



**KDIGO 2012 CLINICAL PRACTICE GUIDELINE
FOR THE EVALUATION AND MANAGEMENT OF
CHRONIC KIDNEY DISEASE**

**Supplemental Tables
January 2013**

ONLINE SUPPLEMENTAL TABLES

Supplemental Table 1. Search Strategy

1. exp kidney glomerulus/
2. exp kidney disease/
3. exp kidney function tests/
4. exp renal replacement therapy/
5. exp kidney transplantation/
6. exp kidney, artificial/
7. renal.af. or renal.tw.
8. kidney.af. or kidney.tw.
9. or/1-8
10. limit 9 to humans
11. limit 9 to (guideline or meta analysis or practice guideline or "review")
12. 10 not 11
13. glomerular filtration rate.af. or glomerular filtration rate.tw.
14. gfr.af.
15. exp kidney function tests/
16. serum creatin\$.af. or serum creatin\$.tw.
17. creatin\$.af. or creatin.tw.
18. cystat\$.af. or cystat\$.tw.
19. or/13-18
20. predict\$.af.
21. formula.af.
22. equation.af.
23. exp regression analysis/ or regression analysis.mp.
24. 20 or 21 or 22 or 23
25. 12 and 19 and 24
26. limit 25 to yr="1999-2011"

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CKD-Allopurinol

1. randomized controlled trial.pt.
2. controlled clinical trial.pt.
3. randomized controlled trials/
4. Random Allocation/
5. Double-blind Method/
6. Single-Blind Method/
7. clinical trial.pt.
8. Clinical Trials.mp. or exp Clinical Trials/
9. (clinic\$ adj25 trial\$).tw.
10. ((singl\$ or doubl\$ or trebl\$ or tripl\$) adj (mask\$ or blind\$)).tw.
11. Placebos/
12. placebo\$.tw.
13. random\$.tw.
14. trial\$.tw.
15. (randomized control trial or clinical control trial).sd.
16. (latin adj square).tw.
17. Comparative Study.tw. or Comparative Study.pt.
18. exp Evaluation studies/
19. Follow-Up Studies/
20. Prospective Studies/
21. (control\$ or prospectiv\$ or volunteer\$).tw.
22. Cross-Over Studies/
23. or/1-22
24. exp kidney glomerulus/
25. exp kidney diseases/
26. exp kidney function tests/
27. exp renal replacement therapy/
28. exp kidney transplantation/
29. exp kidney, artificial/
30. exp ultrafiltration/
31. exp sorption, detoxification/
32. renal.af. or renal.tw.
33. nephro\$.af. or nephro\$.tw.
34. kidney.af. or kidney.tw.
35. ur?emia.af. or ur?emia.tw.
36. h?emodialysis.af. or h?emodialysis.tw.
37. (hemofiltr\$ or haemofiltr\$).af. or (hemofiltr\$ or haemofiltr\$).tw.
38. or/24-37
39. allopurinol.af. or allopurinol.tw.
40. 38 and 39
41. 23 and 40
42. limit 41 to humans

CKD-Acidosis

1. randomized controlled trial.pt.
2. controlled clinical trial.pt.
3. randomized controlled trials/
4. Random Allocation/
5. Double-blind Method/
6. Single-Blind Method/
7. clinical trial.pt.
8. Clinical Trials.mp. or exp Clinical Trials/
9. (clinic\$ adj25 trial\$).tw.
10. ((singl\$ or doubl\$ or trebl\$ or tripl\$) adj (mask\$ or blind\$)).tw.
11. Placebos/
12. placebo\$.tw.
13. random\$.tw.
14. trial\$.tw.
15. (randomized control trial or clinical control trial).sd.
16. (latin adj square).tw.
17. Comparative Study.tw. or Comparative Study.pt.
18. exp Evaluation studies/
19. Follow-Up Studies/
20. Prospective Studies/
21. (control\$ or prospectiv\$ or volunteer\$).tw.
22. Cross-Over Studies/
23. or/1-22
24. acidosis.mp. [mp=ti, ot, ab, nm, hw, kw, ui, an, sh]
25. metabolic acidosis.tw. or metabolic acidosis.af.
26. (acid-base\$ adj (balance\$ or equilibrium or imbalance or status)).tw. or (acid-base\$ adj (balance\$ or equilibrium or imbalance or status)).af.
27. or/24-26
28. bicarbonate\$.tw. or bicarbonate\$.af.
29. bicarbonate.mp. [mp=ti, ot, ab, nm, hw, kw, ui, an, sh]
30. or/28-29
31. 27 or 30
32. exp kidney diseases/
33. exp kidney glomerulus/
34. exp kidney function tests/
35. exp renal replacement therapy/
36. exp kidney transplantation/
37. exp kidney, artificial/
38. exp ultrafiltration/
39. exp sorption, detoxification/
40. renal.af. or renal.tw.
41. nephro\$.af. or nephro\$.tw.
42. kidney.af. or kidney.tw.
43. ur?emia.af. or ur?emia.tw.
44. h?emodialysis.af. or h?emodialysis.tw.
45. (hemofiltr\$ or haemofiltr\$).af. or (hemofiltr\$ or haemofiltr\$).tw.
46. or/32-45
47. 31 and 46
48. 47 and 23
49. Animals/ not humans.mp.
50. 48 not 49

CKD-Gadolinium and Nephrogenic Fibrosing Dermopathy

1. exp kidney glomerulus/
2. exp kidney disease/
3. exp kidney function tests/
4. exp renal replacement therapy/
5. exp kidney transplantation/
6. exp kidney, artificial/
7. exp ultrafiltration/
8. exp sorption, detoxification/
9. renal.af. or renal.tw.
10. nephro\$.af. or nephro\$.tw.
11. kidney.af. or kidney.tw.
12. ur?emia.af. or ur?emia.tw.
13. or/1-12
14. gadolinium.mp. [mp=ps, rs, ti, ot, ab, nm, hw, ui, an, tx, kw, sh, ct]
15. nephrogenic fibrosing dermopathy.mp. [mp=ps, rs, ti, ot, ab, nm, hw, ui, an, tx, kw, sh, ct]
16. 13 and 14 and 15

Protein Diet

1. exp kidney diseases/
2. exp kidney glomerulus/
3. exp kidney function tests/
4. kidney transplantation.mp. or exp kidney transplantation/
5. ((kidney or renal) adj (transplant\$ or recipient\$)).tw.
6. or/1-5
7. exp diet/
8. exp diet therapy/
9. exp diet, protein-restricted/
10. or/7-9
11. 6 and 10
12. randomized controlled trial.pt.
13. controlled clinical trial.pt.
14. randomized controlled trials/
15. Random Allocation/
16. Double-blind Method/
17. Single-Blind Method/
18. clinical trial.pt.
19. Clinical Trials.mp. or exp Clinical Trials/
20. (clinic\$ adj25 trial\$).tw.
21. ((singl\$ or doubl\$ or trebl\$ or tripl\$) adj (mask\$ or blind\$)).tw.
22. Placebos/
23. placebo\$.tw.
24. random\$.tw.
25. trial\$.tw.
26. (randomized control trial or clinical control trial).sd.
27. (latin adj square).tw.
28. Comparative Study.tw. or Comparative Study.pt.
29. exp Evaluation studies/
30. Follow-Up Studies/
31. Prospective Studies/
32. (control\$ or prospectiv\$ or volunteer\$).tw.
33. Cross-Over Studies/
34. or/12-33
35. 11 and 34
36. Animals/ not humans.mp. [mp=ps, rs, ti, ot, ab, nm, hw, ui, tx, kw, ct]
37. 35 not 36
38. (guidelines or meta analysis or practice guideline or "review" or review).mp.
39. 37 not 38

Supplemental Table 2. Equations based on serum creatinine assays in adults that are not traceable to the standard reference material

Study, Year (Reference)	Equation Name	Expression	Formula
Cockcroft and Gault, 1976 ²	Cockcroft-Gault	CrCl in ml/min	$(140 - \text{age}) \times \text{weight} / (72 \times \text{SCr}) \times 0.85$ (if female) SCr in mg/dl
Levey et al, 2006 ³	4-variable MDRD	GFR in ml/min per 1.73 m ²	$186 \times \text{SCr}^{-1.154} \times \text{age}^{-0.203} \times 0.742$ (if female) SCr in mg/dl
Levey et al, 1999 ⁴	6-variable MDRD	GFR in ml/min per 1.73 m ²	$170 \times \text{SCr}^{-0.999} \times \text{age}^{-0.176} \times 1.180$ (if black) $\times 0.762$ (if female) $\times \text{BUN}^{-0.170} \times \text{albumin}^{0.318}$ SCr in mg/dl, BUN in mg/dl, and albumin in g/dl
Ma et al, 2006 ⁵	Chinese-modified MDRD	GFR in ml/min per 1.73 m ²	$1.233 \times 186 \times \text{SCr}^{-1.154} \times \text{age}^{-0.203} \times (0.742$ if female) SCr in mg/dl
Rule et al, 2004 ⁶	Quadratic equation by Rule	GFR in ml/min per 1.73 m ²	$\exp[1.911 + (5.249/\text{SCr}) - (2.114/\text{SCr}^2) - 0.00686 \times \text{age} - 0.205$ (if female)] SCr in mg/dl
Jelliffe, 1971 ⁷	Jelliffe, 1971	CrCl in ml/min	Men: $(100/\text{SCr}) - 12$ Women: $(80/\text{SCr}) - 7$ SCr in mg/dl
Jelliffe, 1973 ⁸	Jelliffe, 1973	CrCl in ml/min	$[98 - 0.8 \times (\text{age} - 20)] / \text{SCr} \times (0.9$ if female) SCr in mg/dl
Mawer et al, 1972 ⁹	Mawer	CrCl in ml/min	Men: $\text{weight} \times [29.3 - (0.203 \times \text{age})] \times [1 - (0.03 \times \text{SCr})] / (14.4 \times \text{SCr}) \times \text{weight}/70$ Women: $\text{weight} \times [25.3 - (0.175 \times \text{age})] \times [1 - (0.03 \times \text{SCr})] / (14.4 \times \text{SCr}) \times \text{weight}/70$ SCr in mg/dl
Hull et al, 1981 ¹⁰	Hull	CrCl in ml/min	$[(145 - \text{age})/\text{SCr} - 3] \times (\text{weight}/70) \times 0.85$ (if female); SCr in mg/dl
Gates, 1985 ¹¹	Gates	CrCl in ml/min	Men: $(89.4 \times \text{SCr}^{-1.2}) + [(55 - \text{age}) \times (0.447 \times \text{SCr}^{-1.1})]$ Women: $(60 \times \text{SCr}^{-1.1}) + [(56 - \text{age}) \times (0.3 \times \text{SCr}^{-1.1})]$ SCr in mg/dl
Bjornsson et al, 1983 ¹²	Bjornsson	CrCl in ml/min	Men: $[27 - (0.173 \times \text{age})] \times \text{weight} \times 0.007/\text{SCr}$ Women: $[25 - (0.175 \times \text{age})] \times \text{weight} \times 0.007/\text{SCr}$ SCr in mg/dl
Walser et al, 1993 ¹³	Walser	GFR in ml/min	Men: $7.57/\text{SCr} - 0.103 \times \text{age} + (0.096 \times \text{weight}) - 6.66$ Women: $6.05/\text{SCr} - (0.08 \times \text{age}) + (0.08 \times \text{weight}) - 4.81$ SCr in $\mu\text{mol/l}$
Nankivell et al, 1995 ¹⁴	Nankivell	GFR in ml/min	$(6.7/\text{SCr}) + (\text{weight}/4) - (\text{BUN}/2) - (100/\text{height}^2) + [35$ (if male) or 25 (if female)] SCr in $\mu\text{mol/l}$ and BUN in mmol/l
Imai et al, 2007 ¹⁵	JSN-CKDI	GFR in ml/min per 1.73 m ²	$1.223 \times 186 \times \text{SCr}^{-1.154} \times \text{age}^{-0.203} \times 0.742$ (if female) SCr in mg/dl

BUN, blood urea nitrogen; CrCl, creatinine clearance; GFR, glomerular filtration rate; JSN-CKDI, Japanese Society of Nephrology-Chronic Kidney Disease Initiatives; MDRD, Modification of Diet in Renal Disease; SCr, serum creatinine.

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Supplemental Table 3. Equations based on serum cystatin C assays in adults that are not traceable to standard reference material

Equation name, reference	Formula
Perkins ¹⁶	$100/(CysC)$
Maclsaac ¹⁷	$(86.7/CysC)-4.2$
Stevens ¹⁸	$177.6 \times (SCr/88.4)^{-0.65} \times CysC^{-0.57} \times Age^{-0.20} \times (0.82 \text{ if female})$
Ma ¹⁹	$169 \times (SCr/88.4)^{-0.608} \times CysC^{-0.63} \times Age^{-0.157} \times (0.83 \text{ if female})$
Filler ²⁰	$91.62 \times CysC^{-1.123} (\text{LogGFR})=1.962 + [1.123 \times \log(1/CysC)]$
Le Bricon ²¹	$78/CysC + 4$
Orebro-cyst ²²	$100/CysC-14$
Hoek ²³	$80.35/CysC-4.32$
Rule ²⁴	$76.6 \times CysC^{-1.16}$
Larsson ²⁵	$77.24 \times CysC^{-1.2623} (\text{Dade Behring CysC calibration})$
Grubb ²⁶	$86.49 \times CysC^{-1.686} \times 0.948 [\text{if female}]$

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