

AG Sitzung 31: 5**Association between alcohol consumption and serum paraoxonase and arylesterase activities: a cross-sectional study within the Bavarian population****Carolina Schwedhelm¹, Katharina Nimptsch¹, Achim Bub², Tobias Pischon¹, Jakob Linseisen³**¹Molecular Epidemiology Research Group, Max-Delbrück Centrum für Molekulare Medizin, Berlin;²Department of Physiology and Biochemistry of Nutrition, Max Rubner-Institut, Federal Research Institute of Nutrition and Food, Karlsruhe; ³Institute of Epidemiology 2, Helmholtz Centre Munich, Neuherberg

Background: High alcohol consumption is an important risk factor for chronic disease and liver degeneration. Paraoxonase (PON1) and arylesterase (AE) are functions of the enzyme paraoxonase, which is synthesized by the liver. PON1 enzyme circulates in plasma bound to HDL (high density lipoprotein) and hydrolyses lipid peroxides, protecting lipoproteins against oxidative modification. Low activities of PON1 and AE are associated with impaired liver function. It has been hypothesized that excessive alcohol consumption would lead to a reduction of serum PON1 and AE activity; however, studies investigating the association with habitual alcohol consumption are scarce.

Objective: We investigated the cross-sectional association between habitual alcohol consumption and serum activity of PON1 and AE using data from the population-based Bavarian Food Consumption Survey II (BVSII).

Methods: PON1 and AE activities were quantified in serum samples of 566 male and female participants (aged 18-80 years) and dietary intake was estimated from three 24-hour dietary recalls. The association between alcohol consumption and PON1 and AE activities was analysed using linear regression, adjusted for age, gender, and socioeconomic status.

Results: There was no strong association between alcohol consumption and enzymatic activities of PON1 and AE in the Bavarian population. PON1 activity was seen to be lowest in abstainers and highest in people with medium alcohol consumption (15.1-30 grams of pure alcohol per day or 1-2 drinks per day): multivariable adjusted mean (95% CI) was 105 (92,117) in abstainers, 108 (98,118) in the low consumption group, 107 (96,118) in the low-medium group, 119 (104,134) in medium alcohol consumers, and 110 (97,124) in the high alcohol consumption group. AE activity increased across alcohol consumption categories with the following multivariable adjusted means (95% CI): 158 (150,166) in abstainers, 159 (152,166) in low alcohol consumers, 161 (153,169) in the low-medium alcohol consumption group, 163 (155,172) in the medium consumption group, and 172 (161,183) in high alcohol consumers and with a significant p for linear trend of 0.04. Associations were attenuated after adjustment for blood concentrations of HDL.

Conclusions: The results of this study do not support the hypothesis that habitual alcohol consumption is related to important PON1 and AE activity alterations

AG Sitzung 31: 6**Associations of meat consumption with measures of adiposity before and after puberty****Carla Harris¹, Anette Buyken², Andrea von Berg³, Dietrich Berdel³, Irina Lehmann^{4,5}, Carl-Peter Bauer⁶, Barbara Hoffmann^{7,8}, Sibylle Koletzko⁹, Berthold Koletzko⁹, Joachim Heinrich¹, Marie Standl¹**¹Institute of Epidemiology I, Helmholtz Zentrum München – German Research Centre for Environmental Health, Neuherberg, Germany; ²Research Institute of Child Nutrition, University of Bonn, Dortmund, Germany; ³Department of Pediatrics, Marien-Hospital Wesel, Wesel, Germany; ⁴Core Facility 'Studies', Helmholtz Zentrum für Umweltforschung UFZ, Leipzig, Germany; ⁵Department of Environmental Immunology, Helmholtz Zentrum für Umweltforschung UFZ, Leipzig, Germany; ⁶Technical University of Munich, Department of Pediatrics, Munich, Germany; ⁷IUF – Leibniz Research Institute for Environmental Medicine, Düsseldorf, Germany; ⁸Medical Faculty, Heinrich-



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