

Blood Glucose Lowering Effect by an Extract from Aronia (*Aronia melanocarpa*) - A Pilot Intervention Study

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Background: The polyphenols from red fruits exhibit protective effects against degenerative diseases, such as diabetes mellitus type 2, cardiovascular disease and others.

Objective: In this small pilot intervention study with only ten volunteers, we investigated the influence of phenolic extracts prepared from an aronia juice, and a red grape juice concentrate on peripheral glucose, blood glucose, and insulin after the intake of a drink containing these extracts plus maltodextrin and water.

Method: Maltodextrin in water served as control; additionally, phenolic extracts from aronia or grape juice were added. Blood samples were taken before ingestion of the bolus drink, and 30, 60, 90, 120, 180, 240, and 360 min after. Additionally, the peripheral glucose was measured continuously using a commercially available sensor system.

Results: In all ten volunteers, the intake of aronia extract (100 mg) reduced both, the peripheral glucose and the blood glucose levels significantly ($p \leq 0.05$) in comparison to the control. Blood insulin levels were not affected. Whereas the intake of red grape extract (120 mg) did not reduce the glucose levels, but increased the insulin levels significantly.

Conclusion: Our pilot study showed that even low amounts of a phenolic aronia extract could lower the glucose absorption. Thus, due to the blood glucose lowering effects of aronia phenolics in healthy volunteers, these preliminary results warrant further investigation in the frame of a follow-up study with larger number of volunteers.

Keywords: Blood glucose, peripheral glucose, human intervention study, aronia, red grape, polyphenolic extracts.