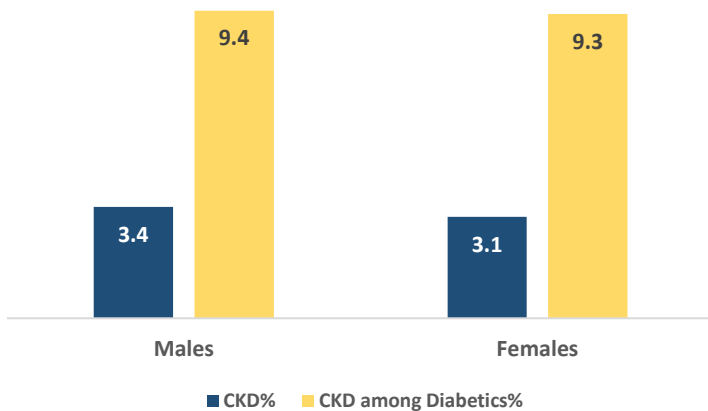


Diabetes and Chronic Kidney Disease, MS 2022

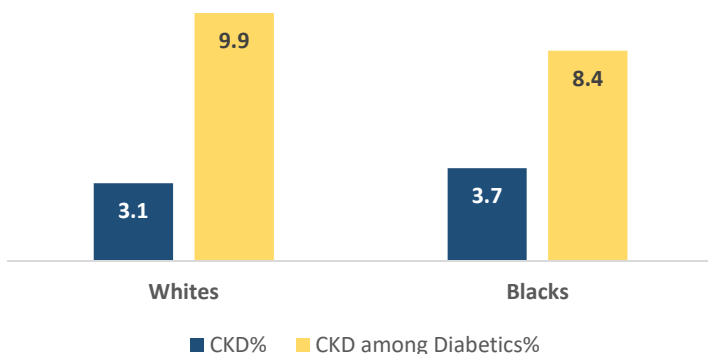
When people develop chronic kidney disease (CKD), their kidneys become damaged and over time may not clean the blood as well as healthy kidneys. If kidneys do not work well, toxic waste and extra fluid accumulate in the body and may lead to high blood pressure, heart disease, stroke, and early death. However, people with CKD and people at risk for CKD can take steps to protect their kidneys with the help of their healthcare providers

Fig. 1 CKD among Diabetics by Gender, 2022



The percentage of chronic kidney disease among diabetics (9.3%) is approximately thrice that of the percentage of individuals having overall Chronic Kidney disease (3.3%). Males have a higher percentage of CKD compared to females among both groups (Fig. 1). Overall CKD in males: 3.4%, females: 3.1%; CKD among diabetics among males: 9.4%, females: 9.3%.

CKD among Diabetics by Race, 2022



While the overall CKD was higher among black individuals (3.7%) in MS compared to whites (3.1%); CKD among diabetics was higher in white individuals (9.9%) compared to blacks (8.4%).

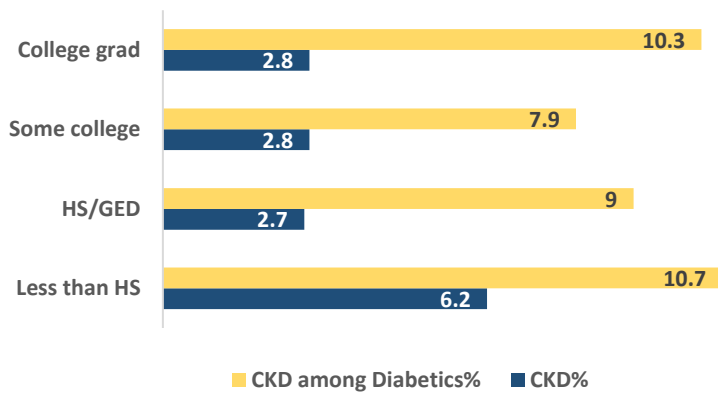
CKD Risk Factors:

Diabetes and high blood pressure are the more common causes of CKD in most adults. Other risk factors include heart disease, obesity, a family history of CKD, inherited kidney disorders, past damage to the kidneys, and older age.

CKD-Related Health Problems:

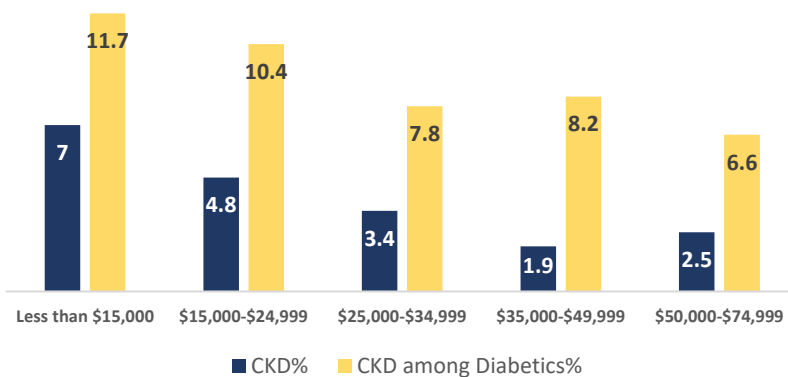
- Heart Disease and Stroke
- Anemia or low red blood cell count, can cause fatigue and weakness.
- Extra fluid in the body, can cause high blood pressure, swelling in the legs, or shortness of breath.
- A weakened immune system makes it easier to develop infections.
- Loss of appetite or nausea.
- Decreased sexual response.
- Confusion, problems with memory and thinking, or depression.
- Low calcium levels and high phosphorus levels in the blood, can cause bone disease and heart disease.
- High potassium levels in the blood, can cause an irregular or abnormal heartbeat and lead to death.
- Kidney Failure
- Early Death

CKD among Diabetics by Education, MS, 2022



The overall CKD was highest among individuals with less than high school education (6.2%) and gradually reduced among individuals with higher education. However, individuals who are college graduates (10.3%) have significantly higher CKD prevalence among diabetics like that of individuals with less than a high school education level (10.7%).

CKD among Diabetics by Annual Income, MS, 2022



During 2022 the CKD and CKD among diabetics trend followed a similar pattern with higher prevalence among individuals with annual income less than 15k USD and lower prevalence among individuals making more than 50k USD annually.

People with diabetes, high blood pressure, or CKD need to talk to their doctor about how to protect their kidneys.

Testing and Treatment: Find it Early, Treat it Early:

- Test for CKD regularly in people who have diabetes, high blood pressure, or other risk factors for CKD. People with CKD may not feel ill or notice any symptoms until CKD is advanced.
- The only way to find out if people have CKD is through simple blood and urine tests. The blood test checks for the level of creatinine, a waste product produced by muscles, to see how well the kidneys work. The urine test checks for protein, which may indicate kidney damage.
- Following a healthy diet and taking medicine for diabetes, medicine for high blood pressure, and other medicines to protect the kidneys may keep CKD from getting worse and may prevent other health problems such as heart disease.

Ways to prevent CKD

Manage risk factors for CKD:

- High blood sugar levels.
 - High blood pressure.
- Keeping a healthy body weight through a balanced diet and physical activity can help manage blood pressure and blood sugar levels in people with diabetes or in people at risk of developing type 2 diabetes.

References:

1. Chronic Kidney Disease in the United States, 2023 (cdc.gov)
2. Chronic Kidney Disease (CKD) - NIDDK (nih.gov)
3. CDC, BRFSS 2022