EC Nutrition Editor's Column - 2016

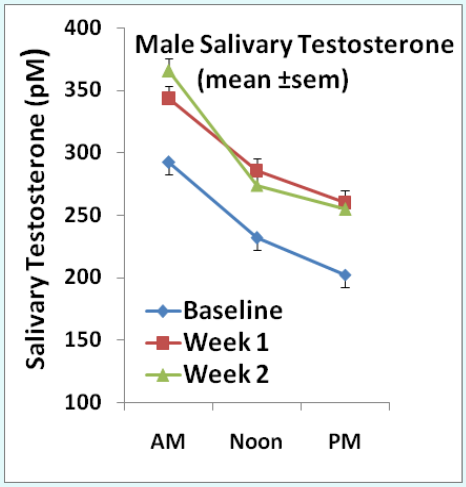
Multipotent Pomegranate Polyphenols Modulate Body Homeostasis and Improve Well Being

"Pomegranate and its polyphenols possess multipotent benefits in health and disease"

Prof. Emad AS Al-Dujaili
Middle East University
Jordan

COLUMN ARTICLE

The pomegranate is by large considered to be among the healthiest fruit on earth. It contains an important range of potent and beneficial plant compounds including ellagitannins, anthocyanins, tannins, ellagic and gallic acid and others that exert powerful antioxidant effects and various other actions. In history, pomegranate symbolizes fertility and has been postulated to enhance sexual function and drive. An explosion of interest in the numerous therapeutic properties of pomegranateover the last decade has led to numerous *in vitro*, animal, and clinical trials, and found that pomegranate is a potent antioxidant, superior to red wine, other fruits and better than green tea. The international scientific community has initiated extensive research to explore pomegranate function in relation to human health and disease. A huge array of these have been reported among many, pomegranate effects in reducing blood pressure and CVD risk factors, benefits to type 2 diabetic patients, body composition, BMI and Obesity, stress, atherosclerosis and Alzheimer's Disease. In addition to their anti-oxidative effects, Pomegranate polyphenols have been foundto exert anti-inflammatory, Anti-carcinogenic, Anti-Bacterial Infections, and improve Memory and Cognitive and sexual functions. In this short column, I would like to summarise our data on the effects of pomegranate products intake on stress, mood and wellbeing.



Pomegranate juice intake caused a significant reduction in systolic and diastolic blood pressure ($p < 0.001$), and PANAS-X mood test positive scores were increased but the negative scores decreased. Arterial elasticity was significantly reduced ($p = 0.003$). To explore further, we have reported that pomegranate juice and extract intake caused a significant decrease of salivary cortisol levels during the day ($p < 0.001$) and Salivary cortisol/cortisone ratio was also significantly reduced. This ratio indicates that pomegranate polyphenols may inhibit 11βHSD type 1 enzyme activity which plays an important role in hypertension, obesity and metabolic syndrome.Health related quality of life scores after pomegranate consumption were increased compared to placebo. Furthermore, we have recently found that salivary

Citation: Emad AS Al-Dujaili. "Multipotent Pomegranate Polyphenols Modulate Body Homeostasis and Improve Well Being". EC Nutrition ECO.01 (2016): 12-13.

testosterone levels were slightly but significantly increased after 1 and 2-week pomegranate juice intake in both men and women (see figure). The increase in salivary testosterone may explain the improvement in mood and wellbeing of volunteers. Our hypothesis was that polyphenols inhibited the enzyme responsible for phase 2 metabolism of testosterone (UDP-glucuronosyltransferase), thereby delaying its metabolism and excretion. In conclusion, our findings suggest that pomegranate products intake rich in biophenols can improve cardiovascular and diabetic risk factors, reduce stress levels and improve quality of life and wellbeing. The improved salivary testosterone levels together with the effects on blood pressure may explain the effects onmood and the positive scores of anxiety and emotions in our large group of human volunteers.