



## Diabetes Mellitus—Type 2

### WHAT IS IT?

Diabetes is a group of common clinical conditions with elevated blood glucose due to abnormalities in the metabolism of sugar. People with type 2 diabetes have insulin in their systems, but their tissues are often resistant to its action. As a result of high blood sugar, people with diabetes can develop kidney, eye, nerve and heart disease, and are at greater risk for cancer, especially when they have the condition for many years.

### DIAGNOSIS

Diabetes is typically diagnosed by blood tests. A random blood sugar greater than 200 mg/dL, fasting blood sugar greater than 126 mg/dL, or a 3-month “average” blood sugar, called hemoglobin A1c (HbA1c), greater than 6.5% are all diagnostic of diabetes.

### TREATMENT

Integrative care is ideal for diabetes management as it incorporates many modes of optimizing health.

#### Lifestyle

- **Exercise:** Exercising regularly can prevent the onset of type 2 diabetes and also improve its control once diagnosed. Aim for 30 minutes of moderate exercise at least 5 days of the week.
- **Low glycemic index and load:** These are scores determined for each food that measure the impact of those foods on blood sugar levels. Higher glycemic load foods cause a greater elevation in blood sugar. Eating a low glycemic load diet can improve levels. There are many websites which provide guidance on a low glycemic load diet and you can also ask your healthcare provider for additional guidance.

#### Medications

- Many pharmaceutical medications enhance the body’s natural insulin or, in the case of advanced type 2 diabetes, there are medications that replace insulin altogether. Common side effects of most diabetes medications include hypoglycemia, or sugars that are too low. Be sure to discuss your diabetes medications with your doctor. Understand how each one acts in the body and what the optimal time is to take each.

#### Botanical or Dietary Supplements

*Make sure to ask your health care provider exactly how and when you should take these.*

- **Chromium** is found in a variety of foods but has been shown to lower blood sugar when taken at higher doses (>200mcg/day) in supplement form. It may cause abdominal discomfort and should be avoided at very high doses in patients with kidney or liver disease.
- **Alpha-Lipoic Acid (ALA)** has been shown to improve insulin sensitivity, lower blood sugar, and nerve pain from diabetes. These benefits have been found with oral alpha lipoic acid dosed between 300–1800mg daily or with 500–1000mg of intravenous alpha lipoic acid daily.
- **Cinnamon cassia**, the most popular form of cinnamon in the United States, has been shown to lower fasting blood sugar. Dosing is about 2000mg/day divided and optimally is made from a water-based extract if taken in supplement form.
- **Fenugreek** is a common cooking spice in Middle Eastern cuisine and has been shown to lower blood sugar and cholesterol levels. Dosing depends on the formulation used and it may cause urine to smell like maple syrup.

