



Diabetes

and the *Dr. Dean Ornish Program for Reversing Heart Disease*

Nutrition

Many of the participants find that the Nutrition Spectrum Reversal Program is just as effective in managing their diabetes as it is managing heart disease. However, there may be an adjustment period at the beginning of the *Dr. Dean Ornish Program for Reversing Heart Disease*, when high and/or low blood glucose levels can occur.

Follow these nutrition tips to help control and stabilize blood glucose levels throughout the *Dr. Dean Ornish Program for Reversing Heart Disease*. Remember, these tips are in addition to the program guidelines.

Focus on a whole foods approach.

- Limit processed and packages foods, which are often high in sugar, salt and refined grains. Choose fresh fruits and vegetables, unprocessed whole grains, beans, legumes and soy foods.
- Fat-free processed foods are usually very high in sugar, because the sugar is used to replace the fat in these products. Limit these highly processed foods.
- When reading food labels, be sure you can identify any source of sugar. Common sweeteners found in packaged foods that can increase blood sugars include fructose, honey, corn syrup, molasses, fruit juice or fruit juice concentrates, dextrose and maltose.
- Sugar alcohols, such as sorbitol, mannitol, or xylitol, have a limited impact on raising blood glucose levels. However, excessive consumption can cause gastrointestinal upset and diarrhea.
- Sugar substitutes (saccharin, acesulfame potassium, aspartame and sucralose) do not raise blood glucose levels and are acceptable for people with diabetes to use. However, these sweeteners are artificial, contain no nutritional value and should also be used sparingly.
- Avoid large intakes of dried fruit due to their concentrated sugar content.



Omit fat-free sweets.

- While the *Nutrition Spectrum Reversal Program* incorporates up to two servings of sweets per day, these foods can contribute to high blood sugars in people with diabetes and may need to be avoided. This may be especially true in the early stages of the program if your blood sugars are fluctuating.

Follow the *Nutrition Spectrum Reversal Program* guidelines for fruit consumption.

- Limit juice to 4 ounces per day, and limit fruit to 2 servings per day. Even juice drinks that are 100% juice, with no added sugars, are still a concentrated form of sugar. Excess intakes of juice (or any form of fruit) can cause elevated blood sugars due to the naturally high sugar content of these foods.

Eat the maximum number of servings for protein each day (1 soy servings plus 3 other protein servings).

- Protein helps control the rise in blood glucose levels when eaten in combination with carbohydrate foods.
- At least one protein serving should always be part of a meal or snack to prevent carbohydrates from being absorbed too quickly and increasing blood glucose levels rapidly.

Aim for all grain foods to come from whole wheat or whole grain sources.

- Whole grains are naturally lower in sugar, higher in fiber and higher in protein than refined grains, which results in better control of blood sugars.

Avoid alcohol.

- Alcohol can increase triglyceride levels.
- Certain types of alcoholic beverages also contain carbohydrates, such as beer and mixed drinks, which raises blood glucose levels.

Exercise

A regular, long-term, aerobic exercise program has been found to be beneficial for everyone. The benefits of exercise may be even greater for the person with diabetes. Several long-term studies have shown sustained glucose control when a regular exercise program is maintained.

When beginning an exercise program, it's important to closely monitor blood glucose levels before and after exercise to prevent hypoglycemia (i.e. low blood glucose levels). Hypoglycemia can occur up to several hours after exercising.

Benefits of Regular Exercise for Diabetes Management:

- Reduction of hemoglobin HbA1C (measures average glucose level over time)



- Improvement in insulin sensitivity (better utilization of insulin by the body)
- Possible reduction in the dependency of diabetes medication
- Achievement and maintenance of lower body weight
- Decrease in coronary artery disease risk factors
- Reduction of cholesterol, triglycerides and LDL “bad” cholesterol
- Increase in HDL “good” cholesterol especially in combination with weight loss

Exercise Tips for Diabetes

- Exercise regularly and at the same time each day for greater blood sugar consistency.
- Inject insulin into non-exercising areas such as the stomach.
- Practice proper foot care. Wear appropriate, well-fitting shoes. Change your socks after exercising.
- Exercise should be well tolerated after an initial adjustment period. Monitor your blood sugar levels before and after aerobic exercise sessions for a period of about two weeks to help assess changes in blood sugar control.
- If symptoms of exercise-induced hypoglycemia (low blood sugar) persist after the initial two weeks, contact your doctor or health care provider. You may need to have your diabetes medication adjusted.
- Plan a pre-exercise snack, if needed, to prevent hypoglycemia.

Stress Management

Stress can increase blood glucose levels because of the body’s “fight or flight” response. When stress occurs, hormone levels increase to stimulate the release of energy in the form of glucose and fat. In people with diabetes, insulin is not always available to keep glucose levels under control; therefore, glucose levels rise secondary to elevated stress. Controlling stress can stabilize blood sugars and reduce insulin requirements.

Stress management practices that include guided imagery, meditation and yoga can influence diabetes management by helping to:

- Improve blood circulation
- Stimulate insulin secretion
- Enhance pancreatic activity
- Promote digestion

Some stress management poses may not be appropriate for individuals with diabetes. Refer to the stress management pose handout for specific information.



Group Support

To effectively manage diabetes (in addition to heart disease), physical, emotional and social limitations and concerns must be addressed. Group support is used to improve health through promoting feelings of intimacy and connectedness while decreasing isolation, depression and feelings of helplessness.

- Depression is common in people with diabetes (15%-20%).*
- Depression has been correlated with mortality in older people with diabetes.*
- The *Dr. Dean Ornish Program for Reversing Heart Disease* has been successful in decreasing depression scale scores by about 48% in just 12 weeks.

Group Support is valuable in managing chronic diseases because it:

- Increases a sense of support and intimacy.
- Develops an ability to deal with emotions in a healthier way.
- Creates a social group that endorses a healthy and healing lifestyle.

The Dr. Dean Ornish Program for Reversing Heart Disease as a Treatment for Diabetes

Nationally, heart disease is the leading cause of diabetes-related deaths. Adults with diabetes have heart disease death rates about two to four times higher than adults without diabetes. (National Diabetes Information Clearinghouse, 2000)

The *Dr. Dean Ornish Program for Reversing Heart Disease* has long recognized that diabetes is a major risk factor for heart disease. For this reason, people are eligible for enrollment into the program solely with the diagnosis of diabetes and no other cardiac risk factors or cardiac history. The *Dr. Dean Ornish Program for Reversing Heart Disease* has been found to be very effective in reducing HbA1C levels and reducing insulin and other medications in participants with diabetes.

Statistics for Participants with Diabetes Enrolled in the *Dr. Dean Ornish Program for Reversing Heart Disease*:

- HbA1C levels decreased an average of 13.7% during the first 12 weeks of the program, going from 8.1% to 7.0%.
- Average cholesterol levels decreased an average of 8.7% in participants with diabetes during the same time frame.



- Approximately 74% of participants with diabetes decreased their HbA1C.
- 21% of participants with diabetes reported a reduction in medication during the initial 12 weeks of the program.
- Participants with diabetes showed the same positive improvements in cholesterol levels, LDL levels, triglycerides, oxygen capacity, blood pressure, weight loss and depression scores as the participants without diabetes.

Diabetes Self-Monitoring and Medication Changes

While the *Dr. Dean Ornish Program for Reversing Heart Disease* is very effective in managing blood sugars, medication requirements typically change for most participants in a matter of one to two weeks after starting the program. This is especially true in participants who take insulin.

All medication changes should be done under the consent of the treating physician or diabetes health care team. Below are some guidelines to follow when working with your doctor to manage your diabetes and/or adjust your medications.

If you take oral diabetes medication or non-insulin injectables:

- At baseline: If your fasting blood glucose is less than 110, you may be able to decrease your diabetes medication, depending on the type of diabetes medication you are prescribed. Continue to self-test your blood glucose as directed by your doctor or at least daily for the first week and several times per week thereafter. Keep a record of your blood glucose results to share with your physician or diabetes team.
- If your blood glucose levels increase to 250, you should resume your medication at the initial dose and contact your treating physician.
- Once your blood glucose have reached 110 or less and are maintained at this level, it may be possible to decrease diabetes medication and eventually eliminate it. Never eliminate medication without the consent of your physician or diabetes health care team.
- Speak with your diabetes team about your blood glucose self-monitoring schedule. As you improve your diabetes control, you may be able to significantly reduce the frequency of tests.

If you take insulin:

- At baseline: Self-test your blood glucose as directed by your treating physician or four times per day for at least two weeks after starting the program. Insulin dosage should be adjusted based on your test results and with your doctor's consent.



- If you wear an insulin pump, both your basal and bolus insulin doses may need to be adjusted. Work closely with your diabetes team to make these adjustments. Your carbohydrate to insulin ratio may also change.
- If your insulin dosage continues to be adjusted after two weeks, continue to self-test four times per day for at least one more week or as directed by your treating physician.
- Once your insulin dosage remains consistent for one to two weeks, self-test your blood glucose levels twice per day for the next 12 weeks or as directed by your treating physician.
- Speak with your diabetes team about your blood glucose self-monitoring schedule. As you improve your diabetes control, you may be able to significantly reduce the frequency of tests.

Managing and Monitoring Your Diabetes

- Individuals with diabetes need to work very closely with their primary care physician, endocrinologist, diabetes team and/or certified diabetes educator (CDE) when participating in the *Dr. Dean Ornish Program for Reversing Heart Disease* due to the rapid changes in blood sugar levels and medication needs during the beginning of this lifestyle change program.
- HbA1C levels can be drawn as often as once per month to also assess diabetes management.
- Individuals with diabetes should ensure that they have an annual dilated eye exam, practice proper foot care, obtain other recommended tests and exams and be knowledgeable in self-management skills.

Source: American Diabetes Association Healthy Living (www.diabetes.com) and Diabetes Clinic Online (www.diabetescliniconline.com)