

## **Sex Differences in Obesity- and Aging-Mediated Increase of Body Weight and Blood Pressure.**

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The rate of obesity is steadily increasing world-wide, and obesity may predispose to chronic kidney disease (CKD) via direct pathway or through its complications such as hypertension. Furthermore, incidence of CKD is affected by aging and obesity accelerates aging especially in association with its complications. Specifically, the relationship between obesity and aging in controlling CKD development has not been well-defined. To address this gap in knowledge, we generated an obese model of 52-58-week-old mice and started the characterization of the model by measuring body weight and blood pressure in male and female mice. We studied four groups of mice: first and second groups were male mice, fed 60% high-fat (HF) diet or 10% low-fat (LH) diet for 19 weeks. Third and fourth groups were female mice, fed HF or LF diet for the same number of weeks. A gain in body weight was measured in male mice on HF when compared to LF diet and was associated with a significant diet-dependent increase (about 30%) of blood pressure. The body weight gain in female mice was more pronounced than in male mice (62% female vs. 54% male). Blood pressure was higher in female mice than in age-matched male mice in control conditions and was not diet dependent. These findings suggest sex differences in the increase of body weight and blood pressure mediated by diet-induced obesity in mice of 52-58 weeks of age. These findings are valuable to aid the understanding of the relationship of determinants that control progression of kidney diseases.

Supported by Des Moines University IOER Research & Grant Award #03-20-09.