

Appendix 2. Understanding and Using the e-GFR

1. **Estimating glomerular filtration rate:** Two most commonly used methods are the Cockcroft-Gault (C-G) formula for creatinine clearance and the Modification of Diet in Renal Disease (MDRD) equation.

C-G formula

One of the easier-to-use variations is: For women: $CC = \frac{140 - \text{age in years} \times \text{weight (kg)}}{\text{serum creatinine } (\mu\text{mol/L})}$

For men: multiply the result from the above formula by 1.2

MDRD equation

Several formulas are used for calculating MDRD. One example is the abbreviated MDRD formula:

$$eGFR \text{ (MDRD)} = 186 \times (\text{SerumCr}^{-1.154}) \times (\text{Age}^{-0.203}) \times 0.742 \text{ (for women)} \times 1.210 \text{ (for blacks)}$$

To facilitate use in clinical practice, free on-line calculators are available at
www.nephron.com

www.kidney.org/professionals/kdoqi/gfr_calculator.cfm

www.diabetes.ca/cpg2003

A downloadable eGFR equation for PDA can be found at <http://www.kidney.org/professionals/KLS/index.cfm>

A “slide rule” Creatinine Clearance Calculator is also available. See
www.geriatricsandaging.ca/fmi/xsl/article.xsl?-lay=Article&Name=Letters%20to%20the%20Editor--May%202003&-find >

2. **Interpreting eGFR:** Results of eGFR are usually interpreted in conjunction with the “Stages of Chronic Kidney Disease” developed by the U.S. National Kidney Foundation <www.kidney.org>.

eGFR mL/min	Interpretation	CKD Stage	Action
≥ 90	At high risk of CKD, but normal eGFR and no evidence of kidney damage	–	Repeated screening Q 1-2 yrs; reduction of risk factors
	<i>or</i> Normal or elevated GFR but with other markers of kidney damage	1	Diagnose and treat underlying kidney disease, treat comorbid conditions, recommend interventions to slow disease progression, reduction of risk factors for cardiovascular disease
60 - 89	Kidney damage with mildly depressed GFR	2	Continue actions for stage 1 Monitor at least q 6 months Estimate disease progression
30 - 59	Kidney damage with moderately depressed GFR	3	Continue actions for stages 1 and 2 Evaluate and treat complications of CKD Referral to nephrologist/renal clinic when GFR <30
15 - 29	Kidney damage with severely depressed FGR	4	Continue actions for Stages 1-3 Preparation for dialysis or transplant
< 15	Kidney failure	5	Kidney replacement therapy if uremia present

Sources: Johnson CA, Levey AS, Coresh J, Levin A, Lau J, Eknoyan G. Clinical practice guidelines for chronic kidney disease in adults: Part I <<http://www.aafp.org/afp/20040901/869.html>> and Part II <www.aafp.org/afp/20040915/1091.html> Am Fam Physician Sept 2004; K/DOQI clinical practice guidelines for chronic kidney disease: evaluation, classification, and stratification. Am J Kidney Dis 2002 <www.nephron.com>; www.oaml.com/eGFR; Identification, Evaluation and Management of patients with Chronic Kidney Disease <www.health.gov.bc.ca/msp/protoguides/gps/ckd.pdf>

