Diabetes and Small Vessel Disease

Small vessel disease (*microvascular disease*) includes nephropathy, retinopathy, and neuropathy. People with diabetes are at risk for these problems, but keeping blood glucose (*sugar*) controlled is helpful in preventing problems.

DIABETIC KIDNEY PROBLEMS (*DIABETIC NEPHROPATHY*)

- Diabetic nephropathy occurs in many patients with diabetes.
- Damage to the small vessels in the kidneys is the leading cause of end-stage renal disease (ESRD).
- Protein in the urine (*albuminuria*) in the range of 30 to 300 mg/24 h (*microalbuminuria*) is a sign of the earliest stage of diabetic nephropathy.
- Good blood glucose (*sugar*) and blood pressure control significantly reduce the progression of nephropathy.

DIABETIC EYE PROBLEMS (*DIABETIC RETINOPATHY*)

- Diabetic retinopathy is the most common cause of new cases of blindness in adults. It is related to the number of years you have had diabetes.
- Common risk factors include high blood sugar (*hyperglycemia*), high blood pressure (*hypertension*), and poorly controlled blood lipids such as high blood cholesterol (*hypercholesterolemia*).

DIABETIC NERVE PROBLEMS (*DIABETIC NEUROPATHY*)

Diabetic neuropathy is the most common, long-term complication of diabetes. It is responsible for more than half of leg amputations not due to accidents. The main risk for developing diabetic neuropathy seems to be uncontrolled blood sugars. Hyperglycemia damages the nerve fibers causing sensation (*feeling*) problems.

The closer you can keep the following guidelines, the better chance you will have avoiding problems from small vessel disease.

- Working toward near normal blood glucose or as normal as possible. You will need to keep your blood glucose and A1c at the target range prescribed by your caregiver.
- Keep your blood pressure less than 130/80.
- Keep your low-density lipoprotein (LDL) cholesterol (one of the fats in your blood) at less than 100 mg/dL. An LDL less than 70 mg/dL may be recommended for high risk patients.

You cannot change your family history, but it is important to change the risk factors that you can. Risk factors you can control include:

- Controlling high blood pressure.
- Stopping smoking.
- Using alcohol only in moderation. Generally, this means about one drink per day for women and two drinks per day for men.
- Controlling your blood lipids (*cholesterol* and *triglycerides*).
- Treating heart problems, if these are contributing to risk.

SEEK MEDICAL CARE IF:

- You are having problems keeping your blood glucose in goal range.
- You notice a change in your vision or new problems with your vision.
- You have wound or sore that does not heal.
- Your blood pressure is above the target range.

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