



STRAWBERRY SUPPLEMENTATION REDUCES BLOOD PRESSURE IN DIABETIC *db/db* MICE

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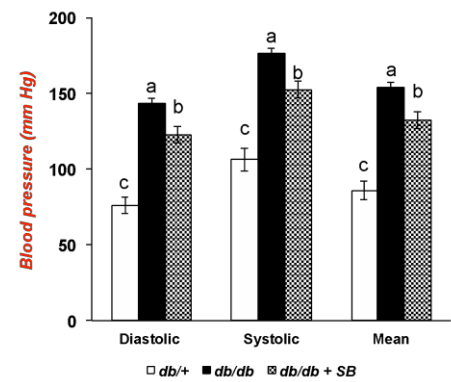
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Background: Cardiovascular disease (CVD) such as atherosclerosis is the leading cause of morbidity and mortality in patients with type 2 diabetes. Recent clinical studies support the vascular beneficial effects of anthocyanins, one class of flavonoids widely available in berry fruits. Human studies have shown that the consumption of strawberries improves several surrogate markers of cardiovascular risk. However, the effect of strawberries on diabetic vasculature are unknown. We investigated the effect of dietary supplementation of strawberries on metabolic parameters and blood pressure in diabetic *db/db* mice.

Hypothesis: We hypothesize that mice fed a freeze-dried strawberry (SB) diet will improve blood pressure in diabetes. **Methods:** Seven-week old male diabetic *db/db* mice that consumed standard chow (*db/db*) or chow supplemented with 2.35% freeze-dried strawberries (*db/db*+SB) for 10 weeks were compared to non-diabetic control mice (*db/+*). The nutritional dose of SB used in this study is equivalent to two human servings of SB (~160g) per day. Body weight and food intake, glucose (GTT), and insulin (ITT) tolerance, and blood pressure (tail cuff method) were assessed after 10 weeks

treatment. All data were analyzed using SPSS/10 software and are expressed as mean \pm SEM. Significant treatment differences were identified using Tukey's multiple comparison tests. $P < 0.05$ was considered different. **Results:** Body weight and blood glucose were increased in diabetic *db/db* mice with an impaired glucose and insulin tolerance. Dietary strawberries didn't improve these parameters in *db/db*+SB. Blood pressure (systolic, diastolic, and mean) was significantly higher in diabetic *db/db* mice vs. *db/+* mice, but the blood pressure was reduced in *db/db*+SB mice. **Conclusion:** Dietary supplementation of strawberries improved blood pressure in diabetic mice without altering metabolic parameters. Strawberry might complement conventional therapies to improve vascular complications in diabetes.



Values are mean \pm SE (n=8-9). Means without a common letter differ, $P < 0.05$.

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