

ESTABLISHING REFERENCE VALUES AND ASSESSMENT OF THE REVISED MDRD FOR ESTIMATED GLOMERULAR FILTRATION RATE (eGFR) IN THE PRIMARY CARE SETTING

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Objectives: To derive reference values for eGFR calculated from the revised MDRD formula and corrected serum creatinine for use in the primary care setting.

Methods: A search of the Gamma-Dynacare Medical Laboratories database was completed one month following implementation of eGFR reporting. Preliminary analyses were performed on data (n=19,333) of the first 3 days. Creatinine was determined by Jaffe reaction on Roche Modular and corrected to standardized IDMS reference material using regression analysis (HealthMatrix). The eGFR was calculated using the revised MDRD formula as specified for age and gender (not corrected for ethnicity). Reference values, stratified for age and gender, were compared with published inulin clearance values.

Results: The eGFR showed normal Gaussian distribution for all subgroups, including overall group. Distributions of uncorrected and corrected creatinine were skewed. eGFR in mL/min/1.73 m² mean and central 95th percentile ranges are shown below:

Age, years	Male		eGFR 2.5-97.5 Percentile	Female		eGFR 2.5-97.5 Percentile
	N	Mean		N	Mean	
18 – 29	544	103.6	71.6 – 144.4	990	103.7	72.8 – 149.2
30 – 39	893	92.0	59.9 – 128.7	1410	97.0	65.0 – 142.0
40 – 49	1570	87.6	55.3 – 126.7	1972	88.1	56.0 – 125.0
50 – 59	1809	82.7	45.0 – 121.0	2020	81.9	46.0 – 120.0
60 – 69	1614	74.6	31.0 – 114.6	1593	72.9	31.0 – 115.2
70 +	2156	62.9	18.0 – 106.1	2761	61.1	21.0 – 105.0
Creat, meas						
18 – 29	544	87.7	63.6 – 114.4	990	67.8	48.0 – 88.2
30 – 39	893	94.3	66.4 – 125.0	1410	67.9	47.3 – 91.0
40 – 49	1570	93.8	64.4 – 129.7	1972	71.2	50.0 – 100.0
50 – 59	1809	95.9	65.0 – 148.0	2020	74.2	51.0 – 113.5
60 – 69	1614	104.4	66.0 – 198.9	1593	82.4	51.0 – 155.0
70 +	2156	124.2	68.0 – 303.4	2761	97.0	54.0 – 209.9

Conclusions: Mean and reference ranges in apparently healthy subjects agree with those previously published for GFR measured by inulin clearance. The wide variation of eGFR within and between age groups requires careful interpretation of eGFR in conjunction with clinical presentation.