

## **Effect of uric acid on plasma antioxidant capacity after red wine consumption in human**

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**Aim:** the nature of the effect on plasma antioxidant capacity observed after red wine consumption is unclear and the mechanisms are not completely understood. This study was an investigation on the plasma uric acid concentration and its relationship with the plasma antioxidant capacity (AC) after red wine intake.

**Methods:** 9 healthy volunteers (5 women and 4 men) were recruited. Each subject consumed 300 ml of red wine with 100 gr of bread and 100 gr. of ham during the experiment. Red wine chosen was the *Merlot 2004*; (total polyphenols:  $3,00 \pm 0,31$  g/L GAE; AC:  $2,90 \pm 0,08$  Trolox milliequivalent). The antioxidant capacity of plasma and the acid uric concentration were measured before (baseline value) wine consumption and 50, 120, 240 min. later. Plasma was separated by centrifugation (2050 rpm for 10 min at 24 °C) and AC was measured by means of the crocin bleaching assay (CBA). On the other hand, the plasma uric acid concentrations were evaluated by a commercial kit.

**Results:** the acid uric concentration has shown the same trend both in women and men. The maximum concentration was reached after 50 min. and remained constant until 240 min after red wine intake. In men, uric acid concentration has the same trend of the plasma AC. While was different in women. In fact, the maximum peak of plasma AC occurs after 120 min. while uric acid shows a higher concentration after 50 min. Moreover, after 240 min, the antioxidant protection goes back to the baseline value while uric acid remains constant until the end of the experiment.

**Conclusions:** changes in the plasma AC are in part due to changes in the plasma urate. Further investigation would be important to determine which of the single components of red wine (phenolic, lactic acid and ethanol) is responsible for the increment in plasma AC