**HIGH SALT DIET DURING GESTATION ALTERS SALT SENSITIVITY OF THE CARDIOVASCULAR SYSTEM IN OFFSPRING**

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The fetal environment-the mother's body-has important effects on the offspring's cardiovascular system. Previously, we demonstrated that offspring of spontaneously hypertensive rats (SHR) fed a high-salt diet during gestation and lactation have lower blood pressure and left ventricular systolic and diastolic function, compared with offspring of SHR fed a control diet. It is unclear, however, whether the high salt intake affects cardiac function in offspring more during gestation or during lactation. In this study, we investigate the influence on cardiac function of a maternal high salt diet during gestation only, compared to the effects of high salt intake during both gestation and lactation. Some SHR were fed a high salt (6% NaCl) diet during gestation and lactation (HH-dam), some were fed a high salt diet during gestation and a control (0.3% NaCl) diet during lactation (HN-dam), and some were fed a control diet during both gestation and lactation (NN-dam). After weaning at 4 weeks of age, the offspring were fed either the control or the high salt diet for 8 weeks. Systolic blood pressure and heart rate of the offspring were measured using a photoplethysmographic tail-cuff system without heating, and ventricular weight was determined as an index of hypertrophy in 12-week-old offspring. Offspring of HH-dams and HN-dams had lower blood pressure and heart rate compared with offspring of NN-dams. Blood pressure and heart weight of offspring of NN-dams were increased by a postnatal salt diet, but those of offspring of HH-dams and HN-dams were not altered. In contrast, there was no significant difference in heat rate among all offspring. These results suggest that a maternal high salt intake, especially during gestation, is a predisposing factor for disturbance of salt sensitivity of the cardiovascular system in offspring.