

## **A Consumer's Guide to Understanding the Role of Diabetes and Dementia for Persons of African-American Heritage**

Diabetes is a disease, which is diagnosed by blood tests for high blood sugars. Glucose is a sugar, which is the source of energy in our brain, and the body regulates glucose by production of the hormone, insulin. Insulin acts through a communication system which includes special areas on the outside of cells that collect the insulin and command the cell to use the sugar. These specialized zones are called “receptors” and stimulation of the insulin receptor can produce many changes in the cell. Different types of tissue use insulin in different ways, including the brain.

High blood sugars occur when the body does not produce or use enough insulin. Most children with diabetes do not make enough insulin. The adult body may not respond to normal amounts of insulin, such as in older diabetics with obesity. The failure to respond to insulin is referred to as “insulin resistance” and this condition is common in many older persons, especially those with obesity and lack of exercise.

Insulin is important to the brain because the brain uses a lot of energy. Too much insulin in the blood stream can be harmful to the brain. This form of insulin toxicity may contribute to some of the intellectual loss that is seen in persons with diabetes.

Untreated or under-treated diabetes is bad for blood vessels. People with chronic diabetes can develop more hardening of the arteries and increased risks for heart damage.

Middle-aged people with diabetes can help to protect their brain by controlling their weight and using their medication to control their blood sugar. Poor control of diabetes may increase damage to heart blood vessels in brain. The fatty tissue that accumulates with obesity reduces the efficiency of insulin in your body. Regular exercise and weight control may help reduce the impact of diabetes in the brain.

Scientists have not performed the research to confirm the benefit of exercise, weight control, and strict control of blood sugar on the long-term risk of developing dementia for persons with diabetes. Common sense suggests that these actions will reduce risks associated with this common disease.