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Effect of low-fat diet on kidney function and the sex hormone in male and female rats

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The effect of a low level of dietary fat on kidney function and the sex hormone was examined in rats at 4 weeks of age fed either a low-fat or high-fat diet (5 or 20 g/100 g diet) for 6 weeks. In rats fed the high-fat diet, kidney weight was slightly increased when compared with rats fed the low-fat diet. In rats fed the high-fat diet, serum urea was decreased 23%; similarly, serum creatinine was decreased 5.5 and 24% in males and females, respectively, when compared with the control. Serum testosterone and estrogen concentrations were determined. Serum testosterone concentrations were 1–3 times higher than that of the control group. Serum testosterone concentrations were higher in male rats fed the high-fat diet than in male rats fed the low-fat diet. Serum estrogen concentrations were unaffected by dietary fat levels. Although it remains to be elucidated how dietary fat influences sex hormone concentrations, the current study demonstrates that low dietary fat intake affects kidney function and the sex hormone.