

## **Presence of elevated circulating HDL phenol levels in men who consumed olive oil with different antioxidant content**

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**Introduction:** The traditional dietary habits of the Mediterranean population have been consistently associated with a lower incidence of CVD. Consumption of olive oil has a protective role due to MUFA and phenol content. An increased level of cHDL also has a protective effect against atherosclerosis. The bioactivity of olive oil phenols could be determined by the in vivo disposition of their biological metabolites in human HDL.

**Objectives:** Determine whether metabolites of phenolic compounds are able to bind HDL and how their content is affected by the ingestion of 2 similar olive oils that differed in phenol concentrations.

**Material and methods:** Participants were 51 healthy men, aged 20 to 60 from a subsample of the Euroolive study. They were randomized to 2 consecutive intervention periods of raw olive oil administration (25 mL/day) with low (LPC, 2.7 mg/kg) and high (HPC, 366 mg/kg) polyphenols content. Each 2-week intervention was preceded by a 2-week wash-out period. Samples were analyzed before and after high and low concentration olive oil treatment.

**Results:** The levels of HDL hydroxytyrosol monosulphate, homovanillic acid sulphate, and homovanillic acid glucuronide, increased significantly after HPC virgin olive oil ingestion ( $P < 0.05$ ), in comparison to LPC.

**Conclusions:** Phenolic metabolites are able to bind the human HDL. Furthermore, the polyphenols in olive oil HPC modulate the HDL content of hydroxytyrosol sulphate and homovanillic acid sulphate.

**Acknowledgements:** This research was supported by “Fundación Mapfre”; through the grant “Ayudas a la investigación 2011”.