

# Diabetes and Kidney Disease

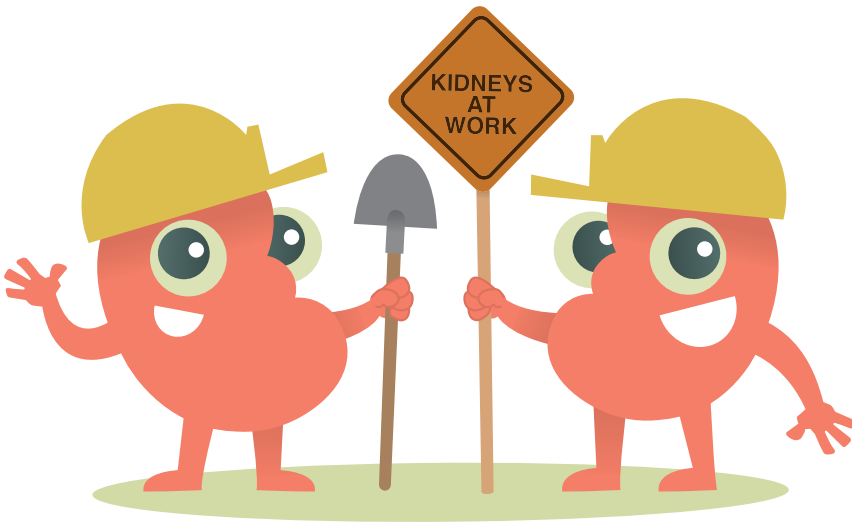
This pamphlet is intended for people diagnosed with early stage chronic kidney disease.

# Diabetes & Your Kidneys

The information in this booklet will help you understand how your kidneys work and how diabetes may affect your kidneys. If you have diabetes you are at increased risk of developing kidney disease. However, taking care of yourself and managing your diabetes with healthy eating, active living, and keeping blood sugars and blood pressure in target will assist in keeping your kidneys healthy.

## What do Your Kidneys Do?

- ✓ Act as filters in the body
- ✓ Remove waste products
- ✓ Keep water and minerals balanced in the body
- ✓ Produce hormones that control other body functions



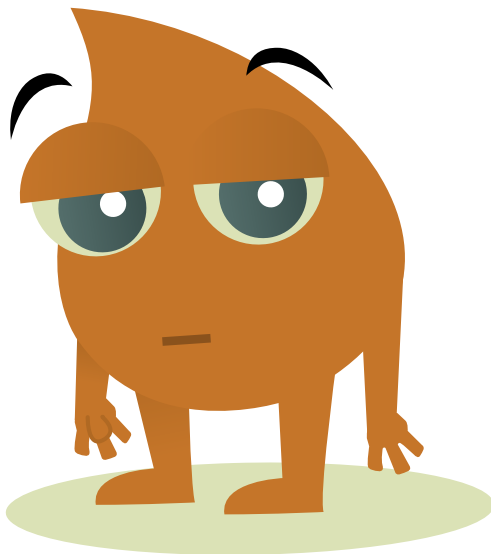
**Kidneys are the master chemists of the body.**

# What are the Two Most Common Causes of Kidney Damage?

- ✓ Diabetes
- ✓ High Blood Pressure

## What are Other Risk Factors for Kidney Disease?

- ✓ Older age
- ✓ Family history of kidney disease
- ✓ Certain ethnic groups:
  - Aboriginal
  - African-American
  - Asian
  - Pacific Islanders
- ✓ Smoking or chewing tobacco or using illegal drugs
- ✓ High blood cholesterol
- ✓ Being overweight



# What are the Signs and Symptoms if the Kidneys are not Working Well?

- ✓ Kidney disease is usually a silent disease.
- ✓ Most people do not have symptoms in the early stages; it is not until later stages of kidney disease that many symptoms appear.

## Warning Signs that May Occur:

- ✓ High blood pressure
- ✓ Puffiness around the eyes, swelling of hands and feet
- ✓ Itching
- ✓ Changes in Urine:
  - Bloody, cloudy or tea colored urine
  - Excessive foaming or difficulty passing urine
  - Passing urine less often or more often at night
  - Protein in urine



# What is "Renal Function"?

**Kidney = Renal**

- ✓ We talk about what your kidneys do as "renal function":
- ✓ If you have two healthy kidneys, you have 100% renal function.
- ✓ Small changes in renal function do not cause problems that you would notice.
- ✓ People can remain quite healthy with only 40% - 50% renal function.
- ✓ You may have more noticeable symptoms if you have less than 20% renal function.
- ✓ If your renal function is less than 10% and your symptoms require some form of treatment, like dialysis, to replace the jobs the kidney can no longer do. This is called "renal replacement therapy".

**The good news is that there are certain things you can do to slow or even stop the decrease of renal function!**

# What are some tests that can be done to check how well my kidneys are working?

**Microalbuminuria (MAU)** – a urine test to see if protein is “leaking” from the kidneys. The normal range is 0-20 mg/L.

**Albumin:Creatinine Ratio (ACR)** – another urine test to see if protein is “leaking” from the kidneys. The normal range is less than 2.0 mg/mmol.

**Creatinine Clearance (CrCl or eGFR)** – a calculation to see how well the kidneys are working. It is calculated from a blood test or 24 hour urine test, your age and gender.

## How often should these tests be done?

The Canadian Diabetes Association recommends:

- ✓ People with Type 1 diabetes have these tests done once a year if you have had diabetes for over five years.
- ✓ People with Type 2 diabetes have these tests done every year.
- ✓ If you already have protein in the urine or reduced kidney function, these tests should be done every six months to monitor changes.

## Here are some other blood tests that your health care provider may order to help monitor your kidney function:

- ✓ Sodium (salt)
- ✓ Potassium
- ✓ Phosphorus
- ✓ Creatinine
- ✓ Urea

Check with your health care provider to ensure that your kidney function is checked regularly.

# How Does Diabetes Affect My Kidneys?

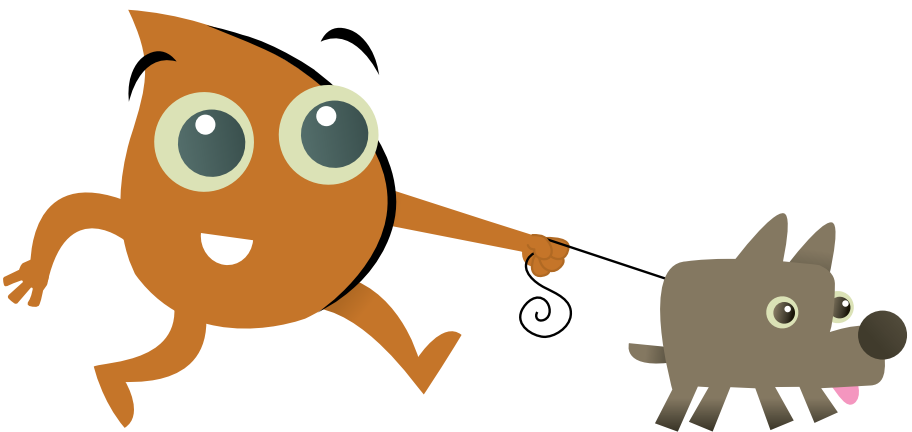
- ✓ High blood sugars and high blood pressure damage the kidney's filters.
- ✓ When the filters are damaged the kidneys cannot clean the blood.
- ✓ Damaged kidneys will leak protein in the urine.
- ✓ Damaged kidneys do not do a good job of cleaning out waste and extra fluids and these build up in your body.

**Diabetic Nephropathy means kidney problems caused by diabetes. Nephropathy affects both kidneys at the same time.**

**Kidney damage begins long before you notice any symptoms.**

# How do I Keep my Kidneys Healthy?

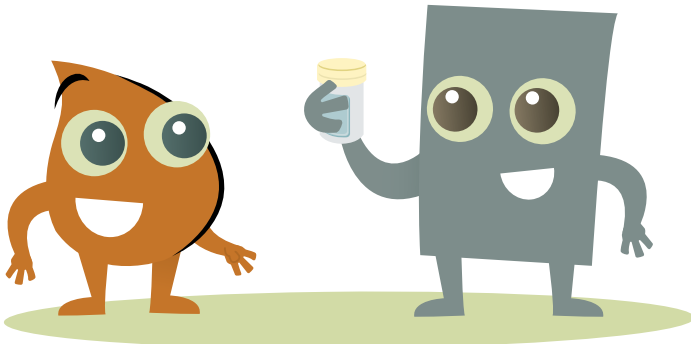
- ✓ Ensure that you are having appropriate screening for kidney damage annually.
- ✓ Keep your blood sugars in the recommended target ranges.
- ✓ Keep your blood pressure below 130/80 mm/Hg to help prevent kidney damage.
  - Keeping your blood pressure under control will also slow down or prevent damage to your eyes, heart and blood vessels.
  - Certain blood pressure medications are available and they help protect the kidney.
- ✓ Take your medication as directed by your health care team.
- ✓ Ask your health care provider if you should take medication to slow down kidney damage.
- ✓ See your dietitian for a healthy eating plan.
- ✓ Stop smoking and chewing tobacco.
- ✓ Be active regularly.





- ✓ Avoid taking painkillers regularly:
  - Daily use of medication like NSAIDS such as aspirin, ibuprofen, Advil™ and some arthritis medication can damage the kidneys.
  - Taking a single low dose of aspirin daily to protect the heart, however, may be recommended.
  - If you are dealing with chronic pain, such as arthritis, work with your health care provider to find a way to control your pain without putting your kidneys at risk.
- ✓ See your health care provider for bladder, kidney or urinary tract infections (UTI) right away. Some symptoms of infections may include:
  - Pain or burning when you urinate
  - Frequent urge to go to the bathroom
  - Urine that looks cloudy or reddish
  - Fever or shaky feeling
  - Pain in your back or on your side below your ribs

**By doing these things listed above you can slow the progression of damage down or even stop it.**



# Living Well with Diabetes

You can live a long and healthy life with diabetes. Working towards a healthy lifestyle to keep your blood glucose, blood pressure and cholesterol in control will help keep your blood vessels and nerves healthy.

- ✓ For healthy kidneys and a healthier you, focus on:
- ✓ Healthy eating
- ✓ Being active
- ✓ Maintaining good blood pressure control
- ✓ Keeping your blood sugar levels in target range
- ✓ Seeing your health care provider regularly
- ✓ Aim for 7 to 8 hours of quality sleep each night.

## KNOW YOUR ABCDEs of diabetes care

**A** = A1C (measure of blood sugar levels over previous 2-3 months)

Target 7% or below

**B** = Blood Pressure Target 130/80mm/Hg or lower

**C** = Cholesterol LDL: 2mmol/L or lower

**D** = Drugs to protect your health

**E** = Exercise

**S** = Smoking Cessation

**Discuss with your health care provider what you can do to stay healthy.**

Notes:

# Contact Information and Resources

## To find a local Health Care Provider:

- Call your local Health Region.
- Call the Saskatchewan HealthLine at 811.
- On Reserve call your local Community Health Clinic or Tribal Council.

The Kidney Foundation of Canada, Saskatchewan Branch  
1-888-664-8588  
[www.kidney.sk.ca](http://www.kidney.sk.ca)

Saskatchewan HealthLine  
811  
[www.healthlineonline.ca](http://www.healthlineonline.ca)

Saskatchewan in Motion  
1-866-888-DOIT (3648)  
[www.saskatchewaninmotion.ca](http://www.saskatchewaninmotion.ca)

Smokers Help Line  
1-877-513-5333  
[www.gosmokefree.ca](http://www.gosmokefree.ca)

Canadian Diabetes Association (CDA)  
1-800-BANTING (226-8464)  
[www.diabetes.ca](http://www.diabetes.ca)

First Nations & Inuit Health  
<http://www.hc-sc.gc.ca/fniah-spnia/index-eng.php>

National Aboriginal Diabetes Association  
1-877-232-6232  
[www.nada.ca](http://www.nada.ca)

**To find a LiveWell™ with Chronic Conditions Program call the HealthLine at 811.**

This document was developed in 2008 by the Chronic Kidney Disease and Diabetes Provincial Working Group and has been updated by a similar group in 2014.