

**Overview:**

Our kidneys' main function is to regulate the amount of water in the body and to keep certain body fluids at a constant concentration and acid base level. This function is achieved by filtering the blood, excreting waste products and excess water in the form of urine. Given these critical functions, good kidney functions are essential to an individual's overall good health. Kidney function abnormalities, as reported by abnormal *kidney function tests (KFTs)*, can lead to systemic problems. Any form of kidney abnormality is of great importance to life underwriting and just about all carriers will test some kidney functions.

The kidneys are susceptible to a wide variety of disorders. Fortunately, the kidneys are created with a large amount of excess capacity. Only one normal kidney is needed for good overall health. Thus, kidney disease is seldom life threatening unless both kidneys are affected simultaneously with advanced forms of kidney disease or trauma. For those with advanced stage kidney disease, dialysis and "routine" kidney transplants often enable a near normal lifestyle for many years into the future.

*Hypertension* (high blood pressure) can be both a cause and effect of kidney disease. *Nephrotic syndrome* is another serious kidney disease that can lead to *chronic renal failure*. The kidneys sometimes produce *benign or malignant tumors*. *Metabolic disorders* can lead to a variety of stones in the kidneys and elsewhere in the urinary tract. Kidneys sometimes become infected (*pyelonephritis*) due to some kind of obstruction to the flow of urine. Certain *autoimmune disorders*, such as the kind sometimes seen after an infection with strep throat, can lead to a condition called *glomerulonephritis*. Sometimes the use of drugs can cause allergic reactions by the kidneys; the multi-year use of analgesics (pain killers) can also lead to *renal failure*. Certain potent antibiotics can lead to damage of the kidney tubules, producing a condition called acute *tubular necrosis*. In addition to disease processes, *congenital abnormalities* of the kidneys are fairly common. *Polycystic kidney disease* is a serious disorder in which multiple cysts develop on both kidneys. In *Fanconi's syndrome* and *renal tubular acidosis* the kidney tubules are affected, leading to inappropriate filtering functions.

Once kidney disease progresses, *renal insufficiency* is common. The means waste products are eliminated less efficiently than normal, leading to increased levels of waste products in the blood. Increases in *creatinine* and *blood urea nitrogen (BUN)* levels indicate trouble. Another common abnormal laboratory findings is "protein in the urine", often called *proteinuria* or *albuminuria*. Healthy kidneys generally do not allow proteins to pass through their filtering mechanism into the urine, although *minute* levels of protein are not uncommon. Blood in the urine, or *hematuria*, is also of concern. Blood cells are too large to pass through the filtering mechanism of the kidneys and thus any finding of blood in urine studies will be of interest. Blood in the urine, however, does not necessarily indicate kidney disease; there are many other conditions that will lead to hematuria.

Regardless of laboratory finding, once kidney function (or related) tests show an abnormality, additional testing is typically in order to determine a cause. For relatively minor abnormalities detected as part of the initial laboratory findings, underwriters will typically request *two additional* urine specimen on different days. If the two subsequent analyses come back without any further evidence, underwriting will normally proceed without a rating. If, on the other hand, additional testing indicates continued abnormal kidney functions an underwriter will often ask the proposed insured do a thorough work up with their personal physician or a kidney specialist. Additional testing often consists of a 24 hour total urine analysis or, if there is serious concern, perhaps even a biopsy.

**Impact on Life Underwriting:**

Kidney conditions are underwritten based on the likely progression, if any, of the underlying disorder. The following questionnaire may be of help if no specific impairment has been identified. Otherwise we have underwriting guides for the most common kidney issues, including the conditions identified in the table below. SB 04/23/2001

<b>Condition</b>	<b>What it is:</b>
<b>Glomerulonephritis</b>	Inflammation of the glomeruli (filtration units of the kidney).
<b>Hematuria</b>	Red blood cells found in the urine. May not be visible.
<b>Kidney Stone</b>	Caused by a variety of conditions and composed of various substances depending on cause.
<b>Proteinuria</b>	The passage of increased amounts of protein in the urine.
<b>Renal Insufficiency</b>	Reduction in ability of kidneys to perform their many filtration functions.
<b>Transplant</b>	Ideal source: identical twin; next best is close blood donor; otherwise cadaver.