



**CITTÀ DI CARPI**



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# **COLLEGIUM RAMAZZINI ANNUAL RAMAZZINI DAYS 2016**

27-30 OCTOBER 2016  
CARPI, ITALY

SCHEDULE OF EVENTS  
SCIENTIFIC PROGRAM  
ABSTRACTS BY SESSION

Title: Environmental and occupational risk factors of amyotrophic lateral sclerosis: A population-based case control study

Authors/Affiliations: Viola Federica<sup>1,2</sup>; Fiore Maria<sup>3</sup>; Flippini Tommaso<sup>1,2</sup>; Malagoli Carlotta<sup>1</sup>; Ledda Caterina<sup>3</sup>; Mauceri Cristina<sup>4</sup>; Dimartino Angela<sup>4</sup>; Mandrioli Jessica<sup>5</sup>; Fini Nicola<sup>5</sup>; Patti Francesco<sup>6</sup>; Ferrante Margherita<sup>3</sup>; Vinceti Marco<sup>1</sup>

<sup>1</sup>CREAGEN-Environmental, Genetic and Nutritional Epidemiology Research Center, U Modena and Reggio Emilia (UMRE), Reggio Emilia, IT; <sup>2</sup>School of Hygiene and Preventive Medicine, UMRE, Modena, IT; <sup>3</sup> Department 'GF Ingrassia' –Section of Hygiene and Public Health and Laboratory of Environmental and Food Hygiene, Department 'GF Ingrassia' of Hygiene and Public Health, Uof Catania, Catani, IT; <sup>4</sup>School of Hygiene and Preventive Medicine, U of Catania, Catania, IT; <sup>5</sup>Department of Neuroscience, UMRE, Modena, IT; <sup>6</sup>Department 'GF Ingrassia'—Section of Neuroscience, U of Catania, Catania, IT

Presenting Author: Marco Vinceti, MD, PhD

mail: [Marco.vinceti@unimore.it](mailto:Marco.vinceti@unimore.it)

Bio: Professor Vinceti is Associate Professor of Epidemiology and Public Health. The main research fields are human health effects of environmental exposure to selenium, heavy metals, pesticides and magnetic fields, with focus on environmental risk factors of amyotrophic lateral sclerosis, childhood leukemia and birth defects, nutritional epidemiology and health risk assessment of municipal solid waste incinerators.

**Background:** Amyotrophic lateral sclerosis (ALS) is a progressive neurodegenerative disease of the motor neuron. Its etiology is still largely unknown, except for some rare forms of genetic origin, but environmental factors may have an important role.

**Methods:** We performed a population case-control study in three Italian provinces (Modena, Reggio Emilia and Catania) in order to assess the possible etiologic role of some environmental factors. We administered 877 questionnaires by mail or by person in a neurological office to collect information about personal, clinical and professional history of ALS cases diagnosed in the 2008-2011 period and age- and sex-matched population controls.

**Results:** analysis of the returned questionnaires (18.5%, 61 cases and 101 controls) showed an increased risk when examining clinical information for reported trauma (OR 1.20, 95%CI 0.63-2.30), head (OR 3.04, 95%CI 1.23-7.55) and chest trauma (OR 2.65, 95%CI 0.72-9.78). History of previous fractures had an OR of 1.10 (95%CI 0.58-2.11), but for head fracture the OR rose to 5.17 (95%CI 0.53-50.88). With reference to occupational history, an excess of risk was found for employment in agriculture (OR 2.44, 95%CI 1.03-5.79) and for welding (OR 1.25, 95%CI 0.27-5.80). Occupational exposure to lead (OR 1.27, 95%CI 0.74-2.17), thinners (OR 1.12, 95%CI 0.66-1.91) and solvents (toluene/xylene) (OR 1.24, 95%CI 0.72-2.13) provide some excess risk. Considering 'extra-working' activities, we found an excess disease risk for: hunting (OR 1.69, 95%CI 0.33-8.65), painting (OR 1.46, 95%CI 0.47-4.58), modelling with glue (OR 1.72, 95%CI 0.57-5.17), gardening (OR 1.15, 95%CI 0.64-2.08), football (OR 1.04, 95%CI 0.44-2.47, p=0.926), pesticides (OR 1.98, 95%CI 0.76-5.12), herbicides use (OR 2.27, 95%CI 0.72-7.19).

**Conclusions:** Though these results must be assessed with caution for the risk of selection and information bias they suggest potential etiologic clues to ALS that are worthy of further study.