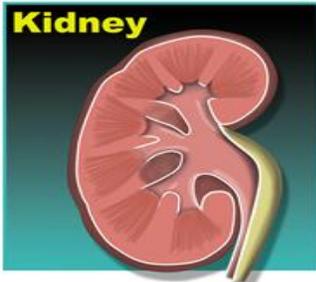


NEPHROLOGY ASSOCIATES OF MICHIGAN
UNDERSTANDING CHRONIC KIDNEY DISEASE



What is chronic kidney disease?

Chronic kidney disease is the gradual destruction of small nephrons of the kidney usually over a number of years. Nephrons are the main functioning unit of the kidney. As we get older, some loss of kidney function and nephrons is normal.

Kidney disease is known as a silent killer just like heart disease because you can lose 75% of total kidney function before you even know anything is wrong with your kidneys. Kidney damage does not mean that your urine production will become less. In fact, during early stages of kidney disease urine production may increase.

Who can have kidney disease? Anyone can. More than 500,000 Americans have kidney failure as of 2007 and the number is expected to grow.

Causes of kidney disease:

- *Type 1 and Type 2 Diabetes is the #1 cause of chronic kidney disease in America. High blood sugars damage the small blood vessels inside your kidneys.*
- *Hypertension is the 2nd most common cause of chronic kidney disease. High blood pressure wacs at your kidneys with every heart beat.*
- *Inflammation of the kidney causes kidney damage. Some causes of kidney inflammation include lupus erythematosus, vasculitis (inflammation of the blood vessels) or infections such as hepatitis.*

- *Obstruction of urine flow from stones, tumor or enlarged prostate can cause a backflow or pressure on kidneys.*
- *Inherited diseases such as polycystic kidney disease (PKD) where fluid filled cysts form throughout the kidneys cause kidney damage.*
- *Other causes include medication, non-steroidal anti-inflammatory drugs (NSAIDs) such as Ibuprofen, Motrin, Aleve, Advil, Celebrex or Naproxen and exposure to toxic chemicals.*

What are the kidneys and what do they do?

- *The kidneys are 2 bean shaped organs about the size of your fist. They are located on each side of your spine.*
- *Tubes called ureters are attached to the kidneys that lead to the bladder.*
- *The kidneys do the following;*
 - *Filter wastes, toxins and extra fluid from your blood*
 - *Help to control blood pressure*
 - *They help to keep your bones strong by maintaining calcium, phosphorous and vitamin D levels in your body.*
 - *Keep body potassium, sodium and acid levels in balance*
 - *Produces a hormone to make red blood cells to combat anemia*
 - *Make urine that goes to the bladder to be excreted*

How does the Doctor know my kidneys are not working right?

To start, your doctor looks at several blood tests to determine kidney function.

These tests are:

- *Creatinine: a byproduct of muscle that can only be removed from the body by your kidneys. Creatinine is a major marker of kidney disease that increases with progression of disease.*
- *GFR (Glomerular Filtration Rate): A measurement of kidney function that is determined through a calculation of your creatinine and other factors. Your GFR decreases with kidney trouble.*

- *Hemoglobin: the part of the red blood cell that carries oxygen. Hemoglobin decreases with kidney trouble. This is called anemia.*
- *Electrolytes (potassium, phosphorus, calcium). The kidneys help to regulate these elements and they are usually elevated in kidney failure.*
- *Urine protein levels. Protein in the urine is a sign of kidney damage.*

Does my Doctor use any other tests to determine kidney function?

Your doctor may order the following to help diagnose the cause of your kidney trouble:

- *Renal Ultrasound: measures kidney size and looks for structural damage, blockages, cysts or mass.*
- *CT scan: a more detailed picture of your kidneys and surrounding structures*
- *Kidney Biopsy: needle biopsy of kidney tissue to help with diagnosis*

What kind of health problems are caused from kidney disease:

- *Higher risk of heart & blood vessel damage from increased cholesterol levels, calcium deposits & inflammation*
- *Anemia (low red blood count)*
- *Bones may become soft and brittle having a higher risk of fracture due to high phosphorous and abnormal parathyroid hormone levels.*
- *High Blood Pressure, swelling in your legs*
- *Poor nutrition from decreased appetite, nausea and low protein levels*
- *Muscle weakness, fatigue, shortness of breath*
- *Depression: fatigue, irritability, weight gain or loss, sadness*

What does it mean when you have kidney failure and need dialysis?

- *Kidney function less than 15%*
- *Wastes and fluid buildup in the body*
- *It is a serious, life threatening condition and treatment is needed to stay alive.*

What are the types of kidney failure?

- *Acute: sudden, emergent, usually reversible*
- *Chronic: slow damage due to chronic disease, over a period of months or years, usually irreversible (Diabetes, High Blood Pressure, from NSAID use, Lupus, Poly cystic kidneys)*
- *You can have both at the same time*

What are the Symptoms of Kidney Failure:

- *Weakness and Fatigue*



- *Swelling of feet, ankles, hands , face or around the eyes*
- *Change in urination volume or amount*
- *Foamy or pink urine*
- *Trouble thinking and remembering*
- *Changes in sleep (trouble sleeping or sleeping excessively)*
- *Depression*
- *Shortness of breath all the time or with very little activity*
- *Loss of appetite or bad taste in mouth*
- *Nausea and vomiting (nausea may be worse in the morning)*
- *High blood pressure*
- *Easy bruising*
- *Pale skin, or excessively dry itchy skin*
- *Rapid weight gain (over 2 pounds in 24 hours or 5 pounds in one week)*



My kidneys are not working well, what's next?

See your doctor on a regular basis and call him or her if your condition changes. When kidneys fail your doctor will review treatment options with you and your family at the appropriate time.

There are 4 types of treatment to choose from:

- *Hemodialysis*
- *Peritoneal Dialysis*
- *Kidney Transplant*
- *No Treatment*

Through the help of your doctor, family and health care team you will learn about all of the options and decide what therapy or treatment best fits your needs.

It is your right and responsibility to understand kidney disease and available treatment options. Remember you are not alone and there are many people out there available to help you. Talk to your family and health care team and seek out resources in your community.

We encourage you and your family to read the brochures, attend a kidney disease education class and go on the internet to learn as much as you can about your illness and treatment. Through education we hope to lessen your anxieties and concerns about living with kidney disease while keeping you as healthy as possible.

Please see come to our other classes for information on kidney replacement therapies, financial and emotional concerns of kidney disease.