

**Title:** Impact of High Fiber diet on cardiovascular risk markers in Co morbidity of Hypertension and Type 2 Diabetes

**Category:** Prevention

### Abstract

**Background:** Markers of subclinical cardiac injury are elevated in individuals with T2DM compared to healthy individuals. Dietary factors are associated with severity of coronary artery disease. Low intake of protein, fiber, vitamins, minerals and high intake of carbohydrate and fat was associated with higher probability of having severe CAD. Increase consumption of dietary fiber is widely recommended to improve health, but knowledge of relation between high fiber diet and cardiovascular disease risk factors is limited. Comprehensive evaluation of etiologic effects of dietary factors on cardio metabolic outcomes, their quantitative effects, and corresponding optimal intakes are not well-established. We aim to investigate whether diet changes in diabetes patients can control hypertension and associated risk factors.

**Methods:** Inclusion Criteria: Known hypertensives with T2DM (n=200) with  $BMI > 26\text{kg}/\text{m}^2$ . Mean age was  $49.8 \pm 12.1$  years.

**Exclusion Criteria:** Patients with diabetic retinopathy, diabetic nephropathy, coronary artery disease are excluded. The planned intervention was the low fat and high fiber diet. All participants received behavioral and nutritional education, including recommendations for increasing the consumption of high fiber vegetables, fruits, cereals and legumes. Brachial-ankle pulse wave velocity (baPWV) measured along with lipid profile, fasting blood glucose. HbA1c, Lipid profile, baPWV, BMI, waist-hip ratio(WHR) monitored at start, after 3 & 6 months.

**Results:** High fiber and low- Glycemic Index diet intake were associated with significant improvement of baPWV, ( $p<0.0001$ ) and hypertension, with both SBP ( $p=0.0068$ ), DBP ( $p<0.0001$ ). Serum cholesterol ( $p<0.0001$ ), LDL-C ( $p<0.0001$ ), WHR ( $p<0.0001$ ) which are strong cardiovascular risk markers, also improved significantly. All diabetic demonstrated improvement in HbA1c ( $p=0.0001$ ) and fasting glucose ( $p=0.0017$ ). High fiber diet is inversely related with several cardiovascular factors in the study cardiovascular factors its protective role against cardiovascular disease and recommends for its increase consumption.

**Conclusion:** High fiber diet has strong positive corroboration for the cardiovascular risk reduction in patients with hypertension and type 2 diabetes.