

HIV and Your Kidneys

Maintaining viral suppression is one of the best ways to preserve kidney function.

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Healthy kidneys are key to a good quality of life. Kidney function diminishes as we age, but you can take steps to keep these organs in good working order.

The kidneys filter the blood, sending waste products and excess water to the bladder to be excreted in urine. Kidney tubules reabsorb fluid, minerals and nutrients and return them to the bloodstream. The kidneys also regulate blood pressure and maintain blood chemistry.

Acute kidney failure can occur suddenly—for example, due to toxins or physical injury. Chronic kidney disease (CKD), in contrast, leads to a slow decline in function over time. Kidney disease symptoms may include frequent urination, fatigue, brain fog, muscle cramps and swelling, but early stages are often asymptomatic.

Older age is the biggest risk factor for CKD. Others include male sex, Black race, family history, diabetes, hepatitis C and use of certain medications. High blood pressure (hypertension) is both a leading cause of kidney damage and a sign of kidney impairment.

Studies have found that up to one third of people living with HIV have abnormal kidney function, but some of these were done before the era of effective antiretroviral treatment. HIV can directly harm the kidneys (known as HIV-associated nephropathy, or HIVAN) and cause damaging inflammation.

Certain HIV medications can themselves cause kidney problems. Among widely used modern antiretrovirals, this occurs most often with tenofovir disoproxil fumarate, or TDF (a component of Truvada). A newer version, tenofovir alafenamide, or TAF (a component of Descovy), is easier on the kidneys and bones. Kidney problems are uncommon among HIV-negative people taking Truvada for pre-exposure prophylaxis (PrEP). Some older antiretrovirals and drugs used to treat opportunistic illnesses caused more severe kidney toxicity, and long-term survivors may have lingering kidney problems.

Kidney function is assessed in various ways. The presence of protein or blood in the urine is one early sign of kidney damage. The estimated glomerular filtration rate (eGFR) is calculated using blood creatinine levels, age, sex and body size. A normal eGFR for a healthy adult is 90 to 120 milliliters per minute. An eGFR between 60 and 90 indicates early CKD, but the kidneys still mostly function well at that stage. People with moderate kidney disease (eGFR 30 to 59) may start to experience symptoms. An eGFR below 15 indicates end-stage renal disease, or kidney failure.

HIV treatment guidelines recommend that kidney function should be assessed at the time of HIV diagnosis, measured before starting a new HIV treatment or PrEP regimen and monitored regularly thereafter. People with impaired kidney function and those at high risk should avoid medications linked to kidney toxicity or use them with caution. Fortunately, drug-related kidney problems often resolve if they are caught early and the offending medication is stopped.

Kidney disease treatment focuses on managing comorbidities to slow disease progression. Various types of drugs are used to control high blood pressure and diabetes. A balanced diet, good hydration, exercise, weight loss, smoking cessation and limited alcohol consumption all contribute to kidney health. Starting antiretroviral treatment promptly and maintaining an undetectable viral load is one of the best ways to preserve kidney function.

Once people progress to end-stage renal disease, kidney damage is likely to be irreversible, and they may need hemodialysis (using a machine to filter the blood) or a kidney transplant. Diagnosing and managing kidney problems early are therefore key to preventing life-threatening kidney failure.