

A Dietary Assessment of Mid-Spectrum Chronic Kidney Disease

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ABSTRACT

Diets of adult individuals with mid-spectrum (stages III and IV) Chronic Kidney Disease (CKD) remain understudied. The 2015-2020 Dietary Guidelines for Americans food patterns based on the Recommended Dietary Allowances (RDA) in concert with the National Kidney Foundation Kidney Disease Outcomes Quality Initiative (NKF KDOQI) guidelines are advised to individuals with CKD. Estimated glomerular filtration rate (eGFR) remains the best method for tracking CKD progression, yet relationships between self-reported dietary intake and eGFR are understudied. **PURPOSE:** To assess the self-reported dietary pattern in patients with stage III or IV CKD in contrast to the RDA and NKF KDOQI dietary guidelines and to identify correlates of eGFR. **METHODS:** Twenty participants with stage III or IV CKD [n = 6 male (M); n = 14 female (F)]; age 62.0 ± 9.9 years; weight 80.9 ± 16.2 kg; body fat $37.3 \pm 8.5\%$ of weight; eGFR 51.5 ± 6.82 mL/min/1.73m²) completed self-reported dietary assessments for an average of 5 days. Diet was assessed using the ESHA Food Processor Software, Version 11.1. Micro- and macronutrient analyses for males and females were compared to the RDA and NKF KDOQI guidelines to identify malnutrition. T-tests were used to test the difference in eGFR between genders and bivariate correlation analyses were used to identify correlates of eGFR, *p*-values were considered significant at the $\alpha = 0.05$ level. **RESULTS:** On average, all subjects met the RDA and NKF KDOQI guidelines for caloric intake. Average consumption of saturated fat (F = 24.3 ± 10.8 g, M = 34.1 ± 6.0 g), sodium (F = 3780 ± 2510 mg, M = 4210 ± 386 mg) and protein (F = 65.0 ± 23.5 g, M = 107.3 ± 27.3 g) was higher than the recommendations while the average consumption of fiber (F = 13.6 ± 4.1 g, M = 14.8 ± 7.3 g), calcium (F = 573 ± 325 mg, M = 720 ± 224 mg), potassium (F = 240 ± 1800 mg, M = 940 ± 492 mg) and phosphorous (F = 628 ± 1320 mg, M = 425 ± 314 mg) was low. On average, males had a higher eGFR than females ($t = -2.40$, $p = 0.03$). Age, body fat percentage, weight, cholesterol, calcium intake, protein intake, and daily caloric intake were not found to be significantly correlated with eGFR. **CONCLUSION:** When compared to the RDA and NKF KDOQI guidelines, individuals with mid-spectrum CKD had poor nutritional quality. Female gender was correlated with reduced eGFR. Future interventions in individuals with mid-spectrum CKD should look to improve diet quality to align with clinical guidelines and prevent progression to end-stage renal disease.