essential for clarifying this relationship. Aside from the distance of the residence from the power lines, the assessments should take into account the height of towers, distance between phases, ordering of phases, and average (mean) load on the power line for each year a study subject had lived in the house.

Funding

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Response to: Residence near power lines and risk of Alzheimer's dementia and Parkinson's disease

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We thank Su et al. for their interest in our recent article,[1] which describes the first Italian case-control study investigating the effect of living in proximity to high-voltage overhead power lines on the risk of Alzheimer's dementia (AD) and Parkinson's disease (PD). Su et al. highlighted three specific points: (i) the role of work-related co-exposures associated with AD or PD, but not considered in our study; (ii) occupational and other exposures to extremely low-frequency magnetic fields (ELF-MFs), which have not been considered; and (iii) the short time window of the study.

The population basis of this study derives from an entire data warehouse gathered for public health purposes, which offers a comprehensive and unbiased picture of the health status of 3.4 million people.[2] Data are nevertheless not collected for this specific study, for which additional information (such as the job of each resident) would have certainly been useful. We took advantage of the power of the population-based data, at the same time controlling for confounding as far as possible. To adjust for other potential confounders, matching has been performed not only by gender and year of birth but also by municipality (194 of them have been considered). The fundamental characteristics of each subject have thus been taken into account, as well as the specificity of each administrative division. This is related to geographical, demographic and socioeconomic

factors and environmental exposures, including production activities that have a major impact on the life of residents and make the municipality committed to a particular production sector (agriculture, industry etc.). Therefore, despite having no information about the individual jobs of subjects, efforts have been made to create sets of cases and controls that are comparable in terms of confounders.

In the original paper, we recognized as limitations of the study the lack of a quantitative estimate of ELF-MF, as well as the short time window which is limited by the availability of data (computerized from 2011). It is believed that the pathogenetic mechanisms of AD and PD start at least 10 years before diagnosis of AD[3] and about 5 years before diagnosis of PD.[4] Bearing this in mind, a case-control design was adopted because a longitudinal approach would have been pointless: it was actually impossible to establish the exposure time, which is essential in cohort studies and which, in this case, would be the length of time each subject had resided in the same dwelling. The growth of the datasets from 2017 onwards will allow the lengths of time needed to build up informative cohorts in several years (earlier for PD).

In conclusion, further developments that are not fully available now, such as the estimate of the magnetic field based on the current load and the structural characteristics of the power lines, and the collection of information about the jobs of subjects by means of questionnaires, will require specific studies and additional resources.

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