

## **P6.30.**

### **Studies on the origin of non-specific symptoms attributed to exposure to power frequency electromagnetic fields.**

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Although the adverse effects of the non-ionizing electromagnetic fields (EMFs) have not been proven, there are frequent complaints about non-specific symptoms (e.g. headache, dizziness, sleeping disturbances, etc.) attributed to EMF exposure. Our aim was to study the influence of psychological factors (e.g. negative expectancies, worrying about EMF) as well as direct biological effects of EMF exposure on the complaints. In animal experiments, male and female Wistar rat embryos or pups, respectively, had been exposed to an EMF of 50 Hz, 0.5 mT for 168 hours and were examined later in 3 different behavioral tests (locomotor activity, Elevated Plus Maze, Social Avoidance). In another, human study, 72 volunteers filled up symptom expectancy and modern health worries /MHW/ questionnaires, then put one hand between two active electromagnetic coils and were asked to mark experienced items from a list of 19 somatic symptoms. Although some minor effects following EMF exposure in the animal experiments have been found, the changes were small and inconsistent. In other words, we could not reproduce the human symptoms in animal models thus their biological origin has still remained questionable. In the human study, those participants experienced more symptoms during the exposure who had shown more symptom expectancies ( $r=0,54$ ;  $p<0,000$ ) and increased worries ( $r=0,25$ ;  $p=0,035$ ), proving that psychological factors may really affect and enhance EMF-induced symptom perception.