A Lay Health Educator’s Manual for the Hispanic Community")
National Heart, Lung, and Blood Institute
Description: Heart-health education for the Latino community. Contains skill-building activities, reproducible handouts, and idea starters.

Team Nutrition Resources Available in Spanish
Food and Nutrition Service, U.S. Department of Agriculture
Description: List of Spanish-language resources available through Team Nutrition to schools and child care facilities that participate in the Federal Child Nutrition Programs.

V. Additional Contacts and Sources of Information
American Diabetes Association
1701 North Beauregard St.
Alexandria, VA 22311
Phone: 1-800-DIABETES (800-342-2383)

American Heart Association Nutrition Center
American Heart Association
Web site: http://www.heart.org/HEARTORG/GettingHealthy/NutritionCenter/NutritionCenter_UCM_001188_SubHomePage.jsp1.15

Asian American Diabetes Initiative, Joslin Diabetes Center
1 Joslin Place, Room 382A
Boston, MA 02215
Phone: (617)226-5815
Fax: (617) 732-2607
Web site: http://aadi.joslin.org/

Asian American Health, Specialized Information Services, National Library of Medicine
2 Democracy Plaza, Suite 510
Bethesda, MD 20892-5467
Phone: (888) FINDNLM (888-346-3656)
Fax: (301) 480-3537

Chinese Americans in Dietetics and Nutrition
Website: http://www.cadn-usa.org/index.html
Chinese Community Health Resource Center
835 Jackson St. Room 425
San Francisco, CA 94133
Phone: (415) 677-2473
Fax: (415) 677-2457

Cooperative Extension Systems Offices
National Institute of Food and Agriculture, U.S. Department of Agriculture

Food and Consumer Safety Bureau, Iowa Department of Inspections and Appeals
Lucas State Office Building
321 E. 12th St.
Des Moines, IA 50319-0083
Phone: (515) 281-6538
Web site: http://www.profoodsafety.org/

Food and Nutrition Information Center
10301 Baltimore Ave., Room 105
Beltsville, MD 20705
Phone: (301) 504-5414

– Ethnic/Cultural Food Guide Pyramid page:

– Sources of Free or Low-Cost Food and Nutrition Materials (includes NonEnglish language materials):
http://fnic.nal.usda.gov/freelowcost


– International Programs - Fruits & Vegetables:
http://fnic.nal.usda.gov/nal_display/index.php?info_center=4&tax_level=3&tax_subject=256&topic_id=1347&level3_id=5470&level4_id=0&level5_id=0&placement_default=0

– International Food Composition Resources page:

Latinos and Hispanics in Dietetics and Nutrition (LAHIDAN)
Website: http://lahidanmig.weebly.com/index.html

Muslims in Dietetics and Nutrition (MIDAN)
Website: http://muslimdietitians.org/About.html
National Council of La Raza
Raul Yzaguirre Building
1126 16th Street, N.W.
Washington, DC 20036
Phone: (202) 785-1670
Web site: http://www.nclr.org

National Heart, Lung, and Blood Institute Health Information Center
Phone: (301) 592-8573
Fax: (301) 592-8573
E-mail: NHLBlinfo@nhlbi.nih.gov
Web site: http://email.nhlbihin.net/ (for online catalog of educational materials)

Office of Minority Health, U.S. Department of Health and Human Services
Publications
P.O. Box 37337
Washington, D.C. 20013-7337
Phone: (800) 444-6472
Fax: (301) 230-7198
TDD: (301) 230-7199

Selected Patient Information Resources in Asian Languages (SPIRAL)
Tufts University Hirsh Health Services Library
145 Harrison Ave.
Boston, MA 02111
Phone (617) 636-4039
Fax (617) 636-4039
Web site: http://spiral.tufts.edu/

U.S. Food and Drug Administration
10903 New Hampshire Ave.
Silver Spring, MD 20993-0002
Phone: (888)-INFO-FDA (1-888-463-6332)
Web site: http://www.cfsan.fda.gov/~mow/internat.html

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References


