

# ALTERNATIVE MEDICINE ALERT™

*A Clinician's Evidence-Based Guide to Alternative Therapies*

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## Patient Handout: Diabetes Mellitus Type 2

**D**IABETES IS A CHRONIC CONDITION IN WHICH THE BODY CANNOT PROPERLY CONVERT food into energy. Most food that a person eats is eventually broken down into blood glucose (also called blood sugar), which cells need for energy and growth. Insulin is a hormone that helps glucose enter cells. In people with diabetes, the body does not make enough insulin, or it does not respond to insulin properly. This causes glucose to build up in the blood instead of moving into the cells. The most common type of diabetes is type 2 diabetes (formerly called adult-onset diabetes or noninsulin-dependent diabetes). People can develop type 2 diabetes at any age, even in childhood.

The symptoms of diabetes include fatigue, nausea, a need to urinate frequently, excessive thirst, weight loss, blurred vision, frequent infections, and sores that do not heal. However, some people with diabetes do not have any symptoms. Over time, the high blood glucose levels caused by diabetes can lead to complications in the eyes, blood vessels, nerves, kidneys, feet, teeth, skin, and, especially, the heart. Such complications can be prevented or delayed by keeping blood glucose, blood pressure, cholesterol, and triglycerides in a normal or close-to-normal range.

Some people develop a condition called insulin resistance before they develop type 2 diabetes. When insulin resistance is present, the body does not respond properly to the insulin it has released to lower blood glucose. So, the pancreas releases more insulin to try to keep up with the excess glucose. If the pancreas cannot produce enough insulin, over time this leads to type 2 diabetes. Obesity, aging, and lack of exercise can all play a role in developing insulin resistance and heightening the risk for diabetes.

### How is diabetes managed in conventional medicine?

In conventional medicine's approach, people with diabetes learn to keep their blood glucose in as healthy a range as possible. They do this by following a healthy food plan, being physically active, controlling their weight, and testing their blood glucose regularly. Some people also need to take medicine, such as insulin injections or prescription diabetes pills. When lifestyle changes and medical treatment are combined to rigorously maintain and control blood sugar in the normal range, this approach to managing type 2 diabetes minimizes the serious complications of the disease. This enables patients to lead productive, full lives.

Conventional medicine is medicine as practiced by holders of M.D. (medical doctor) or D.O. (doctor of osteopathy) degrees and by their allied health professionals, such as nurses, physical therapists, and dietitians. Complementary and alternative medicine (CAM) is a group of diverse medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine. Complementary medicine is used along with conventional medicine, and alternative medicine is used instead of conventional

medicine. Some practitioners of conventional medicine are also practitioners of CAM.

### What CAM therapies are discussed in this report?

There are many different CAM therapies used for diabetes and its complications, and it is beyond the scope of this report to discuss them all. Scientific information on any CAM therapy for diabetes can be sought in the PubMed database on the Internet and from the National Center for Complementary and Alternative Medicine (NCCAM) Clearinghouse (for both, see “For More Information”). Overall, there have been few rigorous studies published on the use of CAM approaches for type 2 diabetes. Most of the literature has looked at herbal or other dietary supplements, which reflects the tradition in certain whole medical systems of using plant products with claimed effects on blood sugar. This report focuses on six of the dietary supplements that people try for diabetes: alpha-lipoic acid (ALA), chromium, coenzyme Q10, garlic, magnesium, and omega-3 fatty acids.

### What to do if you have diabetes and are considering using any CAM therapy?

People with diabetes need to be under the care of a physician or other health care provider who will help them learn to manage their diabetes and will monitor their efforts to control it. Dietitians and diabetes educators help people learn and use the skills needed for managing diabetes on a daily basis. In addition, many patients need to be under the care of one or more specialists, such as an endocrinologist, an ophthalmologist, and/or a podiatrist.

It is important to not replace scientifically proven treatments for diabetes with CAM treatments that are unproven. The consequences of not following one’s prescribed medical regimen for diabetes can be very serious, even life-threatening.

People with diabetes should tell their health care provider about any dietary supplements or medications (prescription or over-the-counter) that they are using or considering. Prescribed medicines for diabetes and all other major health conditions may need to be adjusted if a person is also using a CAM therapy. Pharmacists can be another helpful source of information about dietary supplements.

If they decide to use supplements, they should know that what they see on the label may not accurately reflect what is in the bottle. Some herbal supplements, for exam-

**Table 1**

### Dietary Supplements

Dietary supplements were defined in a law passed by Congress in 1994. A dietary supplement is a product that contains vitamins, minerals, herbs or other botanicals, amino acids, enzymes, and/or other ingredients intended to supplement the diet. The U.S. Food and Drug Administration has special labeling requirements for dietary supplements and treats them as foods, not drugs. They must meet all of the following conditions:

It is a product (other than tobacco) intended to supplement the diet, which contains one or more of the following: vitamins; minerals; herbs or other botanicals; amino acids; or any combination of the above ingredients.

- It is intended to be taken in tablet, capsule, powder, softgel, gelcap, or liquid form.
- It is not represented for use as a conventional food or as a sole item of a meal or the diet.
- It is labeled as being a dietary supplement.

Other important information about dietary supplements:

- They are regulated as foods, not drugs, so there could be quality issues in the manufacturing process.
- Supplements can interact with prescribed or over-the-counter medicines, and other supplements.
- “Natural” does not necessarily mean “safe” or “effective.”

Consult your health care provider before starting a supplement, especially if you are pregnant or nursing, or considering giving a supplement to a child.

**Source:** <http://nccam.nih.gov/health/diabetes/>

ple, have been found to be contaminated; some tests of dietary supplements have found that the contents did not match the labeled dose on the bottle. The NCCAM Clearinghouse has publications on this topic.

Women who are pregnant or nursing, or people who are thinking of using supplements to treat a child, should use extra caution and be sure to consult their health care provider.

If people with diabetes decide to use a supplement and notice any unusual effects, they should stop and contact their health care provider. ❖

**Source:** <http://nccam.nih.gov/health/diabetes/>

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