



## “The short-term influence of a Mediterranean-type diet and mild exercise with and without red wine on patients with the metabolic syndrome”

By: Van Velden, D. Van der Merwe, S., Kidd, M., Blackhurst, D., Kotze, M. and Mansvelt, E.

In: South African Journal of Enology and Viticulture. 28 (1): 44-49. 2007

- The “metabolic syndrome” is a group of coronary heart disease risk factors that make people more likely to develop diabetes and cardiovascular disease. It is estimated that 24% of American adults have this syndrome. A Mediterranean-type diet (fruits, vegetables, high-fibre whole grains, legumes, olive oil, fish, moderate alcohol intake), combined with mild exercise, are key therapeutic objectives in the prevention of metabolic syndrome. A 1999 study showed that populations consuming a Mediterranean diet had the lowest mortality of the seven country populations included in the study.
- This study involved 12 non-smoking individuals, aged 32-60, which had been diagnosed with the metabolic syndrome. These participants consumed a Mediterranean-type diet without red wine for 4 weeks (this meant they increased the intake of vegetables, cereals, fruits, mono-unsaturated fatty acids, and fish, at the expense of red meat and dairy products). After that period, they consumed the same diet, but were supplied with a variety of good-quality South African red wines high in polyphenols (2.6 g/L gallic acid). Subjects had to weigh out food portions and keep records of what they ate, which was later analyzed and translated it into energy, macronutrients, cholesterol, and fatty acid intake. Additionally, the subjects were motivated to include 20-30 minutes of mild exercise (brisk walking) into their daily routine.
- **Results.** The body weight and systolic blood pressure of the subjects decreased significantly during the experimental period, and their abdominal circumference also decreased, although not significantly. Their oxygen radical absorbance capacity increased significantly. In contrast, the lipoprotein profiles, uric acid, insulin levels, and fasting glucose, did not change significantly. **The addition of red wine to their Mediterranean diet did not add any beneficial effect** in this study.
- When the authors conducted a genetic testing of the patients *a posteriori*, they found that 6 of them had mutations in their lipid metabolism able to influence the response to dietary interventions and alcohol consumption that might have influenced the results. So they recommend that a genetic screen be done on patients to clarify the interplay between genotype and environment, and determine the most appropriate therapy, and whether diet is likely to have an impact. The authors admit the limitations of this study in terms of the number of subjects, and the short intervention period. *[Why did they use only 2 weeks?]*

This research suggests that the addition of red wine to a Mediterranean-type diet does not demonstrate any additional beneficial or detrimental effects apart from the diet on its own. The significant weight loss, slight decrease in abdominal circumference, and reduced blood pressure are encouraging results to the authors, as they show that patients with metabolic syndrome may respond rapidly to a change in diet coupled to mild exercise. They also point out that the limited research data linking wine consumption to superior health –as opposed to other alcoholic beverages- warrants further research to identify a plausible mechanism.

Author: Bibiana Guerra, Editor: Kay Bogart. This summary series funded by J. Lohr Vineyards & Wines.