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Analyze the Effect of TETRA, Terrestrial Trunked Radio, Signal on the Health of People Working in the Gas Refinery

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Abstract : TETRA (Terrestrial Trunked Radio) is a digital radio communication standard, which has been implemented in several different parts of the gas refinery ninth (phase 12th) by South Pars Gas Complex. Studies on possible impacts on the users' health considering different exposure conditions are missing. Objectives: To investigate possible acute effects of electromagnetic fields (EMF) of two different levels of TETRA hand-held transmitter signals on cognitive function and well-being in healthy young males. Methods: In the present double-blind cross-over study possible effects of short-term (2.5 h) EMF exposure of handset-like signals of TETRA (450 - 470 MHz) were studied in 30 healthy male participants (mean ± SD: 25.4 ±2.6 years). Individuals were tested on nine study days, on which they were exposed to three different exposure conditions (Sham, TETRA 1.5 W/kg and TETRA 10.0 W/kg) in a randomly assigned and balanced order. Participants were tested in the afternoon at a fixed timeframe. Results: Attention remained unchanged in two out of three tasks. In the working memory, significant changes were observed in two out of four subtasks. Significant results were found in 5 out of 35 tested parameters, four of them led to an improvement in performance. Mood, well-being and subjective somatic complaints were not affected by TETRA exposure. Conclusions: The results of the present study do not indicate a negative impact of a short-term EMF- effect of TETRA on cognitive function and well-being in healthy young men.

Keywords : TETRA (terrestrial trunked radio), electromagnetic fields (EMF), mobile telecommunication health research (MTHR), antenna
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