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Women's health depends on a lifetime
of answers—one test at a time.

Women and Renal Disease

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Answers for life.

Women and Renal Disease

Renal disease is a global public-health concern. Its prevalence is closely aligned with Type 2 diabetes. About 40% of women with diabetes will develop chronic kidney disease (CKD), which increases the risk of cardiovascular disease and other complications of diabetes.¹ CKD presents unique challenges to women's health across all stages of life. A lifetime model of awareness, care, and prevention is required to reduce the overall socioeconomic global burden of this disease.



What Is Renal Disease?

Renal (kidney) disease is a general term for damage that impacts the ability of the kidneys to clear waste and excess fluid from the body. Kidney disease can include acute kidney injury (AKI), in which there is a sudden, temporary, and sometimes fatal loss of kidney function, and chronic kidney disease (CKD), a progressive form of the disease that causes reduced kidney function over a period of time.

Microalbuminuria is a primary complication of CKD associated with diabetes in which the small blood vessels in the kidneys that are responsible for filtering wastes are damaged, causing protein to leak into the urine. CKD can lead to end-stage renal disease (ESRD), which, if left untreated, results in total and permanent kidney failure. Hypertension is the second-leading cause of ESRD and has been established as both a cause and consequence of CKD.²

Early identification and treatment of chronic kidney disease can help slow its progression and prevent renal failure, reducing the consequences of dialysis and renal replacement therapy.³



The Global Burden of Renal Disease in Women

- Chronic kidney disease (CKD) affects 10–16% of the general adult population in Asia, Europe, Australia, and the United States.⁴
- A meta-analysis of multiple studies examining the prevalence of chronic kidney disease in the global population found evidence that indicated the risk of kidney disease is increasing at greater rates in women than men.⁵
- The risk relationship of reduced estimated glomerular filtration rate and a higher albuminuria with mortality were steeper in women as compared to men.⁶
- There are several unique women's healthcare issues resulting from kidney disease affecting menstruation, conception, pregnancy, and menopause.⁷

Risk Factors⁶

Kidney disease is a complex problem. Chronic kidney disease is usually caused by another medical condition. Primary risk factors include diabetes and hypertension, cardiovascular disease, a family history of kidney disease, age greater than 60 years, and ethnicity.

Secondary risk factors include unhealthy diet, obesity, autoimmune diseases, urinary-tract infections, systemic infections, and kidney loss, damage, injury, or infection.

Symptoms⁷

Most people with CKD have no symptoms, because the body can tolerate a significant reduction in kidney function. The presence of CKD may remain unrecognized until the disease is advanced. The only way to detect CKD is by using a blood test to estimate glomerular kidney function and a urine albumin test to assess kidney damage. Some symptoms may include:

- Increased tiredness
- Lack of concentration
- Poor appetite
- Insomnia
- Nocturnal muscle cramping
- Swollen feet and ankles
- Puffiness around the eyes
- Dry, itchy skin
- Frequent nocturnal urination

In most cases, people who develop AKI are already in the hospital. When acute injury occurs, the kidneys are unable to function, upsetting the body's chemical balance and resulting in dizziness and little or no urine output.

Related Diseases and Conditions

Chronic kidney disease has a complicated interrelationship with other disease states.

- Diabetes
- Hypertension
- Cardiovascular disease
- Diabetes
- Pregnancy complications
- Anemia
- Osteoporosis
- Vitamin D deficiency

Siemens Solutions for Renal Disease Testing

	ADVIA Centaur® Systems	ADVIA® Chemistry Systems	Dimension® Systems	Dimension Vista® Systems	IMMULITE® Systems	BN ProSpec® Analyzer	DCA Vantage® Analyzer
Risk Assessment							
Albumin		•	•	•		•	
Creatinine		•	•	•			
Cystatin C		•		•		•	
Ig Light Chains, Type Kappa				•		•	
Ig Light Chains, Type Lambda				•		•	
IgG (urine)				•		•	
Microalbumin		•	•	•	•	•	•
Urea nitrogen		•	•	•			
α-1 Microglobulin				•		•	
α-2 Macroglobulin				•		•	
β-2 Microglobulin		•		•	•	•	
Comorbidities							
Hemoglobin A1c		•	•	•			•
Hepatitis	•				•	•	
HIV	•					•	
Intact PTH	•				•	•	
Lipid panel		•	•	•			
Vitamin D	•						

References

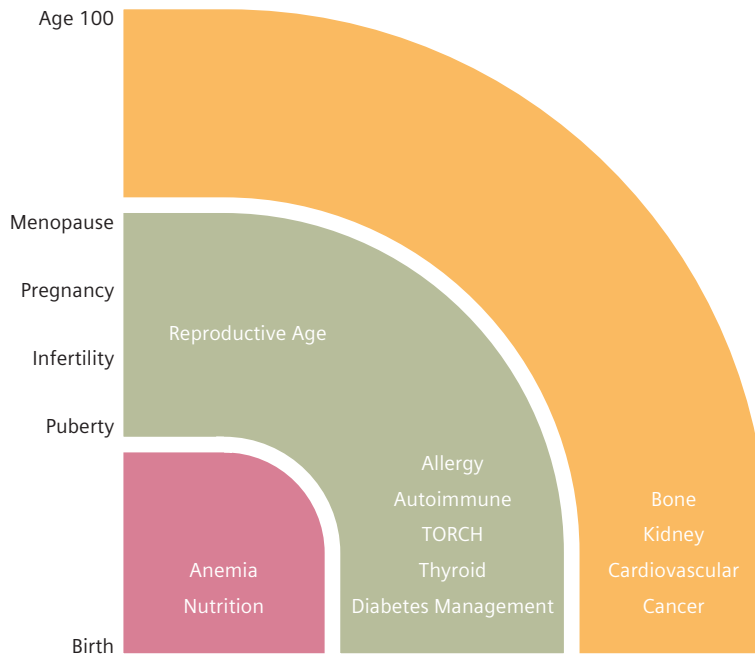
1. National Chronic Kidney Disease Fact Sheet <http://www.cdc.gov/diabetes/pubs/factsheets/kidney.htm>
2. Chronic Kidney Disease Initiative Protecting Kidney Health October 2012 http://www.cdc.gov/diabetes/projects/pdfs/ckd_summary.pdf
3. Tuot, D. et al. Chronic Kidney Disease Surveillance Team, Chronic Kidney Disease Awareness Among Individuals with Clinical Markers of Kidney Dysfunction <http://cjasn.asnjournals.org/content/6/8/1838.full.pdf>
4. Nitsch, D. et al. Associations of estimated glomerular filtration rate and albuminuria with mortality and renal failure by sex: a meta analysis published 29 January 2013 <http://www.bmj.com/content/346/bmj.f324>
5. Zhang, Q., Rothenbacher, D. Prevalence of Chronic Kidney Disease in population-based studies: Systematic review: BMC Public Health 2008, 8:117 <http://www.biomedcentral.com/1471-2458/8/117>
6. Levey, As. Et al. Chronic Kidney Disease as a global public health problem: Approaches and Initiatives – A position statement from Kidney Disease Improving Global Outcomes (KDIGO) International Society of Nephrology 2007 <http://www.Kidney-international.org>
7. Davita Health website: <http://www.davita.com/kidney-disease/causes/assessing-your-risk/women's-health-risks-and-chronic-kidney-disease/e/5012>

Caring for Women with Renal Disease

The diagnostic workup for kidney disease includes diagnostic imaging, laboratory diagnostics, and point-of-care testing to assess kidney status and detect the risk or presence of associated diseases.

As an integrated healthcare company, Siemens' comprehensive solutions follow the complete continuum of renal care, including risk assessment and early prevention, diagnosis, therapy, and aftercare. In addition, our solutions in healthcare IT support the exchange of data for making informed decisions.

Women's Lifetime Health Continuum





Your results. Her lifetime.

**Empowering you to advance the
health and vitality of women
throughout the continuum of life.**

Siemens Healthcare Diagnostics, a global leader in clinical diagnostics, provides healthcare professionals in hospital, reference, and physician office laboratories and point-of-care settings with the vital information required to accurately diagnose, treat, and monitor patients. Our innovative portfolio of performance-driven solutions and personalized customer care combine to streamline workflow, enhance operational efficiency, and support improved patient outcomes.

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