

## LETTER TO THE EDITOR

## Pomegranate Juice Intake and Cardiovascular Health

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The public health burden of cardiovascular diseases (CVDs) is substantial. According to the World Health Organization report “The Global Burden of Disease” 2013 Update, heart diseases are expected to take the second place in the rank order of disease and injury burden by the year 2030 [1]. More than 50% reduction of CVD mortality is attributable to favourable changes in risk factors, while 43% to new medical and surgical treatment [2,3]. Extended research data has indicated that diet is one of the modifiable risk factors that has been substantially related to CVD prevention, through several serum antioxidant and antithrombotic mechanisms. Emphasis has been given to the daily consumption of fruits and vegetables due to the high source, among others, of phenolic acids and flavonoids that are known for their antioxidant properties [4]. In the most recent years, laboratory and clinical studies have examined the health benefits of pomegranate juice consumption, which have demonstrated its protective effect against the progression of atherosclerosis [5]. Pomegranate fruit has very high levels of antioxidants- mainly polyphenols- as well as tannins and anthocyanins, which seem to improve vascular function and modulation of inflammation. In a recent study conducted in a sample of people with hypertension, it has been observed that pomegranate juice can significantly lower blood pressure even in a 2-week intake of fresh juice [6]. Polyphenolic flavonoids are powerful antioxidants which can inhibit the harmful oxidation effect of low-density LDL and consequently restrain atherosclerosis development [7]. Pomegranate seed oil consumption seems to be associated with an improvement in insulin sensitivity, posing an additional protective effect in the development of type 2 diabetes [8]. However, in the same study the CVD – related risk did not change, while other studies did not show a decrease in the type 2 diabetes risk or a reduction in the lipid peroxidation among healthy controls, too [5,9]. It should also be mentioned, that pomegranate seed oil does not have polyphenols.

Despite the fact that dietary flavonoids seem to have a potential effect on the reduction of CVD risk, the question of whether isolated polyphenols are the responsible compounds for vascular health still remains unanswered. Long-term clinical studies exploring the bioactive compounds of various types of fruits are required to determine the potential synergistic effects of polyphenols and the dose-response relationships [10]. Additionally, the impact of pomegranate polyphenol extracts among healthy and high CVD risk subjects needs further investigation.

## CONFLICT OF INTEREST

The authors confirm that this article content has no conflicts of interest.

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