Physicians can influence dietary compliance by delivering brief messages to their patients. Providers’ impact on patients’ dietary compliance can also be enhanced by family and partner involvement; by strict reduction of fat intake within a detailed, individualized menu plan and possibly as part of a vegetarian diet. Group treatment settings, intense teaching about diet, and frequent monitoring of dietary compliance are also effective. Medical providers can and should help to decrease their patients’ fat intake and increase their consumption of grains, vegetables, and fruits.

**Introduction**

Clinicians can greatly influence people’s eating habits by using short, precise messages. We can learn from our success with tobacco cessation techniques and apply it to nutrition counseling: Studies show that brief smoking cessation techniques are effective when applied by members of a health care team. Similarly, a single brief recommendation from physician to patient can result in major dietary changes, including reduced use of high-fat dairy products, eggs, and margarine and increased consumption of fruits, vegetables, and high-fiber grains.

The National Cancer Institute and the US Public Health Service have announced three dietary goals for the year 2000: consumption of five or more servings of fruits and vegetables per day; six or more servings of bread, cereals, and legumes per day; and fat intake to equal no more than 30% of total calories daily. Reaching these dietary goals would prevent 160,000 new cancer cases annually (a 30% reduction) and would save $25 billion annually in costs associated with cancer.

Fifty percent of patients who were invited to enroll in the above programs chose to participate. This statistic indicates that nearly half of patients have contemplated dietary improvement and are willing to make major changes if offered adequate support for doing so. Identifying and motivating patients who are contemplating dietary change is critical to improving health outcomes and should be encouraged in all health care settings.

However, providers do encounter many patients who lack the willingness even to consider strict diet changes; for these patients, small dietary changes might be more successful.

**Factors that Enhance Dietary Compliance**

Successful dietary intervention trials have used similar behavioral techniques. Reviewing trials that used dietary changes to reduce cardiac risk factors, Barnard et al. found that specific factors improved compliance with reducing fat intake. These factors included strict limits on fat intake, adherence to vegetarian diets, frequent (at least monthly) monitoring, family and partner involvement, strategies that target symptomatic patients, availability of an initial residential component, intensive nutritional instruction, and provision of food directly to patients. Growing evidence...
shows that providing detailed menu plans and meeting with patients in group settings also improves dietary compliance (Table 1).

**Dietary Recommendations, Counseling, and Monitoring**

Strictly limiting fat intake is a simple idea for patients to understand. Three changes can limit total fat intake to less than 20% of total calories:

- Eliminate dairy products unless they are nonfat.
- Eliminate butter and margarine, preferably limit cooking oils to monounsaturated oils, and use no more than 1 tsp. oil per person per serving for cooking.
- Eliminate all high-fat meat and poultry products (eg, hotdogs, sausage) and high-fat snacks, and preferably limit lean meat and poultry consumption to 2-3 servings per week.

Vegetarian diets can very successfully help patients to reduce fat intake and increase their consumption of whole grains, fruits, and vegetables. Vegetarian diets that use nonfat dairy products have achieved major dietary improvements without requiring patients to either measure portions or analyze food content.13

An advantage of strictly reducing intake of fat is that patients either feel better or note major changes in their risk factors. For example, in the Ornish intervention group,13 low-density lipoprotein (LDL) cholesterol was reduced 37.4%—a reduction equivalent to that achieved by drugs (eg, pravastatin)—and anginal symptoms decreased more than 90% within the first few months of therapy. This improved well-being gives patients reinforcement for continuing their dietary changes.

The drawback of recommending either strict reduction in fat intake or change to a low-fat vegetarian diet is that patients who accept the recommendations need help finding new recipes and cookbooks, and learning new shopping skills. Clinicians can counter this challenge by offering group cooking and shopping sessions.

Most people are interested in food content and read food labels. Unfortunately, food labels deceive more than half of all patients who read them.10

Dietary compliance is improved by intense initial nutrition counseling. Some programs have used a residential component which was effective but added significant expense to the program. Other investigators simplified their recommendations by teaching patients to count the grams of fat they were eating.10,17

Group cooking and shopping classes are less expensive than are residential training programs and are also effective.

Monthly monitoring of food intake can be a powerful tool in improving compliance. Patients who use one-, four-, or seven-day food records are forced to analyze their food intake and to assess their fat intake. Monthly records not only reinforce dietary compliance, but also help patients to become experts on the fat content of commonly eaten foods.10 Simplified for patient convenience, the record can be modified to count only servings of high-fat foods, whole grains, vegetables, and fruits.

**Social Support Systems and Motivational Techniques**

Family involvement can “make or break” dietary compliance, especially if a partner does the shopping or cooking. Inviting spouses and companions to nutrition classes improves dietary compliance.15 In addition, food preparation is easier when one meal is made, and the stigma of changing diets is lessened when the family changes eating habits together. In a managed care environment, inviting family has the added value of improving the health outcome for two or more people for the price of treating one.

Most dietary intervention programs have targeted symptomatic patients in the belief that such patients are more motivated to change. One prominent study,10 for example, selected female patients who were at increased risk for breast cancer. After dietary intervention, the women decreased their initial fat intake from 39% to 22% of total calories in one year. Reduced consumption of three food groups—dairy products (unless nonfat), meat, and fats or oils—accounted for 70% of this reduction. Devices used to increase dietary compliance included four-day food records for monthly monitoring of fat intake, family involvement, and intensive group classes that emphasized shopping skills and food preparation. The take-home message from this study is that if patients can be sufficiently motivated to decrease fat intake by a family history of breast cancer, where the relation to fat intake is weak, clinicians should be able to bring at least as much motivation to patients who have diseases

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“Strictly limiting fat intake is a simple idea for patients to understand. Three changes can limit total fat intake to less than 20% of total calories.”
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**Table 1. Factors that enhance patients’ dietary compliance**

- Involving family members and partners
- Encouraging strict limits on fat intake
- Encouraging food monitoring
- Targeting cohorts of symptomatic or high-risk patients
- Providing either food or specific meal plans
- Providing instruction on cooking, shopping, and nutrition
- Enrolling patients in group visits
- Providing individualized, computer-generated diet instructions
- Encouraging adherence to vegetarian diets
such as cardiovascular disease, where the link to fat intake is strong. Individualized, computer-generated handouts have also been used to improve dietary compliance. Campbell and coworkers\(^\text{18}\) produced a questionnaire to screen stages of readiness for changing dietary behavior. The analysis included a food frequency assessment, stage-of-readiness diet, and psychosocial issues. A computer program was then used to generate an individually tailored, one-time packet of nutritional information suited to the patient. Each message addressed participants' readiness and motivations for dietary change and supplied nutritional feedback. Total fat consumption decreased by 23% using this single intervention. Because computer-tailored education can be less expensive than individual dietary counseling, this option is yet another way to offer nutritional counseling.

### Techniques to Specifically Direct Food Choices

Providing food directly to patients improves dietary compliance.\(^\text{15,19}\) Although successful as an intervention, however, it adds cost to the program. In addition, because people are often hesitant to try new recipes,\(^\text{10}\) successful programs that do not provide food often offer cooking and shopping classes. Some programs have arranged food tasting by scheduling potluck events featuring the menu plans provided.

Surprisingly, for motivated patients, providing specific meal plans has been shown to be as effective as providing food directly to patients.\(^\text{20}\) Providing specific meal plans has been shown to improve eating habits for more than one year, suggesting long-term benefits. However, no evidence suggests that distributing meal plans itself fosters dietary change; instead, success stems from combining meal plans with instruction and support. Sample meal plans can be found in several health-promoting books\(^\text{21-24}\) (Table 2).

Growing evidence suggests that patients can improve their lipid levels and decrease their number of cardiovascular events by adding specific foods to their diets.\(^\text{25}\) Many patients might perceive such addition of foods as more palatable an idea than eliminating foods (Table 3).

### Long-term Results of Major Intervention Trials

Contrary to popular medical belief, evidence from randomized intervention trials reveals that reductions in both total fat intake and serum cholesterol level persist long after the trials end. Hjermann et al\(^\text{26}\) in reevaluating their patients three years after the end of a five-year trial, found that reductions in the intervention group’s total fat intake and serum cholesterol levels persisted three years later.

After five years of follow-up, patients following the Ornish program who were randomized to lifestyle modification continued to show clinical benefits as compared with patients in a control group.\(^\text{27}\) Modest

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**Table 2. Selected books containing meal plans**

<table>
<thead>
<tr>
<th>Book</th>
<th>Cuisine type</th>
<th>% Fat intake</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reversing Heart Disease(^\text{21})</td>
<td>Vegetarian</td>
<td>10%</td>
</tr>
<tr>
<td>The McDougall Program(^\text{22})</td>
<td>Vegan (no dairy)</td>
<td>10%</td>
</tr>
<tr>
<td>The 28-Day Antioxidant Diet Program(^\text{23})</td>
<td>Mediterranean, Oriental, and Southwest American</td>
<td>20% (featuring monounsaturated and omega-3 fats)</td>
</tr>
<tr>
<td>Dietary Treatment of Hypercholesterolemia(^\text{24})</td>
<td>Low-fat American (by the AHA)</td>
<td>30% (with AHA Step I and II diets)</td>
</tr>
</tbody>
</table>

**Table 3. Foods to add and foods to avoid**

<table>
<thead>
<tr>
<th>Foods to add</th>
<th>Foods to avoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥5 servings of colorful fruits and vegetables daily (8-10 servings/day is best)</td>
<td>Snacks, sweets, high-fat chips</td>
</tr>
<tr>
<td>≥5 servings daily of whole-grain breads and pasta, brown rice, and bagels</td>
<td>White bread, white rice, white pasta</td>
</tr>
<tr>
<td>Nonfat or 1% milk</td>
<td>High-fat dairy products, such as 2% or whole milk, and products made from them</td>
</tr>
<tr>
<td>Herbs and spices (eg, garlic, green herbs, and ginger) daily</td>
<td>Salt (limit to 2.4 g daily)</td>
</tr>
<tr>
<td>Soy products (eg, soy burgers, veggie hotdogs, soy sausage, soy sandwich products, tofu, soy milk)</td>
<td>Bacon, sausage, organ meats, high-fat sandwich meats</td>
</tr>
<tr>
<td>Olive or canola oil for cooking and baking</td>
<td>Butter and margarine</td>
</tr>
<tr>
<td>Fish (1-2 servings per week), beans (1 half-cup serving daily)</td>
<td>Limit meat and poultry to lean cuts and to only 2-3 servings per week.</td>
</tr>
</tbody>
</table>
regression of coronary artery stenosis also persisted in the intervention group, even at the five-year poststudy mark.²⁰

Most of the successful trials referenced here provided group education sessions for 15 to 30 patients at each lesson. Not only does group intervention provide cost-effective interaction, but the group’s support dynamics, too, offer additional theoretical advantages that improve compliance.

Unsuccessful dietary interventions did not use the combination of compliance factors we have discussed here. For example, control groups in the studies by Ornish et al¹³ and Brown et al⁸ used the American Heart Association diet. The Ornish control group started with a total fat intake of 30.1% of total calories and changed to 29.5% in one year—clearly less than an adequate change.

The Multiple Risk Factor Intervention Trial (MRFIT) is another intervention trial that did not reach its goals. In that study, investigators hesitated to recommend a large reduction of fat intake, fearing that such a reduction would be too much to ask of participants in a six-year trial. Instead, the investigators recommended decreasing fat consumption modestly—from 38% to 30% of total calories. Patients in that intervention group reduced their fat intake from 38% to 34% of total calories—a reduction that was less than an adequate change.¹⁵

The lesson from that study is that motivated patients who aim to decrease their total fat intake to a maximum of 20% of total calories may have greater compliance than if they aim for a maximum of 30%.

**Why Don’t People Change Their Diets?**

Cotugna et al¹⁹ found that the most common reason why patients choose not to make dietary changes is that people enjoy the food they currently eat. The second most common reason for shunning change is that people think they are eating healthy food already and that they therefore have no reason to change. The third most common reason why people continue their current dietary practices is that they find the proliferation of recommendations more confusing than helpful.

**Goals**

As this paper makes clear, our goal should be three-fold: to educate our patients as to the importance of reaching the year 2000 dietary goals; to simplify this message so that it will be easier to follow; and—since taste is the #1 factor driving food choice in America,²⁰ we must teach that food that is good for you can also taste good. Specifically, we must communicate to patients simply, consistently, and clearly that they should eat at least five servings of fruits and vegetables and at least six servings of grains and legumes per day, limiting fat intake to <20% of total calories. Providers must also motivate patients from the precontemplation stage to action.

To accomplish these educational and motivational goals, providers and patients need the following resources:

- Simple pamphlets with motivational messages.
- Lists of resources for books, classes, and programs that assist patients in making changes. Motivated patients in particular should be offered healthy meal plans.
- Group classes that help patients address barriers and learn new skills for healthy shopping, cooking, and eating out.
- Computerized dietary assessment tools to provide dietary analysis and tailored advice.
- Follow-up plan with follow-up visits, telephone support, or chart reminders to reinforce change.
- Simple ways to track patients’ dietary status and compliance.

The evidence supports that these goals are attainable. The tools to improve patient compliance are available. Therefore, medical providers and clinical systems need only spring from contemplation into action.

**References:**

Compliance jobs are often in financial services, healthcare, and telecommunications. Compliance officers often need knowledge of ethical practices in their industries. Degrees in engineering, law, and chemistry, as well as economics, finance, and management, are often part of an education in compliance. Job Description. The compliance officer or manager positions are available in a myriad of industries, but job duties and responsibilities of individuals who hold a compliance officer position are similar. The primary duty of any compliance officer is to ensure a company is being run legally and understand better compliance to a dietary plan. However, in exploring the literature on the topic, we were struck by the fact that no studies have verified self-care activities and compliance to dietary self-care activities among adults with Type 2 diabetes. Specifically, we investigated, using a cross-lagged, panel model involving two waves of data over a one-year period, how these variables influence one. Well as coming up with strategies, that is thinking, about what steps to take and how best to handle the problem (Lazarus & Folkman, 1984). On the other. Food pattern modeling To assess how well various combinations and amounts of foods from all food groups would result in healthy eating patterns that meet nutrient needs and accommodate limits, such as those for saturated fats, added sugars, and sodium. Analyses of current intakes To identify areas of potential public health concern. I want to be sure I did a good job of showing you how to use the nutrition label. Can you show me how you will use it to calculate __? Can you tell me in your own words how and when you need to use your glucose tablets? How would you describe your condition to a friend? Can you show me how many pills you would take each day? We covered a lot about carbohydrates and I want to make sure I explained things clearly.