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## Investigation of interaction effects on antioxidant capacity of pairing foods and wines of the Spanish Mediterranean diet

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**Statement of the Problem:** Recent research has shown that antioxidants may be vital to human health. Both foods and wines can be high in polyphenols, which inhibit oxidation in the body. However, no studies have looked at the possible interactions when foods and wines high in antioxidants are consumed together. Studies have shown that antioxidants can interact, but these interactions are not yet well understood. There is a specific interest in the possible interaction effects among components of the Mediterranean diet, as prior health studies have shown this diet to be associated with lower-than-expected mortality rates. The typical Mediterranean diet includes consumption of wine, but no studies have examined how these wines interact with the health properties of other components of the diet.

**Methodology & Theoretical Orientation:** Three foods (raw tomatoes, Spanish onion, and persimmons) and three wines (Tempranillo, Monastrell, and Grenache) common to the Spanish diet were assessed by Trolox Equivalency Antioxidant Capacity, both individually and in pairing combinations. Each food was paired with each wine and evaluated in triplicate. Interaction effects were assessed by one-way ANOVA ( $\alpha=0.05$ ).

**Findings:** Tomatoes showed negative interaction effects with all three wines. Spanish onions and persimmons showed a positive interaction effect with all three wines. The greatest interaction effect was observed between Persimmons and Tempranillo, which demonstrated antioxidant potential ~200% the value predicted for no interaction.

**Conclusion & Significance:** Consuming persimmons and Spanish onions with wine may increase the antioxidant potential, allowing for greater oxidation inhibition *in vivo*. Consuming raw tomatoes with wine may decrease the antioxidant potential. Further studies examining the interaction effects between antioxidant-rich foods and wines may be warranted.

### Biography

Carol Majkrzak has recently graduated from Montclair State University with her Master's Degree in Nutrition and Food Science. She also completed her undergraduate program at Montclair State University in Nutrition with a concentration in Dietetics. Carol's research has focused on antioxidant capacity measurement, specifically looking at foods and wines in the Spanish Mediterranean Diet.

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