

The Mobil phone use and the early childhood neurodevelopment

Ching-Chun Lin , *Institute of Occupational Medicine and Industrial Hygiene, National Taiwan University College of Public Health, Taipei, Taiwan*

Pau-Chung Chen, *Institute of Occupational Medicine and Industrial Hygiene, National Taiwan University College of Public Health, Taipei, Taiwan*

Department of Public Health, National Taiwan University College of Public Health, Taipei, Taiwan;

Department of Environmental and Occupational Medicine, National Taiwan University College of Medicine and Hospital, Taipei, Taiwan

Background and Aims: The effect of exposure to the RF-EMF of mobile phone still not inconsistent and need to be investigated. Our study is to explore the association between the prenatal and postnatal exposure of mobile phone use and early childhood neurodevelopment.

Methods: Our study recruited 192 children in Taiwan. All study subjects were evaluated by Movement Assessment Battery for Children (Movement ABC) at five years old and their parents also completed mobile phone use questionnaires. Multiple linear regression models were employed to assess the potential effects of the mobile phone exposure of three trimesters of pregnancy and at postnatal ages up to 60 months old on the Movement ABC score after adjusted for maternal nationality educational level, family income, and child sex.

Results: There were borderline significantly lower (worse) scores in manual dexterity in children of frequent mobile phone users during the preconception period, second trimester and the age of children before 12 months. However, there were significantly higher (better) scores in balance in children of headsets users during the preconception period, pregnancy and the age of children up to 60 months.

Conclusions: The exposure of mobile phone may be associated with the early childhood neurodevelopment. Further research is needed to elucidate the causal relationship.

References

- INTERPHONE Study Group Brain tumour risk in relation to mobile telephone use: results of the INTERPHONE international case-control study. *Int J Epidemiol.* 2010 Jun;39(3):675-94. Epub 2010 May 17
- Vrijheid M, Martinez D, Forns J, Guxens M, Julvez J, Ferrer M, Sunyer J. Prenatal exposure to cell phone use and neurodevelopment at 14 months. *Epidemiology.* 2010 Mar;21(2):259-62.
- Kundi M. The controversy about a possible relationship between mobile phone use and cancer. *Cien Saude Colet.* 2010 Aug;15(5):2415-30
- Volkow ND, Tomasi D, Wang GJ, Vaska P, Fowler JS, Telang F, Alexoff D, Logan J, Wong C. Effects of cell phone radiofrequency signal exposure on brain glucose metabolism. *JAMA.* 2011 Feb 23;305(8):808-13.