

GRAPE POLYPHENOL CONCENTRATE IN REDUCING THE RISK OF PHOSPHORUS INTOXICATION

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Background: The purpose of this study was to evaluate effects of grape polyphenol concentrate on phosphorus levels and antioxidant activity in individuals suffered to permanent phosphorus exposure. Excessive phosphorus influence is known to disturb mineral metabolism and contribute to oxidative stress. This research aimed to determine whether natural grape-derived polyphenols could support the body’s redox balance and reduce the biochemical risks associated with phosphorus overload.

Materials and methods: The study included a dietary intervention phase, followed by a post-intervention observation period of one year. Participants were divided into an experimental group, which received grape polyphenol concentrate, and a placebo group. Blood samples were analyzed for phosphorus concentration and markers of antioxidant activity, before the intervention, immediately after the intervention and one year later.

Results: Results demonstrated that one year after the end of supplementation, the level of oxidative

stress in the experimental group began to increase, indicating that the grape polyphenol concentrate had previously played a role in suppressing oxidative stress during the intervention. In contrast, the placebo group maintained consistently high levels of oxidative stress throughout the study period. These observations suggest that grape polyphenol concentrate effectively reduces oxidative stress while being consumed, highlighting its potential as a supportive antioxidant intervention during periods of phosphorus exposure.

Conclusion: The novelty of the study lies in its extended follow-up period, which enables the assessment of how quickly redox balance is affected after discontinuation of supplementation.

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