Type 2 Diabetes and Kidney Health

People with type 2 diabetes (T2D) are at increased risk for kidney damage, which can lead to chronic kidney disease (CKD).

However, CKD development and progression can be slowed with certain treatments and lifestyle interventions. In addition to T2D, high blood pressure and older age can also increase the risk for CKD. This handout will walk you through a personalized plan for keeping your kidneys healthy.

My Kidney Health Snapshot

Your kidney health is mainly determined by two lab tests, which should be checked at least annually. These values are used to determine the presence and stage of CKD. It is important to note that abnormal results in either of these lab tests can be temporary. Discuss your results and trends with your health care provider.

- **Serum creatinine** — a blood test that measures creatinine, a waste product that is filtered out of the blood by healthy kidneys. This test can be used to calculate how well your kidneys are functioning by giving you an estimated glomerular filtration rate (eGFR).

- **Urine albumin-to-creatinine ratio (UACR)** — a urine test that measures the amount of albumin (protein) in the urine, which can indicate kidney damage.

<table>
<thead>
<tr>
<th>Test</th>
<th>Date</th>
<th>Results</th>
<th>Next test due</th>
</tr>
</thead>
<tbody>
<tr>
<td>GFR</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>□ Normal (≥90)</td>
<td></td>
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<td>□ Low (&lt;90)</td>
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<tr>
<td>UACR</td>
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<td></td>
<td></td>
<td>□ Normal (&lt;30)</td>
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<td></td>
<td></td>
<td>□ Low (≥30)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>CKD Stage</th>
<th>eGFR</th>
<th>What does this mean for me?</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ No CKD</td>
<td></td>
<td>• Kidsneys are healthy and function normally.</td>
</tr>
<tr>
<td>□ 1</td>
<td>≥90</td>
<td>• Kidsneys are impaired but function normally.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Depending on your UACR, you are at low-to-medium risk for CKD worsening or heart disease.</td>
</tr>
</tbody>
</table>
Kidneys are impaired and function well but not normally.

Depending on your UACR, you are at low-to-medium risk for CKD worsening or heart disease.

Kidney function is mildly-to-moderately reduced.

Depending on your UACR, you are at medium-to-very high risk for CKD worsening or heart disease.

Kidney function is moderately-to-severely reduced.

Depending on your UACR, you are at high-to-very high risk for CKD worsening or heart disease.

Kidney function is severely reduced.

Depending on your UACR, you are at very high risk for CKD worsening, heart disease and kidney failure.

Kidney function is critically impaired.

Discuss with your nephrology team about options, which include dialysis, transplant or end-of-life care.

CKD TREATMENT

Several treatments are recommended for people with CKD to reduce the risk of further kidney damage. Medications that might be used during the treatment of CKD for people with T2D are listed below. Before starting any of these medications, discuss with your provider the reasons why they are being prescribed, the treatment goals and any potential side effects.

- **Angiotensin converting enzyme inhibitors (ACEis) or angiotensin receptor blockers (ARBs)** — for controlling blood pressure and reducing the impact of T2D on the kidney by slowing overall kidney function decline.

- **Other blood pressure medications** — ACEis and ARBs often need to be used with other blood pressure-lowering medications to reach a normal blood pressure.

- **Finerenone** — for reducing kidney damage and inflammation, slowing the progression of kidney disease and reducing the risk of heart disease in patients who also have T2D.

- **Sodium-Glucose cotransporter 2 inhibitors (SGLT2is)** — for reducing blood glucose levels, slowing loss of kidney function and assisting with blood pressure control.
- **Glucagon-like peptide-1 receptor agonists (GLP-1RAs)** — for reducing blood glucose, decreasing body weight and potentially slowing loss of kidney function.

- **Other diabetes medications** — many people with T2D and CKD need to combine several blood glucose-lowering medications to reach their A1C goals.

- **Statins** — for reducing cholesterol levels.

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### MY KIDNEY HEALTH PLAN

Use this tool together with your provider to map out a plan for keeping your kidneys healthy for as long as possible.

#### My Goals

**My ideal A1C and blood pressure are:**

<table>
<thead>
<tr>
<th>A1C</th>
<th>Blood pressure</th>
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</table>

#### Current Progress

<table>
<thead>
<tr>
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<th>Results</th>
<th>Next test due</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood pressure</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- At or below goal
- Above goal

#### Next Steps

To meet or maintain my A1C goals, my provider and I discussed:

- Adjusting my diabetes medications
- Access to my diabetes medications
- Monitoring my blood glucose more often
- Referral to a diabetes educator
Continuous glucose monitoring (CGM) □  More frequent A1C testing □

To meet or maintain my blood pressure goals, my provider and I discussed:

Adjusting my blood pressure medications □  Access to my blood pressure medications □

Monitoring my blood pressure at home □  Reducing my salt intake and/or fluid status □

Other interventions my provider recommends for my kidney health:

Statin therapy for high cholesterol □  Reducing my protein intake □

Reducing my body weight □  Increasing my physical activity □

Referral to a nephrologist □  Referral to a nutritionist and/or exercise physiologist □