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Effect of Onsite Dietitian Counseling on Weight Loss and Lipid Levels in an Outpatient Physician Office

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Abstract

We examined the effect of an outpatient office-based diet and exercise counseling program on weight loss and lipid levels with an onsite dietitian who sees patients at the same visit with the physician and is fully reimbursable. Eighty overweight or obese patients (average age 55 ± 12 years, baseline body mass index 30.1 ± 6.4 kg/m²) with ≥ 1 cardiovascular risk factor (86%) or coronary heart disease (14%) were counseled to exercise 30 minutes/day and eat a modified Dietary Approaches to Stop Hypertension (DASH) diet (saturated fat <7%, polyunsaturated fat to 10%, monounsaturated fat to 18%, low in glycemic index and sodium and high in fiber, low-fat dairy products, fruits, and vegetables). Weight, body mass index, lipid levels, and blood pressure were measured at 1 concurrent follow-up visit with the dietitian and physician and ≥ 1 additional follow-up with the physician. Maximum weight lost was an average of 5.6% (10.8 lb) at a mean follow-up of 1.75 years. Sixty-four (81%) of these patients maintained significant weight loss (average weight loss 5.3%) at a mean follow-up of 2.6 years. Average decrease in low-density lipoprotein cholesterol was 9.3%, average decrease in triglycerides was 34%, and average increase in high-density lipoprotein cholesterol was 9.6%. Systolic blood pressure was lowered from 129 to 126 mm Hg ($p = 0.21$) and diastolic blood pressure from 79 to 75 mm Hg ($p = 0.003$). In conclusion, having a dietitian counsel patients concurrently with a physician in the out-patient setting is effective in achieving and maintaining weight loss and is fully reimbursable.

It has been reported that the average American makes 3 visits per year to office-based physicians.¹ More than 62% of these visits are made to patients' primary care physicians.² In the Behavioral Risk Factor Surveillance System, a random-digit telephone survey conducted by state health departments, <50% of obese subjects reported receiving advice to lose weight.³ Nevertheless, receiving advice to lose weight was strongly associated with attempts to implement that advice. Rates of counseling about physical activity may be even lower. Nationally, the reported rate of physician counseling about exercise is ~34%.⁴ However, many clinicians do not routinely measure patients' weight, assess their lifestyle, or offer advice on such topics. The main reasons for such low levels of clinician involvement are most often attributed to their lack of training in these areas, insufficient time for counseling in practice settings, an absence of clear guidelines and practice tools, scarcity of patient education materials, and minimal to no reimbursement.¹ In the present report, we describe our results with an onsite dietitian, who sees patients at the same visit with the physician and is fully reimbursable, on weight loss and lipid levels.

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Methods and Results

Eighty obese patients with ≥ 1 cardiovascular risk factor (86%) or established coronary heart disease (14%) were seen at the initial visit with 1 provider, a preventive cardiologist, and a dietitian at the Cardiovascular Health and Lipid Center at Beth Israel Deaconess Medical Center (Boston, Massachusetts) from 2000 to 2004. They had ≥ 1 follow-up visit with the dietitian and physician 3 to 6 months after the initial visit and ≥ 1 additional visit with the physician. More than 90% of patients were referred by their primary care physician for management of hyperlipidemia and/or weight management. The remaining patients were self-referred. Each subject recorded the amount and description of all foods and beverages immediately after eating for 3 days before the initial visit. The dietitian analyzed this food record and counseled patients on a modified Dietary Approaches to Stop Hypertension (DASH)-type diet with $< 7\%$ saturated fat, polyunsaturated fat up to 10% (in recognition of the beneficial effects of ω -3 fatty acids found in fatty fish and canola and soybean oils), monounsaturated fat up to 18% (especially with low high-density lipoprotein [HDL] cholesterol levels), low glycemic index, low sodium and high in fiber, low-fat dairy products, fruits, and vegetables geared toward lowering low-density lipoprotein (LDL) cholesterol and blood pressure. To further increase lipid-lowering effects, recommendations included fiber ≥ 25 g/day for women and 38 g/day for men and plant sterols/stanols to 2 g/day. Other recommendations included use of oils high in α -linolenic acid (canola and flaxseed oils) and ingestion of ≥ 2 fatty fish meals per week. Patient's food preferences were determined and patients were instructed in how to prepare them with low saturated fat, high fiber, low glycemic index, low sodium, and high potassium content. Caloric decrease was recommended when indicated. The dietitian spent 45 to 60 minutes at the initial visit and 15 to 30 minutes at follow-up visits. Behavioral counseling by the physician to decrease portions included (1) eating breakfast daily, (2) drinking a full glass of water before each meal to induce satiety, (3) putting the fork down between each bite and taking a sip of water geared to slowing down eating, and (4) taking 50% of a restaurant portion home. Type, duration, and number of sessions of exercise per week were assessed at baseline. Exercise prescriptions were given to all patients by the physician. Exercise duration was increased 5 minutes per session weekly to a goal of 30 minutes daily.

Average age was 55 ± 12 years, and mean baseline body mass index was 30.1 ± 6.4 kg/m². Eighty percent of patients undertook brisk walking; the remainder jogged, swam, or used a treadmill or exercise bike. Maximum weight lost was an average of 5.6% (10.8 lb) of initial weight and occurred at a mean follow-up of 1.75 years. At a mean follow-up of 2.6 years, 81% of these patients ($n = 64$) maintained an average weight loss of 5.3%. Therefore, average weight regain was only 0.3% of the maximum weight loss for most patients. Weight regain for all 80 patients was 1.6% at an average follow-up of 2.6 years. Those who maintained weight loss exercised an average of 3.8 ± 2.6 days per week compared with 2.6 ± 2.2 in those who did not ($p = 0.012$). Educational level was not significantly different in those who maintained weight loss and those who did not (15.1 ± 3.2 vs 14.7 ± 3.2 years, $p = \text{NS}$). Average decrease in LDL cholesterol was 9.3% (from 142 ± 30 to 129.0 ± 26 mg/dl); average decrease in triglycerides was 34% (from 297 ± 105 to 196 ± 67 mg/dl); and average increase in HDL cholesterol was 9.6% (from 48 ± 9 to 53 ± 13 mg/dl). Systolic blood pressure was lowered from 129 to 126 mm Hg ($p = 0.21$) and diastolic blood pressure from 79 to 75 mm Hg ($p = 0.003$).

Discussion

Designing and implementing successful office-based weight-loss programs has been long advocated but challenging to translate into clinical practice.^{5,6} In the present report, we describe a successful weight-loss program in clinical practice focusing on assessment of cardiovascular risk factors (lipid disorders, blood pressure, diabetes, metabolic syndrome, and smoking) and

lifestyle modification with diet and exercise. The program uses a dietitian at 2 visits. The dietitian is fully reimbursable for obesity (billing codes 278.0 and 278.01), overweight (278.02), and dyslipidemia (272.0). This has important implications for cost effectiveness because no group sessions, which are expensive and time consuming, were involved. This approach should be feasible for use by primary care physicians to achieve weight loss in the outpatient setting when a dietitian is present.

A strength of this study is the significant weight loss and its long-term maintenance. The importance of modest, long-term maintained weight loss has been previously endorsed.^{7–9} In the present program, 64 obese patients lost 5.6% of total weight at a mean follow-up of 1.75 years. Most importantly, 81% of them maintained an average 5.3% weight loss at average follow-up of 2.6 years. Those maintaining their weight loss exercised more days per week than did those who did not, a finding emphasizing the importance of exercise in maintaining weight loss. This is particularly important because weight stability after weight loss has been shown to play an important role in modifying the relation between cholesterol and heart disease.¹⁰ Interestingly, in the present program, weight loss was accomplished with a greater focus on modification of cardiovascular risk factors with diet and exercise and less emphasis on patients' weight. Weight loss was accompanied by dramatic improvement in lowering triglycerides (average 34%), increasing HDL cholesterol (average 9.6%), and decreasing LDL cholesterol (9.3%). Thirty-five percent of patients were started on lipid-lowering drugs; thus, the decrease in LDL cholesterol may be partly attributable to drug therapy; however, the increase in HDL and decrease in triglycerides are greater than predicted with statin therapy and are more likely to result from the exercise and weight-loss components.

How feasible would it be for primary care practices to adapt this strategy? Data such as those from the multicenter Activity Counseling Trial (ACT) showed the feasibility of training clinicians to integrate 3 to 4 minutes of physical activity advice into routine office visits of sedentary adult patients.¹¹ Clinicians' response to the ACT was positive and participation in the study was viewed as minimally disruptive to clinicians and beneficial to patients. Moreover, trials such as the ACT demonstrated success with patients without clinical cardiovascular disease.¹²

In a primary care setting, office staff can help perform anthropometric measurements including height, weight, and waist circumference, calculate body mass index from a nomogram, and prompt, co-ordinate, and deliver counseling and follow-up services.¹ On the basis of our results, we suggest that primary care physicians hold an "obesity" clinic on prespecified days and arrange for a dietitian to be available at those sessions, a situation similar to that described in this report.

Modest weight loss $\leq 10\%$ has been shown to have beneficial health effects.^{7,8} Most patients in our study were seen in follow-up at 6 months after the initial visit and then at 1 year. We predict that earlier follow-up (i.e., at 3 months), more frequent follow-up (i.e., every 3 months), and monthly telephone check-ins concerning diet, exercise, and weight-loss logs would result in earlier and greater weight loss. Given the prevalence and consequences of overweight and physical inactivity, helping even a small percentage of patients improve their weight and daily activity may lead to a public health effect. It is therefore critical that weight-loss interventions with proved success in a clinical setting be disseminated and eventually implemented by more clinicians.

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