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## Prevention and Management of Preeclampsia by Magnesium Intake Aging Impairs the Protective Effect of Magnesium Supplementation on Hypertension in Spontaneously Hypertensive Rat

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### Summary

**Objectives** : Preeclampsia is a hypertensive disorder that is unique to pregnancy. Magnesium ( $Mg^{2+}$ ) supplementation is a potential new therapy to ameliorate development of hypertension. The aim of this work was to compare the effects of  $Mg^{2+}$  supplementation on blood pressure in young and aged spontaneously hypertensive rats (SHR).

**Methods** : SHR were divided into young (6-week-old male,  $n = 10$ ) and old (16-week-old male,  $n = 10$ ) groups. Each group of rats comprised two subgroups made of a control subgroup feed with normal rat chow (0.2%  $Mg^{2+}$ ,  $n=5$ ) and a high  $Mg^{2+}$  subgroup nourished with  $Mg^{2+}$  rich diet (0.8%  $Mg^{2+}$ ,  $n = 5$ ). Age-matched Wistar-Kyoto rats (WKY) were also allocated into two groups. Systolic blood pressure (SBP) was assessed weekly for 12 weeks indirectly by the tail-cuff method.

**Results** : SBP increased progressively in SHR-young rats after 7 weeks. This increase was greater in the control subgroup compared to high  $Mg^{2+}$  subgroup at 7 weeks ( $p<0.05$ ). No difference in the SBP was registered between old SHR subgroups and the SBP did not varied in the WKY rats.

**Conclusions** :  $Mg^{2+}$  could have beneficial effect in the developmental phase of hypertension but not in established hypertension.

**Running title:** Effects of Dietary Magnesium on Hypertension

**Key words:** Aging, Hypertension, Magnesium.