

Discovering What's Right for You

By: Elke Jost-Vu, MD Medical Director, Diabetes Program, Eisenhower Medical Center



In Type 2 diabetes, blood sugar levels are high when the body is unable to produce enough insulin or respond to the action of insulin (insulin resistance). Most people suffering from Type 2 diabetes have some kind of insulin resistance. Insulin is produced by the beta cells of the pancreas and large amounts are needed to overcome resistance. Eventually these cells become overworked, producing less and less insulin, resulting in high blood sugar levels. Diabetes medications are effective only in people that produce some level of insulin – they are not for people with Type 1 diabetes. Sulfonylureas In 1942, a scientist studying a sulfa drug (antibiotic) for typhoid fever discovered it caused an unexpected side effect – hypoglycemia. Studies of sulfonylureas led to the oral medication for diabetes, Tolbutamide (Orinase, Tol-Tab®). Almost all patients who require a sulfonylurea are prescribed one of the following: Glyburide (Micronase®, Glynase™ or Diabeta®) Glipizide (Glucotrol®, Glucotrol XL®) Glimpiride (Amaryl®) These drugs are taken once or twice a day, and may remain effective for 24 hours. They are found in newer combination drugs such as Glucovance® (Glyburide + Metformin) and Metaglip™ (Glipizide + Metformin). The main side effect, hypoglycemia, is likely to occur during and after physical activity, when skipping or delaying meals, consuming alcohol, or when taken with other diabetes drugs. Another side effect is weight gain; eating less and exercising regularly is encouraged. Meglitinides (Prandin®) and Phenylalanine Derivatives (Starlix®) These “cousins” to the sulfonylureas were introduced in the mid 1990s. They stimulate insulin faster and for a shorter period of time, and must be taken before every meal that contains carbohydrates. A major benefit is less hypoglycemia, providing greater flexibility in terms of meals and exercise. The drawbacks: patients forget to take them, the cost, and lack of potency compared to the sulfonylureas. Biguanides (Metformin/Glucophage®) Metformin makes insulin more efficient (lowers insulin resistance) and reduces the amount of starch breakdown in the liver in the fasting state and for several hours after eating. It also prevents blood sugar from rising overnight and before meals. Metformin offers several advantages to patients: Does not cause weight gain Lowers cardiovascular risk Restores ovulation in some women with polycystic ovary syndrome The main side effects of Metformin are nausea and diarrhea, easily limited by taking the lowest possible dose with or after meals. Patients with kidney disease, liver disease, or severe congestive heart failure should not take this medication. Thiazolidinediones (Actos and Avandia®) These are the most potent drugs in lowering insulin resistance, making insulin more efficient in transferring sugar from the blood into the muscles and lowering blood sugar levels. Other benefits include: Improvement of the lipid profile Lowering of blood pressure Cardiovascular benefits – protection of the arteries against atherosclerosis No hypoglycemia It traditionally takes two to three weeks before these drugs begin to work, and possibly up to four months for a maximum effect. Major drawbacks are fluid retention and weight gain, both minimized by smaller dosages. These different types of medications can be taken by themselves or in combination. When one medication stops working, others may be added. It is not uncommon for someone with longstanding Type 2 diabetes to take three to four medications. Some people find after implementing a diet and exercise program, the pills become unnecessary. Nevertheless, always consult your physician before ceasing a medication regimen.

EVENTS Call 760-773-1403 for information and reservations. Diabetes Roundtable Discussion Sponsored by Desert Diabetes Club W, May 18, 2 to 3 p.m. (Meetings resume in October 2005) Diabetes Dialogue Group Education W, May 11 and 18; Jun 8 and 15 TH, May 19 and 26; Jun 16 and 23 8:30 a.m. to 1 p.m. Pre-registration required.